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Anthropology

The Center for Learning

Anthropology

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Mary Boteler

The Center for Learning

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Series Introduction

Senior High Electives

Students constantly face the challenge of understanding themselves, interacting with groups, knowing where they came from, and gaining awareness of their society and other societies that live differently from their own. It is important that young people accept these challenges with a thorough base of knowledge rather than racing to opinions that are predicated on media sound bites and personal intuition.

Through a series of units that correspond to senior high social studies electives, students can become young adults prepared with the knowledge of human behavior past and present. The popular electives of sociology, psychology, and anthropology address the issues of society's structure, the individual's behavior, and humankind's past and current direction.

The Senior High Electives Series presents a view of the behavioral or human sciences that explores relevant topics of sociology, psychology, and anthropology in a systematic manner so that students can pursue these studies scientifically, using higher level thinking skills. Lessons from these units can augment other texts or can be used independently as stand-alone lessons for the investigation of these disciplines.

Units in the Senior High Electives Series include *Anthropology, Sociology,* and *Psychology*.

Unit Introduction

Anthropology is the study of humankind divided into two interrelated fields of study: physical anthropology and cultural anthropology. Because of its all-encompassing nature, anthropology intertwines the life and earth sciences with those of the behavioral realm. Anthropology affords the teacher the opportunity to ask the big questions: where do we come from, who are we, and where are we going.

Among the most exciting aspects of this study is the impact of new knowledge on current understanding: what is considered to be fact today may, in the light of new discoveries, be considered incorrect tomorrow and what is incorrect today, indeed, may be accepted in the future. Definitive answers are elusive. This makes the subject interesting, but also difficult, to teach. Teachers need to continually update their knowledge of the field with a critical eye. These lessons generally reflect the consensus of leading anthropologists. However, new discoveries about human origins and new analyses of human cultural variation may cause modification of current thinking.

The lessons presented in this unit are intended to provide a comprehensive manual for teachers as a primary teaching tool or as a supplementary resource. The unit is not geared to any specific text but may be used in conjunction with available high school texts. One such publication designed for teachers and students is *Anthropology Explored: The Best of Smithsonian AnthroNotes* (Smithsonian Institution Press, 1998), which provides an introduction to the field covering all major topics in physical and cultural anthropology, with update sections summarizing the latest developments in the topics discussed. Regardless of the basal textbook used, the unit presented here uses a great variety of student activities and should be valuable to teachers for students of all ability levels.

Part 1
Studying the Human Story

As a study of humankind, anthropology is, by its very nature, extremely broad. It is, therefore, divided into many fields generally under the headings of biological (or physical) and cultural anthropology. The task of the anthropologist is to bring information to light in an objective fashion. One of the many challenges of anthropology is to give perspective of time and space to its students.

The sections allow students to gain a broad perspective on the nature and work of anthropology. Fields of anthropology are explored, the methods of anthropologists are examined, and some of the major touchstones of time and space are investigated.

Lesson 1
Fields of Anthropology

Objectives

- To identify and define anthropology
- To classify the subdisciplines of anthropology into biological (physical) and cultural components
- To identify and classify the subjects related to anthropology

Notes to the Teacher

There are two basic divisions within anthropology: biological and cultural. Within each subdiscipline, there are subfields that define the work of anthropology. In biological anthropology, the subfields consist of primatology, human evolution, human variation, and paleoanthropology. In cultural anthropology, the subfields consist of archaeology, socio- and historical linguistics, and ethnology. Additionally, anthropology calls upon other disciplines to aid in its work. Geology, paleontology, biology, and genetics expedite biological anthropological research. Culturally, history, sociology, and psychology help support the discipline.

Students attend to two stories about anthropology—one biological, one cultural. The story of "Lucy" concerns a hominid that lived between two and three million years ago. Her fossils were found in the early 1970s by paleoanthropologist Donald Johanson, who was looking for fossils in the Hadar region of Ethiopia within the Afar triangle. One day he spotted a number of fossils that he recognized as humanlike. Upon closer examination with his colleagues, he identified a knee joint, femur, jaw, and other bones that made up a creature that had never been identified before. The researchers called this creature Lucy, for they were listening to the Beatles song "Lucy in the Sky with Diamonds" as they made their initial examinations. They surmised that Lucy had lived between two and three million years ago, walked upright, and had the brain approximately the size of a modern chimpanzee. They called her *Australopithecus Afarensis* for the location of her remains.

The other story students hear pertains to cultural anthropology. A group, named the Mbuti Pygmies, lives in central Africa. They exist by hunting and gathering. They wear little clothing and live in sympathy with their forested environment, hunting and collecting only enough foodstuffs necessary for their survival. They have little organized government, but a complex religious system tied to their surroundings. Cooperation rather than competition is the cornerstone of their group dynamic. The entire group sustains familial relationships unlike the nuclear family arrangement of Western society.

Students speculate as to the disciplines required to study such diverse topics, although both are classified as anthropology. By examining these two situations, students devise a graphic organizer that divides anthropology into its subdisciplines, subfields, and related subjects.

Procedure

1. Present two images of anthropology—one biological and one cultural. (See Notes to the Teacher describing Lucy and the Mbuti Pygmies.) Have students brainstorm to ascertain what disciplines are required to study these two topics.
2. Define *anthropology* as the study of humankind of the past and present encompassing both cultural and biological components. Explain that the examples presented in procedure 1 are typical of topics studied in anthropology.
3. Distribute **Handout 1**, and assign parts A and B. Have anthropology texts and/or dictionaries available for students to complete definitions. Review and correct students' answers. Explain that these subjects or subdisciplines make up the field of anthropology.

   Suggested Responses:

   Part A.

   1. Historical linguistics—*the uses of language and word use in a group's past*
   2. Ethnology—*the study of cultures (which is frequently comparative in nature)*

3. Primatology—*the study of nonhuman primates*
4. Human evolution—*the study of the changes in hominids over time*
5. Archaeology—*the study of prehistoric or early societies and their artifacts*
6. Sociolinguistics—*the study of language within a specific society*
7. Human variation—*the study of the patterns of differences among human populations as a result of evolution*
8. Paleoanthropology—*the study of fossils and their environment as they relate to human evolution*

Part B.

1. a. *archaeology, ethnology, sociolinguistics, historical linguistics*
   b. *primatology, human evolution, human variation, paleoanthropology*
2. a. *archaeology, historical linguistics*
   b. *sociolinguistics, ethnology*
   c. *paleoanthropology, human evolution*
   d. *human variation, primatology*

4. Distribute **Handout 2,** and assign part A. Explain to students that there are many other subjects related to anthropology which they may have identified in the opening activity. Inform students that they will classify the related fields of anthropology in the same way that they classified the subdisciplines. Review students' answers thoroughly before continuing with part B.

   Suggested Responses:

   1. *history, archaeology*
   2. *sociology, psychology*
   3. *geology, paleontology*
   4. *genetics, biology*

5. Assign part B of **Handout 2**. When students have completed this assignment, have them share their graphic organizers with the class. Check for accuracy and clarity.
6. Conclude by reviewing students' understanding of these terms and categories by having them complete **Handout 3**.

   Suggested Responses:

   1. *archaeology*
   2. *paleoanthropology*
   3. *historical linguistics*
   4. *sociolinguistics*
   5. *ethnology*
   6. *human evolution (or paleoanthropology)*
   7. *primatology*
   8. *human variation*

Extension

Call a local college or university, and ask them to send a catalog that describes their courses. Review their anthropology listings, and compare these courses with the disciplines and subdisciplines of anthropology that you have studied in this lesson. Create a poster that reviews these findings. Post it on the classroom bulletin board with your teacher's permission.

Name_____

Date _____

Subdisciplines of Anthropology

Part A.

Listed below are the subdisciplines of anthropology. Use past knowledge, an anthropology text, or a dictionary to define each of the terms.

1. Historical linguistics

2. Ethnology

3. Primatology

4. Human evolution

5. Archeology

6. Sociolinguistics

7. Human variation

8. Paleoanthropology

Part B.

Complete the following.

1. Classify the terms above into two groups based on whether the focus of the subject is cultural or biological.

   a. Cultural

   b. Biological

2. Classify the terms again based on whether the focus of the subject is past or present.

   a. Cultural—Past

   b. Cultural—Present

   c. Biological—Past

   d. Biological—Present

Name _____

Date _____

Subjects Related to Anthropology

Part A.

Classify the subjects listed below into four categories—Cultural/Past, Biological/Past, Cultural/Present, and Biological/Present.

Biology	Psychology	Paleontology	Sociology
Geology	Genetics	History	Archeology

1. Cultural—Past

2. Cultural—Present

3. Biological—Past

4. Biological—Present

Part B.

Design a graphic organizer that demonstrates the two divisions of anthropology, the subdisciplines, and the related subjects.

Name _____

Date _____

Field Applications of the Subfields of Anthropology

For each of the situations presented below, identify the subfield of anthropology described.

_____ 1. Studying the paintings on the caves in southern France

_____ 2. Examining a tooth from a modern human's ancestor who lived five million years ago

_____ 3. Studying the Rosetta Stone, which gave the same description in Greek, modern Egyptian, and hieroglyphics

_____ 4. Observing how many times computer terms are used in the daily newspaper

_____ 5. Living among the Australian aborigines in order to write an ethnography

_____ 6. Spending the summer at Hadar, Ethiopia, digging for traces of the human record

_____ 7. Observing and recording the group interactions and feeding styles of gorillas

_____ 8. Using DNA studies to evaluate the differences between isolated populations and the norm

Lesson 2
Work of Anthropologists

Objectives

- To identify the methods anthropologists use to study the evolution of human beings
- To identify the methods anthropologists use to study past and present human societies
- To predict the pitfalls inherent in studying biological and cultural anthropological topics

Notes to the Teacher

To understand the methods anthropologists use, students need to identify the goals of such investigation. In biological anthropology, anthropologists try to trace the evolution of the human species. In cultural anthropology, anthropologists attempt to identify the similarities and differences in human societies. The methods used to study these subdisciplines are, therefore, quite distinct.

Students role-play finding a new society and identify how they would study this society in its cultural and biological evolution. Students also investigate the problems they encounter using these methods.

Procedure

1. Ask students what anthropologists hope to accomplish by their studies. Allow students to brainstorm this question. Write their answers on the board. (*Answers may include trace human evolution, examine the elements of human culture, compare and contrast human societies.*) Explain to students that they are going to study how anthropologists conduct research.
2. Distribute **Handout 4** and assign part A. Divide the class into an even number of groups of four to five students. Assign half the groups the cultural aspects of the scenario presented, and assign the other groups the "biological aspects" of the scenario presented.
3. Have each group report its answers to the class. Discuss responses as they are presented. Add any key information missing from students' responses. Have students record the answers from the other groups.

Suggested Responses:

1. Cultural

- *Establish rapport.*
- *Learn the language.*
- *Be objective.*
- *See all aspects of life.*
- *Learn their history.*
- *Beware of subjects' deception.*

Biological

- *Understand their biology.*
- *Learn their reproductive system and genetic inheritance.*
- *Investigate their geology and geography in order to locate fossils.*

2. Cultural

- *pen and paper*

Biological

- *dating instruments*
- *tissue analysis techniques*

3. Cultural

- *surveys and interviews*
- *observations*
- *relationship mapping (sociograms)*

Biological

- *scientific method*
- *grids for mapping fossil finds*
- *fossil analysis*
- *DNA testing*

4. Cultural

- *Who is considered related to you?*
- *What institutions do you need to survive?*
- *What do you value?*
- *How do you keep order?*

Biological

- *What traits do you inherit?*
- *Have you discovered fossils?*
- *Are there more primitive forms of your species?*

4. Assign part B of **Handout 4**. Have students complete this part working in their original groups.

5. Review students' answers to **Handout 4**, part B. Have students report their responses to the class. Discuss responses as they are presented. Direct students to complete the part of the worksheet they were not assigned.

   Suggested Responses:

   Cultural

   - *overgeneralizing about the society*
   - *judging the society by our own standards*
   - *using invalid evidence*
   - *not including all possible artifacts*

   Biological

   - *misinterpreting fossil record*
   - *destroying fossil evidence during investigation*
   - *assuming fossil record is complete*

6. Distribute **Handout 5**. Direct students to study terms and definitions listed in part A. Review the information, and clarify any misconceptions. Then assign part B and have students complete it individually. Review responses.

   Suggested Responses:

   1. *fossils*
   2. *paleoanthropologist*
   3. *absolute dating (or relative dating)*
   4. *relative dating (or absolute dating)*
   5. *relative dating*
   6. *genetics*
   7. *holistic*
   8. *ethnologist*
   9. *ethnography*
   10. *emic (or etic)*
   11. *etic (or emic)*
   12. *etic*
   13. *ethnocentrism*
   14. *cultural relativism*
   15. *culture shock*
   16. *artifacts*

7. Conclude by asking students which area of anthropology they would prefer to investigate. Be sure students give a rationale for their choice.

Extension

1. Interview a local anthropologist. Ask the anthropologist to explain what types of work he or she does, the education needed to pursue this field, and the difficulties associated with anthropological field work.

2. Contact the local historical society to see whether any field work is currently occurring. Ask if you may volunteer or observe the work firsthand. Report your findings to the class.

Name _____

Date _____

Hypothetical Fieldwork

Part A.

Your group has been assigned the biological or cultural aspect of the following scenario. Complete the following chart based on this assignment.

> You are a team of anthropologists that lands on a distant planet in earth year 2099. The community you land among numbers 324 and are humanlike in that they are upright, live in social groupings, and have language.

Questions	Cultural	Biological
1. What skills will you need to conduct your investigation?		
2. What tools will you need?		
3. What methods will you use?		
4. What questions will you ask?		

Name _____

Date _____

Part B.

What problems may occur in your research that could lead you to inaccurate findings?

Cultural	**Biological**

Name _____

Date _____

Terms Related to Anthropologists' Methodology

Part A.

Study the following terms for use later in the lesson.

1. *Fossil*—the remains of an organism that lived at least 10,000 years ago

2. *Holistic*—incorporating various fields of knowledge into one overall view

3. *Ethnocentrism*—the belief that one's own culture is superior and that judgment of other cultures is made by one's own standards

4. *Cultural relativism*—judging the practices of another culture by its own standards or norms

5. *Ethnologist*—one who studies cultures and frequently makes cultural comparisons

6. *Ethnography*—a non-judgmental description of a culture under study

7. *Culture shock*—a negative response to the traits and values of an unfamiliar culture

8. *Genetics*—the study of inherited characteristics

9. *Emic*—viewing a culture from an insider's point of view

10. *Etic*—viewing a culture from an outsider's point of view

11. *Artifact*—an object made or used by human beings

12. *Absolute dating (chronometric dating)*—measures the object's time difference from the present

13. *Relative dating*—dating that measures the age differences among deposits, (i.e., older/younger)

14. *Paleoanthropology*—the study of fossils and their environment as they relate to human evolution

Name _____

Date _____

Part B.

Use the terms in part A to complete the following.

The work of anthropologists requires different skills depending upon whether one's focus is cultural or biological. An anthropologist interested in biological anthropology may spend a great deal of time trying to find (1)_____. If the primary goal is to trace human evolution, that person is probably considered a (2)_____. Once objects are discovered, they generally go through a process of (3)_____ or (4)_____ _____. (5)_____ _____tries to establish which fossils are older or younger than other ones found. By using a variety of sciences such as chemistry, geology, biology, and (6)_____, a paleoanthropologist uses a (7)_____ approach.

In studying cultures, a cultural anthropologist is also an (8)_____ The written description of a culture is often referred to as an (9)_____. In writing an ethnography, the author should make it clear whether the viewpoint is (10)_____ or (11) _____. Most of the time, the anthropologist is an outsider, so the viewpoint is (12)_____. Anthropologists try to be as objective as possible and not judge the new culture by their own standards. Judging a culture by one's own norms is referred to as (13)_____. Instead, they should practice (14)_____ _____. Nor should anthropologists experience (15) _____ _____, being psychologically upset by how different a culture is to their own. Archeologists study societies of the past by examining (16)_____.

Both biological and cultural anthropologists emphasize using objective, scientific methodology in their studies.

Lesson 3
Anthropology of an American High School

Objectives

- To observe high school students
- To investigate the physical make-up of a high school
- To evaluate the observations using the criteria of cultural anthropologists

Notes to the Teacher

Students often think that cultural anthropology encompasses only primitive and/or distant societies. Yet, such noted works as *Tally's Corner* by Eliot Liebow, which describes the culture of a street corner in Washington, D.C., indicate that cultural anthropology also includes modern, indigenous societies. However, the closer to home the group under investigation is, the more difficult it is to maintain objectivity and cultural relativism.

Half of the class observes a variety of classes and looks for key elements of this culture. The other half of the class observes the physical surroundings that have been constructed to support this society. Each group draws conclusions based on its data. Through class discussions, students evaluate their observations and conclusions using appropriate criteria.

Note that prior arrangements need to be made for students to visit other classes or walk about the building and grounds.

Procedure

1. Read to the class portions of the Horace Miner article "Body Ritual among the Nacirema."

   > The fundamental belief underlying the whole system appears to be that the human body is ugly and that its natural tendency is to debility and disease. Incarcerated in such a body, man's only hope is to avert these characteristics through the use of the powerful influences of ritual and ceremony. Every household has one or more shrines devoted to this purpose. The more powerful individuals have several shrines in their houses and, in fact, the opulence of a house is often referred to in terms of the number of such ritual centers it possesses. Most houses are of wattle and daub construction, but the shrine rooms of the more wealthy families are walled with stone. Poorer families imitate the rich by applying pottery plaques to their shrine walls.
   >
   > While each family has at least one such shrine, the rituals associated with it are not family ceremonies but are private and secret. The rites are normally discussed with children, and then only during the period when they are being initiated into these mysteries. I was able, however, to establish sufficient rapport with the natives to examine these shrines and to have the rituals described to me. . . [1]

   Tell students not to speak out if they recognize the culture described. After finishing the reading, put the word *Nacirema* on the board and ask students what they think about the Nacirema. Eventually, students will recognize the society as American. Have the class discuss whether this a good (though possibly outdated) view of Americans. Ask students what problems may occur in studying one's own culture.

2. Explain to the class that they will be doing a similar investigation during class. Divide the class into two groups. Assign pairs within each group. Distribute **Handout 6** to group one, have students attend the prearranged class, and tell them to follow the directions in **Handout 6,** part A, as they observe that class. Distribute **Handout 7** to group two and tell students to follow the directions on **Handout 7,** part A, as they observe the physical environs.

[1]Horace Miner, "Body Rituals Among the Nacerima," *American Anthropologist* 58 (June 1956): 503–504.

3. When students have reassembled, have both groups complete their respective part B, and have each group present its observations and conclusions to the class.

4. Distribute **Handout 8.** Direct each student to evaluate the group reports according to the criteria presented. Emphasize that these criteria are critical to credible anthropological studies.

5. Conclude by discussing how their reports differed from their own view of high school. Ask if their reports and conclusions support their personal experiences. Have students brainstorm to discover what other techniques would be helpful in presenting a more complete picture.

Extension

1. Read *Tally's Corner* by Eliot Liebow, and present an analysis to the class of that subculture. Include in your report the techniques Liebow used to gain the information.

2. Write an article describing your findings about the school, and submit it to the school newspaper.

Name _____

Date _____

Class Observations

Part A.

Complete this portion in pairs. Sit in an unobtrusive place in the room. Do not interact with other students. Using the format below as a guide, record your observations.

1. grade level _____
2. subject _____
3. number of students _____
4. number of males _____
5. number of females _____
6. Diagram the room arrangement.

Name _____

Date _____

7. Label seats by male/female occupants or other designations of your choosing.

8. Observe and record communication that takes place. Indicate the type of communication, the originator, and the receiver.

   a. tactile (e.g., hitting, touching, etc.)

   b. visual (e.g., gestures, facial expressions, posture, etc.)

   c. auditory (e.g., speech, laughter, shouts, etc.)

9. Observe and record any behaviors that occur (e.g., walking, sitting, writing, etc.). Note the number of students and the amount of time spent performing the action.

10. Observe and record clothing styles. If there is a pattern, note the number of students who conform to it. Also note the number and styles that are exceptions.

Part B.

Working in your group, write a composite description about what you have observed. Draw conclusions about your collective observations.

Name _____

Date _____

Observations of School and Its Environs

Part A.

Complete this portion individually or in pairs. Observe and record your observations of the school buildings and external areas. Do not assume you know the functions of these structures.

1. location of school (urban, suburban, rural) _____
2. number of buildings _____
3. number of stories for the building(s) _____
4. perimeter size of main building (Measure your step. Walk around the building and count your steps. Multiply the number of steps by the size of your step.) _____
5. Describe the building(s), and indicate its probable function.
6. Indicate the approximate age of the building(s). _____
7. Observe the external areas of the building(s), describe them, and indicate their possible uses.
8. Make note of any people you encounter. Record their location and activity.
9. Diagram the internal layout.

Part B.

Working in your group, write a composite description of your findings. Draw conclusions about your observations.

Name _____

Date _____

Evaluating the Ethnographic Process

Using the criteria listed below, rate the descriptions and conclusions drawn by each group. Rate each criteria using a 1–5 scale (1=poor, 5=excellent). Justify your evaluation.

Criteria	Group 1 Report	Group 2 Report
1. Was the report clear?		
2. Was the report based on actual observation?		
3. Was the report detailed enough to avoid overgeneralization?		
4. Was the report free of value judgments?		
5. Did the report represent a broad enough cross section of the culture?		

Lesson 4
Dig!

Objectives

- To use archaeological techniques to study American life today
- To analyze the advantages and disadvantages of such strategies for past societies

Notes to the Teacher

One of the most difficult tasks of the archaeologist or anthropologist (both physical and cultural) is to ascertain whether the artifacts or fossils they uncover are truly representative of the society under study. On a dig site, archeologists uncover layer upon layer of artifacts; presumably each layer is older than the next. Durable items may be preserved, whereas less resistant objects may decay and disappear. Likewise, without written documents, the archaeologist can only speculate as to whether ideas and other abstractions have been perpetuated.

Students bring to class items from their past and present augmented by items brought by their teacher. These items are analyzed for function, and students report their findings to the class. Then the class discusses the conclusions that can be drawn about American life. Students compare these conclusions to their real experiences. In this way, students can begin to understand the problems inherent in archaeological digs.

Procedure

1. The day before this lesson, tell students to bring in items from their lives that represent their present or past. If such items have been lost or are unavailable, students may borrow items from friends, relatives, or neighbors. Note that the teacher will need to bring in additional articles that are typical of American culture. In addition, for homework, have students write a paragraph describing their lives or the lives of Americans in general. Tell students to include what values are important, how Americans spend their time, and what activities hold special meaning.
2. On the day of the lesson, collect students' homework. Save the papers until the end of the activity. Place the items on a table and number each one using index cards. Have at least twenty items.
3. Divide the class into groups of five or six. Tell students to imagine that they are archeologists in the year 2525 and the items are from one dig site. Direct students to review the artifact table and identify in writing the use of each item. Have each group present its findings. Instruct students to listen carefully to each group's explanation.
4. Distribute **Handout 9**. Have students take notes on the groups' presentations by listing a sample of the items presented. Have students record their conclusions on **Handout 9.** Discuss responses.
5. Return students' paragraphs. Discuss whether the conclusions recorded in **Handout 9** reflect the paragraphs written about American life. (*For example, one conclusion that is commonly drawn from the activity is that animals are close to deities because of the number of stuffed animals saved from childhood. However, this rarely is mentioned in the paragraphs.*)
6. Explain that archaeologists often gather artifacts to "read" a past culture. Discuss whether such artifacts can adequately and accurately characterize the past. Conclude by asking why students' artifacts did not always accurately portray American society. (*Answers may include randomness of student choices, only some items were preserved, the durability of the object, etc.*)

Extension

1. Imagine you are able to "plant" five artifacts that will be uncovered by future anthropologists. Keeping in mind your desire to help them see or interpret American life today as accurately as possible, write an essay explaining the five artifacts you would leave to be found and why. Share your essay with classmates.
2. Investigate whether any digs have been performed in your area. If so, and if it is ongoing, ask permission to observe this excavation. Report your findings to the class.

Name _____

Date _____

The Sum of Your Life

Use this handout to take notes on group reports and conclusions drawn from discussion.

1. What types of items seemed to be preserved?

2. Classify the objects based on their apparent function: play, work, residential, technological, etc.

3. From the artifacts present, what conclusions can you draw about life in the United States during late twentieth century?

Lesson 5
Cosmic Calendar

Objectives

- To gain a perspective of the concept of time
- To study universal history from the moment of creation
- To use mathematical skills to determine cosmic perspective

Notes to the Teacher

Time is one of the most difficult concepts for anyone to comprehend. A lifetime is hard enough, but when dealing with billions and billions of years the task becomes even more daunting. Astronomer Carl Sagan tried to make this concept more manageable by incorporating the history of the universe into a year's time. Although the origin of the universe through "The Big Bang" is still controversial, it is the theory that most astronomers accept.

In discussing evolution, be aware that students may question the relationship of the scientific evidence to the biblical narrative of creation. It may be helpful to point out that there are different kinds of language. Scientific language, religious language, poetic language, and legal language all follow different rules and have different ways of expressing what is believed to be true. Language of the Bible is pre-scientific. It does not follow that such language is untrue. The language of religious faith does not try to express what is scientifically verifiable, but what is religiously and morally valid. The Genesis narrative attempts to describe the relation of God to the world and argues that the world comes from God and is good. There is nothing in anthropology that contradicts this belief. To say "that the road is a ribbon of moonlight" does not argue against the fact the road may be made of asphalt. Both statements may be true and they do no contradict each other. Students committed to the doctrine of biblical inerrancy in its most literal sense may have difficulty with this idea. In that case, care must be taken not to question their religious beliefs but to suggest that they try to understand what others believe about language and about evolution. Try to alleviate any suspicion that science and religion are in conflict.

Students calculate key events of the earth's history and place these key events on a calendar.

Procedure

1. Explain that time, how humans perceive it and measure it, is complex. Use the school year as an example by asking students a variety of questions that allow them to gain perspective on their school year. (How many days until the next major school break? How many days until the end of the semester? How many days until your birthday?) Explain that this lesson will attempt to put the history of the earth into a one-year perspective.
2. Ask students how and when the universe began. Allow students to discuss the many open-ended issues that surround the topic. Explain to students that most astronomers accept the Big Bang Theory (until a better one comes along) and that this occurrence happened approximately fifteen billion years ago.
3. Distribute **Handout 10,** part A, which lists earth history events. Explain that they will be placing these events onto a one-year calendar. Direct students to study this list, and answer any questions they may have.
4. Assign students **Handout 10,** part B.

   Suggested Responses:

   January 1—origin of the earth

   January 7—moon at half its present distance

   January 14—cloud cover; volcanoes

   January 21—gasses in atmosphere

   February 23—life

   March 3—algae

   April 29—life in tidal pools

   June 24—first ice age

   November 3—large sea organisms

   November 7—moon close to current distance to earth

November 11—trilobites; sex

November 23—life on land

December 3—plants; amphibians

December 6—forests; insects

December 13—small reptiles

December 14—mammals

December 15—pangaea; dinosaurs

December 20—birds

December 24—moon current distance to earth; continents; rainforests; giant reptiles; flowering plants

December 25—Tyrannosaurus Rex

December 27—primates; asteroid

December 28—lemurs and tarsiers

December 29—monkeys, apes, and hominoids

December 30—Proconsul; Ramapithecines; Dryopithecines

December 31—gorillas; chimps; Australopithecines; humans

4 A.M.—precursors of modern gorillas

12:30 P.M.—precursors of modern chimpanzees

3:15 P.M.—Ardipithecus ramidus

4:10 P.M.—Australopithecines

10:00 P.M.—Homo sapiens

5. Conclude by discussing the implications of time and evolution. Ask students if time is necessary for evolution to occur. (*Most will say yes.*) If so, how much is needed? (*Although a certain amount of time is necessary for the process of evolution to occur, some changes take place in relatively short time spans.*)

Extension

1. Research recent findings regarding Earth and prehistoric human beings. Find articles about recent fossil finds. With your teacher's permission, post these articles on the bulletin board in your classroom. Be ready to answer any questions that may be asked concerning your articles.

2. Ask your school's biology or earth science teachers any questions you have regarding earth and human evolution. Share your questions with the class.

Name _____

Date _____

Earth History

Part A.

Review the history below. You will be placing these dates and events on a yearly calendar that approximates earth history.

4,500,000,000	origin of the earth
4,400,000,000	moon approximately half its present distance to the earth
4,300,000,000	thick cloud cover blocks sunlight; volcano activity forms islands; lava flows into oceans increasing the extent of land formations
4,200,000,000	clouds less dense; gasses (especially carbon dioxide) in atmosphere
3,800,000,000	life in the form of single- and multi-celled organisms
3,700,000,000	algaelike organisms
3,000,000,000	life in tidal pools
2,300,000,000	first ice age
700,000,000	large sea organisms
650,000,000	moon close to current distance from earth
600,000,000	hard-shelled sea creatures (trilobites), invention of sex
450,000,000	life on land, lichenlike plants
360,000,000	plants, small amphibians
320,000,000	forests, insects inhabit earth
230,000,000	small reptiles
220,000,000	first mammals
210,000,000	Pangaea, dinosaurs
150,000,000	Pterosaurus, birds
100,000,000	continents take shape; moon current distance to earth
90,000,000	rainforests, giant reptiles, flowering plants
80,000,000	Tyrannosaurus Rex
65,000,000	first primates; asteroid hits earth (ten kilometers wide) possibly by Yucatan peninsula, causing mass extinctions
50,000,000	continents close to current size and position, lemurs and tarsiers
38,000,000	monkeys and apes
33,000,000	line splits between cercopithecoids (monkeys) and hominoids (humans)
20,000,000	monkeys and apes abound, Proconsul (hominoid)
16,000,000	precursors of modern orangutans
15,000,000	Ramapithecines and dryopithecines
10,000,000	precursors of modern gorillas
6,000,000	precursors of modern chimpanzees
4,500,000	Ardepithecus Ramidus (possibly a human ancestor)
4,000,000	Australopithecines
100,000	modern humans

Name _____

Date _____

Part B.

For each event listed on part A, indicate the month and date that the event would have occurred if placed on a year-long calendar.

Formulas for calculating: 1 year = 4,500,000,000 years

8.1 days = 100,000,000 years

1 day = 12,345,670 years

January	February	March
April	May	June
July	August	September
October	November	December

Lesson 6
Evolution

Objectives

- To define *evolution*
- To contrast the theories of Lamarck and Darwin
- To explore how evolution works within nature

Notes to the Teacher

Although some support the theory of creationism, physical anthropology rests on the principles of evolution. For those who ascribe to the theory of creationism, it is helpful to explain that in order to support a view, knowledge of the opposing view is important. In anthropology, students do not need to believe in evolution, but they must understand its components. Students need to be able to distinguish between the macro view of the species and the micro view of the individual.

Students are exposed to the conflicting theories presented by Lamarck and Darwin. Through examples, students understand the problems presented by Lamarck and investigate how Darwin arrived at his conclusions. Finally, students use examples of how natural selection operates in the natural world.

Should the teacher want to use the extension activity as a small group or whole class activity, The Center for Learning's novel drama unit on *Inherit the Wind* would be useful.

Procedure

1. Ask students how giraffes became long-necked. Allow discussion. (*Students typically give a Lamarckian answer: giraffes stretch their necks to reach food higher in the trees.*) Explain how this rationale would not allow for succeeding generations to have long necks.

2. Distribute **Handout 11,** part A, which describes Lamarck's work. When students have completed part A, review their answers. Discuss question 8 with students to be certain they understand the flaw in Lamarck's theory.

   Suggested Responses:

   1. *to account for variation in living things*
   2. *by dividing animals into vertebrates and invertebrates*
   3. *vertebrates—with spines*

      invertebrates—without spines
   4. *because they need to*
   5. *the environment*
   6. *a body part that no longer has a function*
   7. *They show that the organism changed from an earlier form but kept traces of the previous form.*
   8. *that an acquired characteristic can be passed to the offspring*

3. Assign part B of **Handout 11**. Review students' answers, focus on question 8. Discuss both theories with students to ascertain their understanding.

   Suggested Responses:

   1. *naturalist*
   2. *Galapagos Islands off the coast of Ecuador*
   3. a. *variation*

      b. *struggle for survival*

      c. *Those most suited to an environment survive.*

      d. *The best adapted pass on traits.*

      e. *Those not adapted die out.*

      f. *New adaptations may give rise to new species.*
   4. *There is none; it is random.*
   5. *a scientist who derived a similar theory of evolution*
   6. *Trait is inherited because of a random change in the species.*
   7. *They are better adapted to the environment.*

8. *In Darwin's theory, variation occurs because certain species happen to adapt better to the environment. Those that cannot adapt die. Those that survive pass on their traits to future generations.*

4. Distribute **Handout 12,** which applies knowledge of evolution to specific cases. Have students complete it. Then review correct answers. Use the discussion to correct any misconceptions.

   Suggested Responses:

   a. *There were both long-necked and short-necked giraffes in a particular environment. Because foliage was only in tree tops, short-necked ones died from starvation. Long-necked ones could reach food, survive, and reproduce.*

   b. *Mutation occurred where a litter of kittens was born without tails. Because being tailless did not inhibit their survival, they bred creating a genus of tailless cats.*

   c. *In an environment of shrubs and trees, a striped animal would be less conspicuous to predators like lions. Therefore, zebras survived and passed on their striped trait to their offspring.*

   d. *A mutation occurred whereby a hominid stood upright. (All his fellow hominids laughed.) The hands were freed to do other things, like carry food. Therefore, the upright creature was better adapted to the environment and passed on the bipedalism. Those without the adaptation died out.*

5. Conclude by telling students the following story.

   > "A number of years ago, a lighthouse keeper brought some rabbits to an island. Without natural enemies, and with an adequate food supply for which there was no competition, the rabbits multiplied rapidly and expanded over the island. . . . On one end of the island large numbers of seagulls nested. The helpless young rabbits just emerging from their nest provided a new food for the gulls. Rabbits on the other side of the island suffered little loss from seagulls. The outcome of this loss was that only the quickest and most agile baby rabbits survived among the seagulls while many more rabbits survived on the part of the island without gulls."[1]

   Why are the rabbits on the gull side of the island faster on average than the rabbits on the non-gull side of the island? (*Slow rabbits on the gull side of the island have been eaten by the gulls. Thus, only those rabbits who were quick survived and passed the trait for speed to their offspring.*)

Extension

Read or view *Inherit the Wind*, or research the 1925 Scopes Trial. Present an oral report that demonstrates the controversial nature of the theory of evolution.

[1]James F. Downs and Herman K. Bleintreu, *Human Variation: An Introduction to Physical Anthropology* (Tuscon: University of Arizona, 1969), 39.

Name _____

Date _____

Lamarck versus Darwin

Part A.

Read the following selection, and answer the questions.

Lamarck's View of Evolution

Jean Baptiste Pierre Antoine de Monet, the Chevalier de Lamarck (1744–1829) contributed to the general knowledge of science by dividing animals into two categories: vertebrate and invertebrate. Like other scientists of his time, he attempted to account for the variations in living things. He theorized that such variation occurred because the organism needed to change. The environment provided the catalyst for the modification. Further, he theorized that the organism's change would be passed to the offspring. Lamarck, therefore, did not believe that organisms became extinct; rather, he believed that organisms changed to better, more advanced forms. It could be said that the organisms chose to change for self-improvement. Among other factors, Lamarck used examples of vestigial structures (body parts having no current function) to prove his position.

1. What was Lamarck's goal?

2. How did he contribute to the growing knowledge of science?

3. What do the terms *vertebrate* and *invertebrate* mean?

4. According to Lamarck, why do living things change?

5. What is the catalyst for the change?

6. What is a vestigial structure?

7. How do vestigial structures prove Lamarck's point?

8. What is wrong with Lamarck's theory?

Name _____

Date _____

Part B.

Read the following selection, and answer the questions.

Darwin

Charles Darwin was a naturalist who, voyaging aboard the HMS *Beagle* in 1831, explored the world. As he traveled, he was struck by the wide variation of plants and animals and how they adapted to their environment. In particular, Darwin studied the flora and fauna of the Galapagos Islands, off the coast of Ecuador. By 1859, Darwin published *On the Origin of Species by Means of Natural Selection,* which explained his theory of evolution. His theory has six key elements: 1) there is variation among living things; 2) those organisms struggle for survival; 3) those organisms most suited to a particular environment survive and flourish; 4) those that are best adapted to a particular environment are healthier and survive to pass on their traits to future generations; 5) those species who cannot adapt to the environment die out; and 6) those organisms with the adaptations may give rise to variations within species and/or form new species.

According to Darwin, this process is random. It is important to note that Darwin made these observations and drew these conclusions before Mendel did his work in basic genetics. An interesting postscript to history is that Alfred Russell Wallace developed a very similar view of evolution. Both men presented their theories to the Linnaean Society in 1858, each giving the other credit. Yet, Darwin is the one we most associate with the theory.

1. What was Darwin's occupation?

2. Where did Darwin do many of his observations?

3. What are the elements of Darwin's theory?

4. What is the catalyst for these changes?

5. Who is Alfred Russell Wallace?

6. How do species acquire new traits?

7. Why do certain species survive?

8. What is contained in Darwin's theory that differentiates it from Lamarck's to make it more plausible?

Name _____

Date _____

Application of Darwin's Theory

Describe how each of the following examples could have evolved according to Darwin (and Wallace).

a. long-necked giraffes

b. tailless cats

c. zebras

d. upright hominids

Part 2
Humanity's Closest Relatives

As our closest living, modern, nonhuman primates provide a window into the origins of human physiology and behavior. Although humans, apes, and monkeys share the classification of primate, care must be given not to anthropomorphize nonhuman primate behavior At the same time, one must also realize how close the physiological relationship is among all primates.

In these lessons, students analyze the physical and behavioral characteristics of nonhuman primates and determine the similarities and differences among them, and their relationship to human primates.

Lesson 7
Primates

Objectives

- To identify primates
- To differentiate primates from other mammals
- To examine the classification of primates including humans

Notes to the Teacher

Primatology is a major field within anthropology because humans are a part of this biological classification. By studying modern primates, one can discover the origins of modern human physiology and behavior. It is important to remember that human beings are closer genetically to chimpanzees than chimpanzees are to gorillas. We share a common DNA heritage of about 98 percent. Frequently, students erroneously classify the particular primates and place all of them together as one group. Because of the strong similarities of humans and other primates, students and the media are prone to anthropomorphize nonhuman primate characteristics (placing human values and emotions upon them).

Through brainstorming and discussion, students identify the various primates and differentiate them from other mammals. Students examine the classification of primates and recognize the closeness among the families.

Photos or pictures of nonhuman primates (apes, monkeys etc.) and nonprimate mammals (dogs, cats, horses, etc.) are needed for Procedure 1.

Procedure

1. Have students note the similarities among all mammals (*warm-blooded; hairy; placental birth; nurse young, etc.*). Have students preview photos and pictures of nonhuman primates and nonprimate animals to ascertain these characteristics.

2. Identify for students what species are primates, and have students record this information on **Handout 13,** part A. Include the following on the list: apes (chimps, gorillas, orangutans, and gibbons), monkeys (baboons, macaques, spider monkeys, etc.), lemurs, and tarsiers.

3. Divide students into small groups, and assign part B. They will use it to identify the differences between primates and other mammals based on their experiences and the pictures presented earlier. Monitor the groups, and assist as appropriate. Review correct answers and discuss them.

   Suggested Responses:

   Hand

   - *Primates have sensitive fingertips, not pads.*
   - *Primates have moveable fingers.*
   - *Primates have flat fingernails, not claws.*

   Face/Head

   - *Primates have smaller and less powerful jaws.*
   - *Primates have more vertical faces.*
   - *Primates have smaller snouts.*
   - *Primates have eyes in the front of their heads.*
   - *Primates have a more rounded back of head.*

   Reproductive System

   - *Primates have a longer period of gestation relative to the size of the animal.*
   - *Primates generally have a single birth.*
   - *Primates have an extended period of nursing.*

4. Help students examine **Handout 14**. Ask students how the classification system is organized (*from more general characteristics to more specific ones within the same kingdom*). Relate the information to sets and subsets as they understand those terms in mathematics. (*The category below is a subset of the one above.*) Have dictionaries available for students to define terms that are unfamiliar to them. Answer any other questions students may have.

5. Conclude by having students write a short essay on the relationship of primates (including humans) to others in the animal kingdom. Show and discuss completed essays.

Extension

Acquire a copy of David Attenborough's *Living Planet—Life in the Trees*, which explores the physiology and behavior of the primate order. After viewing, design a family tree of the primates, and place the information on a poster. Present the poster to the class.

Name _____

Date _____

Differences between Primates and Other Mammals

Part A.

Record the animals that are classified as primates.

Part B.

Use pictures or photos of a nonprimate mammal and a nonhuman primate, background knowledge, and experience to determine differences between them in the following categories.

a. hands

b. face/head

c. reproductive system

Name _____

Date _____

Classification of Primates

Review the following information.

Kingdom:	Animals
Phylum:	Chordata
Subphylum:	Vertebrata
Class:	Mammalia
Subclass:	Eutheria
Order:	Primates
Suborder:	Prosimii
	Anthropoidiae
Infraorder:	Lemuriformes (Lemurs)
	Tarsiiformes (Tarsiers)
	Platyrrhinii (New World monkeys)
	Catarrhinii (Old World monkeys)
Superfamily:	Hylobatidae (Gibbons and Siamangs)
	Pongidae (Orangutans, chimpanzees, and gorillas)
	Hominidae (Humans)
Family:	Hominid (ancestral and modern humans)
Genus:	Homo (Humans)
Species:	Sapiens (Wise)

Lesson 8
Characteristics of Primates

Objectives

- To review the behavioral and physical characteristics of primates
- To identify primates' behaviors and physical characteristics from a visual aid
- To compare and contrast nonhuman primate behavior to human behavior

Notes to the Teacher

One can study the physical and behavioral characteristics of nonhuman primates by researching, studying past histories that included nonhuman primates, or spending time observing at a zoo. Because of decades of work in the field, Jane Goodall educated the world on the behavior of chimpanzees. Similarly, Dian Fossey studied mountain gorillas in their natural habitat, and Birute Galdikas gave us insight into the effects of diminishing environments on orangutans. Because of the work of these three women and others like them, our knowledge of nonhuman primate behavior has grown substantially. It is important to keep in mind that, because of the work of Jane Goodall, our knowledge of chimpanzees is far more extensive than our knowledge of other nonhuman primates.

Students examine physical and behavioral characteristics of nonhuman primates and answer related questions. Linking the behavior of our closest evolutionary cousins is important in order to understand the behavior of humans. Students then see or read a description of a nonhuman primate. They discuss the resource and draw conclusions about nonhuman primate behavior.

Procedure

1. Ask students what are typical behavioral characteristics of primates (*are arboreal, live in social groups, learn their environment, recognize individuals, assess situations [danger], groom as a social activity, segregate by sex and age, take part in communicative displays, etc.*).
2. Distribute and assign **Handout 15**. Instruct students to study the chart in part A and complete the column with information about humans before answering the questions in part B. Review and discuss students' answers.

Suggested Responses:

Part A.

Humans

Physical—*males: ht. 5′–6′ ½″, wt. 110–250 lbs.; females—ht. 4′8″–6′; wt. 90–200 lbs.*

Habitat—*landed, all continents*

Dominance—*Most societies are male dominated, although females may confer status.*

Behavior—*omnivorous; some aggressive behavior within and among groups; division of labor common between sexes*

Structure—*nuclear and extended family groupings*

Learning—*all social behavior is learned; takes place within family and society at large*

Family—*wide variation in family; mother and father both acknowledge young and care for them to some degree*

Part B.

1. *gorillas*
2. *tamarins*
3. *bonobos, macaques, perhaps baboons*
4. *spider monkeys and tamarins*
5. *chimpanzees and macaques*
6. *orangutans and macaques*
7. *to protect from inbreeding*
8. *chimpanzees, because of learning, social groupings, and examples of violence and war*

9. *chimpanzees*

   (Remind students that we know more about chimpanzees' behavior because of the work of Jane Goodall. Other groups may exhibit such behavior, but the behaviors are not documented.)

10. a. *There are many variations among primates.*

    b. *Nonhuman primates lived in treed environments in Africa.*

    c. *Male dominance is common, though dominance is sometimes conferred on females.*

    d. *Most primates are herbivorous.*

    e. *Most primates live in social groupings.*

    f. *Most young are cared for by mothers. These bonds are often long-lasting.*

3. Obtain a film or reading that exhibits nonhuman primate behavior. (Search a variety of sites on the Internet to find information about nonhuman primates. One site of particular note is the Jane Goodall Institute (www.wcsu.ctstateu.edu). Some excellent readings are in *Scientific American* and *National Geographic.* Check your local or school library or cable provider for videos that may be available on nonhuman primates.) Distribute and assign **Handout 16**. Have students complete the handout based on the resource selected.

   Discuss and review students' answers and help students draw conclusions relative to nonhuman primate behavior.

Extension

1. Prepare a poster that describes a primate not mentioned in the lesson. Include a picture of the primate and information pertaining to its physical description, habitat, dominance, behavior, group structure, evidence of learning, and family. Present your poster to the class; describe the pertinent information.

2. View the film *Gorillas in the Mist.* Prepare and present a report on the film based on your study of primates.

3. Read and report on the following article: Frans B. M. de Waal, "Bonobo Sex and Society: The behavior of a close relative challenges assumptions about male supremacy in human evolution," *Scientific American* (March 1995): 82–88.

   Be sure you compare the conclusions you drew from the article with the conclusions drawn by the class on nonhuman primate behavior.

Name _____

Date _____

Major Primates

Part A.

Study the chart below. Note that not all primates are included on the chart. Then complete the column for humans.

Type	Baboon	Bonobo	Spider monkey	Mountain gorillas	Colobus monkey (many varieties)
Physical	20–43" tall 30–80 lbs. males— long canines	3–4' tall 70–100 lbs. black or brown	19–20" tall 10–15 lbs. nonfunctional thumb prehensile tails	males—5'8"–6'; up to 450 lbs females—4'8"– 5'; up to 250 lbs. sexual dimorphism	19–25" 6 ½–32 lbs. black, black and white, red, or olive no thumb
Habitat	Africa/Asia close to open country	Africa rainforest Congo	New World treed environment tropics	Africa Congo Uganda Rwanda high elevations	Africa Uganda Tanzania wooded or rainforest, mountains
Dominance	Females give males status; daughters in- herit mother's status.	males follow females	single sex groups	male silverback	no social order
Behavior	low-status females more protective; many visual signs— ex. aggression	use sex as aggression reducer	vegetarian	sedentary, peaceful, and gentle; at 8 or 9 female leaves natal group	quadrupeds arboreal leaf-eaters
Structure	Large groups possibly over 100 males and harem	relatively per- manent groups of 50–120	2–100 in wan- dering groups break down into smaller groups of 3–4	5–15 silverback plus 1–2 males and mature females and young	100 or more few adult males in group sev- eral females with young
Learning		Infants learn from mothers.		food locations care of infants	
Family	Females care for infants. Males may adopt orphans for own sake.	strong mother- infant bonds	gestation 225– 230 days one baby at a time 1–3 year dependence	long-lasting bonds one young mature at 10– 20 years	one offspring olive colobus carries infant in mouth

Name _____

Date _____

Type	Tamarins	Orangutans	Macaques (many varieties)	Chimpanzee	
Physical	small 12" long 2 lbs. multicolored	Males—54" tall; 130–200 lb. Females—45" tall; 88–110 lbs.	15-30" long brow ridge cheek pouches	39–66" tall 90–110 lbs.	
Habitat	Central or South America high trees	Asia Indonesia forests	Asia Japan, China Africa Barbary Coast	Africa Gombe Stream Reserve	
Dominance	males—very territorial	Males dominate in groups, though often solitary.	male and female High females get food access.	Alpha male Grooming occurs across dominance patterns.	
Behavior	mated pairs with young vegetarian	live to be 35 in wild males solitary due to environment	omnivorous ground-living tree-living adapted to water activities	hunting omnivorous friendships evidence of violence and cannibalism	
Structure	extended family groups up to 15	female and young males travel alone occasions of male rape	depends on type groups of 8–80	groups of 30–80 nomadic in designated range	
Learning		have been taught to live with humans and then be put back into wild	examples: sweet potato washing; separation of rice from sand	tool use toolmaking sponges nut cracking termite "fishers"	
Family	frequently twin; mother, father, and siblings often care for young	long period of child dependency upon mother	strong bonds children teach adults	lifelong mother-offspring bonds	

Name _____

Date _____

Humans

Part B.

Answer the following questions based on the chart in part A.

1. Which primate is the largest?

2. Which is the smallest?

3. Which groups appear to have females equal to or greater than males in status?

4. Which are considered New World primates?

5. Which two show evidence of learning?

6. Which reside in Asia?

7. Why do females adolescent gorillas leave their natal groups?

8. Which appears to be closest to humans? Why?

9. Which appears to be the most violent?

10. For each of the categories listed below, make a generalization from the data.
    a. physical

    b. habitat

    c. dominance

    d. behavior

    e. structure

    f. family

Name _____

Date _____

Case Study

After reading the article provided by your teacher or viewing a visual presentation, answer the following questions about what you read or saw.

1. Which primate is described?

2. What is the environment?

3. What is the purpose of the activity portrayed?

4. What tactile signals are used?

5. What visual signals are used?

6. Is there any evidence of learned behavior? If so, what behaviors are learned?

7. What is the size of the group portrayed?

8. What evidence is described portraying division of roles by gender?

Lesson 9
Zoo Lab

Objectives

- To observe and record primate behavior
- To compare and contrast the behaviors of different primates

Notes to the Teacher

There are a number of ways to study nonhuman primates—in the wild, in captivity, through films, and through print material. Certainly, the most effective way to study nonhuman primates is in the wild. However, since this is rarely possible, the next best method is observing non-human primates in captivity. Many people, when they go to zoos, often meander throughout the park only stopping when something catches their eye. Although this experience may be pleasant, it could be made more effective by staying longer in one place, observing one group of animals at length, and perhaps not seeing the whole zoo in one visit! Alison Brooks, a professor at George Washington University, has developed a method for studying primates in captivity. Her "Zoo Lab" is reprinted in this lesson and provides an effective, enjoyable, and appropriate approach to examining nonhuman primate behavior.

Students visit the zoo either on their own time or through a school-organized field trip. Equipped with the Zoo Lab, students observe and record nonhuman primate behavior (specifically locomotion, communication, mother-infant interaction, general behavior, or dominance/submissive behavior). In class, students compare their observations. (This lesson is not designed for rural areas that are far from a zoological park.)

Procedure

1. Ask students when they last visited the local zoo. (*Most adolescents have not done so since childhood.*) Have them relate the experiences they remember, especially ones related to nonhuman primates. Explain that the class will visit the zoo and study the nonhuman primates in a very specific way.
2. Divide the class into five groups. Assign each group one of the following topics: Lab 1—locomotion, Lab 2—communication, Lab 3—mother-infant interaction, Lab 4—general behavior, and Lab 5—dominance/submissive behavior. Distribute **Handout 17**. Have students assemble the materials they need to go to the zoo: pens, notebooks, cameras (if permissible and available), and their copy of the handout.
3. Arrange the visit either by organizing a field trip or providing information about transportation for individuals. If students travel to the zoo on their own, recommend strongly that they go in groups or with their families.
4. After the zoo visit, have each group compare and contrast their experiences and review their notes. After conferring with each other within the group, have each group present its information to the class.
5. Conclude by having students write a personal reflection on their assignment (including such information as their enjoyment of the assignment, a description of their favorite non-human primate, and any changes they would make in the assignment). Have volunteers share their reflections with the class.

Extension

1. Write to animal conservation groups about what can be done to protect nonhuman primates in the wild. Post your responses on the bulletin board in your classroom with your teacher's permission.
2. Contact the educational outreach representative of the zoo. Ask if there are programs available for students to learn more about the care and maintenance of non-human primates in the zoo facility.
3. Ask the educational outreach representative of the zoo how programs involving animals in captivity can benefit wild populations of endangered species. Report your findings to the class.

Name _____

Date _____

Zoo Labs

Lab 1: Locomotion

1. Walk by at least 8 cages with *different* primates and record what the most active animal in the cage is doing as you walk by—for example, sitting, grooming, sleeping, brachiating (hanging from branches and swinging arm to arm), knuckle or fist walking, hanging by the tail and one leg, slow quadrupedal climbing or leaping (indicate whether quadrupedal running like a cat or vertical clinging and leaping where animals push off with hind limbs, twist in mid-air, and land on hind limbs). Record the name of the primate and the locomotion pattern.

2. For 3 primates **who were moving**, describe how the method of locomotion you observed is related to the animals' anatomy. What physical features help the animals move, such as tail form, location of special friction skin (like skin on our palm), form of nails, long legs or ankles, long arms, grasping or flat feet, bare knuckles, long curved fingers, curved spine, deep chest, etc.

3. Select any active adult primate to observe for 15 minutes. Then observe an infant primate (of the same species) for 15 minutes. Estimate about how much of the time is spent in each of the different locomotor activities—walking on all fours, walking or standing on two legs, brachiating, jumping from hind-limbs and landing on forelimbs, jumping from hind-limbs and landing on hind-limbs. Discuss the similarities and differences between the adult and infant's movement.

Name _____

Date _____

Lab 2: Communication

Types of Communication Acts to Observe (the numbers and letters will be used as explained below):

I. *Olfactory*: taste and smell

   a. smelling of one animal by another

   b. smelling of other object and/or eating object and then same thing done by second animal

   c. "marking"—urinating, licking, or rubbing a part of the body against part of the environment which is then smelled by another animal

II. *Tactile*:

   a. grooming

   b. hand clasping or arm embrace

   c. kissing

   d. nipping

   e. wrestling, rolling together

   f. touching another animal

III. *Visual*:

   a. postures—rigid, relaxed

   b. gestures—*aggressive*: raised eyebrows or open mouth display, *threatening*: "rushes," shaking stick, slapping ground or cage, *appeasement*: bowing to ground; presenting hand, face, or hindquarters; holding up one hand.

   c. facial expressions—*aggressive*: stares, eye brow raises, yawns or canine displays; *appeasement*: grins

   d. chasing

   e. use of hands to signal communication

IV. *Vocal-auditory*:

   a. speaking

   b. listening

   c. shouting

   d. laughing

   e. hooting or calling—series of similar noises mostly vowels

   f. chattering—series of similar noises mostly consonants

Name _____

Date _____

How to Attack Problems:

1. Choose a group of animals which interests you. Don't worry too much about being able to "hear" voices, there is plenty of silent communication to watch.
2. Watch the group for 10 minutes learning to identify animals and "logical" behavior sequences. (You may want to assign names to animals.)
3. Begin to take notes—try to take notes either in terms of behavior sequences or time intervals (Make separate notebook entry for each one or two minute period.)

   Example (note assignment of letters and numbers to communication acts):

   a. A swings over to B who looks up (IIIc) They wrestle (IIe)
   b. B bites at A (IId)

4. Watch for 20 minutes. Afterwards add communication numbers and letters to the descriptions.
5. Do a similar observation on a human group.
6. Summarize the communicative acts for both nonhuman primate group and human group.
7. Try to summarize your observations and findings—what are the most common communication acts, which animals communicate the most, how do nonhuman primates differ in communication acts from humans?

Name _____

Date _____

Lab 3: Mother-Infant Interaction

The relationship of the infant primate to other animals of its own species has been the subject of considerable experimentation and observation, both in captivity and in the wild. This lab involves a quantitative study of these relationships and an attempt to see patterns of interaction and socialization in a group of caged primates.

1. Observe any two different groups with infants for 20 minutes each. Record in detailed notes the behavior of the infant and those with whom it interacts over this time. Take notes particularly on:

   a. Number of times infant contacts other animals (specify mother, adult, male, juvenile, etc.)

   b. Number of times infant breaks contact with other animals.

   c. Number of times other animal contacts infant.

   d. Number of times other animal breaks contact with infant. Describe the general nature of the contact in each instance. Also note if the infant is threatened or approached by other animals. Note which animals the infant has the most interaction with.

2. For each species, estimate the percentage of time spent by the infant in various activities, such as grooming, eating, playing, cuddling, sitting, etc.

3. Write a brief summary comparing the interactions of infants in the two groups.

Name _____

Date _____

Lab 4: General Behavior

1. Watch any group of three or more primates for 30 minutes. Try to assign a name to each animal observed, and if possible, note the animal's sex and approximate age. If your group has more than four animals in it, choose one or two animals to focus upon during your observation.

2. Describe how each animal is physically different from the others.

3. After 5 minutes of observation, begin to take careful notes on what is happening in the group. Try to identify "behavior sequences"—a series of interactions or behaviors which seem to begin and end. What happens during each sequence, who is involved, how long does the behavior last?

4. Note what the animals are doing, what expressions and communication acts are involved, which animals are interacting most intensely.

5. Look for differences in behavior among the adult males, adult females, infants, and juveniles.

6. Try to summarize the group's behavior during the time you observed. Can you make any "educated guesses" about the dynamics of the group you were observing—i.e., which animals are related; which animals prefer to interact with one another; which animals are older, younger; which are dominant or submissive?

Name _____

Date _____

Lab 5: Dominance/Submissive Behavior

Describe dominance/submissive behavior in a group of caged primates and discern the rank order (if any) of individuals in the group.

The following events or interactions are connected with dominance behavior in various species:

Approach-Retreat Interactions

1. Spatial supplanting of subordinate by dominant
2. Avoidance of dominant by subordinant. Aggressive actions on the part of one animal
3. Threats (e.g., stares, postural fixation, special vocalizations, etc.)
4 Displays (e.g., canine (yawn), tree shaking, chest beating, etc.)
5. Chasing

Approach-Approach Interactions

6. Presenting
7. Grooming
8. Mounting
9. Other submissive gestures (reach out a hand—chimps)
10. Control of desirable food (and females—though this is a more disputed concept which you probably won't be able to observe.)

Observe one group of animals housed together for 40 minutes. Make a chart with those 10 interactions across the top and the list of animals in the cage down one side. Note "dominance" interactions as they occur, under type of interaction and animals involved, e.g. under supplanting you might have a "d" for animal 4 and an "s" for animal 6, indicating that animal 4 spatially supplanted animal 6. Any given interaction may fall into more than one type: mark it under as many types as relevant but indicate that it is one behavior sequence (for instance, you might number interactions sequentially ld-ls, 2d-2s, 3d-3s, etc.).

Rank animals in order of number of d's. Rank in order of number of s's. What do you perceive to be the rank order of the animals in this group? What kind of interaction is most closely correlated (by eye) with your rank order? Is the rank order of some animals (e.g., very young juveniles) improved by their association with a more dominant animal? Hand in notes and chart along with your conclusions. (Note: one problem you may find is that the most dominant animal may be avoided by others, resulting in little interaction.)[1]

[1]Alison S. Brooks, "Teacher's Corner: Zoo Labs," *AnthroNotes, the National Museum of Natural History Bulletin for Teachers* (Spring 1998): 9–12. (*AnthroNotes* is published free-of-charge by the National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560-0112.)

Part 3
Human Beginnings

The main emphasis of biological anthropology is tracing the human family tree. This area of study also generates the most controversy. Disagreements arise among anthropologists, and therefore, anthropology students, as to which hominids led to modern humans. Because of scanty evidence, our family tree is in much dispute. Special care has to be given in this section, since students can become easily confused by the terminology. Just as human evolution is a step-by-step process, so this study must also be taken in small steps.

This section allows students to examine the family tree while constantly evaluating the key issues of what components make us human.

Lesson 10
Classification of Hominids

Objectives

- To delineate the physical and behavioral differences between humans and apes
- To understand the derivation of hominid nomenclature

Notes to the Teacher

Humans and chimpanzees share approximately 98 percent of their DNA. Physically, humans are less hairy, stand upright, and have fully opposable thumbs. Additionally, modern humans' cranial capacity is considerably larger than that of chimps, but our human ancestors had a cranial capacity similar to that of modern chimps. Although chimps, gorillas, and other non-human primates vocalize, speech is not evident. Humans have large resonance areas in the back of their throats and larynx structures that permit the creation of about a hundred distinct sounds. Despite such differences, nonhuman primates and humans share many physical and behavioral characteristics.

Through an in-class competition, students categorize physical and behavioral characteristics, denoting whether each belongs to apes, humans, or both. Opportunity is given for explanations of these classifications. Additionally, students examine the roots of hominid nomenclature.

Procedure

1. Ask students what sets humans apart from other primates. Allow students to brainstorm. Write students' responses on the board.

2. Distribute **Handout 18.** Divide students into small groups, and have each group complete **Handout 18,** part A in pencil to allow for corrections. Review correct answers, and use students' responses as a springboard for discussion.

   Suggested Responses:

   1. *B—From observation, both apes and humans have eyes in front of head to allow for depth perception.*
   2. *B—Although humans demonstrate greater dexterity, both have individual digits to manipulate objects.*
   3. *A/B—Today, apes have a pronounced brow ridge; however, some early hominids did as well.*
   4. *B—Both have color vision, unlike most mammals (except cats).*
   5. *H—Only humans can manipulate their thumbs to touch every other digit.*
   6. *B—Though aberrant behaviors occur in both species, humans and apes generally build strong mother-child bonds.*
   7. *H—Though apes vocalize considerably and obviously communicate, only humans have speech.*
   8. *H—Apes and other mammals have other ways of keeping cool. Humans have the adaptation of sweat glands, which may have accompanied loss of hair.*
   9. *B—Humans may be able to reason in a more complex fashion, but apes and other mammals certainly can solve problems.*
   10. *B—There are examples of solitary apes (specifically, male orangutans), but generally apes live in social groups.*
   11. *B—Apes often live in groups where dominance dictates social behavior. Similarly, human society is often described as patriarchal or matriarchal.*
   12. *B—Because of dental traits, humans are omnivorous. Chimps are as well. It is thought that gorillas are herbivores.*
   13. *B—ASL is used by the deaf to manipulate language through hand symbols. Some apes (Koko, the gorilla) have been taught to use ASL, which has furthered the controversy as to whether apes have the ability for language.*
   14. *H—Though apes may be able to walk upright for short periods, only humans do so continually.*

15. *B—Although humans have generally settled down, some societies are still considered nomads, as are most apes.*

16. *H—As far as we know, only human brains are lateralized with different functions on each side of the brain.*

17. *B—Humans are clearly ground-dwelling; however, gorillas are as well, and chimps spend time both in the trees and on the ground.*

18. *H—As humans became upright, those with shorter arms had the advantage.*

19. *B—Once it was thought that only man hunted; studies in the last thirty years have proved that chimps hunt, at times in organized packs.*

20. *B—It was once thought that food sharing set humans apart from apes, but food sharing has been observed in chimps, particularly after a hunt.*

21. *B—Chimps use tree limbs to break nuts and use leaves to soak up water for drinking.*

22. *B—Chimps strip the leaves from stems to use the stem to stick into termite holes and extract termites for food.*

23. *B—Chimps in different groups have learned certain behaviors (e.g., tool use) and passed this information on to succeeding generations.*

24. *B—Neither apes nor humans have a good sense of smell; both rely more heavily on their sense of sight.*

25. *A—Unlike human teeth, which are flared toward the back, apes' teeth are set in parallel rows.*

3. Award students a point for each correct answer. Note, however, that there may be instances where more than one answer is correct. For students to receive their point, they must offer a plausible explanation for their answer. Provide a small prize for the group scoring the most points.

4. Assign **Handout 18,** part B, and complete it with the whole class. Review answers with students. Have students come to a consensus as to what constitutes human characteristics.

Suggested Responses:

Answers should include the following:

- *fully opposable thumbs*
- *speech*
- *sweat glands*
- *upright posture*
- *handedness*
- *lower limbs longer than upper limbs*

5. Distribute **Handout 19**, and have students review the terms in part A. Assign part B and review correct answers.

Suggested Responses, Part B:

1. *ground ape (root for human tree)*
2. *southern ape of the lake*
3. *southern ape from Afar*
4. *southern ape of Africa*
5. *heartily-built Southern ape*
6. *human named for lost city of Solomon*
7. *heartily-built near human*
8. *handy man*
9. *upright man*
10. *human from Neander*
11. *wise man*

6. Conclude the lesson by having students write and share an essay on the value and importance of each hominid adaptation.

Extension

1. Look at an animal and imagine that it is the first example you have found of that particular species. Give the animal a scientific name based on some of the criteria used in the naming of humans' predecessors. Present your find to the class. Be prepared to answer questions.

2. Write a persuasive essay on the following quotation by Dr. Louis S. B. Leakey: "We either need to redefine man, redefine tool, or accept chimpanzees as men." Submit it to your teacher for extra credit.

Name _____

Date _____

Human or Ape

Part A.

For each of the following traits, indicate whether it belongs to humans, apes, or both. Answer *H* for human, *A* for Ape, or *B* for Both. Give a rationale for your selection below each characteristic. You will receive a point for each correct answer. No points will be awarded for answers without explanations.

_____ 1. eyes in the front of the head

_____ 2. manual dexterity

_____ 3. brow ridge

_____ 4. color vision

_____ 5. fully opposable thumbs

_____ 6. strong, often lifelong, mother-offspring bonds

_____ 7. speech

_____ 8. sweat glands

_____ 9. ability to reason

_____ 10. live in social groups

_____ 11. establish dominance hierarchies

_____ 12. omnivorous diet

_____ 13. use American Sign Language

Name _____

Date _____

_____ 14. primarily upright posture

_____ 15. nomadic

_____ 16. handedness

_____ 17. ground-dwelling

_____ 18. lower limbs considerably longer than upper limbs

_____ 19. hunt

_____ 20. food sharing

_____ 21. tool use

_____ 22. toolmaking

_____ 23. culture

_____ 24. poor sense of smell

_____ 25. parallel tooth rows

Part B.

List characteristics that belong only to humans.

Name _____

Date _____

Hominid Nomenclature

Part A.

Review the definitions below.

Afar—region of Ethiopia
Africanus—of Africa
Anam—lake
Anthropo—human
Ardi—ground
Australo—southern
Erectus—upright
Habilis—handy
Homo—man
Neander—river valley in Germany
Para—near
Pithecus—ape
Ramidus—root
Robustus—heartily-built
Sapiens—wise
Zinj—lost city of King Solomon

Part B.

Use the information in part A to write the meaning of the hominid names below.

1. *Ardipithecus ramidus*

2. *Australopithecus anamensis*

3. *Australopithecus afarensis*

4. *Australopithecus africanus*

5. *Australopithecus robustus*

6. *Zinjanthropus*

7. *Paranthropus robustus*

8. *Homo habilis*

9. *Homo erectus*

10. *Homo neanderthalensis*

11. *Homo sapiens*

Lesson 11
Ardipithecus and the Australopithecines

Objectives

- To describe the fossil finds of *Ardipithecus* and the australopithecines
- To investigate the link between the environment and diet to physical structure and behavior
- To develop the process by which hypothetical ideas are formed
- To identify key paleoanthropologists

Notes to the Teacher

The search for hominid fossil evidence is one that entails arduous labor and tremendous luck. The paleoanthropologist must have knowledge of geologic history and the places on earth where fossilization could have occurred. Few paleoanthropologists have been fortunate enough to have found very ancient hominid fossils. Their finds represent a minuscule percentage of the hominids that existed at the time. Funding for these digs is very competitive and an integral part of the investigative process. With each new discovery, anthropological history usually is reconstructed to include that discovery.

Students analyze information about five of the hominids that lived between five and two million years ago. Using this material, students speculate as to the hominids' physical structure and behavior and relate that information to the diet and environment of the hominid. Students then hypothesize about how the environment was suitable for a particular hominid's survival.

Procedure

1. Have students postulate on what physical characteristics would likely have been present in the precursors of humankind. Write students' responses on the board. Be sure students explain why they think those particular physical characteristics would have been present.
2. Distribute **Handout 20**, and have students complete it. Review correct answers in a class discussion format.

Suggested Responses:

Reading A.

1. *yes*
2. *because of smaller canines (larger canines are used to rip meat) and large molars, which are used to grind hard materials*
3. *There is no evidence of tool making.*
4. *the relative size of the creature*

Reading B.

1. *yes*
2. *thickly-enameled teeth*
3. *canines, ear region of the skull*

Reading C.

1. *yes*
2. *probably vegetarian*
3. *the difference in size between male and female in a species*
4. *the pelvis*
5. *No. Rather than male and female of one species, perhaps they are two separate species.*

Reading D.

1. *teeth; nonemergence of adult teeth*
2. *yes*
3. *both sharp for ripping and strong for grinding*
4. *that something else killed both the animals and the child (probably a leopard)*

Reading E.

1. *small-brained, prominent brow ridge, sagittal crest*
2. *herbivorous, nuts, and hard food*
3. *No evidence that they are tool makers is presented.*

3. Distribute **Handout 21** which helps students analyze and summarize the information provided in **Handout 20.**

Suggested Responses, Part A:

1. *Broom*—Australopithecus robustus

   Dart—Australopithecus africanus

   Donald Johanson—Australopithecus afarensis

   Louis Leakey and Mary Leakey—Zinjanthropus

   Mary Leakey—Laetoli footprints

   Meave Leakey—Australopithecus anamensis

   Tim White, Gen Suwa, and Berhane Asfaw—Ardipithecus ramidus

2. *South and East Africa*

3. • *4.4 mya*—Ardipithecus ramidus
   • *4.2–3.9 mya*—Australopithecus anamensis
   • *4–2.5 mya*—Australopithecus afarensis
   • *3.5–2.5 mya*—Australopithecus africanus
   • *2.5–1 mya*—Australopithecus robustus, Paranthropus Boisei

4. anamensis *and* afarensis

   africanus *and* afarensis

   afarensis *and* robustus

4. Conclude by using part B to have students hypothesize about the past and defend their analyses. Have students speculate as to the next step in human evolution. Require students to justify their responses.

Extension

1. Write to the Institute of Human Origins (2453 Ridge Rd., Berkeley CA 94709), and ask to be placed on the mailing list. Share incoming newsletters with your classmates.
2. Research *Ardipithecus ramidus* and the *Australopithecines* to learn more about these hominids. Create posters for each of these hominids and display them in your classroom with your teacher's permission.
3. Write to the Smithsonian Institute, Anthropology Outreach and Public Information Office, Washington, D.C. 20560, and request appropriate back issues of *AnthroNotes*. Share issues with your classmates.

Name _____

Date _____

Who Are the Early Hominids?

Read each of the descriptions, and answer the questions that follow. Keep in mind that three critical differences exist between humans and apes: cranial capacities, forms of locomotion, and dental structures. The brief description that follows may help you to classify the hominid you are studying. (The abbreviation *mya* stands for million years ago.)

- Human cranial capacity is approximately 1200 cc., whereas modern apes' cranial capacity is approximately 500 cc.
- Humans have smaller canines, thick molar enamel, and a parabolic dental arch. Apes generally have parallel rows of teeth and a U-shaped dental arcade.
- Humans are bipedal, whereas apes are brachiators, knuckle walkers, or quadrupeds.

Reading A.

Ardipithecus Ramidus

In 1994, Tim White, Gen Suwa, and Berhane Asfaw discovered the fossilized remains of sixteen creatures in a region of Ethiopia. Their finds included canine teeth that are smaller than those of apes, large molars, parts of several arm bones, and parts of two skulls that would have been positioned atop the spinal column. The size of the cranium was similar to that of a present-day chimp. Anthropologists think that the environment that *ramidus* lived in was forested and its diet was mostly nuts and vegetation. Dating processes suggest that *Ardipithecus ramidus* lived 4.4 mya.

1. Is *Ardipithecus ramidus* bipedal?

2. Why do anthropologists think it was a vegetarian?

3. Did *Ardipithecus ramidus* make tools?

4. What could arm bones tell us?

Name _____

Date _____

Reading B.

Australopithecus Anamensis

Discovered in 1995 by Meave Leakey and her team in Kenya, *Australopithecus anamensis* finds included apelike canines; thick, enameled teeth (as part of an almost-complete set of lower teeth); upper and lower jaw; ear region of a skull which resembles ape ear holes; and upper part of the shin. It is thought that *Australopithecus anamensis* lived in the open savannas, was bipedal, and ate nuts and other hard food. The skull suggests a small cranium similar to that of a modern chimp. This hominid is believed to have lived between 3.9 to 4.2 mya.

1. Is *Australopithecus anamensis* bipedal?

2. Which fossils indicate that this creature was part of the human family?

3. Which fossils indicate that this creature was part of the ape family?

Name _____

Date _____

Reading C.

Australopithecus Afarensis

In 1974 Donald Johanson, working in the Awash River in Hadar, Ethiopia, found a knee that appeared to be of human origin. Shortly thereafter, much to his amazement, he found an almost complete hominid, which he named Lucy. The dentition is similar to that of modern humans, with reduced canines and a parabolic jaw, but the cranium was chimplike. Lucy was approximately three and a half feet tall, which led Johanson to believe that she was female. Later finds, referred to as A.L. 444-2, indicate that *Australopithecus afarensis* could be considerably larger since the ulna (arm bone) is 22 percent larger than Lucy's. Johanson concludes that there was significant sexual dimorphism in the species. Scientific dating of fossil remains indicates that *Australopithecus afarensis* lived from 4 to 2.5 mya. Footprints found in Laetoli, Tanzania, by Mary Leakey may also fit into this classification. This contention is subject to vigorous debate.

1. Was Lucy upright?

2. What was Lucy's diet?

3. What is *sexual dimorphism*?

4. How could scientists prove that Lucy was one sex or the other?

5. Was Lucy necessarily of the same species as A.L. 444-2?

Name _____

Date _____

Reading D.

Australopithecus Africanus

Raymond Dart in 1924 found nearly an entire skull of a child in South Africa at Taung, henceforth known as the Taung child. The teeth were similar to modern humans and reflected an omnivorous diet. The shape of the head indicates that it sat atop the spine. While bigger than *Australopithecus afarensis*, this species was referred to as gracile because of its slender build. (Remember that *africanus* was discovered fifty years before *afarensis*.) "Mrs. Ples" is an adult australopithecine discovered at Sterkfontein in South Africa. It is thought that she may have had prehensile (grasping) feet. Although new finds are continually made, *africanus* is thought to have lived from 3.5 to 2.5 mya. Because many animal bones were also found with *Australopithecus africanus*, it was concluded that *africanus* had utilized available materials to kill and consume the animals found at the same site. It should be noted that before Dart's find, Asia, not Africa, was the focus for the search for early evidence of human-like creatures.

1. Why did Dart think the Taung find was a child?

2. Was *Australopithecus africanus* bipedal?

3. If *africanus* was omnivorous, what were its teeth like?

4. What other conclusions can be drawn concerning the animal bones found at the sites?

5. If *africanus* did indeed kill to eat, is violence a part of our inheritance from this "killer ape"?

Name _____

Date _____

Reading E.

Australopithecus Robustus/Paranthropus Boisei

Although these are two different finds from two separate parts of Africa, their characteristics are such that they may be grouped together for the introductory anthropology student. Originally named *Zinjanthropus* in 1959, the mandible of *Paranthropus boisei* was uncovered by Louis and Mary Leakey at Olduvai Gorge in Tanzania. Both Louis and Mary Leakey and Olduvai Gorge are synonymous with the emergence of modern paleoanthropological science. *Australopithecus robustus* was discovered by Robert Broom, another early leader in the field. The characteristics of both hominids are massive teeth for grinding food, a sagittal crest (much like a Klingon on Star Trek), and pronounced brow ridges. The cranial capacity is slightly larger than a chimpanzee's but on a creature with a much larger frame. The skull and other skeletal structures indicate that they were bipedal. Although estimates widely vary, they existed approximately from 2.5 to 1 mya.

1. Why is it unlikely that these creatures were ancestral to the genus *Homo*?

2. What was their diet?

3. Were they tool makers?

Anthropology
Lesson 11
Handout 21

Name _____

Date _____

Hominid Finds

Part A.

Use the information in the previous handout to answer the following.

1. Identify the major paleoanthropologists and their finds.

2. Where have most of these finds been made?

3. Place each hominid on the timeline.

5 | 4 | 3 | 2 | 1 | 0 mya

4. Which hominids may have co-existed?

Part B.

Hypothesize which, if any, of the hominids you studied led to modern humans. Be prepared to explain your answer and cite the evidence you would use to prove your hypothesis.

Lesson 12
The Hominids

Objectives

- To identify the uses of crude tools
- To examine the evidence of *Homo habilis* and *Homo erectus*
- To make inferences about the lives of *Homo habilis* and *Homo erectus* based on the evidence presented

Notes to the Teacher

As the evolution of human beings progressed to the genus *Homo*, the lifestyles of humans developed also. With the advent of tools, humans expanded their horizons. The increased brain capacity, possibly triggered by a changing environment in Africa, led to the ability of humans to make tools. Early humans may have hunted or merely scavenged with these tools. In either case, however, tool use indicated more meat, and, therefore, more protein was consumed. With climate changes in Africa and elsewhere, *Homo erectus* adapted to these changes using reason and tools.

Students examine tools and speculate as to their use. After reviewing pertinent data about both *Homo habilis* and *Homo erectus*, students analyze the possible lifestyles of each of these hominids.

Procedure

1. Bring a few rocks, about the size of your fist, to class. Take the class outside to smash the rocks. (If this activity is inappropriate for your class, ask the earth science teacher to describe rock fracturing.) Ask the class what they notice about the broken rock. (*Rocks have specific rock fractures.*) Direct students' attention to the sharp edges created by the breaks.

2. Distribute **Handout 22** for students to complete. Review correct answers, and use students' responses as a springboard for discussion.

   Suggested Responses:

   1. *larger brain, more frontal lobe development; available resources such as stone*
   2. *hand-eye coordination, ability to reason and experiment, ability to comprehend varied uses of a resource*
   3. a. *crack nuts, break bones to get marrow, pound bark*

      b. *cut through skin, scrape, cut small tree limbs*

      c. *butcher animals*

      d. *slice meat, use as projectiles (these are the by-products of the choppers in a.)*

      e. *scrape skin for use as clothing, skin animals*

   4. a. *baskets, egg shells, leather straps*

      b. *carriers, containers for food*

      c. *Materials such as leaves, leather, and bark decay.*

3. Distribute **Handout 23.** Review the information in part A before assigning part B. Divide the class in half with one group completing the section on *Homo habilis* and one group completing the section on *Homo erectus*. Have them work in pairs, each taking an opposing position on the topics presented.

4. Conclude by having students present their points of view from the chart in part B. Have students determine which position seems more plausible in each case.

   Suggested Responses:

   1. Homo habilis

      a. *Yes, they had the tools necessary to hunt.*

      No, they more likely scavenged, for their toolmaking was not very sophisticated.

      b. *Yes, despite the absence of tools that indicate gathering, they probably did gather foods in containers that have not survived.*

      No, there is no evidence of gathering implements.

c. *Yes, many of the tools found could have been used to scavenge dead animals.*

No, even though tools could have enabled scavenging, early humans would not have survived by eating dead animals.

d. *Yes, despite specific evidence, they probably did wear animal skins.*

No, neither habitat nor artifact evidence indicates clothes.

e. *Yes, meat eating makes cooking necessary. There are ash pits at* Homo habilis' *sites.*

No, the evidence is very weak for fire use or making.

f. *Yes, finding numerous tools at a site indicates group living.*

No, they may have just gathered occasionally or by chance.

g. *Yes, in order to survive, they needed to recognize those with whom they have a bond. This is similar to other primates.*

No, there is no evidence to indicate such recognition.

h. *Yes, although no evidence exists for education, the use of tools and their improvement over time indicates that knowledge was passed from generation to generation.*

No, there is no evidence of education taking place.

i. *Yes, care of children required the separation of tasks by gender.*

No, there is no reason to believe that both men and women could not have scavenged, gathered, and cared for children together.

j. *Yes, the presence of Broca's area in* Homo habilis' *skull indicates speech.*

No, other structures such as Wernicke's area and adequate larynx structures did not exist, so speech could not have occurred.

2. Homo erectus

a. *Yes, the tools of* Homo erectus *would have allowed them to hunt.*

No, the tools they had would not have allowed them to hunt large animals.

b. *same as* Homo habilis

c. *same as* Homo habilis

d. *Yes, because* Homo erectus *hunted and lived in colder climates, it is likely that they wore clothes.*

No, without specific evidence, it is impossible to judge whether or not they wore clothes.

e. *Yes, the evidence points to that fact that* Homo erectus *used fire, therefore, it is likely that they cooked food.*

No, fire was for warmth not for cooking.

f. *same as* Homo habilis

g. *same as* Homo habilis

h. *same as* Homo habilis

i. *same as* Homo habilis

j. *Yes, the presence of both Broca's and Wernicke's areas indicates that* Homo erectus *had speech. Also hunting required communication by speech.*

No, if Homo erectus *had speech, there would be signs of it such as artwork.* Homo erectus *probably communicated with grunts.*

Extension

1. Read the *National Geographic* articles on *Homo habilis* and *Homo erectus* in the February 1997 and May 1997 issues. Report to the class on information you found that was not in the lesson.
2. Search the Internet for new information or new finds of *Homo habilis* or *Homo erectus.* Begin a file of significant Web sites related to hominid history.

Name _____

Date _____

Oldowan and Acheulean Tools

Answer the following questions.

1. What biological and environmental elements were needed for early humans to make tools?

2. What skills were needed by early humans to use and make tools?

3. What could early humans have accomplished with each of the following tools?

   a.

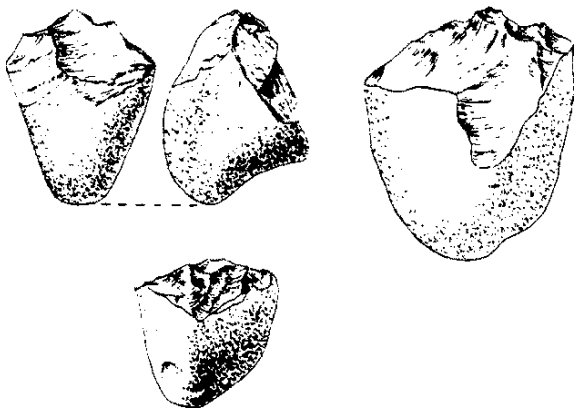

Fig.12.1.

Fig.12.1. Marvin Harris, *Culture, People, Nature: An Introduction to General Anthropology* (New York: Harper & Row, 1988), 81.

Name _____

Date _____

b.

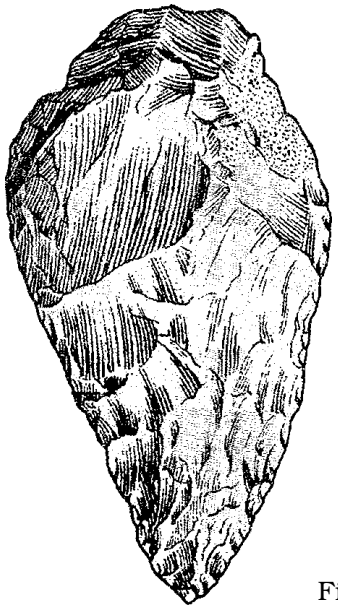

Fig. 12.2.

c.

Fig. 12.3.

Fig. 12.2. David Lambert and the Diagram Group, *The Field Guide to Early Man* (New York: Facts on File Publications, 1987), 126.
Fig. 12.3. Ibid.

Name _____

Date _____

d.

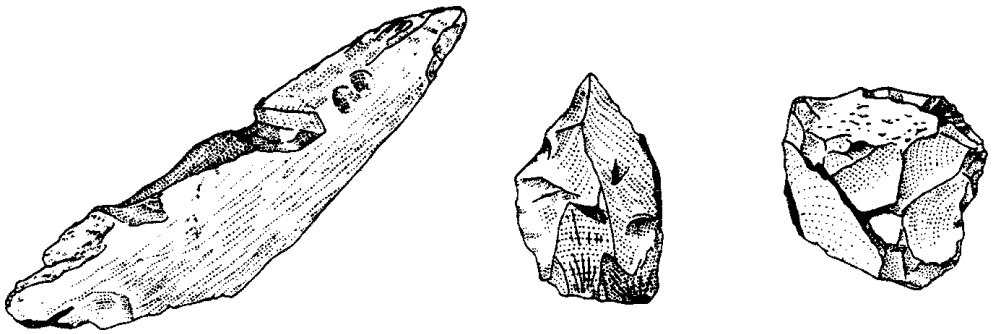

Fig. 12.4.

e.

Fig. 12.5.

4. a. If early humans were capable of using and/or making such tools, what other tools probably existed but were not preserved?

   b. Describe the uses of the tools listed in 4a.

   c. Why would such tools not have been found?

Fig. 12.4. Robert Jurmain, Harry Nelson, and William A. Turnbaugh, *Understanding Physical Anthropology and Archeology, fourth edition* (St. Paul, Minn.: West Publishing Co., 1990), 418.
Fig. 12.5. Ibid., 331.

Name _____

Date _____

Homo Habilis and *Homo Erectus*

Part A.

Study the chart below. You will use the information to complete part B.

Characteristic	***Homo habilis***	***Homo erectus***
Examples	1470 Koobi Fora new finds at Hadar	Turkana Boy Peking Man (*Sinanthropus*) Java Man (*Pithecanthropus*)
Date	oldest example—2.33 mya youngest example—1.5 mya	oldest example—1.8 mya youngest example—200,000 years ago
Physical	up to 5' tall cranial capacity of 650–800 cc. Broca's area[1]	5' to 6' tall; 88–160 lbs. cranial capacity of 800–1100 cc.; Broca's and Wernicke's areas[2]
Tools	manuports[3], choppers, scrapers, hammerstones, discoids, flakes	hand axes, fire, anvil, blades, cleavers, points, bone and wood tools
Other Evidence	cuts on bones; possible living areas in Olduvai Gorge	hunted Fossils found in Africa, Asia, Europe

[1]Broca's area—speech center in the human brain

[2]Wernicke's area—center in the brain for understanding language

[3]manuports—stones that were carried to another location possibly for tool use

Name _____

Date _____

Part B.

Using the evidence presented in the previous handouts and part A of this handout, draw inferences about the lives of *Homo Habilis* or *Homo Erectus*, depending on your assignment. Working with a partner, present arguments for and against each item listed.

1. *Homo habilis*

Questions	**Yes**	**No**
a. Hunt?		
b. Gather?		
c. Scavenge?		
d. Wear clothes?		
e. Cook food?		
f. Live in groups?		
g. Recognize family?		
h. Receive education?		
i. Work by gender?		
j. Have speech?		

Name _____

Date _____

2. *Homo erectus*

Questions	Yes	No
a. Hunt?		
b. Gather?		
c. Scavenge?		
d. Wear clothes?		
e. Cook food?		
f. Live in groups?		
g. Recognize family?		
h. Receive education?		
i. Work by gender?		
j. Have speech?		

Lesson 13
The Neanderthals

Objectives

- To analyze the physique and behavior of the Neanderthals
- To make inferences about the lives of the Neanderthals based on evidence
- To speculate as to the reasons for the Neanderthals' disappearance

Notes to the Teacher

The first hominid known as Neanderthal was found in the Neander River valley in Germany in 1856, hence the name. Since that time, although many other fossils have been uncovered, Neanderthals still remain a mystery in terms of their ancestry, classification, and disappearance. Through mitochondrial DNA studies, recent information suggests that *Homo neanderthalensis* did not lead to modern humans, which further complicates the reasons why they passed out of existence. Additionally, Neanderthals are often the victims of caricature as a huge, bumbling, brutal, cave men.

Students are presented with numerous pieces of evidence about Neanderthals. Armed with this knowledge, students piece together the lives of this hominid who lived between 200,000 and 30,000 years ago. Students then suggest plausible explanations for the Neanderthals' demise.

Procedure

1. Ask students what impressions they have of Neanderthals. List students' answers on the board. Explain that during this lesson their ideas about Neanderthals may change. Save the students' responses for later use.
2. Distribute **Handout 24**, and have students complete the assignment. Allow them to work in small groups in order to brainstorm for answers. Review students' responses. Be sure students justify their answers.

Suggested Responses:

1. *hunted large prey, probably cooperatively*
2. *died relatively young or died off site*
3. *engaged in fights or had encounters with large animals*
4. *used fire in their dwellings*
5. *were dextrous, used tools, passed on knowledge*
6. *designated butcher sites*
7. *necessary to coordinate large body*
8. *to take in more air, which was warmed by nasal passages*
9. *used clothes, lived in caves*
10. *possibly believed in an afterlife*
11. *moved, possibly to avoid glaciers*
12. *used teeth to hold objects*
13. *had experienced artisans, made tools, passed on knowledge*
14. *used bear skins as blankets*
15. *cared for sick, helped others survive*
16. *adapted to cold-weather living*
17. *practiced cannibalism or ritual scarification*
18. *buried dead with flowers (indicating respect for the dead)*
19. *practiced cannibalism by eating bone marrow, or used marrow for other purposes*
20. *indicated presence of voice box and possibly speech*

3. Distribute and assign **Handout 25**, part A. Allow students to work in small groups.

   Suggested Responses:

   1. • *disease*
      • *war with* Homo sapiens
      • *inability to compete with* Homo sapiens
      • *interbreeding with* Homo sapiens *(unlikely because of recent DNA evidence)*
   2. • *butcher*
      • *shaman or healer*
      • *hunter or gatherer*
      • *head man or leader*
   3. • *hunted in groups*
      • *lived in groups*
      • *passed on information about tool-making*
      • *had hyoid bone*
   4. • *empathy and compassion*
      • *belief in an afterlife*

4. Assign **Handout 25,** part B as a homework assignment. On the following day, select volunteers to read their essays. Discuss with students whether their assertions are based on evidence.

5. Return to students their answers from the opening activity. Conclude by discussing with students how their impressions of Neanderthals have changed.

Extension

1. Read Jean Auel's *Clan of the Cave Bear.* (Do not use the movie of the same name as a substitute.) Write a book report, and submit it to your teacher for extra credit.

2. Organize a small group of students, and prepare a skit that depicts the lives of Neanderthals. Videotape your performance, and submit the tape to your teacher for extra credit.

Name _____

Date _____

Evidence of Neanderthals

For each piece of fossil evidence about Neanderthals, provide a corresponding conclusion about their lives.

Example: Lived in caves *Weather conditions required shelter.*

1. Bones of elk, bears, oxlike animals

2. Few skeletal remains of individuals over forty years old

3. Head injuries

4. Layers of ash in caves

5. Axes conforming to hand shape

6. Locations with hundreds of animal bones and tools

7. Brains larger than our own

8. Broad noses

9. Lived during periods of glaciation

10. Buried dead

Name _____

Date _____

11. Found in Europe, Middle East, and Central Asia

12. Front teeth excessively worn

13. Knives, scrapers, points, blades

14. Bear claws in caves near hearth sites

15. Serious injuries to eyes, head, leg bones, arm bones with breaks or wounds that healed

16. Stocky build with massive bones

17. Cut marks on skulls

18. Burial sites with scattered pollen

19. Large leg bones broken open

20. Hyoid bone (bone at back of mouth, which attaches to voice box)

Name _____

Date _____

What Was Neanderthal Like?

Part A.

Answer the questions that follow based on the brief description and the information from the previous handout.

> *Homo neanderthalensis* lived in Europe, Central Asia, and the Middle East between 200,000 and 30,000 years ago. They were large hominids with stocky builds, prominent brow ridges, small chins, sloping foreheads, and a cranial capacity larger than that of modern humans. For a time they coexisted with *Homo sapiens*. They are probably descended from *Homo erectus* but did not evolve into *Homo sapiens*. Fossil and archeological evidence indicates that they hunted cooperatively, lived in caves at times, cared for the infirm, and buried their dead.

1. Speculate as to why Neanderthal disappeared. Give at least four reasons.

2. List the roles or occupations of Neanderthal.

Name _____

Date _____

3. What evidence might be used to indicate that Neanderthals had speech?

4. What personal traits might Neanderthals have possessed that led them to care for the sick and bury their dead ceremonially?

Part B.

Write an essay on "A Day in the Life of Neanderthal."

Lesson 14
Homo Sapiens

Objectives

- To view *Homo sapiens* as makers of art
- To understand the difficulty of interpreting artwork
- To analyze the cave art of *Homo sapiens* in its own context

Notes to the Teacher

As *Homo sapiens* emerged, changes occurred in their physical makeup and cultural context. One of the most noteworthy aspects of early *Homo sapiens* was their paintings and sculpture. Cave paintings have been discovered in Europe and the Middle East, setting *Homo sapiens* apart from their earlier relatives. One of the difficulties inherent in processing art is understanding it within its own cultural context. Too often, lifestyles of the past are interpreted by present-day values.

Students create and explain their own artwork. Members of the class try to interpret individual pieces, Students compare their meanings to that of the creator and analyze the similarities and differences discovered between viewers' interpretation and the artists' explanation. Then the class is presented with the art of *Homo sapiens* living around 20,000 to 30,000 years ago. Students discuss the challenges in establishing the cultural context of prehistoric art. Students develop questions regarding the creators of the cave art. The possible answers to the most frequently asked those questions are provided in the lesson.

Additional or alternative images for the first handout are available from the following sources:

- http://www.cg25.fr/1VISITE/IM_grdlastroup.htm
- http://www.ncl.ac.uk/~nantiq/archart.html
- http://www.ndirect.co.uk/~arcbooks/gloss.htm
- http://www.users.zetnet.co.uk/ptrglyph/

Procedure

1. The day before beginning this lesson, direct students to bring to class unlined or art paper and colored pencils.
2. Direct students to create a simple drawing of their own choosing. It may pertain to any aspect of their life in whatever form they choose. Drawings should be neat but they will not be judged on the quality of the art itself. Students should be prepared to describe what they drew and its meaning to them.
3. Allow time for students to complete their drawings. Then have students show their artwork to the class. As each piece is presented, have members of the class speculate as to its meaning. Have the artist confirm the interpretation or relate the meaning. As students make their presentations, help the class categorize the pieces (for example, animals, people, cultural objects, geometric designs, etc.).
4. When all (or selected, as time permits) pieces are displayed, review the categorization of the works. Conduct a discussion of whether or not students' explanations of the works were generally on target with the artists' meanings.
5. Distribute and assign **Handout 26,** part A. Review answers. Discuss thoroughly the range of possibilities for interpretation of the art. Note that none of the explanations may be correct.

   Suggested Responses:

   Fig. 14.1.

   - *animals that they hunted or ate*
   - *animals that have magical characteristics*

   Fig. 14.2.

   - *depictions of symbolic religious figures*
   - *attempts to portray themselves realistically*

6. Have students complete **Handout 26,** part B. Review the questions that students have designed.

   Suggested Responses, Part B:

   Possible student questions could include those listed below.

   1. *When were they created?*
   2. *What did the people who created these drawings look like?*
   3. *Did they have language?*
   4. *What materials were used for the drawings?*
   5. *Why is the art found mostly in caves?*
   6. *Where are these drawings?*

7. When students have completed composing their questions about *Homo sapiens*, distribute **Handout 27**, which provides the answers to the most frequently asked questions. Have students return to **Handout 26,** part B to answer the questions they developed.

   Suggested Responses:

   1. *between ten and thirty-five thousand years ago*
   2. *They were about 5'6" to 5'8" tall and had no brow ridge. They had small noses and jaws and high foreheads.*
   3. *Both anatomical features and cultural sources indicate that they probably had language.*
   4. *These artists used clay, charcoal, bone, stone, and ivory.*
   5. *Art is found mostly in caves because of harsh climatic conditions. It may have existed elsewhere but has been destroyed by a variety of factors.*
   6. *The pieces depicted were found in Europe.*

8. Have students return to their own drawings and compare them to the drawings made by our early ancestors. Ask students what conclusions can be drawn about a culture from its art. (People describe their surroundings, symbolic rituals, daily activities, etc.)

Extension

1. Find other examples of cave art from Europe, particularly Altamira in northern Spain or the Lascaux caves in France. Look for examples of daily life and depictions of ritual in the art. Post the examples on the bulletin board in your classroom with your teacher's permission.

2. Contact your local library to obtain copies of *Current Anthropology* (Vol. 28, 1987: 63-89; Vol. 29, 1988: 202-245; Vol. 30, 1989:125-156; Vol. 31, 1991: 233-262). Read the pertinent articles, and report to the class about the interpretations of prehistoric art.

Name _____

Date _____

The Art of Early *Homo Sapiens*

Part A.

Indicate at least two possible interpretations for each drawing.

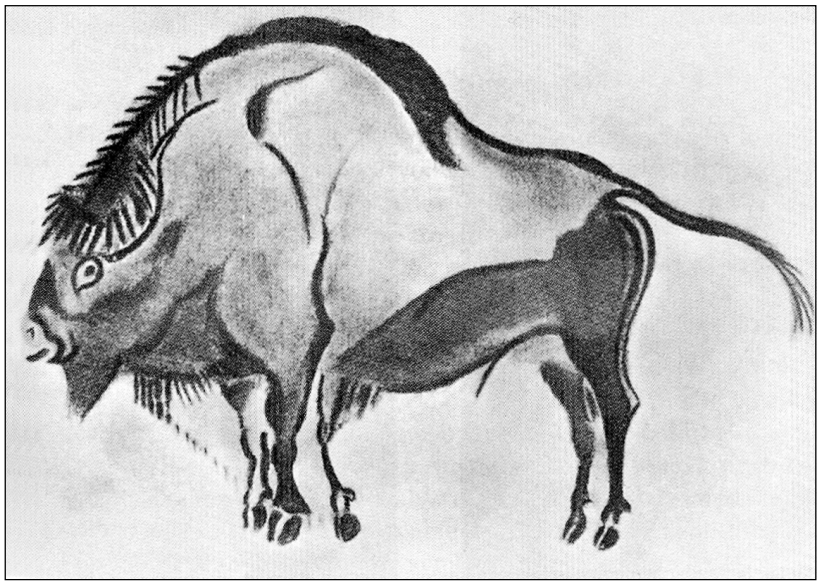

Fig.14.1.

a.

b.

Fig. 14.1. Robert Jurmain, Harry Nelson, and William Turnbaugh, *Understanding Physical Anthropology and Archaeology* (St. Paul: West Publishing Company, 1990), 483.

Name _____

Date _____

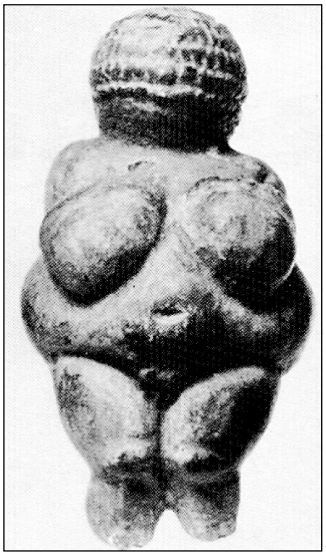

Fig.14.2.

a.

b.

Part B.

List at least five questions you have concerning these drawings.

Fig. 14.2. Jurmain, et. al., *Understanding Physical Anthropology and Archaeology,* 483.

Name _____

Date _____

A Description of *Homo Sapiens* and Their Art

Use the reading below to answer the questions that you posed in the previous handout.

The art depicted in the previous handout was created by *Homo sapiens* living approximately ten to thirty-five thousand years ago in Europe. Other sites range throughout the Old World. Physically, the creators of these pieces of art were between 5'6" and 5'8" tall with no brow ridge, a small jaw and nose, and a high forehead. Both anatomical features and cultural sources, indicate that they probably had language

The art was found near or in caves because these people needed the protection of caves because of the harsh climatic conditions. Art may have existed elsewhere but has been destroyed by erosion or other conditions including current human pillage. The artists used substances such as clay, charcoal, bone, stone, and ivory to create their visions.

Theories abound as to the meanings attached to these pieces. Those found in deep cave chambers with high ceilings may be related to rituals associated with chanting. Another possibility is that some art was created by shamans in trances. Perhaps they were simply depictions of daily activities.

Homo sapiens possessed elaborate tool kits that enabled them to fashion detailed artwork as well as hunt large and small prey.

Lesson 15
The Anthropologists' Views of Human Evolution

Objectives

- To trace the ancestry of *Homo sapiens*
- To illustrate the lineages presented by Donald Johanson and Richard Leakey
- To evaluate the leading anthropologists' views of human evolution

Notes to the Teacher

Knowledge of the various hominids discovered to date is directed toward tracing human ancestry. Some of the hominids unearthed thus far seem to lead to human beings. Diet, dentition, tool use, tool-making abilities, and a large brain are some of the characteristics that help place a particular hominid in the family leading to modern humans. Other hominids seem to have died out without descendants that were in the vanguard of modern *Homo sapiens*. With the data known at the present time, many noted anthropologists agreed that *Australopithecus robustus* and *Homo neanderthalensis* were not directly ancestral to *Homo sapiens*. Other hominids, such as *Homo habilis* and *Homo erectus*, have received the acclaim of anthropologists who state that these species did, indeed, lead to modern humans. Apart from such generalities, there is little agreement among anthropologists. The role of *Australopithecus afarensis*, for example, is much debated. Other finds, such as *Australopithecus anamensis*, are still too new to be placed on a human family tree.

Students explore the issue of which hominids led to modern humans. They construct their view of the human family tree. Students then examine the work of Donald Johanson and Richard Leakey and compare the two views to each other as well as to their own.

Procedure

1. Ask students to construct their family tree. (For students for whom this task is impossible because of adoption, foster arrangements, or personal reasons, assign students to construct the family tree of some famous person or arrange for them to work with another student.) Allow them to work in class without consultation with their parents or grandparents. Ask students how many generations they can trace in their history. Most students will not be able to trace their families very far without significant help. Explain to the class that this lesson will attempt to trace the human family tree. Point out that the difficulties they experienced with their own family tree are similar to those anthropologists face when tracking human origins.
2. Obtain the following issues of *National Geographic* from the local or school library: September 1995, January 1996, March 1996, February 1997, May 1997, July 1997, and September 1997. Divide students into groups, and provide each group with one of the issues listed. Have each group research the hominid described in its article and note whether anthropologists think it led to future hominids. Have each group report its findings, and list pertinent information on the board for reference for the next activity. Consider using the article "Redrawing Our Family Tree" from the August 1998 *National Geographic* to help students understand the changing nature of this matter.

3. Distribute **Handout 28.** After students have completed part A, allow them to explain their answers to the rest of the class. Permit students to revise their answers based on other students' justifications of their choices.

   Suggested Responses:

   Answers might include the following.

   1. *not enough information*
   2. *not enough information*
   3. *led to* Homo sapiens*; lived in groups*
   4. *led to* Homo sapiens*; tool users, tool makers*
   5. *died out; physique unlike* Homo sapiens.
   6. *led to* Homo sapiens; *tool makers, possible speech*
   7. *led to* Homo sapiens; *hunted cooperatively, used fire*
   8. *died out; DNA evidence*

4. Assign part B, which directs students to illustrate their concept of the human family tree. Have selected students present their graphics to the class with appropriate rationales for their illustrations.

5. Distribute **Handout 29** and have students complete part A. Be sure that students understand the areas of agreement and disagreement between the two anthropologists.

   Suggested Responses, Part A:

   1. *Both anthropologists agree that* Homo habilis *and* Homo erectus *are direct ancestors of modern* Homo sapiens. *Both agree that* Australopithecus africanus *and* robustus *as well as* Homo neanderthalensis *are not direct ancestors of* Homo sapiens.

   2. *Johanson believes that* Australopithecus Afarensis *is part of the direct line leading to modern humans. He thinks that* Australopithecus afarensis *led to* Homo habilis. *Leakey believes that* Australopithecus afarensis *is ancestral to other Australopithecines but not to* Homo habilis. *Leakey thinks that an undiscovered member of the genus* Homo *led to later hominids such as* Homo habilis *and* Homo erectus.

   3. *Johanson*—Australopithecus afarensis *(4–2.5 mya)* —> Homo habilis (2.33–1.5 *mya)* —> Homo erectus *(1.8 mya–200 kya)* —> Homo sapiens

      Australopithecus afarensis —> Australopithecus africanus *(3.5–2.5 mya; died out)* —> Australopithecus robustus

      Leakey—Unknown Homo —> Homo habilis *(2.33–1.5 mya)* —> Homo erectus *(1.8 mya–200 kya)* —> Homo sapiens

      Australopithecus afarensis *(4 –2.5 mya; died out)* —> Australopithecus africanus *(3.5–2.5 mya; died out)* —> Australopithecus robustus *(died out)*

6. Assign part B. Although there are no definitive answers, emphasize the importance of logical thought and the use of evidence. Review students' responses. Conclude by discussing with students how they arrived at certain conclusions. Be sure they can give reasons for their answers.

Extension

1. Research other anthropologists' views of human evolution. Consult standard anthropology texts for your information. Summarize the materials you research. Present an argument defending or refuting another view.

2. Search the Internet for updated materials relative to human evolution. Print relevant materials, and build a file for classroom use. Suggested sites include

   - http://www.dealsonline.com/origins/news/tree.gif
   - http://www.communique.net/~pepbaker/march0.htm

Anthropology
Lesson 15
Handout 28

Name _____

Date _____

The Human Family Tree

Part A.

Assume that the hominids listed below are members of your human family tree (The abbreviation *mya* means millions of years ago.) For each hominid listed, decide whether it led to modern humans or was a dead end (that is, the hominid was not ancestral to modern humans). For each decision, give a rationale for your choice.

Hominid	Led to *Homo sapiens*	Dead End	Rationale
1. *Ardipithecus ramidus* (4.4 mya)			
2. *Australopithecus anamensis* (4.2–3.9 mya)			
3. *Australopithecus afarensis* (4–2.5 mya)			
4. *Australopithecus africanus* (3.5–2.5 mya)			
5. *Australopithecus robustus* (2.5–1 mya)			
6. *Homo habilis* (2.33–1.5 mya)			
7. *Homo erectus* (1.8 million–200,000 years ago)			
8. *Homo neanderthalensis* (200,000–30,000 years ago)			

Part B.

Design a graphic that illustrates the human family tree. Include those hominids that led to modern *Homo sapiens* as well as those that died out.

Name _____

Date _____

Who's Right?

Part A.

Read the selection below, and answer the questions that follow. Be prepared for class discussion.

> In determining the correct lineage that leads to modern *Homo sapiens*, we must recognize that there are many contradictory theories. Each anthropologist presents his or her specific ideas that certainly emphasize the importance of the finds that he or she has made in the field. The reasons for this may be personal pride in propagating one's own efforts or self-promotion in the highly competitive field of funding for future anthropological endeavors. Two common views proffered in the field are by Donald Johanson and Richard Leakey.
>
> Johanson's view states that *Australopithecus afarensis* is a common ancestor to all future Australopithecines and also to all subsequent forms of the genus *Homo*. It should be noted that, according to Johanson, once the split between Australopithecines and *Homo* occurred, all Australopithecine forms after *Australopithecus afarensis* are dead ends insofar as human evolution is concerned.
>
> Meanwhile, Richard Leakey has postulated that while the find of *Australopithecus afarensis* is fascinating, it is merely an ancestor to all subsequent *Australopithecines*; he believes that an as yet undiscovered *Homo* species leads directly to *Homo habilis* and all future species of the genus *Homo*.
>
> Both Leakey and Johanson believe that although *Homo erectus* is probably an ancestor to both modern *Homo sapiens* and *Homo neanderthalensis*, *Homo neanderthalensis* is probably not ancestral to *Homo sapiens*. It should be noted that any new discoveries may change the viewpoint of either or both of these anthropologists.

1. What are the areas of agreement between Leakey and Johanson?

2. What are the areas of disagreement between Leakey and Johanson?

3. Design a graphic that describes each view. Make sure you include some type of time notation in your graphic.

Part B.

Answer the questions below based on your understanding of the lesson.

1. Which theory most closely approximates your view? Cite examples of similarities.

2. Which anthropologist's view do you think is more credible? Give reasons for your answers.

Lesson 16
Mapping the Finds

Objectives

- To locate and label the sites of major hominid discoveries
- To make implications about the location of the origin of the species
- To understand the geographic factors that encourage fossilization

Notes to the Teacher

The location of hominid fossils found to date indicates where the human species began. Since literally all of the earliest finds come from Africa, it is currently thought that Africa is the place where human life began and flourished. Such a statement assumes that paleoanthropologists have examined other locales, which indeed they have. Hominid fossil evidence from Eurasia exists, but the discoveries are of more recent human relatives. Evidence from North and South America is among the youngest of the human family because of the oceans that surround these continents.

Another factor to be considered when examining the locality of fossil evidence is the climatic conditions that made fossilization possible, and the geographic and demographic conditions that allow fossils to survive and be unearthed. Most global environments do not permit the preservation of cultural and biological evidence over millions of years.

Students examine the location of hominid sites and the specific hominid found at that site. Students then locate the sites of specific hominids by color-coding their maps. Students also investigate the types of regions where such finds have taken place, leading students to analyze the factors necessary for fossilization.

The day before starting the lesson, direct students to bring colored pencils or pens to class. Have a large world map posted in the room.

Procedure

1. Divide the class into teams of five. Number each student in each team one to five. Name a nation related to the study of hominid excavation (Ethiopia, South Africa, Tanzania, Morocco, Chad, Indonesia, China, Israel, Germany, France, Spain, India, etc.). Starting with students numbered 1, have them go to the world map and identify the country. The first student to point to the country gets a point for the team. Continue until all the appropriate countries are identified. The team with the most points earns a prize (candy, extra credit, etc.).

2. Distribute **Handout 30.** Have students use part A, which shows significant hominid sites in Africa, and part B, which lists the location of specific hominid finds, to complete part C. When students have completed the map exercise, review students' answers, checking for correct placement and color.

   Suggested Responses, Part C:

   On the map of Africa

   Awash River Valley—black

   Broken Hill—turquoise

   East Turkana—purple/red

   Florisbad—turquoise

   Hadar—blue

   Kanapoi—pink

   Koobi Fora—red/purple

   Kromdraai—orange

   Laetoli—blue

   Mankapansgat—green

   Olduvai Gorge—green/orange/red/purple

   Omo—red/turquoise

   Sterkfontein—green

   Swartkrans—orange

   Ternifine—purple

   Thomas Quarry—purple

3. Follow the procedure used in the previous handout with **Handout 31.**

   Suggested Responses, Part C:

   On the map of Eurasia

   Atapuerca—green

   Amud—blue

   Dali—green

   Gibraltar—red/blue

   Hexian—red

   La Chappelle—blue

   Lantian—red

   Narmada—green

   Neander River Valley—blue

   Peking—red

   Sangiran—red

   Shanidar—blue

   Swanscombe—green

   Teshik-Tash—blue

   Verteszollos—green

4. Distribute **Handout 32** for students to complete in small groups. Discuss responses.

   Suggested Responses:

   1. *Africa*
   2. Homo erectus
   3. *Europe, because they were better adapted to colder climates*
   4. *The geography of the region allowed for fossilization to take place. This is also probably the location of the origin of the species.*
   5. *To date,* Homo neanderthalensis *has not been conclusively identified in Africa.*
   6. *No fossils of early hominids have been found in North or South America because anthropologists' findings currently date the human entry into the New World from 12,000 to 15,000 years ago.*
   7. *For fossilization to take place, climatic conditions that encourage rapid burial would be suitable. Such burials might result from volcanoes or avalanches. Sedimentation, which might take place in areas such as lakes, flood plains, or regions with moving sands, also increases the likelihood of fossilization.*
   8. *Typically, dry areas that preserve the fossils have proven to be good sites for recovering fossil evidence. During the rainy season in these usually dry areas, the rains erode the soil and therefore bring the fossils to the surface. Areas that are heavily populated stand less chance of preservation.*

5. Conclude by helping students speculate on likely locations of future finds. Have students explain their location choices.

Extension

1. Using a map of the Western hemisphere, locate sites where hominids have been discovered. Draw the map of North and South America on a large poster, and label the sites on your map. Indicate the probable route of *Homo sapiens* to the New World. Indicate the dates of the hominids living in these sites. With your teacher's permission, place your poster on the bulletin board in your classroom.

2. Investigate the geology of Olduvai Gorge. Write an essay describing why Olduvai Gorge has been home to so many hominids. Submit your essay to your teacher for extra credit.

Name _____

Date _____

Hominid Sites in Africa

Part A.

Study the location of the hominid sites on the map below. You will need to locate and label some of these sites on part C.

Name _____

Date _____

Part B.

The information below indicates a partial listing of the sites for the major hominid fossil finds. You will need this information to complete part C.

Ardipithecus ramidus
Awash River Valley, Ethiopia

Australopithecus anamensis
Kanopoi, Kenya

Australopithecus afarensis
Hadar, Ethiopia
Laetoli, Tanzania

Australopithecus africanus
Taung, South Africa
Sterkfontein, South Africa
Mankapansgat, South Africa
Olduvai Gorge, Tanzania

Australopithecus robustus
Swartkrans, South Africa
Kromdraai, South Africa
Olduvai Gorge, Tanzania

Homo habilis
Omo, Ethiopia
Olduvai Gorge, Tanzania
Koobi Fora, Kenya
East Turkana, Kenya

Homo erectus
Koobi Fora, Kenya
Olduvai Gorge, Tanzania
East Turkana, Kenya
Swartkrans, South Africa
Thomas Quarry, Morocco
Ternifine, Algeria

Archaic *Homo sapiens*
Florisbad, South Africa
Omo, Ethiopia
Broken Hill, Zambia

Name _____

Date _____

Part C.

Locate and label the following hominid sites: Awash River Valley, Broken Hill, East Turkana, Florisbad, Hadar, Kanapoi, Koobi Fora, Kromdraai, Laetoli, Mankapansgat, Olduvai Gorge, Omo, Sterkfontein, Swartkrans, Ternifine, and Thomas Quarry. Use the color key to indicate which hominid(s) were found at the site. Write the location in the color(s) of the hominid code.

Ardipithecus ramidus—black
Australopithecus anamensis—pink
Australopithecus afarensis—blue
Australopithecus africanus—green
Australopithecus robustus—orange
Homo habilis—red
Homo erectus—purple
Archaic *Homo sapiens*—turquoise

Name _____

Date _____

Hominid Sites in Eurasia

Part A.

Study the location of the hominid sites on the map below. You will need to locate and label some of these sites on part C.

Name _____

Date _____

Part B.

The information below indicates a partial listing of the sites for the major hominid fossil finds. You will need this information to complete part C.

Homo erectus:
- Peking (Beijing), China
- Hexian, China
- Lantian, China
- Gibraltar, U.K.
- Sangiran, Indonesia

Archaic *Homo sapiens*
- Dali, China
- Narmada, India
- Verteszollos, Hungary
- Swanscombe, England
- Atapuerca, Spain

Homo neanderthalensis
- Shanidar, Iraq
- Gibraltar U.K.:
- La Chapelle, France
- Neander Valley, Germany
- Teshik-Task, Uzbekistan
- Amud, Israel

Name _____

Date _____

Part C.

Locate and label the following hominid sites: Atapuerca, Amud, Dali, Gibraltar, Hexian, La Chappelle, Lantian, Narmada, Neander River Valley, Peking, Sangiran, Shanidar, Swanscombe, Teshik-Tash, and Verteszollos. Use the color key to indicate which hominid(s) were found at the site. Write the location in the color(s) of the hominid code.

Homo erectus—red

Homo neanderthalensis—blue

Archaic *Homo sapiens*—green

Name _____

Date _____

What Does It All Mean?

Answer the questions that follow based on your study of the location of the hominid finds.

1. Where are the earliest hominids found?

2. Which is the oldest fossil outside of Africa?

3. Where are the fossils of *Homo neanderthalensis* mostly found? Why might this be so?

4. Why are so many fossils of hominids found in East and South Africa?

5. Which hominid is not found in Africa?

6. Why are the earliest hominids not found in North or South America?

7. What climatic conditions are favorable for fossilization to take place?

8. What geographic and/or demographic conditions are favorable for fossils to be discovered?

Lesson 17
The Hominids: A Review

Objectives

- To trace the major finds in hominid history
- To research and review physical and behavioral descriptions of the major hominids

Notes to the Teacher

Having students complete a comparative chart on the major finds in hominid history may help you to determine whether or not students have comprehended the material about physical anthropology. Adequate knowledge of major hominids includes the age, location, discoverer, and dentition, as well as physical and behavioral implications from the fossil evidence.

Students review pertinent information about the major hominids and test their knowledge by completing a chart. Since there are eighty-eight squares that should be completed, a scoring method is developed based on a musical theme.

Procedure

1. Ask students what the number eighty-eight signifies (*the number of keys on a piano*). Have students who are familiar with musical works devise a scoring system based on the complexity of a musical composition (for example: song, duet, sonata, concerto, symphony).

   Explain to students that this scale will be used to determine their knowledge of hominid history. (For example, 10–40 correct = song; 41–50 correct = duet; 51–60 correct = sonata; 61–75 correct = concerto; 76–88 correct = symphony.)

2. Distribute **Handout 33**. Allow students to use textbooks, prior lessons of this unit, the Internet, and other available resources to locate the data necessary to complete the handout. Direct students to work independently.

3. Review students' answers. (There may be some minor differences between students' responses and the suggested responses because of the sources used.)

   Suggested Responses:

   1. Ardipithecus ramidus
   - *a. 4.4 mya*
   - *b. Ethiopia—Awash River*
   - *c. canine teeth, mandible, knee*
   - *d. Tim White, Gen Suwa*
   - *e. 390 cc.*
   - *f. large teeth; nuts, vegetation*
   - *g. strong hands and arms; bipedal; 4'*
   - *h. lived in forested areas*

   2. Australopithecus anamensis
   - *a. 4.2–3.9 mya*
   - *b. Kanapoi, Kenya*
   - *c. upper and lower jaw skull, arm/leg bones*
   - *d. Meave Leakey*
   - *e. 390 cc.*
   - *f. parallel rows of teeth; hard food*
   - *g. long arms; bipedal; large ear holes*
   - *h. adapted for savanna living*

   3. Australopithecus afarensis
   - *a. 4–2.5 mya*
   - *b. Hadar, Ethiopia; Laetoli, Tanzania*
   - *c. Lucy (40%); 13 members of First Family; footprints*
   - *d. Donald Johanson, M. Taieb, Mary Leakey*
   - *e. 400 cc.*
   - *f. small canines; fruits*
   - *g. Male—5', 100 lbs.; Female—3.5', 60 lbs.; face projects outwards; tree-climbing, pigeon-toed, bipedal*
   - *h. spent time in trees; lived in small groups; possibly monogamous*

4. Australopithecus africanus
   a. *3.5–2.5 mya*
   b. *South Africa*
   c. *Taung 5–6 year old; pelvis; jaw*
   d. *Raymond Dart*
   e. *240–550 cc.*
   f. *small molars; large front teeth; probably an omnivore*
   g. *grasping hand, big toe stuck out at angle*
   h. *climbing; tool-making*

5. Australopithecus aethiopithecus
   a. *2.6–2.3 mya*
   b. *African Rift Valley*
   c. *black skull; tooth*
   d. *Alan Walker*
   e. *410 cc.*
   f. *heavy chewing; hard foods*
   g. *massive face; sagittal crest; flat molars;*
   h. *bones as digging tools; ancestor of* robustus*; resembles* afarensis

6. Australopithecus robustus
   a. *2.5–1 mya*
   b. *South Africa—Swartkrans Cave*
   c. *numerous adult skulls*
   d. *Robert Broom*
   e. *530 cc.*
   f. *large molars; plants, nuts, fruits*
   g. *5'; 70–140 lbs.; flat face; sagittal crest; little forehead*
   h. *savanna living; lived in groups; possible tool use*

7. Homo habilis
   a. *2.33–1.5 mya*
   b. *Olduvai Gorge, Tanzania*
   c. *Skull 1470*
   d. *Louis and Mary Leakey*
   e. *650 cc.*
   f. *small canines; possibly omnivorous*
   g. *5'; 100 lbs.; Broca's area; long arms*
   h. *"handy man" toolmaker; possible speech*

8. Homo erectus
   a. *1.8 mya–200 kya*
   b. *Eurasia, Africa*
   c. *Java Man; Peking Man; Lake Turkana Boy*
   d. *Richard Leakey (Turkana)*
   e. *750–1250 cc.*
   f. *large teeth and jaw; omnivorous*
   g. *tall/slender; small pelvis; brow ridge*
   h. *used fire; made tools; cooperative hunting*

9. Homo neanderthalensis
   a. *200–30 kya*
   b. *Eurasia*
   c. *full skeletons*
   d. *various*
   e. *1200–1800 cc.*
   f. *large teeth and jaw; carried items by front teeth; omnivorous*
   g. *short, heavy limbs; prominent brow ridge; large brains; large faces; receding forehead*
   h. *moved in small groups; hunted; tools and fire; buried dead*

10. *Archaic* Homo sapiens
    a. *500–130 kya*
    b. *Africa, Eurasia*
    c. *full skeletons*
    d. *various*
    e. *1200–1500 cc.*
    f. *teeth in proportion—larger than modern; omnivorous*
    g. *5'2"–5'7", weak chin; big brow ridge*
    h. *tent-like structures, campsites; hunters and gatherers*

11. *Modern* Homo Sapiens
    a. *120 kya–present*
    b. *global*
    c. *full skeletons; living specimen*
    d. *various*
    e. *1200–1800 cc*
    f. *small teeth; omnivorous*
    g. *large forehead; large chin; no brow ridge*
    h. *art, language, tools, trade, food processing*

4. Have students calculate the number of items they completed correctly. Score them according to the scale they determined in the opening activity. Reward accordingly.

5. Conclude by distributing **Handout 34.** Divide the class into small groups and have students complete the questions. Use students' responses as a springboard for discussion.

   Suggested Responses:

   1. *Africa is the probable locale for the origin of the species.*
   2. *Large teeth have the ability to grind hard, fibrous food like nuts and vegetables.*
   3. *Hearth sites with ash have been found.*
   4. *Speech is deduced from anatomical structures such as Broca's area and communal activities such as hunting that would have required elaborate communication.*
   5. *Brain size indicates the complexity of structures and functions of brain activities.*

Extension

1. Create posters that depict one of the hominids listed in **Handout 33.** Design the poster to include the pertinent information from the handout as well as a map depicting the sites where the hominid was found and a picture or sketch of the hominid. Post it on your classroom's bulletin board with your teacher's permission.

2. Keep a folder of newspaper and magazine clippings that relate to hominid searches and discoveries. Summarize each article on an index card. With your teacher's permission, post an article and your summary on the bulletin board in your classroom.

Name _____

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Finding the Keys to Hominid History

Use appropriate, available sources to complete the chart below.

	1. *Ardipithecus ramidus*	2. *Australopithecus anamensis*	3. *Australopithecus afarensis*	4. *Australopithecus africanus*
a. age				
b. location				
c. evidence				
d. discoverer				
e. cranial capacity				
f. dentition/ diet				
g. physical description				
h. behavioral description				

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	5. *Australopithecus aethiopithecus*	6. *Australopithecus robustus*	7. *Homo habilis*	8. *Homo erectus*
a. age				
b. location				
c. evidence				
d. discoverer				
e. cranial capacity				
f. dentition/ diet				
g. physical description				
h. behavioral description				

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	9. *Homo neanderthalensis*	10. Archaic *Homo sapiens*	*11.* Modern *Homo sapiens*
a. age			
b. location			
c. evidence			
d. discoverer			
e. cranial capacity			
f. dentition/ ciet			
g. physical description			
h. behavioral description			

Name _____

Date _____

Drawing Conclusions about Hominid History

Answer the questions below based on your studies of hominids.

1. What can be concluded from the information that the early hominids were found only in Africa?

2. Why do large teeth indicate a herbivorous diet?

3. How can anthropologists conclude that *Homo erectus* and the hominids that followed had fire?

4. What factors help anthropologists conclude that a particular hominid had speech?

5. What is the significance of hominids' cranial capacity?

Lesson 18
Out of Africa/Multiregional Theories

Objectives

- To compare and contrast the Out-of-Africa and Multiregional theses
- To apply the concepts inherent in the Out-of-Africa and Multiregional theses through SAT-type questioning
- To study the origins of *Homo sapiens* through vocabulary-building, analogies, and critical reading exercises
- To analyze and evaluate the two theories on the origins of *Homo sapiens*

Notes to the Teacher

One controversy that has emerged from recent finds and mitochondrial DNA studies is whether *Homo sapiens* evolved from *Homo erectus* living in Africa or from the *Homo erectus* that had migrated from Africa to other parts of the world. Evidence exists on both sides of the issue. The controversy began when Rebecca Cann and others working in the mid-1980s at the University of California at Berkeley traced the mutations in current populations through mitochondrial DNA. Their work led them to indicate that a woman in Africa mothered all modern humans. She became known as "Eve." Since that time, scientists following different DNA paths have identified an African Adam. Those who subscribe to the Multiregional thesis, such as Milford Wolpoff and Alan Thorne, looked for and found holes in the Out-of-Africa or African Eve hypothesis. Wolpoff and his colleagues believe that the fossil evidence does not support the Out-of-Africa thesis. Further, they contend that mitochondrial DNA research findings are inconclusive. Work in this area continues.

Students explore this controversy by using SAT practice techniques. Vocabulary-building exercises, analogies, and paired reading passages are employed to help students understand the material and to prepare them for standardized tests such as the SAT. Students identify the major components of the theories and evaluate each.

Procedure

1. Share Notes to the Teacher information before asking students if they believe that it is possible that all humans share a common set of ancestors. (Expect a variety of responses.) Keep the discussion brief and conclude by reinforcing the assertion that work relative to this subject is ongoing.
2. Explain to the class that this lesson will focus on who were the first modern *Homo sapiens*, who were their direct ancestors, and where this process took place. Inform the class that, in fact, scientists are searching for the original home of our ancestors.
3. Distribute **Handout 35,** and have students complete the readings and the questions that follow. If they are not familiar with the SAT format, advise them that the handout is typical of SAT questions. Review correct answers and use students' responses as a springboard for discussion.

Suggested Responses:

1.	*a*	*9.*	*d*
2.	*e*	*10.*	*e*
3.	*b*	*11.*	*a*
4.	*d*	*12.*	*b*
5.	*c*	*13.*	*c*
6.	*a*	*14.*	*d*
7.	*b*	*15.*	*b*
8.	*e*		

4. Distribute **Handout 36**. Working with the class, identify the major elements of each theory. Place the key components of each theory on the board. Conclude by discussing with students which hypothesis seems more plausible and has the most convincing evidence. (Either theory is plausible depending on which piece of evidence one believes.)

Suggested Responses:

1. Out-of-Africa Theory

a.
- Homo sapiens *evolved from* Homo erectus.
- Homo erectus *emerged from Africa and spread to Eurasia.*
- Homo erectus *in Africa evolved into* Homo sapiens *and replaced those living elsewhere.*

b. Mitochondrial DNA

2. Multiregional Theory or Regional Continuity with Gene Flow

a.
- Homo erectus *emerged from Africa and spread to Eurasia.*
- *In Eurasia,* Homo erectus *evolved into* Homo sapiens.
- Homo sapiens *are so similar from place to place because of interbreeding and gene flow.*

b. fossils

Extension

1. Interview a biology teacher in your school about DNA and mitochondrial DNA. Take notes on the teacher's responses and present the information to your class in an oral report.
2. Work with other students to prepare a formal debate on the two major theories presented in the lesson, Out-of-Africa and Multiregional. Have the debate videotaped for presentation to the class.

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Two Views on the Origin of Modern Humans

Read the passages below, and answer the questions that follow. Be prepared for class discussion.

Passage 1

Humankind has long searched for a single source as an explanation for its development. The biblical story of Adam and Eve is the Judeo-Christian religion's this explanation of our origins. Recent molecular evidence has suggested that all modern humans have descended from one common African ancestor known popularly as Eve. According to this evidence, this event occurred about 200,000 years ago. Studies were performed around the globe examining the mitochondrial DNA (mt DNA) of various sample populations. Mitochondria are cellular materials that provide energy to the cell. This mt DNA is only inherited from females because mt DNA is not passed on by sperm from the male, as is other DNA found in the cell's nucleus. Therefore, one has to examine only the maternal line to check for any connections.

In examining their samples of women, scientists demonstrated that several conclusions were evident. First, that all populations in the study were genetically very similar and that, in fact, the differences between "races" were negligible. This would lead one to the conclusion that the divergence of these populations was not in the too distant past. Secondly, the most noticeable difference in the groups was that there was a greater degree of genetic diversity in the sub-Saharan African group than in all of the other groups. That is to say that all groups shared the same mt DNA characteristics, but the African group not only shared these characteristics, but also had characteristics that no other group possessed. Experts have long assumed that the greater the genetic diversity within a group, the more central it should be to the origins of the entire human line.

Thus, scientists were elated to find scientific evidence that all humans are more closely related than ever imagined. This theory now could even have a named single female ancestor, Eve. Since the greatest genetic diversity was present in the sub-Saharan African sample of women tested, the indications would lead one to postulate that all humans have derived from one African woman living about 200,000 years ago.

Passage 2

Skulls from China Support New Hypothesis on Humans
Find Challenges Theory of an African Eve

Two ancient human skulls found recently in China are lending support to a new theory of how anatomical modern human beings evolved from less advanced hominids. The theory challenges the "Eve" hypothesis that all living people are descended from one woman who lived in Africa 200,000 years ago. The skulls may also help explain the origin of modern Asians, Africans and Europeans.

The discoveries, reported today in the journal *Nature*, support the view that modern Chinese and other Mongoloid peoples can trace their ancestry to prehistoric humans who had been living in Asia continuously for perhaps 1 million years and to interbreeding with people who migrated from other parts of the world.

Similarly, modern Africans and Europeans and their descendants worldwide also may be able to trace their origins to people who lived in their homelands long before the purported "Eve" but also interbred with immigrants from other continents. "Eve" is the nickname given to a hypothetical African woman who, according to one widely publicized theory, was said to be the maternal ancestor of all living humans. That interpretation was based on studies of a special kind of DNA found in the cells of all people.

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Molecular biologists looked at the differences in this "mitochondrial DNA," inherited from mothers, among a large number of people worldwide. They concluded that the differences were the result of mutations that had accumulated over about 200,000 years in a single original form of the DNA passed on by one woman. From the current distribution of DNA differences around the world, they also concluded that Africa was the woman's home.

The Eve story supported what came to be known as the "out of Africa" hypothesis, namely that all modern people are Eve's descendants who migrated through Arabia to populate Asia and Europe, replacing a more primitive species of human, *Homo erectus*, that had spread from Africa perhaps 1 million years ago.

A long standing predecessor of that "replacement theory" was the "regional continuity" theory. It suggested that after *Homo erectus*, which originated in Africa, spread into the two other continents, it continued to evolve separately in each, giving rise to the African, Asian and European peoples.

Modern anatomic and genetic studies, however, have shown that these groups are so similar that it is highly implausible that they could have been separated for as long as this theory requires. Instead there had to have been considerable interbreeding, or "gene flow," among the three populations. The newly found Chinese skulls are significant because they contain a mixture of *Homo erectus* and *Homo sapiens* features in an individual who lived long before Eve. The skulls are thought to be between 350,00 and 400,000 years old. The mixture suggests that *erectus* evolved into *sapiens* in Asia.

Moreover, the skulls have the high, forward-facing cheekbones typical of living Asians, suggesting that the Asiatic form of humanity began developing its distinctive features in Asia long before any Eve lived.

But because similarly transitional fossils suggesting that *erectus* evolved gradually into *sapiens* have long been known in Europe and Africa, the new finds do not suggest that *Homo sapiens* arose only in Asia.

"The evidence suggests that no one region of the world is the exclusive area from which modern humans evolved," said Dennis A. Etler, a paleoanthropologist at the University of California at Berkeley. Etler published the analysis of the skulls with their discoverer, Li Tianyuan of the Hubei Institute of Archaeology in Wuhan. Li found the somewhat crushed fossils in 1989 and 1990 in Hubei province in central China.

In their *Nature* paper, Li and Etler proposed that the evolution of modern humans from *Homo erectus* was a "mosaic" involving patterns of migration and gene flow that are "much more complex than previously thought."

"I think this is an important discovery," said Milford Wolpoff, a paleoanthropologist at the University of Michigan, who has seen the skulls in China. "These two crania are very complete, including both the brain case as well as the face. This is support for the model of regional continuity with gene flow."

Like virtually all developments in the study of human evolution, this interpretation is not immediately likely to win over advocates of other theories.

Paleoanthropology is famous for its rivalries and ranges of opinions, largely because of the well-known situation in science that the less data available, the more theories there are. All known fossil remains of prehistoric humans could be assembled on one large table.[1]

[1]Boyce Rensberger, "Skulls from China Support New Hypothesis on Humans," *Washington Post,* 4 June 1992.

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_____1. What is the main idea of Passage 1?

a. Mt DNA studies show that humans developed in Africa approximately 200,000 years ago.

b. The same mt DNA is shared by all members of the species.

c. The biblical story of creation is proven by mt DNA evidence.

d. Races should not be classified.

e. All humans are closely related.

_____2. According to the reading, who is Eve?

a. the author of the study

b. a representation of the women who participated in the study

c. a woman living outside of Africa around 200,000 years ago

d. the first female to have mt DNA

e. the person from whom modern humans first descended

_____3. From the description in the first paragraph, which statement about mt DNA is true?

a. Mt DNA is inherited from males.

b. Mt DNA is inherited from females.

c. Sperm are incipient with the code.

d. It is not feasible to fathom ancestry through mt DNA.

e. Mt DNA are cellular materials that enable sperm production.

_____4. The word *divergence* in paragraph 2 of passage 1 means

a. melding

b. similarity

c. congruity

d. separation

e. assimilation

_____5. What is the main idea of passage 2?

a. Recent finds in China corroborate the Eve hypothesis.

b. Eve's descendants replaced *Homo erectus* living outside Africa.

c. Modern humans evolved in many parts of the world through interbreeding.

d. *Homo erectus* originated in Asia and Europe.

e. *Homo sapiens* arose only in Africa.

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_____6. The regional continuity theory suggests that

a. *Homo erectus* evolved into *Homo sapiens* separately in Africa, Asia, and Europe.

b. Eve fostered all *Homo sapiens*.

c. *Homo erectus* facilitated a confluence of populations in three continents.

d. *Homo sapiens* arose only in Asia.

e. *Homo sapiens* migrated out of Africa.

_____7. The word *implausible* in paragraph 7 of passage 2 means

a. possible

b. unlikely

c. probable

d. rational

e. credible

_____8. According to the Out-of-Africa hypothesis, what happened to *Homo erectus* outside of Africa?

a. They evolved separately into Asians and Europeans.

b. They interbred with other *Homo erectus*.

c. They evolved into autonomous branches of the human tree.

d. They lacked mt DNA.

e. They were superseded by *Homo sapiens*' descendants of Eve.

_____9. Which hypothesis do the skulls found in China support?

a. Regional continuity

b. African Eve

c. Replacement

d. Regional continuity with gene flow

e. Out-of-Africa

_____10. From both passages, one similarity that can be inferred from all the theories is that

a. Modern humans emerged at least 400,000 years ago

b. African Eve is the mother of all humans

c. Mt DNA is the best method to determine human heritage

d. Asia is the homeland of modern humans

e. *Homo erectus* gave rise to *Homo sapiens*

Name _____

Date _____

_____11. The fossil evidence supporting the Out-of-Africa thesis is

a. scanty
b. vast
c. extensive
d. audacious
e. ineffable

_____12. Wolpoff has a(n) _____ for the Regional Continuity with Gene Flow Theory.

a. aversion
b. predilection
c. repugnance
d. reticence
e. hatred

_____13. Mitochondrial DNA : females::

a. cat : mouse
b. book : page
c. Y chromosome : males
d. father : son
e. apex : apogee

_____14. fossil : paleoanthropology::

a. climate : oceans
b. kings : countries
c. launch : rockets
d. tumors : oncology
e. life : science

_____15. skull : brain::

a. eye : face
b. veins : blood
c. heaven : earth
d. hill : mountain
e. photo : camera

Anthropology
Lesson 18
Handout 36

Name _____

Date _____

An Analysis of the Out-of-Africa and the Multiregional Theses

Indicate the major elements of each of the theories studied. Cite the type of evidence that scientists use to support the theory. Evaluate which theory seems more plausible. Be prepared to explain your position.

	1. Out-of-Africa or African Eve Theory	**2. Multiregional Theory or Regional Continuity with Gene Flow**
a. elements		
b. type of evidence		
c. evaluation		

Lesson 19
Genetics

Objectives

- To identify and define the basic terms associated with genetics
- To illustrate genotypes and phenotypes by using the Punnett's square
- To demonstrate the common phenotypical characteristics present to modern humans

Notes to the Teacher

Although many students taking anthropology recall from biology class the process of genetic inheritance, reviewing these concepts remains incumbent upon anthropology teachers. The work of the nineteenth century monk Gregor Mendel is critical to the understanding of the role of genetics. How these genetic processes operate is crucial to student comprehension of evolution.

Students review the basic terminology of genetics and apply these concepts to characteristics modern humans possess. Additionally, students demonstrate their knowledge of genetics through a variety of interesting illustrations and observations.

Procedure

1. Using a test of color blindness from any standard psychology text, ask students if anyone in the class is color blind. (If there is no color-blind student in the class, continue using a hypothetical example.) Inquire if it is probable that one or both of the student's parents is color blind. (The answer is generally that they are not.) Continue exploring the issue by asking the class if they understand how the student would come to be color blind.
2. Distribute **Handout 37,** part A, and have students define the terms listed from their past knowledge, an anthropology text, or a dictionary. Review the terms carefully to be sure everyone understands the process before continuing.

Suggested Responses, Part A:

1. allele—*the variation of a gene for a particular trait (blue, green, brown eyes)*

2. chromosome—*the structure that carries the genes (sex chromosome, X or Y)*

3. dominant trait—*the part of the gene pair that will express itself phenotypically (tallness)*

4. gene—*the DNA code for a particular trait (the genes for eye color)*

5. genetics—*the study of inheritance and inherited characteristics*

6. genotype—*the genetic code of a particular trait (TT, Tt, or tt)*

7. heterozygous—*having different genes for the same trait (Tt)*

8. homozygous—*having identical genes for the same trait (TT)*

9. phenotype—*observable genetic traits (blond hair)*

10. recessive trait—*the part of the gene pair that will express itself phenotypically if paired with another recessive trait (tt)*

3. Have students complete **Handout 37,** part B, which helps students understand the process of genetics. Review correct answers, and discuss each example thoroughly as students grasp the genetic process.

Suggested Responses, Part B:

1. a.

	T	*t*
T	*TT*	*Tt*
t	*Tt*	*tt*

b. Each offspring has a 75 percent chance of being tall and 25 percent chance of being short.

c. The phenotype of Tt is tall.

d. The phenotype of tt is short.

2. a.

	T	*t*
t	*Tt*	*tt*
t	Tt	tt

b. Each offspring has a 50 percent chance of being tall and a 50 percent chance of being short.

3. a.

	X	X
X	XX	XX
Y	XY	XX

b. Each offspring has a 50-50 chance of being male/female.

4. a.

	XC	Xc
XC	XC/XC	XC/Xc
Y	XC/Y	Xc/Y

b. Females will not have a chance of being color blind with this combination.

c. Males may be color blind.

d. Males have a 50 percent chance of being color blind.

4. Distribute **Handout 38,** and have students record whether they have the dominant or recessive phenotype for the traits listed. Review students' responses in small groups. Monitor and assist as needed.

Suggested Responses:

For each of the traits listed, the answer for phenotype is the outward trait the student possesses. In the space for genotype, if the student shows a recessive characteristic, then the answer is two lower case letters, such as ff. If the student shows a dominant characteristic, then the answer would be either two upper case or an upper and lower case pair of letters, such as FF or Ff.

5. For homework, have students find out their parents' phenotypes for the traits listed in **Handout 38**. (Some students might find this task impossible or difficult because of their family environments. Offer the option of investigating another family such as a neighbor or relative.) Provide class time to share and discuss results. After determining this information, have students revise their genotype on **Handout 38.**

Extension

1. Investigate a genetic disease, such as sickle cell anemia, Tay-Sachs, Huntington's chorea, or phenylketonuria. Write a report on how the disease is inherited, who are the likely victims, and the effects of the disease on the offspring. Present your report to your teacher for extra credit.

2. Conduct research on other inherited traits such as thumbness (when folding hands, which thumb is on top), arm folding (when folding arms, which arm is on top), and asparagus metabolism (whether eating asparagus creates a particular odor during urination). Create a poster that illustrates these traits using Punnett squares. Explain your poster to the class and place it on the bulletin board.

Name _____

Date _____

Terms and Process of Genetics

Part A.

Using an anthropology text, dictionary, or past knowledge, define and give an example of the following terms.

1. allele

2. chromosome

3. dominant trait

4. gene

5. genetics

6. genotype

7. heterozygous

8. homozygous

9. phenotype

10. recessive trait

Name _____

Date _____

Part B.

Read the following information before completing the squares and answering the questions.

Interpreting Punnett's Square:

One parent's genotype is indicated across the top of the table (Tall/Tall in the example below). The other parent's genotype is indicated down the side (short/short in the example below). The offspring's genotype is determined by combining one gene from each parent. In this example each offspring has a 100 percent chance of being tall. Note that four possibilities exist for each offspring. The phenotype, therefore, is tall is each case. Typically, scientists denote the dominant gene in upper case (T) and the recessive gene in lower case of the same letter (t). T = tall; t = short.

	T	T
t	Tt	Tt
t	Tt	Tt

1. a.

	T	t
T		
t		

b. Each offspring has a _____ chance of being tall and a _____ chance of being short.

c. What is the phenotype of Tt?

d. What is the phenotype of tt?

Name _____

Date _____

2. a.

	T	t
t		
t		

b. Each offspring has a _____ chance of being tall and a _____ chance of being short.

3. a. Determine the sex of the offspring. XX is female; XY is male.

	X	X
X		
Y		

b. The chance of an offspring being male is_____.

c. The chance of an offspring being female is_____.

4. a. Sex-linked traits are carried on the portion of the X-chromosome that has no counterpart on the Y. Color blindness is a sex-linked trait. Color vision is dominant and indicated by a C; color blindness is recessive and indicated by a c.

	XC	Xc
XC		
Y		

b. Will either female be color blind?

c. Will either male be color blind?

d. What chance does a male have of being color blind?

Name _____

Date _____

Dominant or Recessive?

For each of the characteristics listed below, determine your phenotype and possible genotypes. A capital letter denotes a dominant trait; a small letter denotes a recessive trait.

1. Are your earlobes attached (f) or free hanging (F)?

   Phenotype _____ Genotype _____

2. Is your thumb straight (S), or can you bend it back about 45 degrees (s)?

   Phenotype _____ Genotype _____

3. Are your feet flat to the floor (F), or do you have an arch creating a gap between the floor and the middle of your feet (f)?

   Phenotype _____ Genotype _____

4. Is your hairline straight across your forehead (w), or does it V in the center creating what is called a widow's peak (W)?

   Phenotype _____ Genotype _____

5. Is there any natural curl to your hair (C), or is it totally straight (c)?

   Phenotype _____ Genotype _____

6. Is there hair on the middle portion of your fingers (M), or is this section of your fingers hairless (m)? There are five separate alleles for middigital hair—one for each pair of fingers.

   Phenotype _____ Genotype _____

Part 4
Hallmarks and Touchstones of Culture

Cultural anthropology demonstrates the variety of the human condition but also illustrates the many components that unite the human family. The social institutions of government, religion, economy, education, and family are elements that all societies share frequently. During the lessons included in parts 4 and 5, reference is made to the social institutions as GREEF, an acronym for the social institutions.

As students examine these social institutions, they focus particularly on family and marriage patterns, how economic systems dictate other cultural practices, and how the governmental organization relates to the social structure. Similarities among cultures should be emphasized.

Lesson 20
Hunting-Gathering Model

Objectives

- To explain how humans survived using hunting-gathering techniques
- To interpret the origin of how human behaviors developed through this model

Notes to the Teacher

Various theories have been presented over the past thirty years to explain how human behavior developed. In examining the origins of human behavior, one can only speculate, as behavior does not present us with fossil evidence in the way one has seen already in the paleoanthropological lessons. Another cautionary note should be made regarding the fact that many of these theories are couched in gender-biased positions that can appear to become self-fulfilling prophesies.

In the 1960s Desmond Morris in his book *The Naked Ape* and Robert Audrey in several books such as *African Genesis* purported the theory that human survival has been based upon the success of males in hunting. Alternatively, in response to this male-biased approach, female-biased theories issued forth promoting the idea that female gathering of foodstuffs was the reason behind the biological and behavioral adaptations that led to human survival. More recently, a dualist position offered by Adrian Zhilman has come to the fore incorporating elements of both theories into a sensible gestalt.

Students analyze gender roles as illustrated in popular television shows. With these stereotypes in mind, students examine each of the two models (hunting and gathering) by speculating about the lives of prehistoric humans.

Procedure

1. Help students create a list of television programs, including reruns (like *The Dick Van Dyke Show*) and animated shows, that depict family life. Ask students what roles the adult male and female portray in permitting the family to survive. (*For example, in* The Simpsons, *Homer works outside the home and is supposed to provide the primary source of family income, while Marge is responsible for caring for home and children.*)
2. Divide the class into two groups: one representing the male hunters, the other representing the female gatherers. If the make-up of the class permits, place all the males in the hunters' group and all the females in the gatherers' group.
3. Distribute **Handout 39** to the hunting group and **Handout 40** to the gathering group. For the first part of the activity, the hunters will complete **Handout 39** while the gatherers will complete **Handout 40**.
4. Have each group report to the class. Encourage both groups to take pride in their accomplishments in keeping the society alive. Answers may appear in any order.

Suggested Responses:

Handout 39

1.
- *Leadership skills—The group needs some direction and guidance in their attempts to hunt.*
- *Cooperation—Hunting requires people working together to track and kill the prey.*
- *Speech—Hunters need to communicate their plans to each other.*
- *Technology—Spears, points, and clubs need to be developed for killing and butchering.*
- *Division of labor—Efficiency can be accomplished by dividing the tasks, possibly by specific abilities such as tracking, skinning, killing, etc.*
- *Knowledge of the area—Geographic abilities will be needed to follow the herd and get back to the home base.*
- *Establishment of a home base—The hunters will need to know where the rest of the group has remained, especially if the hunt is unsuccessful.*
- *Food-sharing—The hunters need to decide who gets the meat from the hunt.*
- *Speed and strength—Speed is necessary to run down the prey, while*

strength is necessary to carry the animal back to the home base.

- *Loss of hair and development of sweat glands—This physical adaptation is necessary to maintain body temperature despite great physical exertion.*

2. *The hunters have found and killed food, returned it to the home base, and shared food with the women, children, elderly, and infirm.*
3. *men, successful hunters*
4. *only if game is plentiful*

Handout 40

1. - *Organization—The gatherers need to organize the home base.*
   - *Knowledge—They need to know where foods are and what foods are edible.*
   - *Technology—Digging sticks and woven baskets are probably needed.*
   - *Foodsharing—The gatherers need to share the food among the people at the home base.*
   - *Speech—Gatherers need to pass on information orally about the whereabouts of food sources.*
   - *Nurturing—The gatherers must care for those at the home base unable to hunt or gather for themselves.*
   - *Division of labor—There needs to be a system developed for who gathers and who cares for the others.*
   - *Stamina—Because of the constant nature of the work, gatherers need to develop sufficient strength to continue.*
   - *Establishment of a home base—The gatherers need to keep those who can't gather supervised in one area. They also need to remain stationary so the hunters know where they are.*
   - *Loss of hair and development of sweat glands—This physical adaptation is necessary in order to maintain body temperature despite constant exertion.*
   - *Loss of estrus—Those women who lost their estrus cycle would be more attractive to men returning at sporadic times. Such an adaptation would be better suited to the environment.*
2. *The gatherers have established and organized a home base and provided food and care for the entire group.*
3. *healthy females*
4. *The gatherers can probably survive without the hunters if they find enough protein sources.*

5. Discuss differences in skills, behaviors, and physical adaptations that occur as a result of the hunting/gathering models (*men—leadership, speed, and strength; women—organizational skills, stamina, and loss of estrus*). Also ask if one group could have survived without the other and the reasons why one group could survive. (Don't consider the obvious procreative elements.)
6. Assign the following essay: "Describe how the development of both the male-hunting model and the female-gathering model insured the survival of the human species." Share and discuss completed essays.
7. Conclude by having students speculate how current stereotypes regarding male and female roles have their origin in our evolutionary past. Discuss how and why traditional male and female roles are changing.

Extension

1. Investigate a twentieth century hunting-gathering human society such as the !Kung Bushmen or the Mbuti Pygmies or an advanced primate society such as the bonobos or chimpanzees. Compare and contrast their male and female roles to that presented in the hunting-gathering models. Write your findings in an essay and turn it in for credit.
2. Read Robert Audrey's *The Hunting Hypothesis* (New York, Atheneum, 1976) and Sally Slocum's "Woman the Gatherer: Male Bias in Anthropology" in *Toward an Anthropology of Women* (New York, Monthly Review Press, 1975). In an article for the school newspaper, compare and contrast the two views presented. Check with your teacher before submitting your article.

Name _____

Date _____

The Hunting Model

Working within your group, read the scenario below and answer the questions that follow.

> You live in the open savanna not far from woodlands. Your society has no technology, no domesticated animals, and no agriculture. You survive basically by what you find to eat—both plant and animal. The area has ample game. You watch a pride of lionesses hunt for a wildebeest for themselves and their cubs. This scene gives you an idea.

1. List at least ten skills, behaviors, and physical adaptations you develop in order to hunt successfully. For each skill, behavior, or physical adaptation you mention, explain why it is needed.

2. What have the hunters accomplished?

3. Who has the power in such a system?

4. Under what conditions can hunters survive without gatherers?

Name _____

Date _____

The Gathering Model

Working within your group, read the scenario below and answer the questions that follow.

> You live in the open savanna not far from woodlands. Your society has no technology, no domesticated animals, and no agriculture. You survive basically by what you find to eat—both plant and animal. The men are out on a hunt and are usually gone for a few weeks at a time. There are no food reserves. You need to provide for yourselves, the children, the elderly, and the infirm. You decide to gather fruits, berries, and roots to survive.

1. List at least ten skills, behaviors, and physical adaptations you develop in order to gather successfully. For each skill, behavior, or physical adaptation you mention, explain why it is needed.

2. What have the gatherers accomplished?

3. Who has the power in such a system?

4. Under what conditions can gatherers survive without hunters?

Lesson 21
The Social Institutions

Objectives

- To identify the basic social institutions common to every society
- To specify how the social institutions operate within American society
- To envision how the social institutions function in a variety of societies
- To use the mnemonic device of *GREEF* in describing the social institutions

Notes to the Teacher

Cultural anthropology is the study of the ways in which human beings have adapted their physical qualities and ways of behavior to the changing environment. Humans developed societies to make this adaptation possible. Culture is the means by which humans pass down their behavior to future generations. Within culture, humans developed social institutions; that is, a variety of organizations that enable societies to survive. What are the social institutions that enable societies to stand and endure? This lesson deals with this question.

Students speculate as to the key social institutions that enable societies to function and apply their speculations to American society. Students learn a mnemonic device to help them remember the concept of social institutions. Lastly, students apply their knowledge of social institutions to other, less developed societies such as hunting-gathering and farming-herding societies and constantly inquire whether the social institutions' criteria apply.

Procedure

1. Ask students what is necessary for a society to survive. Probe further by giving them the following scenario: This class is stranded on a deserted island that appears to have adequate food supplies and a climate that is conducive to survival. What is necessary for the group to survive?

   Allow students to brainstorm for answers to the questions posed. Write their answers on the board or overhead projector transparency. Once an adequate list is generated, have students group answers and classify their responses. Guide them toward the headings of government, religion, education, economy, and family.

2. Explain to students that anthropologists have identified government, religion, education, economy, and family as the five basic social institutions that are necessary for a society to survive. Tell students an easy way to remember the social institutions is by using the mnemonic device *GREEF*.

3. Distribute **Handout 41,** and have students complete it in pairs or small groups. Encourage students to think carefully about the importance of these institutions in their lives. Review correct answers.

   Suggested Responses:

   Part A.

   1. government—*to keep order, to make group decisions*
   2. religion—*to determine group values, to have a common belief system*
   3. economy—*to make a living, to acquire and distribute goods and services*
   4. education—*to pass information and knowledge of the culture from one generation to the next*
   5. family—*to care for the young, to provide a kinship system for social organization*

   Part B.

   1. *The government keeps order by providing law enforcement at various levels; it defends us from enemies through the armed services; it provides social services like Social Security and Medicare; it protects the rights of the population.*
   2. *Although American society has many religious sects, they serve similar functions. Religion teaches a moral code that is generally reflective of the society; it frequently provides social services; it supports the group emotionally; it gives*

a spiritual dimension, meaning, and purpose to the lives of its members.

3. *The American economy provides a myriad of goods and services demanded by society. It produces and distributes food supplies; it manufactures and sells industrial and consumer goods; it conducts trade with industries around the globe.*

4. *American education instills knowledge about the world; it provides skills to become competent in the adult world of work; it teaches the values of the American way of life; it offers opportunities for intellectual, social, and emotional growth.*

5. *The American family is the basic unit of society. As such, it cares for the young physically, emotionally, socially, and intellectually. It provides the basic living arrangements; it structures the kinship system; it furnishes companionship and emotional and social support for its members.*

4. Distribute **Handout 42** and have students complete the outline. Encourage students to think about cultures other than their own to discern alternative forms of the social institutions.

   Suggested Responses:

   Answers could include the following:

   1. Government
      a. *egalitarian (all members have equal power)*
      b. *hereditary monarchies and chiefdoms*
      c. *representative democracy*
      d. *totalitarian dictatorships*
   2. Religion
      a. *monotheism*
      b. *polytheism*
      c. *a specific ideology such as communism*
   3. Economy
      a. *market*
      b. *command*
      c. *subsistence*
   4. Education
      a. *formal through schooling*
      b. *informal through observation*
   5. Family
      a. *nuclear*
      b. *extended*

5. Conclude by asking students which social institution is functioning in the following situations: play (*education*), ratings of movies (*religion*), legal codes (*government*), courtship and dating (*family*), clothing trends (*economy*). Help students speculate why social institutions often enforce rules with unwritten but understood codes of behavior. (*Group/peer pressure can be as effective as an enforcer.*)

Extension

1. Using the GREEF model, investigate a Native American society to determine how that society operated. Compare and contrast the society that you chose to mainstream modern American society. Create a poster showing the similarities and differences of these two cultures. Share your findings with classmates and display your poster on the classroom bulletin board.

2. Examine a dysfunctional society such as one disrupted by warfare or widespread civil disobedience to discover what elements of its social institutions were not functioning. Prepare and present a brief oral presentation to the class, and discuss which of the social institutions may not be operating at optimal levels. Describe ways to remedy the situation.

Name _____

Date _____

GREEF

Part A.

For each of the social institutions listed below, determine why each is necessary for a society to survive.

1. Government

2. Religion

3. Economy

4. Education

5. Family

Part B.

Describe at least four functions of each of the social institutions in American society.

Name _____

Date _____

How Social Institutions Vary among Societies

Indicate alternative ways that societies design the institutions listed below.

1. Government
   a.
   b.
   c.
   d.
2. Religion
   a.
   b.
   c.
3. Economy
   a.
   b.
   c.
4. Education
   a.
   b.
5. Family
   a.
   b.

Lesson 22
Terms of Cultural Anthropology

Objectives

- To define terms related to cultural anthropology
- To apply these terms to specific situations related to anthropology

Notes to the Teacher

In cultural anthropology, as with any discipline, specific terminology exists. Students must to learn the anthropological definitions in order to read materials intelligently and to differentiate these meanings from the same term in other disciplines. The terms included in this lesson refer to those necessary to understand the five basic social institutions that form the basis of ethnological study.

Students examine definitions of terms central to cultural anthropology and apply those terms to specific situations in order to test their knowledge. This lesson presents numerous activities that reinforce students' knowledge of this information.

Procedure

1. Ask students what events marked their entry into adolescence (leaving elementary school, etc.), and what events will mark their passage to adulthood (graduating from high school, etc.). Put both lists on the board. Ask students to compare and contrast these events to those in other societies (marriage or becoming a warrior, etc. in Native American culture.) Explain that such events are called *rites of passage* and that this and other terms necessary for studying cultural anthropology will be examined in this lesson.

2. Assign each student or pair of students (depending on class size) one of the terms on **Handout 43**. Have students speculate as to the term's meaning based on previous study in this and other classes. Have students write definitions on the board.

3. Distribute **Handout 43,** which presents the terms and application exercises. Have students compare their definitions to those in part A and make appropriate corrections. Then have students complete part B. Explain that these terms will be used later in the lesson and throughout the course. Review answers to part B to insure students' understanding.

Suggested Responses, Part B:

1. *ethnography*
2. *ethnic group*
3. *socialization*
4. *ethnocentrism*
5. *nuclear family*
6. *rite of passage*
7. *matrilineal*
8. *subculture*
9. *etic*
10. *culture*
11. *extended family*
12. *matrilocal*
13. *market economy*
14. *ethnology*
15. *patrilineal*
16. *emic*
17. *subsistence*
18. *patriarchal*
19. *egalitarian*
20. *society*

4. Distribute **Handout 44** and have students complete the crossword puzzle for homework. Review answers with students.

   Suggested Responses:

   Across

   1. *socialization*
   3. *subsistence*
   7. *egalitarian*
   8. *matriarchal*
   11. *matrilocal*
   13. *patrilineal*
   15. *extended*
   16. *ethnic group*
   17. *rites of passage*
   18. *subculture*

   Down

   1. *society*
   2. *nuclear*
   4. *etic*
   5. *patrilocal*
   6. *market*
   8. *matrilineal*
   9. *emic*
   10. *ethnology*
   12. *culture*
   13. *patriarchal*
   14. *ethnography*

Extension

1. Obtain a pack of index cards, and place the words used in this lesson on one side and their definitions on the back. Conduct a review session with classmates in preparation for your next test. Continue adding new definitions to your stack of cards for future review and testing.
2. Design a board game, like Monopoly, using the words in the lesson. Put one of the vocabulary words on each square. When a player lands on the square, the definition of the word is needed to continue play. Submit your gameboard and rules to your teacher for play during class or for after-school review.

Name _____

Date _____

Anthropology Dictionary

Part A.

Compare your definitions to those presented below. Study the words and definitions. They will be used in the lesson and throughout the course.

culture—the behaviors, attitudes, and way of life shared by a society

egalitarian—referring to all members of a society having equal access to power and decision making

emic—describing a culture from the point of view of a member of that society

ethnic group—a part of society that shares most of the traits of the dominant culture but has specialties based on nationality or background

ethnocentrism—the belief that one's culture is superior to all others

ethnography—a description of a culture

ethnology—the study and comparison of cultures

etic—describing a culture from the point of view of someone outside the society

extended family—family consisting of parents, children, and other relatives living in the same residence

market economy—an economic system that produces enough for a surplus which is then often traded

matriarchal—power in the family lies with the mother

matrilineal—descent and inheritance are carried by the female line

matrilocal—a newly-married couple lives with or near wife's family

nuclear family—family consisting of only parents and children living in the same residence

patriarchal—power in the family lies with the father

patrilineal—descent and inheritance are carried by the male line

patrilocal—a newly-married couple lives with or near the husband's family

rites of passage—events that mark change from one age status to another

socialization—the process by which a person learns the ways of the society

society—a group that shares a particular way of life

subculture—a part of a society that has some specialties that make it distinct from the dominant culture

subsistence economy—an economic system that produces just enough to survive

Name _____

Date _____

Part B.

Use the terms in part A to complete the sentences.

1. A book about the Mbuti Pygmies of central Africa is a(n)_____ .

2. The residents of the "Little Italy" section of Baltimore can be considered a(n) _____ _____ .

3. Your learning proper behavior for school is called _____ .

4. Criticizing the dress of the Bedouins is a form of _____ .

5. In the United States, most households are made up of the_____ _____.

6. In some African societies, a young man's killing of a lion is his_____ _____ _____into adulthood.

7. In the kingdom of Ghana, which flourished between the eighth to eleventh centuries, the line of descent passed through the mother's line or was considered_____ .

8. Teenagers make up a(n) _____ of American society.

9. An American anthropologist describing Polynesian society has a(n) _____ point of view.

10. The Alaskan Eskimos share a common way of life or_____ .

Name _____

Date _____

11. In many places, one household consists of parents, children, grandparents, and other relatives. This is referred to as a(n)_____ _____.

12. A young couple gets married and moves into the wife's family's household. This is called _____.

13. The United States is said to have a(n) _____ _____ because of the way we produce and distribute goods.

14. Studying the comparisons between the !Kung Bushmen and the Mbuti Pygmies is a(n) _____.

15. Throughout the world, most societies are _____that is, they inherit through the father's line.

16. An Arab anthropologist examining the life style in Iraq is studying culture from a(n) _____ point of view.

17. Prehistoric humans probably had a(n) _____ economy.

18. Families or societies where the father traditionally "rules the roost" are known as _____.

19. In some utopian societies, all adults shared in the decision-making process. This is called _____.

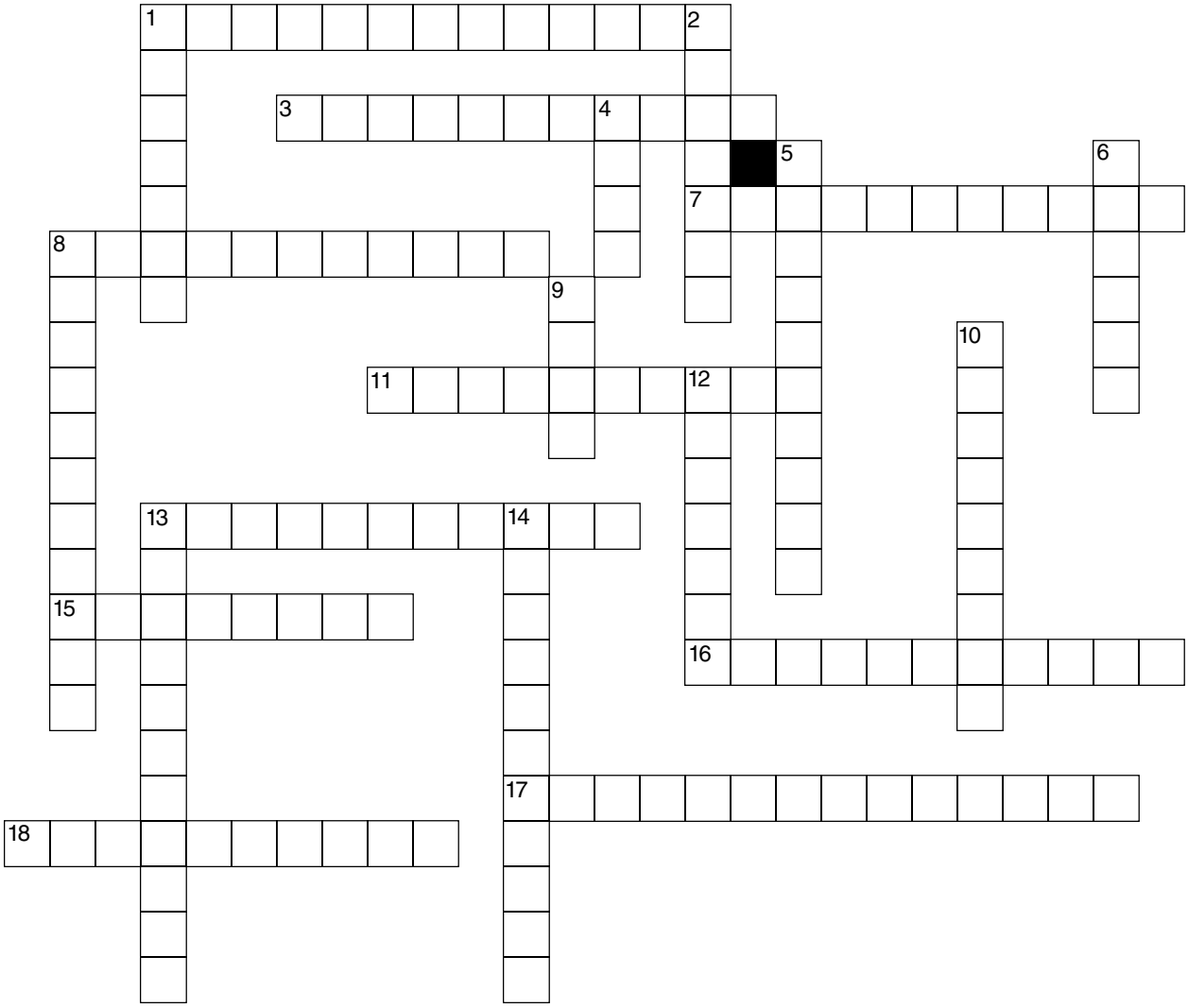
20. The Yanomamo, a(n)_____ living in South America, are currently having difficulty keeping their way of life because of political problems in the area.

Anthropology
Lesson 22
Handout 44

Name _____

Date _____

Anthropology Crossword



Across

1. process by which a person learns the rules of society
3. an economy that produces just enough to survive
7. all adult members of a society have equal access to power
8. the mother has authority
11. newlyweds live with wife's family
13. inheritance passes through father's line
15. many family members live together
16. Irish-Americans, for example
17. students graduating from high school
18. a group that has some specialties that set it apart

Down

1. a group that shares a particular way of life
2. family made up of parents and children
4. an outsider's point of view
5. newlyweds live with husband's family
6. an economy that trades
8. inheritance from your mother's family
9. an insider's point of view
10. the study of culture
12. behaviors, values, attitudes that set a group apart
13. authority rests with the father
14. a written account of culture

Lesson 23
Cultural Change

Objectives

- To explain the causes of cultural change
- To investigate how cultural change affects social institutions
- To examine the effects of cultural change in one case study
- To describe how cultural change affects societal values

Notes to the Teacher

In modern society, change occurs at an almost alarming rate. Change is a part of every life, but when change occurs at a societal level, the impact can be dramatic. Change generally occurs because of invention, discovery, and/or contact with another culture. Technological advances as well as ideas can be categorized as inventions. Discovery can be of new resources, land, cures, etc. Contact with other cultures happens voluntarily or involuntarily. Values may be altered by change; however, the converse is also valid.

As students explore the basic reasons for societal change, they note the effects created by modifications that result. Students complete the lesson by examining a case study in change—that of Hiroshima after World War II.

The Center for Learning has a novel/drama curriculum unit (*Hiroshima/On the Beach*) that may be useful if any students elect to do the third extension activity.

Procedure

1. Before students arrive, rearrange the room as much as possible. (For example, push all the desks to one corner, turn desks toward the back of the room, etc.) Have a few students acting as confederates to note reactions. After a few minutes, assemble the class, and have the confederates present the reactions the other students had to the changes made.
2. Ask students to describe the changes that have occurred in society during their lifetime. Note their answers on the board. (*computers, fiber optics, cell phones, genetic engineering, etc.*). Then ask students to describe the changes that have taken place during the twentieth century; encourage them to think of societies beyond the borders of the United States (*changes in governments, independence movements, inventions, etc.*) Discuss whether change is always accepted or if there is ever resistance to change. (Both options are valid.)
3. Distribute **Handout 45,** and assign part A. Divide the class into five groups, and assign each group a different section of part A (invention, discovery, diffusion, assimilation, and acculturation). Encourage the groups to generate as many examples as possible.
4. Have each group present its answers to the class. Note that students may use many different examples.

   Suggested Responses:

   1. Invention

   - *television and radio—permitted instantaneous communication of events*
   - *car—increased the mobility of societies*
   - *birth control pills—allowed couples to plan families and prevent unwanted pregnancies*

   2. Discovery

   - *cures for certain diseases—increased the life span which, in turn, created a large elderly population*
   - *space exploration—created new arms race, advanced telecommunications, may lead to colonization*
   - *finding new minerals in the earth—allowed for new fuels*

3. Contact with another culture

diffusion

a. *foods exchanged—more diversity, better nutrition*

b. *use of cigarettes—changes in economy and health as smoking becomes commonplace in other areas of the world, such as China*

c. *sports—Particular sports become popular pastimes in many diverse regions.*

assimilation

a. *the U.S.—American culture blends many otherwise distinct societies.*

b. *the European Union—Once diverse nations have voluntarily joined sharing more cultural and economic components.*

c. *public schools—Students from various ethnic and socioeconomic backgrounds create a group different from their particular groups.*

acculturation

a. *establishment of Israel in Palestine—The way of life of Arabs in the area changed, or they were compelled to move.*

b. *apartheid in South Africa—The settling of the Europeans in South Africa and their policies of apartheid changed the lives of the Africans living in South Africa. (The move away from apartheid is causing changes again in South Africa.)*

c. *the occupation of Japan by the United States after World War II—Japan was Americanized and democratized. New industries were introduced, which changed their economy.*

5. Have students complete part B of **Handout 45** individually. Have a few students who used different examples present their answers to the class.

Suggested Responses:

example—the enforcement of the apartheid policy in the Union of South Africa in the twentieth century

government—As apartheid become official policy, stricter governmental rules were enforced regarding residence, movement, and participation of Africans in government.

religion—Many Africans were converted to Christianity. For those who kept native religions, practice was often restricted.

economy—The economic base of Africans was changed from hunting and farming to factory work, mining, or nothing.

education—African children attended separate schools from the whites yet were given traditional European/British education.

family—African traditions were often destroyed; families were split as wives and children lived in homelands and husbands worked in mines and other businesses in industrial centers far from the homelands.

6. Conclude the lesson by giving students a case study in change. Distribute **Handout 46** and have students read the case study of Hiroshima and answer the questions that follow. The case mentions Nagasaki. Explain to students that a second bomb was dropped three days later on Nagasaki with similar effect. When they have finished, review their answers and use students' responses to generate a discussion on how the atomic bomb changed forever the lives of those living in Hiroshima.

Suggested Responses:

1. *Uncontaminated food would have been hard to find; all facilities like schools, hospitals, transportation systems, and government functions would have ceased. Disease and pain would have been everywhere.*

2. *As social institutions were rebuilt, much of their function would have been devoted to caring for the needs of survivors.*

3. *The survivors of the atomic bomb and current residents are insistent that conflict resulting in such devastation never happen again.*

4. *invention—The atomic bomb destroyed the world they had known causing instantaneous catastrophe and change.*

   diffusion—The use of wheat and bread changed their dietary habits.

   acculturation—The occupation of Japan by the Americans introduced many changes in both government and economy.

Extension

1. Conduct further research into the bombing of Hiroshima and its effect on the city and its residents. Give an oral presentation to your class. Include visual aids.

2. Investigate an example of cultural change such as the changes that have taken place in Russia since the fall of Communism. Present a report to the class on how your example changed each of the social institutions in that society.

3. Read *Hiroshima* by John Hersey, give an oral report to the class, and turn in a book report for extra credit.

Name _____

Date _____

Causes and Effects of Cultural Change

Part A.

Examine the causes of change listed below. Working in small groups, cite as many examples as you can. Describe how each example affected society. Use separate paper if you need more space.

1. Invention

2. Discovery

3. Contact with another culture

   diffusion—movement of cultural traits from one society to another

   assimilation—blending of cultures

   acculturation—the changes that occur as a result of an involuntary contact of a subordinate culture by a dominant one

Part B.

Working individually, choose one example from part A, and illustrate how it changed the five social institutions (government, religion, economy, education, and family).

Name _____

Date _____

Case Study: Hiroshima

Read the following essay, and answer the questions that follow. Be prepared for class discussion.

Hiroshima had a long and celebrated past in the history of Japan. During the Sino-Japanese War, it served as the center for the supreme military command. By the turn of the twentieth century, it was home to the Higher School of Education, only the second such school in the country. During the first half of the twentieth century, its industries, especially those related to the military, grew tremendously.

In one brief flash, Hiroshima changed forever. On August 6, 1945, the atomic bomb destroyed Hiroshima, killing over 100,000 people, leveling the city, and causing the area to be turned into an inferno. The temperature at ground zero was several million degrees Celsius. Approximately 350,000 people, the city's entire population, were exposed to the effects of the bomb; by December 1945, the death toll had risen to 140,000. Such figures are speculative, since all records had been destroyed by the blast and subsequent blaze.

Diseases related to radiation such as leukemia, other cancers, and keloids (swollen, twisted skin over scar tissue) plagued many of the survivors. Even the unborn were affected by exposure. To add insult to injury, a number of deadly typhoons and floods hit the city shortly after the bombing. Some people believed that Hiroshima would be uninhabitable for seventy years.

After the bombing, though, the survivors of Hiroshima began to rebuild. They had lost the entire infrastructure of normal city life—transportation, fire and police facilities, schools, hospitals, businesses, and government agencies. Yet they rebuilt. Today Hiroshima is once again a bustling and modern city that boasts a healthy economy and numerous universities.

One success story begins shortly after the bombing. The Takaki Bakery was built from the ashes of destruction. Wheat flour was being distributed, and one family decided to bake bread, a food rarely used in Japanese culture. Because of the severe food shortages, the business grew and bread became a common staple in Hiroshima. That bakery is so successful that, ironically, it now has branches in California.

As Hiroshima rebuilt, new industries were introduced. Automobile, steel, ship-building, machinery, and textile factories replaced the primarily military industries of the pre-war period. By the 1970s, Hiroshima had the world's largest steel mill. Land reclamation projects and new port facilities added to the growth of the city.

Among the changes evident in the lives of the residents of Hiroshima as a result of the dropping of the A-bomb is its commitment to peace and the elimination of nuclear weapons. Numerous museums and the Peace Memorial Park reinforce their resolve to world peace. The following excerpt from the *Appeal from Hiroshima and Nagasaki for a Total Ban and Elimination of Nuclear Weapons* demonstrates their intention.

> Forty years have passed since the atomic bombing of Hiroshima and Nagasaki, and the end of the Second World War. In spite of the intense desire of the A-bomb survivors of Hiroshima and Nagasaki and the people of all the world that such tragedies must never be repeated, nuclear weapons over one million times more destructive than the Hiroshima and Nagasaki bombs are now stockpiled, the result of the on-going nuclear arms race.

Name _____

Date _____

> The use of nuclear weapons will destroy the whole human race and civilization. It is therefore illegal, immoral and [a] crime against the human community.
>
> Humans must not coexist with nuclear arms.
>
> With effective activities for the prevention of nuclear war now developing throughout the world, the elimination of nuclear weapons, as a common international task, has become most urgent and crucial for the very survival of the whole of humanity. Along with the survivors and on behalf of those who died and cannot now speak for themselves we appeal from Hiroshima and Nagasaki:
>
> There must never be another Hiroshima anywhere on earth.
>
> There must never be another Nagasaki anywhere on earth.
>
> Now is the time to call for the complete prohibition and elimination of nuclear weapons. Let us work together urgently to achieve a total ban on the use, testing, research, development, production, deployment and stock-piling of nuclear weapons.[1]

Answer the following questions based on the reading and other knowledge you may have pertaining to Hiroshima.

1. If you had lived in Hiroshima in 1945 and survived the blast, how would your life have immediately changed?

2. What changes would have taken place in the social institutions?

3. How did societal values change among the people of Hiroshima since the dropping of the bomb?

4. Give examples of how invention, diffusion, and acculturation affected the postwar residents of Hiroshima.

[1]Delegates to the Annual Atomic and Hydrogen Bomb Conference, "Appeal from Hiroshima and Nagasaki," *Appeal from Hiroshima and Nagasaki for a Total Ban and Elimination of Nuclear Weapons* (Hiroshima, 1985, accessed June 12, 1998); available from http://www.prop1.org/prop1/jhirosh.htm.

Lesson 24
Kinship

Objectives

- To define *kinship*, understand how it is organized, and investigate its purposes
- To examine the types of bonds that characterize kinship and diagram one's own kinship pattern
- To define terms related to residence and inheritance
- To demonstrate the variability of kinship through different naming patterns

Notes to the Teacher

Though kinship patterns differ among societies, they determine the structure of families in virtually all societies. Where people live, from whom they inherit, and who constitutes their support systems—all stem from the kinship pattern dictated by the society. Especially in nonindustrialized societies, kinship also has a profound impact on political, economic, and religious institutions. In such societies, offspring often inherit land, position, and status through kinship relationships. Similarly, residence also influences community relations and can frequently forestall conflict between communities since family members of one community may often live in another through marriage exchange.

As students examine their own kindred pattern, they use the terms that denote relationships in our naming system. Students define the terms that relate to kinship regarding residence and descent and note the purpose and variations of kinship. Finally, students review one of the six major naming systems and two of the four inheritance patterns.

Procedure

1. Ask students to list all the people they consider to be their kin or family. Allow a few minutes for them to complete their lists. Write on the board the categories of relationships (*father, mother, aunt, uncle, brother, sister, cousin*). Further clarify by asking if all those listed are related by blood. (*Generally, the answer is no; some are related by marriage, while others may not be related at all, such as godparents.*) Define *kinship* as all those considered relatives organized in such a way that each person has a definable role.
2. Distribute **Handout 47**, and have students complete part A. Suggest to students that they follow the directions and prepare their diagram first on a separate paper, since it often gets skewed to one side of the paper. Answer any questions students many have as they complete their kinship pattern.
3. Write the terms from part B on the board and, working with students, help them define each term. Permit the use of their textbook, and provide some dictionaries. Have students write the definitions in the appropriate place on **Handout 47**, part B.

Suggested Responses, Part B:

1. consanguineous—*related by blood*

2. affinal—*related by marriage*

3. fictive—*not related by blood or marriage but considered family, such as godparents or close friends of the parents*

4. matrilocal—*a newly-married couple lives with or near the wife's family*

5. patrilocal—*a newly-married couple lives with or near the husband's family*

6. neolocal—*a newly-married couple lives in a residence apart from either family*

7. avunculocal—*a newly-married couple lives with or near the husband's mother's brother (his uncle)*

8. bilocal—*a newly-married couple lives with or near either spouse's family*

9. matrilineal—*descent is inherited through the mother's side of the family*

10. matrilineal—*descent is inherited through the male side of the family*

11. bilateral—*descent is inherited from both father's and mother's line*

12. ambilineal—*descent is inherited from either the father's or mother's line*

4. Have students answer the questions in part C, which relates to their diagram and definitions. Allow students to work together. Use specific terminology where appropriate when reviewing answers.

   Suggested Responses, Part C:

   Answers may include the following:

   1. government—*taxation, inheritance, status*

      religion—*named for a relative, relative as spiritual protector*

      education—*responsible for education, initiation rites*

      economy—*dowry, residence, inheritance*

      family—*whom one is allowed to marry or not to marry, who is responsible for care*

   2. *by gender and age*
   3. *by blood (consanguineous)*
   4. *through marriage (affinal)*
   5. *godparents, close friends of parents (fictive)*
   6. *both parents, bilateral; if father only, patrilineal; if mother only, matrilineal*
   7. *if both, bilateral; if father, patrilineal; if mother, matrilineal*
   8. *live in a new location, apart from wife's or husband's family (neolocal)*
   9. *inherit wealth and status from both parents (bilateral)*

5. Distribute **Handout 48,** which shows three diagrams, one on naming systems and two on descent. Have students complete the handout. Review responses.

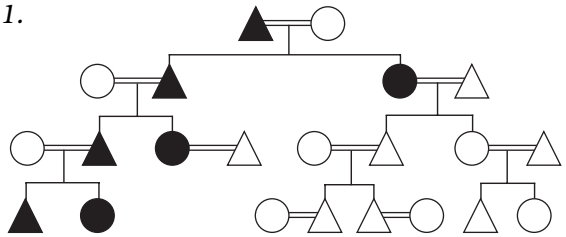
   Suggested Responses:

   Part A.

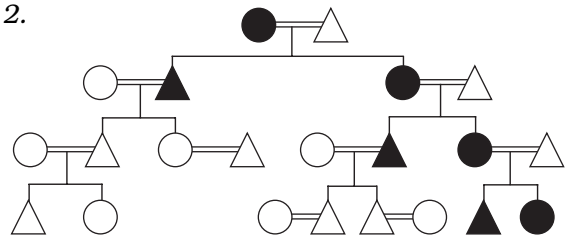
   1. *mother, father, aunts, and uncles*
   2. *brothers, sisters, and cousins*
   3. *all related adults*
   4. *all related adults*
   5. *close family relations; no marriage permitted within the kindred; inheritance is dispersed among all offspring*

   Part B.

   1.



   2.



   3. *all offspring*

6. Conclude by assigning one of the following essay questions.

   - Describe the impact of residence patterns (patrilocal, matrilocal, and neolocal) on the lives of the newly-married couple and the community in which they live.
   - Describe the impact of kinship on the political, economic, and religious systems in nonindustrial societies.

   Provide class time to share and discuss completed essays.

Extension

1. Prepare a report on a culture that follows a patrilineal descent pattern. Provide examples of how the society functions using this system. Submit the report to your teacher for extra credit.

2. Examine one of the other systems not used in this lesson (Omaha, Iroquois, Crow, or Sudanese). Diagram its kinship pattern, and indicate how the naming system impacts marriage and family relations. Place the diagram and impact statement on a poster for your classroom bulletin board. Be prepared to explain your work.

Name _____

Date _____

Personal Kindred

Part A.

Study the key below. Use the key to diagram your family relationships on a separate sheet of paper. An example is provided. Then copy your diagram in the space provided.

Key

female ◯
male △

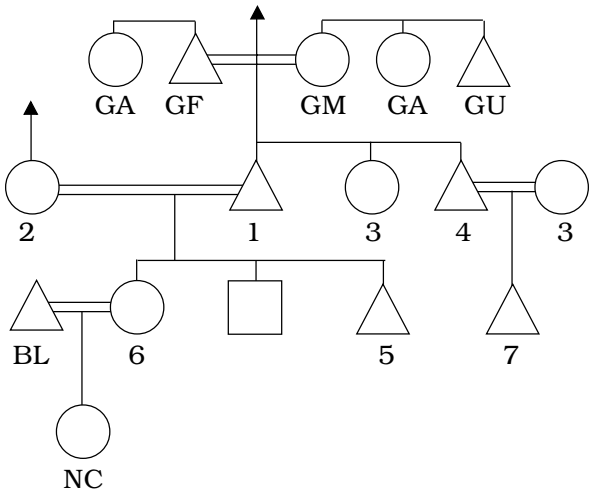
marriage =
offspring |
dead /
divorce =/
self □

father 1 △
mother 2 ◯
aunt 3 ◯
uncle 4 △
brother 5 △
sister 6 ◯
cousin 7 △

grandfather GF △
grandmother GM ◯
great uncle GU △
great aunt GA ◯
brother-in-law BL △
sister-in-law SL ◯
nephew NP △
niece NC ◯

Example: (shows only father's side)

Be sure to mark with a / all those who have died. Check to see that age moves left to right. In the example, sibling 6 is older than sibling 5.



My family relationships:

Name _____

Date _____

Part B.

Define the words listed below.

1. consanguineous

2. affinal

3. fictive

4. matrilocal

5. patrilocal

6. neolocal

7. avunculocal

8. bilocal

9. matrilineal

10. patrilineal

11. bilateral

12. ambilineal

Name _____

Date _____

Part C.

Working in small groups, answer the following questions based on your diagrams and definitions.

1. What is the purpose of kinship? State a purpose that relates to each of the five social institutions (government, religion, education, economy, and family).

2. How is your diagram organized?

3. How are your mother, father, siblings, and mother's and father's siblings related to you?

4. How are your father's brother's wife and mother's sisters' husbands related to you?

5. What other people do you consider family that may or may not appear in your diagram?

6. From whom will you inherit?

7. From whom did you inherit your name?

8. In American culture, the pattern of residence is generally _____ .

9. In American culture, the pattern for inheritance of wealth is generally _____ .

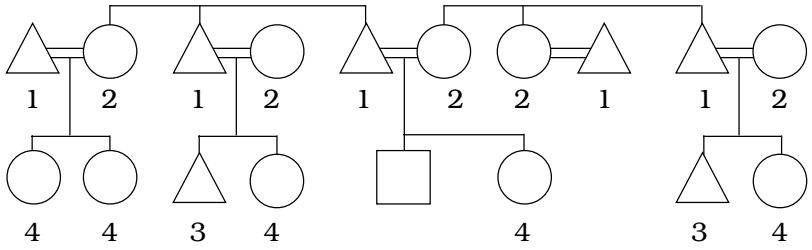
Name _____

Date _____

Naming and Descent Systems

Part A.

There are six major naming systems used throughout the world: Omaha, Crow, Hawaiian, Iroquois, Eskimo, and Sudanese. The American pattern of naming as seen in the previous handout is known as the Eskimo system. The example shown below is the Hawaiian system. Study the diagram, and answer the questions that follow.



1. Who are the ego's parents?

2. Who are ego's brothers and sisters?

3. Who cares for ego?

4. To whom is ego responsible?

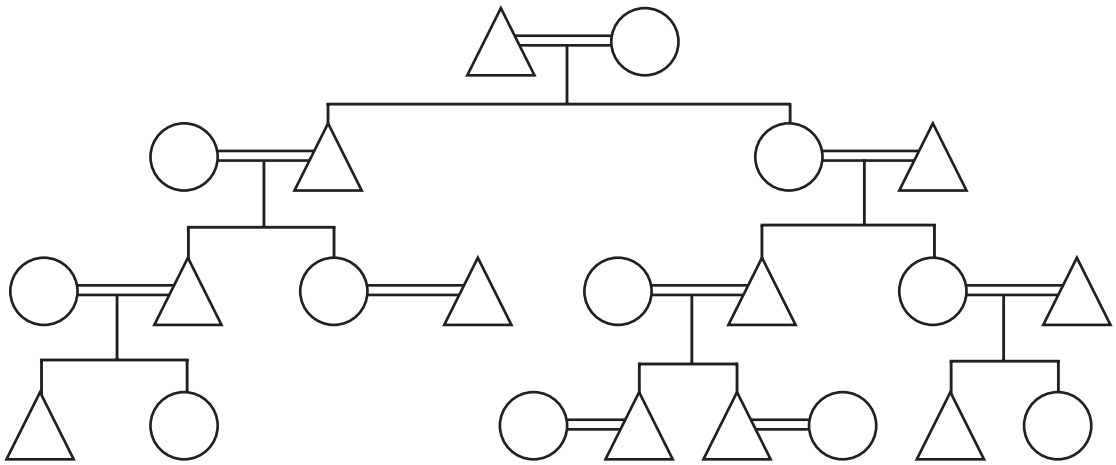
5. What are the implications of this naming system?

Name _____

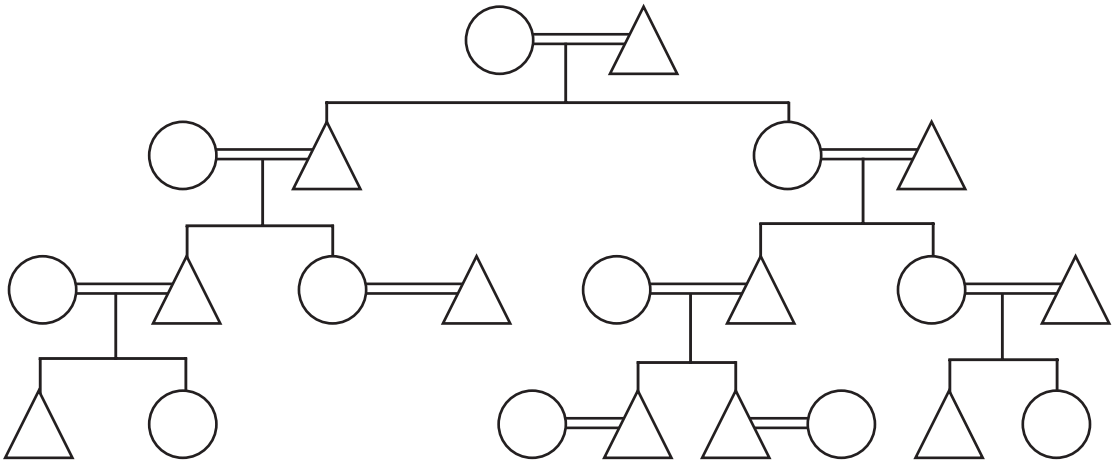
Date _____

Part B.

1. In the diagram below, shade the persons who are in the descent line if this is a patrilineage.



2. In the diagram below, shade the persons who are in the descent line if this is a matrilineage.



3. Describe who will inherit in a bilateral system.

Lesson 25
Gender Roles

Objectives

- To discern whether biological differences between genders cause differences in cultural adaptations
- To examine the gender roles of males and females in various types of societies
- To determine how the gender roles of males and females have evolved in American society

Notes to the Teacher

The issue of gender roles in American society continues to be a topic of hot debate. The American goal seems to be equality of the sexes, but traditional stereotypes continue to play a part in determining gender roles. Additionally, the perception of gender roles in other societies is frequently different from our own, and students of anthropology need to be careful not to place American cultural values upon others who value a different system.

Students examine male and female traits and try to determine if gender roles are based on biology or culture. Students also investigate changes in gender roles by conducting interviews with three generations. Students who interview people who were not raised in the United States may bring some critical information to understanding gender roles and their part in cultural change. This portion of the lesson might be best used if assigned in advance. Brief descriptions of gender roles in other cultures are presented for students to be exposed to different value systems so that they can draw conclusions about the society and determine how these roles play a part within the society.

Procedure

1. Have students brainstorm lists of traits that might be considered typically male or typically female. Traits may include physical ones such as strength, size, and muscularity or psychological ones such as sensitivity, courage, and honesty. Place their responses on the board. Discuss whether these traits are determined biologically or culturally. (Students will probably opt for the traits being both.) Once such a guess is made, examine both lists of traits and discuss whether the traits would be the same in other cultures. Return to the question of whether such traits are biologically or culturally determined. (Students should now see that culture determines gender roles.)
2. Have students conduct interviews with people representing three generations in society regarding the change in gender roles in the five major social institutions—government, religion, education, economy, and family. Divide the class into five groups, and allow them to spend class time developing questions related to the topic. Have students develop questions that include such issues as work, family and child care responsibilities, levels of education, input into the political process, participation in religious ceremonies, etc. Review and refine the questions for each topic as a class.
3. Assign students to conduct the interviews as homework. Have them bring their interview responses to class.
4. Divide the class into small groups. Distribute **Handout 49,** and have students complete the questions in the designated groups. When students have completed their questions, review their responses.

   Suggested Responses:

   1. *Men and women share some power, but men still retain most political power. One example is the number of men versus women in all areas of government.*
   2. *education, heritage, money*
   3. *money, family background, social status such as athlete or entertainer, investment advantages*
   4. *No. Women still make less for the same work.*
   5. *Men work outside the home; women are caregivers and homemakers. This is not a valid view of American families. Today, there are many varieties of American families.*

6. *personality, status, abilities, tradition*

7. *Women are responsible for education in this society as seen by the number of female teachers. School boards, legislatures and local, state, and national commissions make educational policy. Many of these institutions are male dominated.*

8. *In traditional monotheistic religions (Judaism, Christianity, and Islam), men control the religious power.*

5. Have students examine their three-generation interviews. Discuss with students what information they discovered about the change in gender roles. Distribute **Handout 50.** Have students note the common experiences of the three generations for each of the five social institutions on **Handout 50,** part A. Then have students complete part B individually.

6. Distribute **Handout 51,** which describes gender roles in a variety of other societies. Have students complete the handout individually or in small groups. Review students' responses.

Suggested Responses:

1. *Settled societies tend to be male dominated. When such societies were hunting-gathering, they tended to be more egalitarian.*

2. *Although the men seem to have all the power, women can make or break a man's honor and therefore have access to power.*

3. *The fact that men live apart both in residence and work may account for the differences found here.*

4. *Because men perform public roles and women are relegated to domestic status in agricultural societies, men can attain and use power.*

7. Conclude by asking students whether biology or culture determines gender roles. Have them prove their answer by using the information gathered by their group work, brief investigation of other cultures, and interviews.

Extension

1. Organize a group of four students, and research an example of four different cultures: hunting-gathering, horticultural, agricultural, and pastoral. Develop an ethnography of each culture, focusing on the development and practice of the gender roles. Present your information to the class; emphasize the conclusions that can be drawn about the different cultural patterns.

2. Investigate the gender roles portrayed by other primates, especially gorillas, chimpanzees, baboons, and orangutans. Decide whether their gender roles are biological or cultural adaptations. Present your findings to the class in a brief oral presentation.

Name _____

Date _____

Gender Roles in American Society

Answer the following questions.

1. Do men and women share political power in the United States? Give an example to support your position.

2. What factors determine who has political power?

3. What are the determinants of economic status?

4. Do men and women have an equal share in economic power in the United States? Give an example to support your position.

5. What is the image of the typical American family in terms of the gender roles of the family members? Is this valid? Is there a typical American family?

6. What factors determine whether males or females have power within a family?

7. In the American educational system, which gender is responsible for educating the young? Give an example to support your position. Who makes educational policy for the schools?

8. Within the religious establishment, which gender controls the power? Give an example to support your position.

Anthropology
Lesson 25
Handout 50

Name _____

Date _____

Gender Role Changes over Three Generations

Part A.

List the gender and age of those interviewed. Then complete the chart with the class consensus related to the experiences gathered by the interviews.

Gender and age of interviewees

	Generation 1	Generation 2	Generation 3
1. government			
2. religion			
3. education			
4. economy			
5. family			

Part B.

Summarize the changes that have taken place over the past three generations in the five social institutions.

Name _____

Date _____

Gender Roles in Other Societies

Read the following descriptions, and answer the questions.

The !Kung have traditionally lived by hunting and gathering within the Kalahari Desert region of southern Africa. Men were responsible for hunting large and small game while women gathered. Although there was a nominal headman, decisions were made collectively by the group. Within the past two decades, many of the !Kung have become settled as goat herders. The political and economic power changed to favor the men in the group with the modification of their lifestyle.

1. What generalization about gender roles can be inferred from this description?

The Pakhtun live in northern Pakistan near the Afghan border. They are basically small farmers growing wheat, corn, and rice. They are Sunni Muslims but have some unique religious practices based on their strict code of honor. There is a distinct division of labor among the Pakhtun: men are responsible for the farming while women draw the water and are responsible for the household and children. The code of honor demands that women be modest and faithful. Men risk disgrace even at the prospect of a wife's infidelity. An unfaithful wife and her lover face death as punishment for their transgression.

2. What conclusions can be drawn about the relative power of men and women in this society?

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The Tchambuli of New Guinea exhibit a somewhat different pattern of gender roles. Women tend to be dominant over men and manage the affairs of the community. Men, on the other hand, are concerned primarily with the arts—decorating ceremonial houses, playing music, and arranging ceremonies. Women make the articles for trade while men actually conduct the negotiations. Women tend to the household as well since men often live apart from the women in ceremonial houses. Many Tchambuli men work away from the group on large plantations.

3. What might account for the apparent role reversal?

The Dani of New Guinea support themselves by farming and trading. The division of labor between men and women is clear. Men clear the fields for planting, construct and maintain trenches for irrigation, and perform more public duties such as planning ceremonies and trading with neighbors. While the agricultural portion of this work is more strenuous than women's work, it is also less time consuming. Women are responsible for planting, maintaining the fields, and harvesting, jobs that require constant attention. In addition, women care for the children and the all-important pigs. Men live apart from the women in a communal house. Women's huts surround the village and are home to women, children, and pigs. Women in this polygynous society have virtually no power except to leave the husband, depriving him of her labor.

4. Why do women in settled, mostly agricultural societies have significantly less power than women in more mobile societies?

Lesson 26
Marriage across Cultures

Objectives

- To define types of marriage patterns
- To examine the effects of differing marriage patterns
- To evaluate marriage patterns

Notes to the Teacher

Many societies around the world employ different marriage patterns to fulfill their societal responsibilities. You need to caution students not to judge a pattern that differs from the American norm by American standards.

Working within an assigned marriage, students explore the various ways different types of marriages accomplish the necessary goals of society. Students may create differing solutions as to how these tasks are accomplished, even within the same marriage. For example, in monogamy and work roles, either one or both spouses may work outside the house. Students then evaluate the advantages and disadvantages of these forms of marriage.

Procedure

1. Photocopy the Teacher Resource Page at the end of this section, and provide enough cards for each student. Write a color within the brackets. Create groups of cards that are differentiated by marriage form and code so as to have small groups represent one individual marriage pattern. Distribute marriage form descriptions to students as they enter the classroom. Have students find other students with the same description and code (for example, polygyny/green). If your class is heavily populated by one gender, have students take the alternative spousal role.
2. Distribute **Handout 52.** Have students complete the handout with other students who have the same marriage form and color code. Instruct students to relate their assigned marriage pattern to the various tasks of married life.
3. After **Handout 52** has been completed, distribute **Handout 53,** which will be used for taking notes from student presentations relative to their group work.
4. Have students present their information to the class by marriage pattern and by each individual task (for example, polygyny/color code/child care). When a task for each group is completed, begin to examine the next task of the marriage form. Direct students to take notes on **Handout 53** as the presentation and discussion of each task is completed.

Suggested Responses:

1. *Monogamy—marriage with one spouse*
2. a. *Labor is divided, perhaps unequally, between the two spouses.*

   b. *usually the responsibility of the female spouse*

   c. *Spouses generally live in the same dwelling.*

   d. *Acquisition depends upon the type of economy for the society. Distribution is usually within the nuclear family.*

   e. *Relationships with the extended family vary among societies and may depend upon personal preferences.*

   f. *Although nuclear family may reside in a separate dwelling, there is usually a relationship with the larger community through religious, educational, or political institutions.*

   g. *In some societies divorce is permitted with legal provisions made for division of property and child custody. In other societies divorce is not permitted, usually on religious grounds.*

3. *Polygyny—one man married to more than one wife*

4. a. *The male role is distinguished markedly from the female. All females or wives of the males do basically the same work. Their roles are similar.*

   b. *In most polygynous marriages each wife cares for her own children.*

   c. *Wives may live communally or in separate housing. Husband either will live with all wives together, spend the night with one wife, or may live in a separate communal men's house.*

   d. *Typically, food is acquired and distributed by wives to the husband and their own children.*

   e. *Husband, wives, and children form the extended family.*

   f. *This type of family is generally part of the community at large.*

   g. *Jealousy among the wives may be frequent, but divorce is not common.*

5. *Polyandry—one wife with several husbands*

6. a. *Wife maintains the household while the husbands work outside the home.*

   b. *Wife is responsible for raising the children.*

   c. *All parties live in the same domicile.*

   d. *Husbands acquire the food while the wife prepares and distributes it to the household.*

   e. *Since husbands are frequently brothers, there are extensive patrilineal contacts, but little contact with the wife's family.*

   f. *There are extensive community relationships because of the scarcity of land.*

   g. *Divorce is common, usually occurring when the wife leaves the marriage arrangement by returning to her home village.*

5. Conclude by distributing **Handout 54.** Instruct students to work independently. Discuss students' responses. Use the students' listings to help them analyze and evaluate each marriage form.

Extension

1. Conduct research to discover various societies that exhibit these marriage patterns and investigate how each accomplishes these tasks. Put your information on a poster for classroom display.

2. Investigate how each of these marriage forms or societies celebrates or institutionalizes the marriage (i.e., weddings or marriage ceremonies). Put your information on a poster for classroom display.

Marriage Form Descriptions

Monogamy

marriage with one spouse

( )

Polygyny

one man married to more than one wife

( )

Polyandry

one woman married to more than one husband

( )

Name _____

Date _____

Marriage Forms and Tasks

Indicate assigned marriage form and color code _____

Definition of marriage form _____

_____

Working with your partner(s), determine how each of the following tasks or activities should be achieved within this marriage form.

1. work roles

2. child care

3. housing pattern

4. food acquisition/distribution

5. extended family relationships

6. relationship to community

7. divorce

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Comparative Marriages

Complete the following based on class presentations.

1. Define *monogamy*.

2. Indicate how each of the following tasks is accomplished through monogamy.
   a. work roles

   b. child care

   c. housing pattern

   d. food acquisition/distribution

   e. extended family relationships

   f. relationship to community

   g. divorce

3. Define *polygyny*.

4. Indicate how each of the following tasks is accomplished through polygyny.
   a. work roles

   b. child care

   c. housing pattern

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d. food acquisition/distribution

e. extended family relationships

f. relationship to Community

g. divorce

5. Define *polyandry*.

6. Indicate how each of the following tasks is accomplished through polyandry.

a. Work roles

b. Child care

c. Housing pattern

d. Food acquisition/distribution

e. Extended family relationships

f. Relationship to community

g. Divorce

Name _____

Date _____

Evaluation of Marriage Forms

Complete the chart based on previous class discussions.

Form	Advantages	Disadvantages
1. Monogamy		
2. Polygyny		
3. Polyandry		

Lesson 27
Selection of Economic Activities

Objectives

- To identify geographic and cultural factors that influence economic activities
- To define the major economic activities
- To identify the major geographic habitats
- To explain what economic activities are most likely produced by a particular habitat by analyzing information presented in tables

Notes to the Teacher

Economic activities are generally the means by which societies survive. It is important, however, not to oversimplify this topic since many factors help determine the economic system that a society uses. Geographic factors are most significant when the level of technology is low. As the level of technology rises, societies can overcome many geographic barriers by developing appropriate technology.

Students identify the basic determinants of economic activities through a brainstorming activity. They are presented with the terminology relative to economic activity, geography, and land use. With this information and two tables of economic data and land use of nine selected countries, students analyze how and/or why certain economic activities are employed by particular nations.

Procedure

1. Ask students what geographic criteria they would use to purchase a house. Brainstorm to get the most possible answers (*close to schools and shopping districts, good climate, wooded area, near the ocean, good soil, etc.*) List students' answers on the board under the heading *geographic*. Continue the discussion by asking whether there are any cultural considerations that are important in choosing a place to live (*distance to family, good schools, a particular political atmosphere, neighborhood climate, access to cultural activities, etc.*). Write students' answers on the board under the heading *cultural*. Explain that this lesson will examine why certain economic activities generally occur in particular climates.
2. Distribute **Handout 55.** Have students review the information on various climatic regions and economic activities. Review students' answers.

   Suggested Responses:

   1. *agro-industrial*
   2. *desert*
   3. *forest*
   4. *mountains*
   5. *rain forest*
   6. *agriculture*
   7. *permanent crop*
   8. *glaciation*
   9. *nomadic*
   10. *woodlands*
   11. *pastures*

3. Distribute **Handout 56,** and have students complete the questions regarding the tables. Use a wall map to locate the nine countries. Review students' answers; discuss each of the implications of these economic indicators.

   Suggested Responses:

   1. *arable land, permanent crops, permanent pastures*
   2. *Papua New Guinea and Israel*
   3. *Afghanistan and France*
   4. *Papua New Guinea, Ecuador, and Botswana*
   5. *Afghanistan, Botswana, and China*
   6. a. *mountains*
      b. *deserts*
      c. *deserts*
      d. *mountains, plateaus, salt flats, deserts*
   7. *Botswana*

8. *France, because of a more highly technological development level as indicated by a high literacy rate*

9. *Israel*

10. a. *France, USA, Israel, and Ecuador*

    b. *based on literacy rate*

11. a. *Afghanistan and Chad*

    b. *not enough information*

12. *USA because it has the lowest percentage of its labor force in agriculture*

13. *incomplete data; people involved in more than one occupation*

14. a. *Afghanistan*

    b. *a negative correlation between agriculture and literacy*

15. *land use, resources, technology*

4. Conclude by discussing the effects the changing world environment has on populations living in rain forests or similar ecologies. Be sure to note how change in the world environment affects populations regardless of where they are located.

Extension

1. Establish a pen pal relationship with a student in a different economic environment from your own. (Pen pals are now available online. One of many sources is through the Peace Corps available at http://www.peacecorps.gov/www/dp/wws1.html) In your letters explain how our economy works in your experience, and ask for information about how economic systems operate in their country and its effect on teenagers. Post letters on your class bulletin board, and/or submit them to the school newspaper as an ongoing report.

2. Gather information on how people survive economically in desert and mountain terrains. Prepare a series of posters, transparencies, or a computer slide presentation (such as PowerPoint) to demonstrate to your class how life survives in such difficult environments.

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Definitions for Climates and Economic Activities

Study the terms and definitions listed below. Complete the acrostic as a review. You will use these terms and definitions in later exercises.

Climatic Regions

desert—areas where rainfall is low and vegetation is scarce
Deserts make up approximately 18 percent of the earth's surface.[1]

tropical rain forest—areas of abundant rainfall and lush vegetation
Tropical rainforests make up approximately 10 percent of the earth's surface[2] and are rapidly being eliminated.

forest—areas of woodlands of mixed deciduous and/or coniferous trees
Such forests exist in as scrub forests, mixed forests, and coniferous forests of the northern polar regions. Approximately 8 percent of the earth's surface[3] is composed of such forested regions.

mountain—areas of high elevation where rainfall and vegetation vary
12 percent[4] of the earth's surface is considered mountainous.

grasslands—areas of either tall or short grasses with varying amounts of precipitation
Approximately 26 percent of the earth's surface[5] is made up of grasslands.

polar—areas of glaciation with brief growing periods
Approximately 16 percent of the earth's surface[6] is considered polar.

arable land—land that is replanted after harvest season

permanent crops—areas where no replanting of crops is necessary; for example, coffee and rubber

permanent pastures—land permanently used for forage crops

Types of Economic Activities

hunting and gathering—collecting plants and capturing large and small game using simple technology

horticulture—the cultivation of plants usually using relatively simple technology
Some horticulturists engage in slash and burn horticulture, which involves clearing and burning the land before planting.

agriculture—the cultivation of crops as well as domestication and production of livestock using more advanced technology

pastoralism—the care and herding of livestock such as cattle, goats, and sheep
Some pastoralists are transhumant, meaning that they follow a mixed pattern of migration. Others are more truly nomadic, following no fixed pattern of migration.

agro-industrial—intensive agriculture using advanced technology and the manufacturing and distributing of goods and services using market strategies and advanced technology

[1]Carol R. and Melvin Ember, *Anthropology* (Englewood Cliffs, N.J.: Prentice-Hall, 1990), 255.
[2]Ibid., 256.
[3]Ibid.
[4]Ibid., 257.
[5]Ibid.
[6]Ibid.

Name _____

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Complete the following puzzle.

1. ____ ____ ____ ____ - ____ ____ D ____ ____ ____ ____ ____ ____ ____
2. ____ E ____ ____ ____ ____
3. F ____ ____ ____ ____ ____
4. ____ ____ ____ ____ ____ ____ I ____ ____
5. ____ ____ ____ N ____ ____ ____ ____ ____ ____
6. ____ ____ ____ I ____ ____ ____ ____ ____ ____ ____
7. ____ ____ ____ ____ ____ ____ ____ T ____ ____ ____ ____
8. ____ ____ ____ ____ _____ ____ ____ I ____ ____ ____ ____ ____
9. ____ O ____ ____ ____ ____ ____
10. ____ ____ ____ ____ ____ ____ N ____ ____
11. ____ ____ S ____ ____ ____ ____ ____

Clues

1. This describes the economy of the United States.
2. The Gobi is one.
3. Robin Hood's Sherwood haunt was one.
4. The Rockies and the Andes are two examples.
5. The Amazon Basin contains one of the world's largest.
6. This is a major activity in America's Great Plains.
7. Maple syrup is an example.
8. Polar regions have areas of this.
9. This term is used for pastoralists who follow no fixed pattern of migration.
10. This is another name for forested areas.
11. These lands are used for herding.

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Comparisons of Selected Land Use and Economic Activities

Review the following information, and answer the questions that follow based on the tables and prior knowledge.

Table 1

Country	Arable land	Permanent crops	Permanent pastures	Forests and woodlands	Other
Afghanistan	12	0	46	3	39
Botswana	1	0	46	47	3
Chad	3	0	39	26	35
Ecuador	6	5	18	56	15
Israel	17	4	7	6	66
Papua New Guinea	.1	1	0	92	6
France	33	2	20	27	18
China	10	0	43	14	33
USA	19	0	25	30	26

Fig. 27.1.

1. What three categories would you use to determine which countries have the highest percentage of their national income (Gross GDP—Gross Domestic Product) from agriculture and pastoral activities?

2. Which two countries would you expect to have the lowest national income from agriculture and pastoral activities?

Fig. 27.1. Source: Central Intelligence Agency, *World Factbook*, 1997.

Name _____

Date _____

3. Which two countries would you expect to have the highest national income from agriculture and pastoral activities?

4. What three countries' terrains would support hunting-gathering societies?

5. What three countries' terrains would support pastoral societies?

6. What do you think "Other" represents in the following countries?

   a. Afghanistan

   b. Israel

   c. Chad

   d. China

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Table 2

Country	GDP Agriculture	GDP Industry	GDP Service	Labor Force Agriculture Animal Husbandry	Labor Force Industry	Labor Force Construction	Labor Force Commerce	Labor Force Services	Literacy Rate
Afghanistan	56	15	29	68	10	6	5	10	31.5
Botswana	4	43	53	80	25				69.8
Chad	48	18	34	85					48
Ecuador	13	38	49	29	18	6	15	38	90
Israel	3.5	22	74.5	3.5	22	6.5	14	36	95
Papua New Guinea	27	42	31	64					72.2
France	2.4	26.5	71.1	5	26			69	99
China	20	49	31	54	26	7		16	81.5
USA	2	23	75	2.8	25.1	28.8*	29.7^	13.6	97

All numbers are in percentage of category (i.e., GDP, labor force, literacy).
* managerial and professional
^ technical, sales, and administrative support

Fig. 27.2.

7. Which country employs the most people in agriculture for the smallest financial return from that category?

8. According to the first chart, which country has the most arable land? Why does this country have so little of its labor force involved in agriculture?

9. For which country is its production in agriculture equal to or greater than its expenditure in labor?

Fig. 27.2. Source: Central Intelligence Agency, *World Factbook*, 1997.

Name _____

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10. a. Which four countries are probably the most technologically advanced?

    b. Upon what category did you base your answers?

11. a. Review your answer to question 3. What two countries actually have the highest GDP in agriculture?

    b. Why was your answer in question 3 partially incorrect?

12. Of the countries presented, which is probably the most industrialized? How did you arrive at this answer?

13. What might account for the labor force percentages not adding up to 100 percent?

14. a. Which country earns the greatest amount of their GDP from agriculture?

    b. How does that correlate to literacy?

15. What factors account for the selection of economic activities?

Lesson 28
Hunting and Gathering Societies

Objectives

- To analyze the concept of cultural relativism as it relates to the work of anthropologists
- To examine the lifestyles of present-day hunters and gatherers
- To organize the studying of cultures into a consistent format

Notes to the Teacher

Among the most interesting groups studied in cultural anthropology are those societies that still survive by hunting and gathering. Often living in extreme environmental conditions, these societies can teach modern peoples how to live in concert with their surroundings. They may also give an indication of how humans adapted to their environment in the past before the Neolithic Revolution and the domestication of plants and animals. As changes occur to and within these societies making them more contemporary, the tendency is to romanticize their traditional way of life. It is important to understand that changes come, and in many cases, the hunting-gathering societies have welcomed the new technology and lifestyle.

Students read about the two most studied hunting-gathering societies, the !Kung San of the Kalahari Desert in Botswana and the Mbuti Pygmies of the Ituri Forest of the Democratic Republic of the Congo, formerly Zaire. Students are given a format for studying culture and use this organizer to note the information gathered about the two groups. Since the readings do not include all the information about the two groups, students are encouraged to do further research to complete the picture. Students examine the role of anthropologists, particularly as it relates to value differences between the anthropologist and the group under study.

Prior to beginning this lesson, have students acquire and bring to class notebooks suitable for keeping a journal. Instruct students to use the notebook only as a culture journal. The format followed in this lesson will help students in subsequent culture studies.

Procedure

1. Ask students what it would be like to be an anthropologist and study hunting-gathering societies. Focus on the difficulties anthropologists face when values conflict. Introduce the concept of cultural relativism, judging a culture based on its own values. For those students who watch Star Trek, ask them to describe the Prime Directive (noninterference with other peoples encountered).
2. Distribute **Handout 57** to half of the class and **Handout 58** to the other half of the class. Have students read the passage. Answer any general questions they ask.
3. Distribute **Handout 59.** Explain to students that the format presented can be used to study any culture. Have students complete the culture study format, inscribing the information as an entry in their journals. Inform students that they may not find all the information required in the short passage they read. Have students who read **Handout 57** report on their findings. Direct the rest of the class to take notes in their culture journal on the !Kung. Repeat the procedure with the students who read **Handout 58**.

Suggested Responses:

Handout 57

(Answers in parentheses are not found in this reading but may be found in other resources.)

1. *!Kung*
2. Nisa: The Life and Words of a !Kung Woman, *(New York: Random House, 1981).*
3. *M. Shostak*
4. *Kalahari Desert of Botswana, Angola, and Namibia*
5. *They live in semipermanent villages of 10–30 people around a water source. They live in huts made of grass around a communal area where activities take place.*
6. *There is no formal chief. They govern by group consensus.*

7. *healing dance*
8. *The spiritual world is part of all aspects of life.*
9. *(observation and role-playing)*
10. *hunting and gathering*
11. *(bows and arrows, digging sticks)*
12. *(Since possessions are nonexistent, lineages are unimportant except in marriage arrangements.)*
13. *(Marriages are typically exogamic [marriage outside the group] and may be polygynous.)*
14. *(close bonds among all family and group members)*
15. *Men are responsible for providing meat; women provide the most of the food by foraging. Women also care for children, carry water, gather wood, and cook.*
16. *(A boy becomes a man with his first kudu kill.)*
17. *Many have become settled with cultivated gardens and herds of goats.*

Handout 58

1. *Mbuti Pygmies*
2. The Forest People, *(New York: Simon and Schuster, 1961) and* The Mbuti Pygmies—Change and Adaptation *(New York: CBS College Publishing, 1983).*
3. *C. M. Turnbull*
4. *Ituri Forest, Congo (Zaire)*
5. *They live in small groups of families in temporary campsites of small huts made from saplings covered with broad leaves.*
6. *They live cooperatively with no central authority figure.*
7. *the molimo, a ceremony of thanks or restoration of harmony*
8. *The forest is the center of existence. They are peaceful and avoid conflict.*
9. *(observation and role-playing)*
10. *hunting and gathering*
11. *bows and arrows and nets*
12. *(Although Pygmy children know their biological mother and father, they consider all female adults their mother and all male adults their father.)*
13. *(Marriage is usually monogamous. A woman may divorce her husband by taking apart the hut.)*
14. *(All members of the group are considered family.)*
15. *Men and women share roles in hunting and gathering and child care. Women build huts and usually cook.*
16. *(Boys become men at the time of their first kill. Girls become women at the time of their first menstruation. A ceremony called an elema is held. It is a time of joy, for a woman can bear children.)*
17. *There is more and more interdependence with the villagers, those who live outside the forest. There is also political pressure to leave the forest. There is depletion of meat due to overhunting, causing them to leave the forest.*

4. Have students research the !Kung and Mbuti Pygmies to fill in the gaps of their entries. If time and resources do not permit this, provide the parenthetical information in the Suggested Responses.
5. Conclude by reviewing the concept of cultural relativism (judging another society by its own standards). Discuss the difficulty of living among and studying another culture without making value judgments.

Extension

1. Read Colin Turnbull's *The Forest People* about the Mbuti Pygmies or Elizabeth Marshall's *The Harmless People*. Write a book report about your findings, and present it to your teacher for extra credit.
2. Conduct research about another hunting-gathering society, the Ik of Uganda in *The Mountain People* by Colin Turnbull. Contrast their general values and beliefs to the Mbuti Pygmies. Enter the information in your culture journal. Present your information to the class in an oral report.

Name _____

Date _____

The !Kung of the Kalahari Desert

Location and Environment: Shaping Traditional Lifestyle

The !Kung population is located in isolated areas of Botswana, Angola, and Namibia. They refer to themselves as the Zhun/twasi, "the real people," and are also referred to as the !Kung San. The semi-arid region in which they live features some trees but is mostly brush and grass-covered low hills and flat spaces. Rainfall during the wet season varies from only five to forty inches. Temperatures during the winter are frequently below freezing, but during the summer are well above 100°F.

This harsh environment was avoided by most outsiders, but the !Kung are able to survive by adapting to their surroundings. The villages, consisting of 10–30 people, are semi-permanent; once the water source dries up, the band has to carry their belongings to a new site where a reliable source of water can be located. The huts are small and built of grass with all doors facing the center, circling a large communal area where children play, women cook, and all family life except for sleeping takes place. A fire is burning in front of each hut at all times.

The !Kung are hunter gatherers, adapting to their semi-arid environment by gathering roots, berries, fruits, and nuts that they gather from the desert, and from the meat provided by the hunters. Both women and men possess a remarkable knowledge of the many edible foods available, and of the medicinal and toxic properties of different species. !Kung men are responsible for providing the meat, although women might occasionally kill small mammals. Game is not plentiful and the hunters sometimes must travel great distances. Meat is usually sparse and is shared fairly among the group when a hunter is successful. Every part of the animal is used; hides are tanned for blankets and bones are cracked for the marrow. Typical game sought in the hunt includes wildebeest, gemsbok, and giraffe; they also kill various reptiles and birds, and collect honey when it is available. The men provide household tools and maintain a supply of poison tipped arrows and spears for hunting.

!Kung women provide the majority of the food, spending two to three days a week foraging varying distances from the camp, and are also responsible for child care, gathering wood for fires, carrying water, and cooking. Typical foods they might return with are mongongo nuts, baobab fruits, water roots, bitter melon, or !Gwa berries. Children are left at home to be watched over by those remaining in camp, but nursing children are carried on these foraging trips, adding to the load the !Kung women must carry.

Leisure time in !Kung camps is spent singing, visiting, playing games, and storytelling. They have no formal authority figure or chief, but govern themselves by group consensus. Disputes are resolved through lengthy discussions where all involved have a chance to make their thoughts heard until some agreement is reached. Travel to visit relatives occurs during or following the rainy season, when a source of water and food is assured during the trip. During the dry winter months, a number of bands may settle around one permanent spring. During this time, ritual life increases, including the frequency of trance dances.

Name _____

Date _____

Rituals and Traditions: The Trance Dance

The spiritual world is a part of all aspects of !Kung life, determining health, death, and the abundance of food and water. They believe that misfortune, death, or sickness can be directed at a person via invisible arrows shot by spirits, but that if they can influence the spirits and stop the arrows, they can stop adverse things from happening. The healing dance is an attempt by the healers to stop or remove the invisible arrows causing the problem. The healers dance around a fire until their concentration puts them into a trance state. They believe this activates a powerful force which the !Kung call n/um. When they reach the trance state and achieve n/um, they are able to ritually heal everyone sitting around the fire. Both men and women can become healers by going through an apprenticeship with an experienced healer.

The trance dance is an exciting social event for the !Kung during which people renew bonds, visit and laugh together, and sing and dance. !Kung women's clapping and singing influence the power of the n/um the healers are able to activate, and they also protect the healers from hurting themselves when they are in a trance.

History and Change: Its Impact on the !Kung

Archaeological records indicate that hunter gatherers have lived in southern Africa for thousands of years (Shostak, 1981). Around two thousand years ago, the Bantu-speaking population began to migrate into the !Kung territory, bringing with them a much different way of life. Over the centuries they have lived together, largely maintaining their individual traditions. However, years of exposure to the relative ease of village life, with its cultivated gardens, herds of goats, and permanent housing, have made it difficult for the !Kung to withstand the lure of an apparent easier life. Drought and the impact of overgrazing on the availability of wildlife have been factors in these changes, along with exposure to the concept of wages for labor and role models from the outside world. Although a few !Kung still maintain their traditional lifestyle, most have succumbed to the pressures of change.[1]

[1]Cathy Suroviak, summary of *Nisa: The Life and Words of a !Kung Woman* by M. Shostak (New York: Random House, 1981), accessed 7 July 1998; available from http://www.qvctc.commnet.edu/QVCTC/brian/saroviak/overview.html; Internet.

Name _____

Date _____

The Mbuti of Zaire

Location and Environment: Shaping Traditional Lifestyle

The Mbuti population lives in the Ituri Forest, a tropical rainforest covering about 70,000 km^2 of the north/northeast portion of Zaire. The world of the rainforest is one of filtered sunlight under a tall, dense canopy of trees, where deep quiet is punctuated by sounds of the many birds and animals who share the forest with the Mbuti. A constant, comfortably warm temperature, plentiful rainfall, moist air, and rich soil help to nourish the multitude of plants that grow there. In turn, this richness of flora sustains a broad range of animals, birds, and insects which become a food source for the Mbuti.

The forest is the core element around which traditional Mbuti life flows. They sometimes refer to the forest as mother or father, acknowledging it as the source of their food, clothing, and materials for shelter. Mbuti reverence for the forest extends beyond being merely a source of supplies to viewing it as sacred, as a "deity" from which they ask for help and give thanks through their ritual ceremonies, including the molimo. They think of the forest as a place to return to for safety.

Although the Ituri Forest seems dense and impenetrable to outsiders, the Mbuti are at home in the rainforest and know its paths, valleys, and rivers intimately. They have great endurance and are able to orient themselves and travel long distances quickly and easily. Their skills as quiet, stealthy hunters allow great success at killing animals and birds to provide the needed protein for their diets. They also are wise gatherers of mushrooms, roots, and other vegetation, who know which items are poisonous and should be avoided. Other food sources include termites and honey, and plantains obtained through trade with Bantu villagers. They live in small groups of families, building campsites of small, round huts from pliable saplings covered with large leaves to shed the rain. These villages are temporary, and are abandoned when the group moves on to an area with more plentiful game and vegetation. Each new Mbuti campsite is close enough to the periphery of the forest to provide relatively easy access to the particular Bantu village with whom each Mbuti group has a political and economic relationship.

Hunting occurs only when meat is needed for consumption or trade with the Bantu, and the successful hunter typically shares with others of his group. Men do the hunting, particularly when they are hunting with bow and arrow, but women and children play a key role when nets are used. Long nets are spread by the waiting hunters, and the women and children flush game into the nets. Men and women share roles as gatherers of vegetation, as well as child care. Women are in charge of building the huts and do most of the cooking.

The Mbuti are characterized as good natured and happy. Since food and firewood is so plentiful, only a small portion of their day is spent hunting or doing chores, leaving an abundance of time for singing and storytelling. They are peaceful and avoid conflict with outsiders, preferring to return to their "real" world of the forest rather than deal with unpleasant situations. Instead of having a central figure of authority, they live cooperatively and solve problems among themselves by arguing relentlessly until a compromise is reached. In extreme cases, the group may ostracize an individual, forcing him or her to live alone in the forest for a period of time, eventually allowing the person to return to the group.

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Rituals and Traditions: The Molimo

The molimo is a major ritual in Mbuti life, inspired by their belief that the forest is the center of their existence, the source of all that is good in their lives. It is celebrated to give thanks to the forest or, after a bad event such as a death, to put their lives back in order—to find balance by becoming more "centered." The molimo mad is intended to cure noise, or *akami*, and lasts from one to three or four nights. The *molimo mangbo* is celebrated to cure death and might last a month or more. "Molimo" refers both to the ritual and to the trumpet through which Mbuti men sing to make the animal sounds and beautiful music that are part of the ritual. The trumpet is a long, hollow tube that is sometimes made of wood, and is stored high in a tree between uses. The trumpet itself is not sacred—what makes the ritual sacred to the Mbuti are their beliefs in the goodness of the forest that inspire the ritual.

Earlier in the day, food and firewood are gathered from every hut in the camp, signifying unity and cooperation in invoking the molimo. In the evening, men gather around a central fire to take part in the dancing and singing; women and children must stay in their huts with the door closed. At some point in the singing and dancing, young men leave the central fire and go to the forest where the molimo is stored. They carry it back, stopping along the way to immerse it in water (so that the trumpet can drink) and to rub it with leaves and dirt as a symbol of water, earth, and air.

When the youths arrive at the camp with the molimo, they circle the periphery of the camp, making sure that the kumamolimo, the singing and dancing around the central fire, is good enough to enter. When the singing is most intense, the youths enter with the trumpet, adding its sound to that of the others. One youth holds one end while another sings into the other end, slowly pivoting around the central fire. Depending on how well everyone dances and sings, the trumpet might stay only a few minutes or all night. After leaving the molimo trumpet is again stored in a tree until its next use.

History and Change: Its Impact on the Mbuti

The Mbuti have lived in the Ituri Forest for many thousands of years, and it is even speculated that they might be the earliest inhabitants of Africa. The first recorded reference to "pygmies" is in the story of an expedition to the area by Egyptians around 2500 B.C., where they referred to the Mbuti as "people of the trees" characterized by singing and dancing. By the time Homer and then Aristotle wrote about them, they were thought of more in mythical terms than as real people. In subsequent years, knowledge of the Mbuti decreased to the point of referring to them as subhuman monsters or creatures flying through the treetops. It was not until the nineteenth century, when explorers traveling in the Congo encountered the Mbuti, that these myths were corrected.

Stanley's exploration of the region during this period resulted in Colonial exploitation, which created a ripple effect eventually felt by the Mbuti. Bantu villagers, who historically lived an agricultural lifestyle in adjoining regions, were forced from their land and migrated to the areas along the edge of the Ituri Forest. Over the years of contact, the Mbuti and the villagers have developed an unusual relationship where they are somewhat interdependent, yet fiercely guard what independence they do have. Both view the other as inferior; the villagers have

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assumed a position of authority and view the Mbuti as heathens from the forest, but a good source for cheap labor. And, since the villagers are afraid to enter the forest to hunt, the Mbuti are also their source for meat. In turn, the Mbuti depend on trade with the villagers for plantains and other supplies grown on village plantations. From the Mbuti point of view, they have no obligation to the villagers. Instead, they acquiesce to their wishes only if it serves their purposes. Once that need is satisfied, they disappear back into the forest, regardless of any commitment they may have agreed to. This reciprocal relationship is punctuated by frequent highs and lows, depending on the situation.

In the years following the war, political upheaval has continued to cause the Mbuti to adapt their traditional way of life. Pressure by the Zairean government caused some Mbuti to leave the forest and live among the villagers. The ever-growing population of villagers has enticed some Mbuti to over-hunt in the forest to meet the villager's need for protein, leading to depletion of the once-rich animal population. Large areas of the forest are also being opened by gold seekers.[2]

[2]Cathy Suroviak, summary of *The Forest People* by C. M. Turnbull (New York: Simon and Schuster, 1961) and *Change and Adaptation* by C. M. Turnbull (New York: CBS College Publishing, 1983), accessed 7 July 1998; available from http://www.qvctc.commnet.edu/QVCTC/brian/saroviak/overview.html; Internet.

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Studying Cultures: A Blueprint

Use this format to record information about the culture you read about in the previous handout. Keep this information in your culture journal. Each entry of your journal should be dated.

1. name of the society

2. source

3. author or anthropologist

4. specific location

5. description of the living arrangements

6. government

7. religious practices

8. general values and beliefs

9. educational system

10. type of economy

11. level of technological development

12. kinship system

13. marriage type

14. family relations

15. male-female roles and relationships

16. rites of passage

17. recent changes

18. personal reflection

Lesson 29
Farming-Pastoral Societies

Objectives

- To analyze the marriage system among Irish small farmers
- To read and comprehend how farming communities operate
- To investigate how the economic system connects to other social institutions

Notes to the Teacher

For much of America, small farm life is a part of our culture that is part of history. Yet, many societies across the globe, as well as some communities within the United States, still live and work on small farms. The culture that emerges from this economic pattern is quite different from the hunting-gathering or agro-industrial societies. This lesson focuses on the life of the Irish small farmer. Although this pattern of farming presented by the Irish small farmer is typical of such economic systems, other patterns do exist in other parts of the world. Please note that the reading presented relies on research done in the 1930s and 1960s. Though some of Irish culture has changed, especially with their membership in the European Union, much of rural Ireland still maintains these traditions. The case presented shows the current situation of one son inheriting the farm. From a historical perspective, it is important to realize that before the famine of the mid-nineteenth century, the family farm was subdivided among many of the sons. The potato crop allowed small farms to sustain the family. After the famine and the failure of the potato crop, this was no longer the case. Laws were enacted to ensure that farms were passed to only one son.

Through a role-playing exercise, students re-create how marriage patterns operate in the small farm communities of the Irish. After analyzing the pattern displayed, students read an account about Irish farmers answering questions about their way of life and its relationship to the social institutions.

Procedure

1. Before students arrive, rearrange the desks into groups of five. On one desk in each group tape a black square, and on one desk in each group tape a yellow square. (The choice of colors is arbitrary.) When students arrive, have them sit in the prearranged desks. At least one boy and one girl must be in each group. (If the school is not coeducational, designate one person to serve as the opposite gender in each group.) Without revealing the purpose, be sure that a boy is sitting at a desk with the black square and a girl is sitting at a desk with the yellow square.

2. Explain that each group represents one family's children, of marriageable age, in a farming community. The boy in each group with the black square will inherit the farm when he marries or at the time of his father's death. The girl will inherit a good portion of the wealth of the family, and it will serve as a dowry to be brought to her prospective husband's father. The other siblings work for the father or brother after he inherits.

3. Instruct students to arrange a marriage for themselves if they so desire. Once an agreement has been reached, the girl moves to the group of her husband. If she has the yellow square, she takes it with her to her husband's group. Not all students will find a suitable spouse.

4. After all the marriage agreements have been reached, help students analyze what has transpired. Debrief by having students discuss what happened by answering the following questions.

   - Did all those with black squares marry? (*probably*)
   - What made them desirable spouses? (*owned the farm or will come to own the farm*)
   - Did all those with yellow squares marry? (*probably*)
   - What made them desirable spouses? (*the dowry they bring to the husband's family.*)

- How many black square holders married yellow square holders? (*probably quite a few*)
- What happens to all the other siblings? (*work for their brother, marry without land or property, move away, remain unmarried*)

5. Distribute **Handout 60**. Have students read the passage and answer the questions that follow. Review students' answers.

   Suggested Responses:

   1. *family relationships*
   2. *Until his First Communion, he is in the house with the women. At Confirmation, he does men's work and wears men's clothing.*
   3. *the home*
   4. *none*
   5. *The boy receives adult status when he gets the deed to the farm; the girl obtains adult status at marriage.*
   6. *He is chosen by the father.*
   7. *Marriage is arranged, and her dowry goes to her husband's father.*
   8. *because of the strict rules of inheritance, limited land holdings, and cultural practice of late marriages*

6. Conclude by discussing whether the marriage pattern functions to protect the social institutions of this culture. (*Despite the toll taken on siblings not inheriting or being given a dowry, generally, the system does keep the farm intact and protect cultural continuity over generations.*)

Extension

1. Research the various migrations of the Irish to America. Investigate the reasons why people emigrated from Ireland. Write a report on this topic, and submit it to your teacher for extra credit.
2. Analyze the marriage patterns of modern America, and compare them to those of another culture or of a Western culture at another time. Present your findings to the class.
3. View the film *The Quiet Man* or *The Field*. In an essay, compare and contrast the film's depiction of Irish farm life to that of the reading. Submit your essay to your teacher for extra credit.

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Social Institutions in a Small Farming Community

Read the passage below, and answer the questions that follow.

Irish Small Farmer

In 1932, Dr. Conrad Arensberg and Dr. Solon T. Kimball, social anthropologists of Harvard University, went to County Clare, Ireland, and for two years studied the social behavior of the Irish small farmer. The following account reports some of their findings on what life was like on the farm in Ireland at that time.

Concentrated in the west and south, small-farm owners make up the single largest group in Ireland. In 1926, 63 percent of the Irish Free State's population of almost 3,000,000 lived in rural areas, and almost eight out of every ten persons working in agriculture lived on small farms (less than two hundred acres). Averaging from fifteen to thirty acres, these farms support a class of people with habits all their own. The small farmer is a "subsistence farmer"—nearly all that he raises is used at home. It is only his surplus farm products and his annual crop of calves that bring in any money to the family. The milk cow is the basis of the economy, and a man is often described by the number of cows he owns. He raises a small garden of oats, rye, potatoes, cabbage, and turnips, and a few other foods for both his family and his farm animals (primarily hens, pigs, and cows), and goes to town only to buy clothing, sundries, flour, and tea, and to sell his calves and yearlings at the local cattle fairs. As you can imagine, his livelihood is little connected with the outside world. Traditional ways of living are passed on from generation to generation without much change.

The Irish small farmer relies upon the united efforts of all the members of his family. All family members—sons, daughters, and other relatives—take part in running the farm. It is this family relationship, rather than wages, that is an indispensable factor in working the small farms. Although family roles and tasks are clearly divided, they complement each other—a good husband is a skillful farmer; a good wife is a skillful, willing household worker, who also performs such chores as milking the cows in the sheds and feeding the calves, pigs, and poultry. Work assigned to each sex is further divided on the basis of age. The father and husband is normally owner and director of the farm. The farm bears his name in the community, and his sons are spoken of as his "boys," even though they may be fully adult. They work under their father's eye and refer necessary decisions to him.

A boy growing up on a small Irish farm is like an apprentice. As soon as he learns to speak and walk, he runs errands for the family. Until he is seven and has received his First Communion, his place is in the house with the women. (In remote regions, boys even wear girls' clothing until the age of seven to protect them from the evil fairies.) After that year, he leaves his mother's apron strings and is slowly drawn into men's ways. By the time he is ten or eleven, he is brought home from school when needed to help with the farm work. When about this same age he passes Confirmation and leaves school, he takes on full men's work and wears men's clothing. Even then, as he reaches maturity and takes on additional heavy farm tasks, he never escapes his father's direction. If he earns money on a job away from the farm, he is expected to contribute everything he receives to the household, so long as he lives on the farm. Only if his father deeds over the farm to him (at death or at the son's marriage), can he assume command and full adult status.

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Like the boy, the farm girl gradually does more and more family chores and takes on more responsibilities. She is constantly with her mother and the older women of the household. After she is seven, her activities differ completely from those of her brother. She has no working contact with her father, except in the house. She gradually learns the chief business of women, running the household, which prepares her to fill the role her mother occupies. She learns to milk cows, feed pigs, tend chickens, churn butter, sell eggs, prepare and serve food, knit and sew. Only the mother buys food and household goods. Income from selling butter, eggs, and poultry belongs to the older women; the girl has no share until she herself has married—when she comes into full adult status.

Social life in the country consists of frequent visiting between relatives and neighboring farm families—sharing work on occasions, playing cards, storytelling (enlivened by humor and ballads), and participating in important family functions such as weddings, christenings, and wakes. While most contact is with members of one's own sex, boys and girls can meet at local fairs or festivals, sports contests, occasional dances, and singsongs in the kitchen.

Parents' dominance of the children continues as long as the father lives. A deep mutual bond of pride and respect develops between father and children, for he is fully responsible for taking care of them. The mother, however, provides the emotional aspects in their lives, and throughout her life she is a source of great comfort. These strong family ties develop through the cooperative efforts of the family to maintain the farm. Only at marriage are family bonds changed.

Marriage is a turning point in the lives of farm families. Because of the small size of the farm, only one son is chosen to inherit the land. Usually, only the heir and one daughter are married and dowered, the one with the farm, the other with the fortune. The decision of who is to be the heir is made by the father, and he chooses the son who he feels can best carry on the farm and family name. Then a suitable wife must be chosen for him—one who will work hard in her role as mother of the household and one who will bring an adequate dowry with her. The marriage is arranged and the dowry goes to the father, who in turn uses it for his daughter's dowry. The woman comes to her husband's farm to live. The farm is deeded to the son, and it is then that the father and mother retire from active control of the family. They still occupy a position of great respect and honor in the new household, however. When he marries, the chosen son assumes the responsibility of seeing that his brothers and sisters are provided for.

Marriage occurs at a late age in Ireland compared with other countries. The man is often more than thirty years of age; the woman, more than twenty-five years of age. Thus the rules of inheritance and the limited land holdings of many Irish farmers mean that there are many unmarried relatives.[1]

[1]Adapted from *The Irish Countryman: An Anthropological Study* by Conrad M. Arensberg (New York: The MacMillan Company, 1937) and *Family and Community in Ireland* by Conrad M. Arsenberg and Solon T. Kimball (Cambridge, Mass.: Harvard University Press, 1940, 1968). In *Inquiries in Sociology,* American Sociological Association (Boston: Allyn and Bacon, 1978), 17–19.

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1. What is the central factor in working the small farms?

2. For a boy, what are the connections of work and religion?

3. A girl's education is begun and conducted in what setting?

4. If children earn money away from the farm, what percentage of it are they allowed to keep?

5. When do boys and girls have full adult status?

6. How does a boy get the deed to the farm?

7. How does a girl with a dowry get married?

8. Why are there so many unmarried relatives?

Lesson 30
Agro-Industrial Societies

Objectives

- To ascertain work and leisure patterns in an agro-industrial society
- To compare work and leisure patterns in an agro-industrial society with such patterns in hunting-gathering and agricultural societies
- To delineate problems existing in modern society and how they can be addressed by the concept of planned communities

Notes to the Teacher

Studying modern agro-industrial societies objectively is difficult. One way to analyze a modern society such as our own and also compare it to other types of societies is through time-analysis. Calculating hours of work, recreation, and leisure can tell students of anthropology much about society. Additionally, modern agro-industrial society is plagued by serious problems. Currently, urban planners are designing communities to alleviate some of the stresses of modern American life.

Students use the concept of a time capsule to try to capture the essence of modern American life. To study American life further and objectively, students conduct interviews to ascertain how time is allocated. (Students need ample time to complete this assignment. Also, students need to understand that their results are not necessarily a cross section of all Americans.) Students tally their interview information and compare their findings to those found in other types of societies. Finally, students identify modern society's major problems and design a planned community. They then describe how such issues can be addressed by planned communities.

Procedure

1. Present the following situation to students: imagine that you need to create a time capsule for anthropologists who are living hundreds of years from now and who are trying to understand our culture. You may put five items in the time capsule.

   Have the class brainstorm to generate suggestions for the time capsule. Help the class reach a consensus (by vote, if necessary) about which five items best reflect American society.

2. Distribute **Handout 61**, and review it with students. Have students interview six adults about daily life and use the handout as a starting point for the interviews. If the class decides to ask other questions, be sure that all students use the same questions. Provide enough copies of the handout for students to complete the interviews.

3. Distribute **Handout 62**. After students complete the interviews, tally the results, and record them in part A. Tally results for each question on the board.

4. Have students review the comparative information in part B and answer the questions. Review students' responses.

   Suggested Responses:

   1. *Since hunting-gathering societies have no money and collect few possessions, there is no need to work beyond subsistence levels.*
   2. *The work is labor-intensive, and the more one produces, the more one earns.*

5. Distribute **Handout 63**. Divide the class into small groups, and assign students to complete the handout. Encourage students to use poster-size paper to design their community. Have students present their communities to the class and explain how such communities can solve societal problems. Be sure to allow ample time for both the preparation and presentation.

6. Conclude by having students write an essay on the type of society in which they would most like to live and why. Have them share their essays with the class.

Extension

1. In the Mid-Atlantic region there are several so-called planned communities: Columbia, Maryland; Kentlands, Maryland; Reston, Virginia; and others like them. Research how these communities were developed and ascertain whether they have been successful in addressing the problems of modern American society. Present your report to your teacher for credit.

2. Research information from the most recent U.S. census to determine how Americans allocate their time. Compare this data to that gathered by your class. Analyze whether your community is representative of the United States as a whole. Prepare a graphic comparison, and with your teacher's permission post it on the bulletin board in your classroom.

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Interview Format

Interview three adult men and three adult women. Use the questions below or questions composed in class.

1. Age _____ Gender _____

2. How many hours per week do you spend doing the following things?

   a. work for which you are paid _____
   b. child care _____
   c. housework and meal preparation _____
   d. organized recreation _____
   e. leisure _____

3. What type of job do you have?

   _____a. craft person
   _____b. factory worker
   _____c. agricultural worker
   _____d. office worker
   _____e. service worker
   _____f. salesperson
   _____g. government worker
   _____h. professional
   _____i. entrepreneur
   _____j. unemployed
   _____k. retired

4. What are the recreational activities in which you engage? Indicate the number of hours per week spent in each activity.

   a. sports, participatory _____
   b. sports, viewing in person _____
   c. movies, theater, concerts _____
   d. electronic _____
   e. other (explain) _____
   _____

5. Do you perform any volunteer work? If so, how many hours per week?

6. What are the leisure activities in which you participate? Indicate the number of hours per week engaged in the activity.

   a. reading _____
   b. watching television _____
   c. visiting friends and relatives _____
   d. resting (not nighttime sleep) _____
   e. other (explain) _____
   _____

7. On average, how many hours do you sleep per night?

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Allocation of Time

Part A.

Use the spaces below to compile the data from the whole class.

1. Total number of hours in one week 168
2. Average number of hours that adults
   a. work _____
   b. spend in child care _____
   c. do housework and meal preparation _____
   d. spend in organized recreation _____
   e. spend in leisure activities _____
   f. sleep _____
   g. spend volunteering _____
3. Percentage of adults in each type of work
   a. crafts _____
   b. factory _____
   c. agricultural _____
   d. office _____
   e. service _____
   f. sales _____
   g. government _____
   h. professional _____
   i. entrepreneur _____
   j. unemployed _____
   k. retired _____
4. Rank order of recreational activities by number of hours per week (1 is lowest, 5 is highest)
   a. sports, participatory _____
   b. sports, viewing in person _____
   c. movies, theater, concerts _____
   d. electronic _____
   e. other _____

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5. Rank order of leisure activities by number of hours per week (1 is lowest, 5 is highest)
   a. reading _____
   b. watching television _____
   c. visiting friends and relatives _____
   d. resting (not nighttime sleep) _____
   e. other _____

Part B.

Compare the results of your class to other types of societies.

Class average number of hours of work and housework per week:	men_____	women_____
Average number of hours of work and housework per week among the !Kung (a hunting-gathering society)[1]	men 44.5	women 40.1
Average number of hours of work and housework per week in intensive agricultural societies[2]	men 63	women 77

1. Why do hunting-gathering societies spend less time working?

2. Why do agricultural societies spend so much time working?

[1]Richard B. Lee, *The !Kung San* (Cambridge: Cambridge University Press, 1979), 278.
[2]Carol R. Ember, "The Relative Decline of Women's Contribution to Agriculture with Intensification," *American Anthropologist* (85:1983): 289.

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Problems and Solutions

Working in small groups, complete the exercises below.

1. List the major problems existing in the United States today.

2. For each problem devise a reasonable solution.

3. Planned cities and communities are becoming popular today. Design a planned community. Be sure to include services such as fire protection, police, medical services, educational facilities, and recreational centers.

4. How can planned communities address major problems?

Lesson 31
Impact of Environment

Objectives

- To investigate the reasons behind the development of human food production
- To examine concepts inherent in two theories pertaining to the origins of agriculture
- To evaluate the topic of the impact of the environment on agricultural production

Notes to the Teacher

Whether human population increase and technological development have been due to an environmental response or whether these factors were, in fact, the cause of a changing environment has long been debated. What caused humankind to begin to domesticate plants and animals? Whatever the reasons behind this revolution in human living, there can be no argument: the emergence of people as food producers brought about fundamental changes in the human way of living and the productivity of the species both toward propagating the species and creating a significant source of food for the population. However, with this revolution in production there also has been the advent of burgeoning populations, widespread famine, and devastating environmental change on a scale never imaginable in previous epochs.

Students read a paired passage and examine the main ideas and supporting evidence contained in each. (Although not in SAT questioning format, such exercises help students in reading comprehension on standardized tests.) Once students have read and comprehended the passages, selected students debate the issue of the origin of food production.

Procedure

1. Having students draw on past knowledge of history, ask them when and where food production originated. Students usually think of the Middle East around 10,000 years ago. Clarify that although this is true, food production developed simultaneously throughout many areas of the world. Explain that this lesson will illustrate two theories of why food production began.
2. Distribute **Handout 64**. Have students read the paired passages and answer the questions that follow. Review students' answers.

   Suggested Responses:

   1. *Agriculture caused the population to increase.*
   2. *Harvests were predictable and nutritious, thus allowing population to increase.*

      Technological advances further increased production. Settled living further increased the population.
   3. *because they lived on the periphery of traditional hunting-gathering areas and had to find creative solutions to the food problem*
   4. *Additional leisure time was created because of the seasonality of agriculture, which allowed time for people to develop technology.*
   5. *Population increase caused the development of agriculture.*
   6. *As hunting-gathering societies reached the limit of the number of people that could be sustained, new sources of food had to be developed.*
   7. *need for more land and conflicts with residents of those lands*
   8. *Food collectors were pushed to the peripheries of the lands controlled by the food producers.*
3. Before proceeding, make sure that students have a grasp of the major concepts presented in the readings.
4. Select three students to support the argument presented in passage 1 and three students to support the argument presented in passage 2. Conduct a panel discussion. Have each student present an argument for a time period not to exceed two minutes. Have each panelist present in an alternate fashion. After the presentation of arguments, allow two minutes on each side for rebuttal of the other argument.

5. Conclude by having all students write an essay on their view of the origin of food production. Provide class time to share and discuss completed essays.

Extension

1. Prepare maps of the diverse places in which food production was initiated. Indicate the dates that archaeologists believe this occurred. Ask your teacher to post your map on the classroom bulletin board.
2. Read the studies by Louis Binford and Kent Flannery found in most anthropology textbooks, and summarize their findings. Turn your summary in to your teacher for extra credit.

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Two Views of the Origin of Human Food Production

Read the passages, and answer the questions that follow. Be prepared for class discussion.

Passage 1

Prior to the last third of the twentieth century, agriculture was viewed as a means by which humankind through cleverness or luck was able to escape the drudgery of a hunting-gathering existence and enter into the abundant living that food production rather than food collection could provide. Those individuals living literally on the peripheries of traditional areas for food collection would have a more difficult time supporting themselves and were forced to be creative. They had to produce artificially what their neighbors were collecting from the natural world in order to survive. As rich harvests came to be predictable and nutritious, the population was not only preserved but also allowed to increase rapidly. Because of the seasonality of agricultural pursuits, additional leisure time afforded this new way of life opportunities to make further technological advancements. Thus, the species not only was assured survival but also was beginning to enter into a new age in which settled living was desirable and even beneficial to further population increases. In fact, this new way of living was one in which food producers were increasingly shaping their environment, no longer at the mercy of nature's caprice. As these technologies proliferated, settled populations increased. These settlers turned the land once used by their ancestors as gathering places into land for food production. Therefore, one can hypothesize that technological ingenuity has fostered the growth of population and has allowed humankind to exploit the environment to such an extent that they create their own environment.

Passage 2

Upon examination of the life of food collectors, one is struck by the simplicity of how the basic needs of the society are met. Through an egalitarian means of food distribution, people are nourished with minimal effort and lack fear of extended deprivation. Animal herds and seasonal plants were dependable sources of sustenance. Conflicts were few, and leisure time was as abundant as the sources of food. Why then would humans want to leave this idyllic existence and turn to one of food production? Why would so many groups choose a life that has harder work, longer hours, greater unpredictability, less tasty and less nutritious food? Because they had to do so. The idyllic way of life described for food collectors was also quite successful in sustaining a somewhat larger population. However, as a food collecting society reached the threshold of the limit of population density in its means to support itself, it would be obliged to supplement traditional sources of nourishment. Therefore, its food source would be supplemented with new domesticated supplies. As humans became more experienced with these domesticated plants and later animals, new methods of production were discovered in order to support the already increasing populations. As time progressed and populations continued to grow, new territories would be needed to continue to expand the lands necessary for the requirements of this production-based society. With more people in an area, food producers would likely win any conflict with food collectors who are now essentially competitors for land control, but in different aspects. Thus, many gatherers have been now pushed to the peripheries, an ironic twist on the situation of the original producers. Other collectors may have simply adopted the new way and, in so doing, forgotten forever the ways in which survival as a collector could be assured. But this was not now necessary because the demands of an ever-growing population have now outstripped the means by which a collector society could provide for human survival.

Name _____

Date _____

1. What is the main idea of passage 1?

2. What is the supporting evidence for the main idea in passage 1?

3. According to passage 1, why did people opt for an agrarian way of life?

4. According to passage 1, what encouraged the development of higher technology?

5. What is the main idea of passage 2?

6. What is the supporting evidence for the main idea in passage 2?

7. According to passage 2, what resulted from ever-increasing population growth?

8. According to passage 2, what happened to food collectors?

Lesson 32
Leadership

Objectives

- To speculate as to the type of leadership, economic activities, and type of social organization based on size, composition, and political organization
- To identify the types of leaders, the power of leaders, and method of selection of leaders based on the type of society under study
- To recognize the evolutionary nature of political, economic, and social institutions

Notes to the Teacher

Generally, when students study leadership and government roles, the subject of such investigation is the nation-state. Government and civics curricula emphasize federal versus unitary systems and totalitarian versus democratic institutions. In cultural anthropology, the study of leadership goes beyond such parameters. When cultural anthropologists observe societies, they encounter political organization based on bands, tribes, and chiefdoms, as well as the modern state. The leaders of such groups get their titles and power in ways that are frequently very different from the acquisition of titles and power of modern nations.

Students imagine themselves in a variety of situations to determine the likely development of political, economic, and social institutions. They examine the dominant ways that various societies have met these requirements, and they play a bingo-styled game to reinforce the information pertinent to leadership. Finally, by examining the graphic organizer presented, they ascertain the concurrent evolutionary nature of the major social institutions.

Consider using the first extension as a small group or whole class activity. The Center for Learning has teacher resource units on both *Lord of the Flies* and *Animal Farm.*

Procedure

1. Ask students what qualities they use when electing class or student government leaders. (Expect a wide variety of answers.) Question students as to whether these are the same qualities that are required of national leaders. (*In many cases, yes.*) Ask if different levels of organizations require differing models of leaders. (*Yes.*)
2. Divide the class into four groups and distribute one part (part A, B, C, or D) of **Handout 65** to each group. When students have completed the assignment, have each group present its scenario and responses to the class. Discuss possible alternatives. A variety of answers can be expected for all portions of the handout.

Suggested Responses:

Part A.

1. *hunting and gathering*
2. *probably not for a while—perhaps the one with the best ability of keeping the group together*
3. *very limited ones—where to settle, assignment of tasks*
4. *move to another vicinity; accede to the will of the group*
5. *as equitably as possible*
6. *probably*

Part B.

1. *hunting and gathering*
2. *probably—the person who seems most able to take on responsibility*
3. *take over in crisis situations*
4. *try to persuade others to my point of view*
5. *as equitably as possible*
6. *Consideration may be given to those with special needs or status. Seniors, for example, may get extra privileges.*
7. *adoption of agriculture*

Part C.

1. *agriculture, trade, some specialization of activities*
2. *yes; by election, family status, or age*
3. *to allocate resources, to lead rituals and ceremonies, to protect from disorder*
4. *be punished or conform to the group's or leader's decision*
5. *by the leader, by the individual's work*
6. *No, there is ranking by age and occupation.*
7. *by age, occupation, or relationship to leader*

Part D.

1. *trade, manufacturing, agriculture*
2. *yes, by election, inheritance, through military force*
3. *taxation, head of military, enforce laws*
4. *will be punished under the law*
5. *by the economic institutions*
6. *No, work and status determine the amount of resources possessed by an individual.*
7. *by blood, by wealth, or by occupation*

3. Distribute part E of **Handout 65,** and have students complete the diagram based on their discussion. Explain that the terms *band, tribe, chiefdom,* and *state* are defined by the other elements in the ring.

4. Distribute **Handout 66** and have students compare their diagram to the one presented. Have students add to or subtract from their work in part E. Keep in mind that the diagram in **Handout 66** is a summary of typical patterns and that students may have valid answers not represented in the diagram.

5. Make a transparency of the Teacher Resource Page. Have students put away all their materials and test their knowledge of political organization and its related leadership, economic, and social systems. Assign a number from 1 to 28 to each student. Place the transparency on an overhead projector. Randomly choose a number. The student who has that number has a chance to answer a question. If the student's answer is correct, cover the spot on the transparency. Give students a point for each number correctly identified. During the second round, reassign numbers to students. Omit the numbers correctly answered. Repeat the question process until all questions are correctly answered. Provide treats or give extra credit to students who have the highest number of correct answers.

6. Conclude by returning to **Handout 66**. Have students note the organization of the diagram in concentric circles. Ask students why this format is used. (*The concentric circles indicate the increasing complexity of institutions.*) Lead a discussion on how political, economic, and social institutions evolve depending on size and structure of group, availability of resources, and technology.

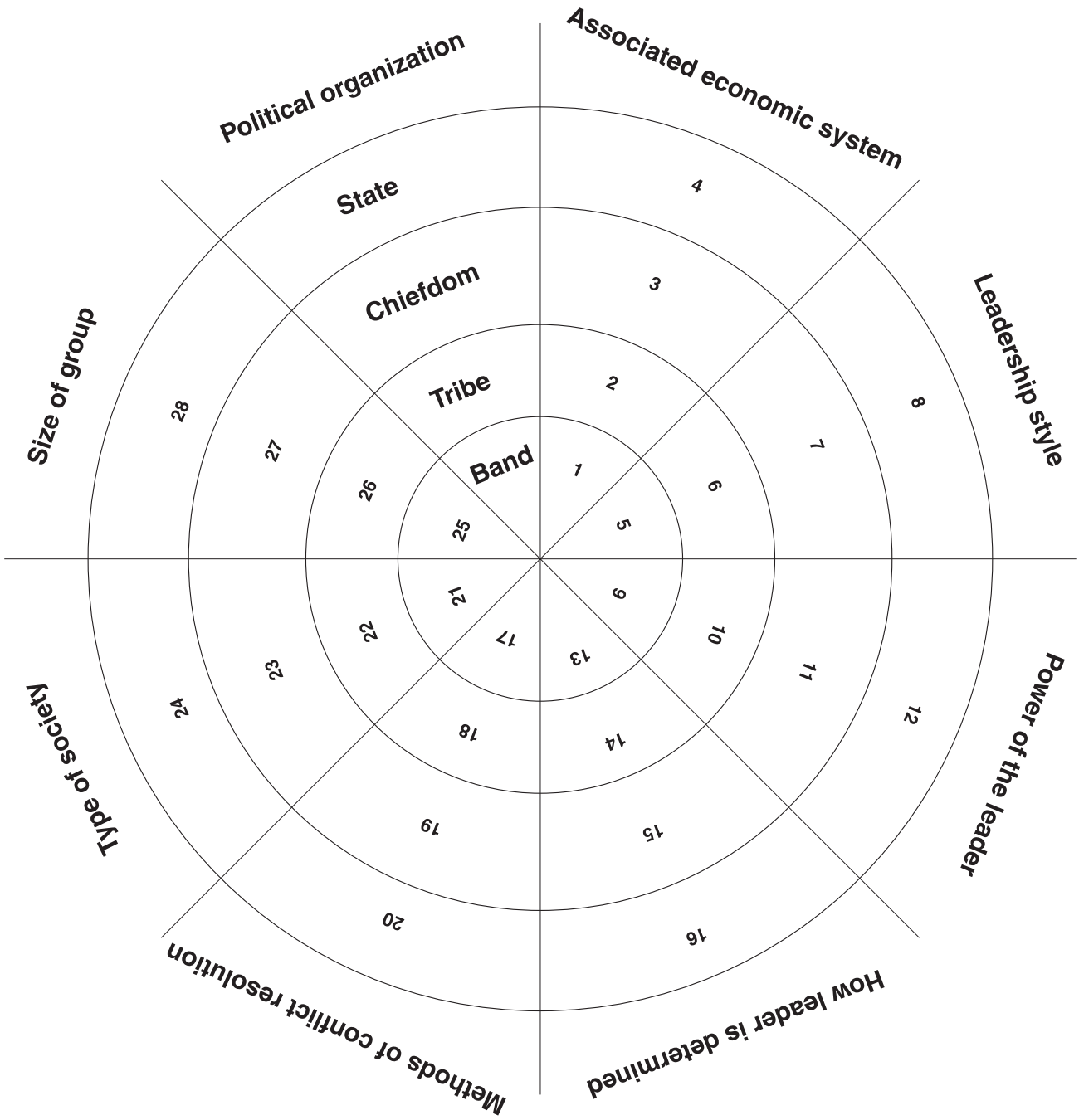
Extension

1. Read William Golding's *Lord of the Flies* or George Orwell's *Animal Farm*. As you read, note particularly how leadership emerged, what the leader's powers and responsibilities were and how dissenters were treated. Write a report on these issues, give the report to your teacher, and make a brief oral presentation on the role of leadership in the book.

2. Investigate the leadership roles of one of the Native American tribes before their contact with the dominant European-American society. Examine how leaders were chosen and their political, economic, military, and religious roles. Write an essay describing your findings, and submit it for extra credit.

3. Investigate the reasons women have not been prominent in leadership roles in many types of societies. Examine if and why that position is changing in modern societies. Present your information to your class.

Social Institutions



Name _____

Date _____

Forming Social Institutions

Part A.

Answer the questions below based on the following scenario.

> The students of this class have been mysteriously transported to an unpopulated region with no modern conveniences—no money, cars, phones, extra clothes, etc. The weather is pleasant, but it can get quite cold at night. There appears to be sufficient flora and fauna for survival.

1. What economic activities will you undertake to ensure survival?

2. Will you choose a leader? If so, how?

3. What powers will the leader have?

4. What will you do if you disagree with the others in the group?

5. How will resources be distributed?

6. Does everyone have equal access to the resources collected?

Name _____

Date _____

Part B.

Answer the questions below based on the following scenario.

> About two thousand students have been mysteriously transported to an unpopulated region with no modern conveniences—no money, cars, phones, extra clothes, etc. The weather is pleasant, but it can get quite cold at night. There appears to be sufficient flora and fauna for survival.

1. What economic activities will you undertake to ensure survival?

2. Will you choose a leader? If so, how?

3. What powers will the leader have?

4. What will you do if you disagree with the others in the group?

5. How will resources be distributed?

6. Does everyone have equal access to the resources collected?

7. After five years, how will your economic activities have changed?

Name _____

Date _____

Part C.

Answer the questions below based on the following scenario.

> Years ago, all the members of your extended family and one or two other families had been mysteriously transported to an unpopulated region with no modern conveniences—no money, cars, phones, extra clothes, etc. The weather is generally pleasant, but it can get quite cold at night. There has been sufficient flora and fauna for survival. The population has grown to the tens of thousands.

1. What economic activities will you perform to ensure continuing survival?

2. Do you have a leader? If yes, what are the possible ways that you chose your leader?

3. If you have a leader, what powers does he or she have?

4. What do you do if you disagree with the others in the group or the leader?

5. How will resources be distributed?

6. Does everyone have equal access to the resources collected?

7. How is social status determined?

Name _____

Date _____

Part D.

Answer the questions below based on the following scenario.

> You live in a nation of five million people. You have the technology for mass production of goods and intensive agriculture.

1. What economic activities will you perform to ensure continuing survival?

2. Do you have a leader? If yes, what are the possible ways that you chose your leader?

3. If you have a leader, what powers does he or she have?

4. What do you do if you disagree with the others in the group or the leader?

5. How will resources be distributed?

6. Does everyone have equal access to the resources collected?

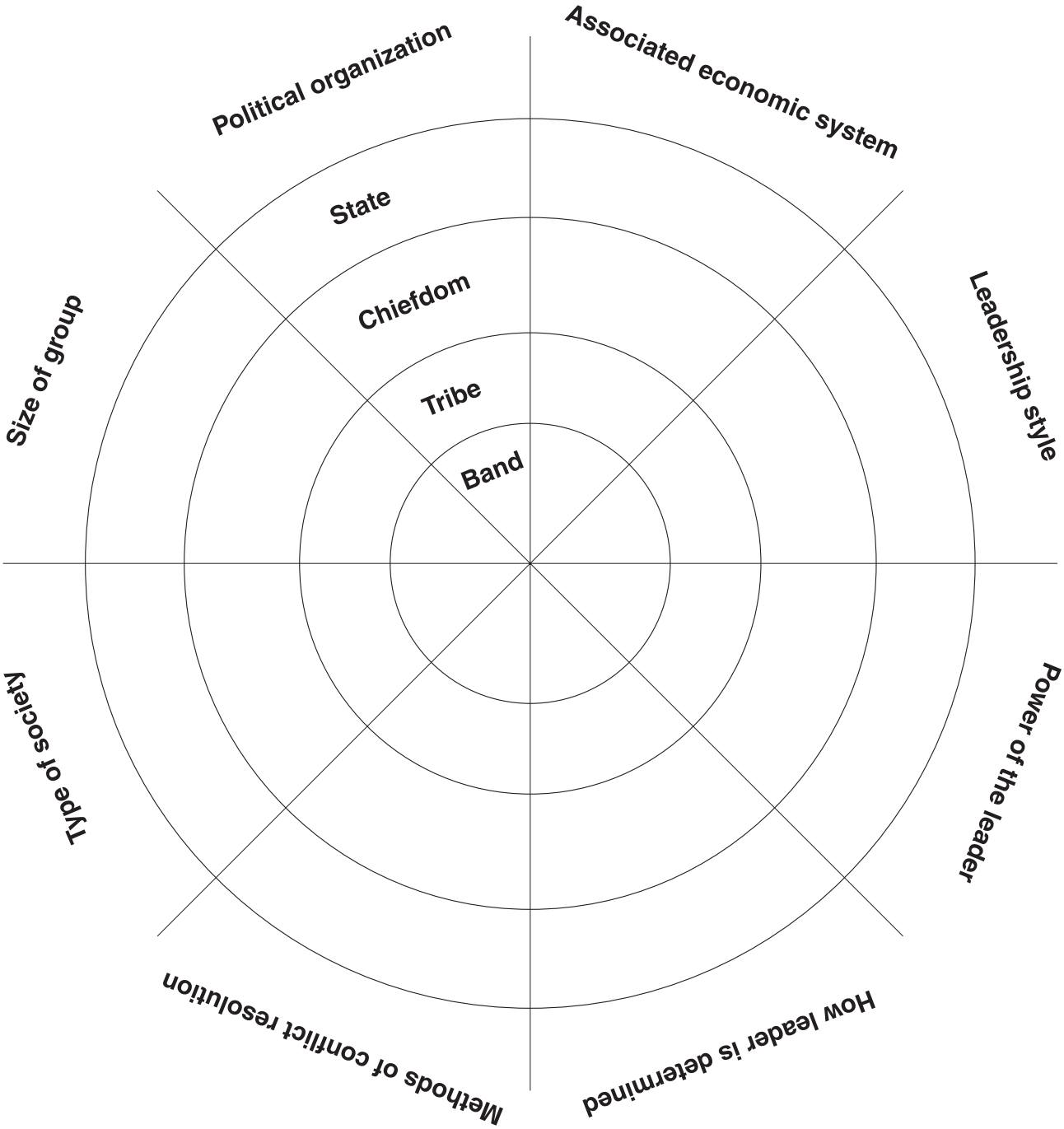
7. How is social status determined?

Name _____

Date _____

Part E.

After discussing your responses to parts A through D with the class, complete the chart below. (Band corresponds to part A; tribe corresponds to part B; chiefdom corresponds to part C; and state corresponds to part D.)



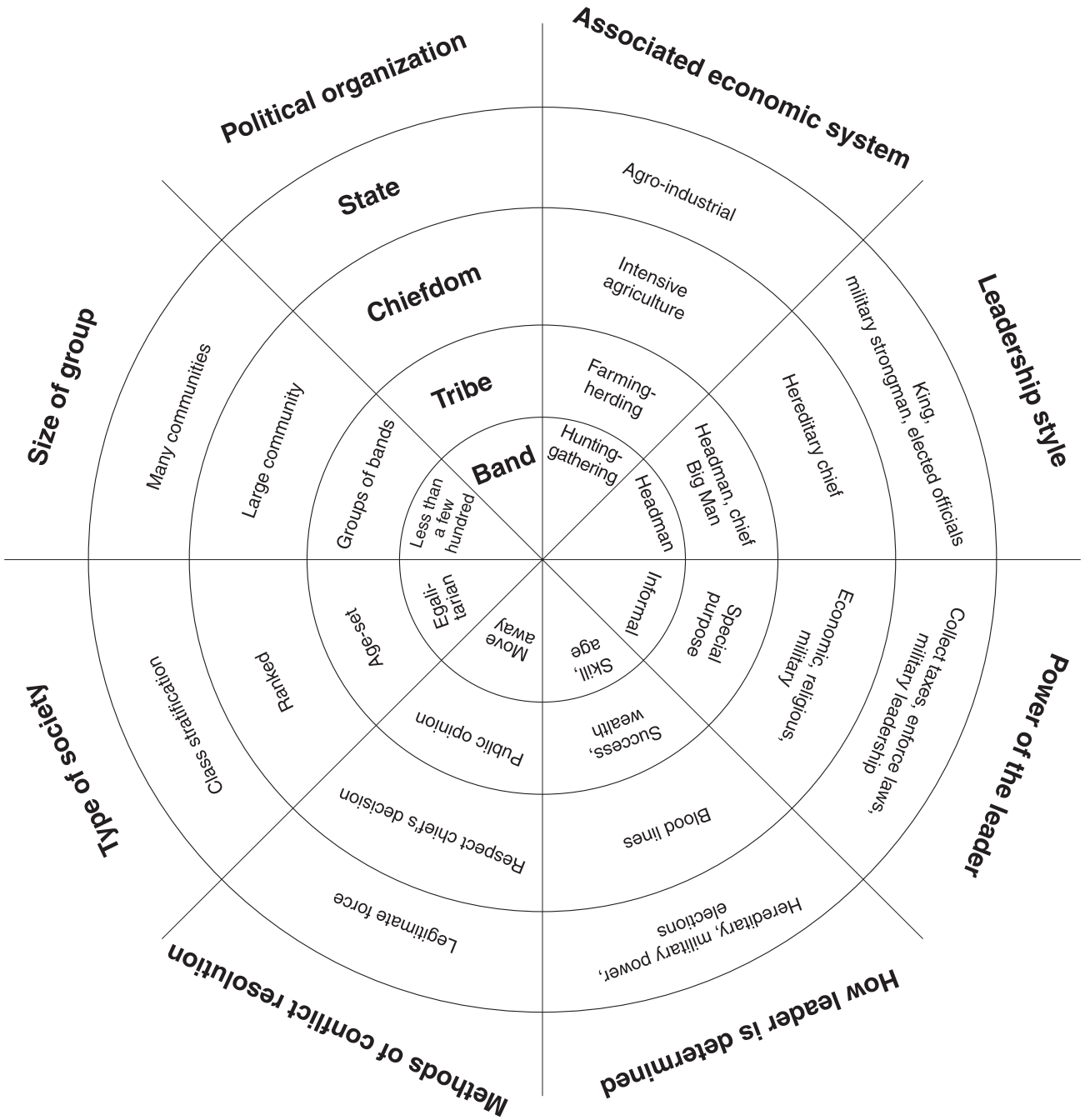
Anthropology
Lesson 32
Handout 66

Name _____

Date _____

Typical Patterns of Organization

Compare the information gathered in part E with the diagram below. Peruse the diagram for use in a later activity.



Lesson 33
Warfare

Objectives

- To assess prior knowledge by enumerating instances and causes of war
- To discuss whether violence and aggression are innate
- To examine examples of war in different types of societies

Notes to the Teacher

One of the fundamental questions in the behavioral sciences and philosophy is whether humans are innately aggressive and violent. Although there is no clear-cut answer to this question, human history is replete with war, especially so since the Neolithic Revolution and the production of food. Although modern societies have used advanced technology to conduct vast and extremely destructive wars, anthropologists believe that the instance of war has remained fairly constant among all types of societies.

Students assess their knowledge of warfare by brainstorming about past wars and their generic causes. This activity is followed by an in-depth discussion of the nature of warfare. Finally, students examine two societies' experiences of war.

Procedure

1. Write on the board two headings: *Wars* and *Causes of War*. Ask each student in the class to name or describe a different war. (Examples include World War I, Persian Gulf War, war in Kosovo, war in Rwanda between the Hutus and Tutsis, Crusades, etc.) As students name wars, write their responses on the board. When all students have contributed, have students who know the cause of the war they mentioned write the cause on the board. Leave the information on the board for the next activity.
2. Distribute **Handout 67**, and have students complete the questions individually. Encourage them to think carefully about their answers. Conduct a discussion based on their responses, which may differ considerably in some cases.

Suggested Responses:

1. *Yes, since the dawn of time, human beings have had to use violence to survive. Or, no, many societies exist without violence.*
2. *education, negotiation, conflict resolution techniques, treaties, etc.*
3. *Warfare is more serious in the twentieth century because of technological advances, but the frequency of war is probably about the same.*
4. *Yes, the Aztecs of the fifteenth century, the Yanomamo, and the Dani seem more aggressive and warlike than the !Kung and Mbuti Pygmies.*
5. *scarcity of resources (including human resources), territorial expansion, religion, revenge, differences in ideology, etc.*
6. *Hunting-gathering societies have less frequent wars because of their view of the world. They see themselves as part of nature; therefore, violence, killing, and warfare are undertaken only to ensure survival. Also, they see cooperation as a society as the key to survival.*
7. *No, some societies, such as the !Kung, have no history of war.*
8. *In feuds, the participants were part of the decision to go to war and have a stake in the fighting and outcome. In war, participants often had no say in the decision to fight and have little stake in the outcome.*

3. Distribute **Handout 68,** which describes two societies for which war is an integral part of the society. Review students' answers.

   Suggested Responses:

   1. *The causes of war revolve around revenge. In the case of the Dani, revenge is expected for death and stealing; in the case of the Yanomamo, revenge is directed for abusive treatment of relatives, theft, and killing.*

   2. *The imposition of central authority has reduced warfare among the Dani.*

   3. *Recent changes could result in the extinction of the Yanomamo way of life since their land is being used for other purposes and modern weapons have been introduced.*

   4. *The role of women in both societies is similar in that they are subservient to the male warrior role. Women in the Yanomamo society, however, are one of the causes of conflict, which does not appear to be the case among the Dani.*

   5. *In modern warfare, death is more indiscriminate and participants are often conscripted for armed service. Among the Dani and Yanomamo, death is limited, and combatants willingly participate.*

4. Conclude by having students investigate for homework a society that has little history of violence and warfare (for example, !Kung of the Kalahari Desert, Semai of Malaya, or contemporary Switzerland). Have students report on the factors that seem to encourage such peaceful behavior (*rules of cooperation, a view of the world that is not one of exploitation, avoidance of minor violence, etc.*).

Extension

1. Obtain and view the film *Dead Birds* about the Dani of New Guinea. Write an essay on the relationship of religion and warfare among the Dani. Submit it to your teacher for extra credit.

2. Write questions that you would like answered about war. Invite speakers from the local chapter of the Veterans of Foreign Wars or another veterans' group to speak to your class on their experiences. Ask the questions you have prepared. (Be sure your teacher has reviewed the questions first.) Write an article for the school newspaper about the experiences of the veterans who visited your class.

3. Obtain a copy of the Fall 1997 issue of *AnthroNotes*, and read the lead article "Exploring our Basic Human Nature: Are Humans Inherently Violent?" Write a report that summarizes the arguments presented, and submit the report to your teacher for extra credit. *AnthroNotes* is available from the Smithsonian Institute, Anthropology Outreach and Public Information, NHB 363 MRC 112, Washington, D.C. 20560

4. View *All Quiet on the Western Front, Patton, Bridge over the River Kwai, Braveheart,* or any other film appropriate to this topic. Write a movie review; emphasize the nature of warfare.

Name _____

Date _____

The Nature of War

Think carefully about the following questions before you answer them. Be prepared for class discussion about these issues.

1. Are humans innately aggressive and violent? Give reasons to support your answer.

2. What kinds of activities could forestall or eliminate violence and war?

3. Is warfare more serious and/or more common in the twentieth century than in previous times? Give reasons to support your answer.

4. Are some societies more aggressive, violent, and warlike than others? Give examples to support your answer.

Name _____

Date _____

5. What are the causes of war?

6. Which type of society engages in war least frequently (hunting-gathering, herding-farming, agro-industrial)? Why?

7. Is war universal? Give reasons for your answer.

8. What is the difference between feuds and wars?

Name _____

Date _____

Societies that Live by War

Read the selections below, and answer the questions that follow. Be prepared for class discussion.

War was a way of life for the Dugum Dani of New Guinea. Both feuds and wars occurred on a regular basis within this society. Most commonly, feuds transpired among the tribe as revenge for stealing wives or pigs. Wars arose between tribes to avenge the death of a tribal member. Once the death was vindicated by the death of someone from the other side, the fighting was over until another transgression happened. War is surrounded by ritual. Rules exist for when and where battles take place. Combatants are typically the men of the tribe, but women participate by collecting arrows between skirmishes. Ceremonies that call upon the spirits of the dead combatant prepare the warriors before battle, and extravagant funerals for the dead follow the war. Female relatives of the dead often suffered finger amputation as part of the mourning ceremony. Such warfare has been outlawed by the central government within the past few decades, and much of the warfare has been replaced with elaborate ceremonies of pig exchanges between and among tribes.

The Yanomano living in the Amazon Basin of Brazil and Venezuela are slash and burn horticulturalists. They are also extremely patriarchal and patrilineal. Because their society is frequently involved in raids and battles, men are highly prized, and women are expendable. This devaluation of women can even result in female infanticide. Yet, the cause of warfare is often conflict over women. Since the marriage pattern is exogamous (marriage outside of the group), women of one family or clan live among another. Wife abuse, which occurs among the Yanomano as a standard practice, is avenged by her brothers and other members of her family. Additionally, women are scarce, which results in raids to capture women. In these raids, side-slapping and chest-pounding duels with clubs often result in severe injury and even death that then must be avenged, making warfare a self-perpetuating phenomenon. Other causes of war exist (such as murder and theft). Conflicts are avoided if a group feels too weak to retaliate. In such cases, that portion of the tribe simply moves to a new area of the forest. When these tribal members believe that they are competent enough to win a battle, old wounds and grievances may erupt again in violence. Though the area occupied by the Yanomamo is protected by the Brazilian government, encroachment by miners and others seeking land have introduced weapons such as shotguns to the Yanomamo. The future of this group is being threatened by exploitation, deforestation, and the resulting loss of game and land.

Name _____

Date _____

1. Describe the causes of war among the Dani and Yanomamo.

2. What factors are responsible for reducing fighting and warfare among the Dani?

3. How have recent changes in the Amazon Basin impacted the Yanomamo?

4. Compare the roles of women in these societies.

5. How is warfare in these societies different from modern warfare?

Part 5
Expressions of Culture

Although cultures share many of the same characteristics, the study of culture finds that societies often express themselves in varying ways. Religion, language, art, and entertainment are some of the areas in which societies articulate their uniqueness.

In this section, students explore the particular ways societies convey their individual interpretation of the social institutions. The last two lessons tie many of the concepts of cultural anthropology together.

Lesson 34
Taboos

Objectives

- To define *taboo* and *incest taboo*
- To examine theories related to the origins of incest taboo
- To evaluate critically the theories presented

Notes to the Teacher

The taboo most frequently cited in anthropology is the one related to incest. Recognizing its universality, scholars have hypothesized as to its origins in human history. One must note that there are exceptions to the cultural rule against incest as in the case of certain monarchies. Especially notable in this regard are those in Hawaii and Roman Egypt. Sexual abuse indicates that this taboo is often violated. Law enforcement, therefore, is necessary to protect the most vulnerable in contemporary society.

Students react to the taboo situation and then posit reasons for its existence. They read various theories concerning the origins of the incest taboo. For each theory, students evaluate its validity.

Procedure

1. Ask students why they don't marry their brother or sister. Give students reasons for the advantages of such an arrangement (*no need to get dressed up, know each other's strengths and weaknesses already, have fights but get over them, etc.*). List students' reasons on the board.
2. Help students define *taboo* and *incest* (taboo—*a prohibition of a particular activity having moral or supernatural consequences;* incest—*sexual relations between close relatives*).
3. Distribute **Handout 69**, and have students read the various theories about the origins of the taboo presented in part A.
4. After students have completed the reading, divide them into small groups. Have each group complete part B, in which they evaluate the theories presented.
5. Review students' answers. Use the discussion to help students understand both sides of each theory.

   Suggested Responses:

   1. Pro—*It seems to be true as evidenced by the kibbutz example that siblings and those raised together are not sexually attracted to each other.*

   Con—*It is doubtful that this taboo is instinctive.*

   2. Pro—*Repression of such desires probably occurs as does other inappropriate sexual attractions.*

   Con—*The theory of Oedipus and Electra complexes may not be universal.*

   It does not answer the possibility of sex between siblings.

   3. Pro—*Family roles are fairly consistent with parents as authority figures and children as learners of the rules of the culture.*

   Con—*There are other family arrangements, such as extended families, that still have an incest taboo.*

   Siblings could be sexually involved without disrupting family roles.

   4. Pro—*There are many instances of marriage patterns where exogamous marriage is the rule.*

   Con—*This theory offers examples of marriage rules rather than rules about sex.*

   5. Pro—*This theory gives a reasonable social explanation about an issue that it considered primarily biological. This theory's explanation appears to work in the real world.*

   Con—*The objection to this theory is similar to the objection to the Taylor and White theory; that is, it offers examples of why exogamous marriage rules exist, but not necessarily why the sexual prohibitions among family members originated.*

6. Pro—*This theory might explain the origin of the taboo if populations experienced the negative consequences of inbreeding and realized its cause.*

   Con—*Deformities were probably caused by many factors, not only genetic ones. This theory presupposes that people could isolate genetic causation from other causes of deformity and disease.*

6. Conclude by having students come to a consensus on which theory they believe has the most validity. Be sure students can explain why their consensus choice is the most valid choice.

Extension

Investigate the history of the Hawaiian royal family and the royal family of Roman Egypt. Explain their rationale for the practice and the positive and negative consequences of these examples.

Name _____

Date _____

The Origins of the Incest Taboo

Part A.

Read the following passage, and be prepared to evaluate the theories presented.

Why are there taboos against mating with close relatives? The first answer that comes to mind for a person living today is that the offspring of such a pairing would be genetically disabled, physically and/or mentally. People do not, therefore, practice incest because they are aware of the genetic consequences. The incest taboo predates such knowledge of the science of genetics.

Edward Westermarck in the late nineteenth and early twentieth centuries suggested that children who are raised together have an instinctive sexual repulsion toward each other. Later researchers concurred, finding that children raised in the kibbutzim of Israel rarely, if ever, married each other.

A bit later, Sigmund Freud also investigated the incest taboo, attributing it to the Oedipus and Electra Complexes. The Oedipus Complex states that a young boy wants his mother and sees his father as a rival for her affection. To resolve such a complex, the boy represses his feelings and desires for his mother and identifies with his father. The taboo against incest is thus reinforced. The young girl goes through the same process through her resolution of the Electra Complex, where she wants her father and sees her mother as a rival for his attention.

Bronislaw Malinowski proposed that the taboo exists to keep nuclear families intact. Roles within the family are clearly defined. Malinowski thought that incest would destroy these roles, and, therefore, the incest taboo was developed to keep the roles distinct.

By the 1940s, another view had emerged. Leslie White, building on the earlier work of E. B. Taylor, developed a broader based theory. They contended that the incest taboo grew out of a need to avoid conflict with other families and communities. Marriages, therefore, were arranged with outsiders (exogamous) to forge alliances and keep the peace with neighbors since a family member lived among them.

In 1969, James Downs and Hermann Bleibtreu purported that humans are the only animal that places symbolic restrictions on sexual relations with other certain individuals based on kinship. The incest taboo has a function that forces the individual away from the family to seek a sexual partner. Social and technical skills must be acquired by the individual to attract a mate. Thus, the individual will be allowed to breed, and the society has a productive contributor who has competent skills that benefit the group.

Melvin Ember in the 1970s returned to the concept of genetics. He believed that although peoples of the past did not possess knowledge about genetics, they saw the consequences of inbreeding and refrained from sex between close relatives. He also pointed to mythology to demonstrate that people had such awareness since the myths often showed monstrous offspring when closely-related gods were united.

Most anthropologists agree that no one theory completely answers the question of why the taboo originated.

Name _____

Date _____

Part B.

For each theorist listed, present at least one argument in favor of the validity of the theory (pro) and one argument against its validity (con).

1. Westermarck

   Pro

   Con

2. Freud

   Pro

   Con

3. Malinowski

   Pro

   Con

4. Taylor and White

   Pro

   Con

5. Downs and Bleibtreu

   Pro

   Con

6. Ember

   Pro

   Con

Lesson 35
Religion

Objectives

- To define *religion*
- To consider the anthropological explanations of religion
- To identify the major elements of religion
- To give examples of the major components of religion

Notes to the Teacher

Religion is one of those topics on which teachers should be aware that caution is required. Some Americans consider religion a sensitive and personal issue and see the existence of religion as something that simply is. To others, religion is a nonissue and should not be included as a major social institution because it has lost its relevance and is not subject to the laws of science and logic. Despite such disparity, belief systems do impact the daily activities of all societies today and certainly had predominance among many societies of the past. Teachers need to be sensitive to a wealth of opinions surrounding this subject and to students' right to privacy while imparting information about the topic.

Students take a pretest on their knowledge of religion. They correct their pretest and note the major components of religion. Finally, students identify examples of the elements of religion by examining specific practices of a variety of religions.

Procedure

1. Ask students what they would like to know about religion. Post their questions on the board. Explain that this list can be modified as the lesson progresses.
2. Distribute **Handout 70**, and have students take the pretest individually.
3. When students have completed the pretest, distribute **Handout 71,** which provides the answers to the questions and explanations where necessary. Have students complete the answers that were incorrect or incomplete in **Handout 70**. Use these questions and answers as a springboard for discussion about religion.
4. Distribute **Handout 72**. Direct students to develop examples based on the categories presented. Please note that although suggested responses are not provided because of the great variety of student answers, examples are furnished for teacher and student guidance.
5. Return to the list of topics suggested by students in the opening activity. Contact several local clergypersons, and invite them to participate in a round-table discussion to address a topic of the class's choosing, a topic from their list. (Examples include what is the purpose of religion, why are rites of passage different for different religions, and why is ritual important.) Be sure to clear this concluding activity with your school administration before making these arrangements.

Extension

1. Ask representatives of the local religious institutions if you may observe and record the activities of their services. Compare and contrast your findings with other students who take this assignment. Prepare a list of the myriad ways that humans communicate and interact with the supernatural.
2. Investigate a religion that interests you. Indicate its beliefs, rituals and ceremonies, supernatural forces or beings, etc. Use the information to write an essay that describes how that religion impacts the daily life of its adherents.
3. If your area has an interfaith council that conducts tours of religious buildings, arrange to participate in a tour. Take notes, and present your findings to the class.

Name _____

Date _____

How Much Do You Know about Religion?

Answer the following questions as completely and clearly as you can. As you answer the questions, think about all religious practices, not just those having numerous adherents.

1. What is religion?

2. Is religion practiced by all societies?

3. What are the purposes of religion?

4. How do people communicate or interact with the supernatural?

5. What is the purpose of rituals and ceremonies?

6. Do all religions believe in an afterlife?

7. What is the difference between *monotheism* and *polytheism*?

8. What is magic (in a religious sense)?

9. What is the difference between *animism* and *animatism*?

10. What is the main job of a shaman?

Name _____

Date _____

11. What kind of society and political organization uses shamans?

12. What is the main job of a sorcerer?

13. What kind of society and political organization uses sorcerers?

14. What is the main job of a medium?

15. What kind of society and political organization uses mediums?

16. What is the main job of a priest?

17. What kind of society and political organization uses priests?

18. Why are religions so different?

19. What are the similarities and differences between *spirits* and *gods*?

20. How are rites of passage associated with religion?

Name _____

Date _____

The Components of Religions

Below are some answers to the questions from the previous handout. The letters indicate the category or component under study; the numbers refer to the questions. Compare your answers to those presented here. Be prepared to discuss these topics.

A. Universality

1. Religion—a social institution that involves belief in the supernatural, rituals, and identification of sacred objects

2. Although not all individuals practice religion, it is evident in all societies and is therefore considered universal.

B. Theories on the Existence of Religion

3. Anthropologists believe that religion serves many purposes: to explain the unexplainable, as a force to be turned to in times of need or crisis, and as a way to control and dictate behavior. Religion may also exist as a vehicle for humans and the supernatural to communicate.

C. Interaction with Humans

4. People communicate with the supernatural through prayers, trances, drugs, voodoo, magic, sacrifice, ritual, and communion through food

5. Rituals and ceremonies are formalized ways that humans communicate with the spiritual world.

D. Afterlife

6. Not all religions believe in an afterlife.

E. Belief systems

7. *Monotheism* is the belief in one God, while *polytheism* is the belief in many gods.

8. Magic is specific actions that are intended by humans to necessitate spirits to respond in a certain way.

9. *Animism* is the belief in supernatural beings, whereas *animatism* is the belief in supernatural forces that are inanimate.

F. Practitioners

10. Shamans are generally men or women whose main task is healing.

12. Sorcerers (or witches) use magic to urge the supernatural to act.

14. A medium's main task is to heal and learn the wishes of the supernatural.

16. A priest's main task is to communicate with the supernatural beyond the powers of the average person. *Priest* is a generic term that includes anyone who fits the above description.

G. Relationship of Practitioner to Economic Activities and Political Organization of the Society

11. The shaman is found generally in hunting and gathering societies organized into bands.

13. Sorcerers are found generally in horticultural societies organized into tribes.

Name _____

Date _____

15. Mediums are found generally in agricultural societies organized into chiefdoms.

17. Priests are found generally in industrial societies organized into states.

H. Nature of Religious Activity

18. According to anthropologists, societies develop religious institutions that mirror the other relationships in that society.

I. Supernatural Forces

19. Both gods and spirits have supernatural origins, that is, nonhuman origins. Gods are higher in status than most spirits. Spirits usually have more specific characteristics.

J. Rites of Passage

20. Rites of passage are frequently religious ceremonies that mark the passage of an individual from one stage of life to another.

Name _____

Date _____

Specific Religious Practices

For each of the components of religion listed, indicate at least two examples of that component. Specify the religion and the practice. In each category, examples are presented for you to follow.

A. Interaction with Humans

Example: Ancient Jews offered animal sacrifices to please God.

Example: Navajos chant, pray, and perform rituals and ceremonies to connect with the spirit world.

B. Afterlife

Example: Roman Catholics believe in an afterlife of heaven and hell.

Example: Classical Roman pantheists did not believe that there was life after death.

C. Belief System

Example: Most Hindus are believers in polytheism.

Example: Islam, Judaism, and Christianity are monotheistic religions.

D. Practitioners

Example: The !Kung San of the Kalahari Desert use shamans as healers.

Example: The sorcerers of the Dani perform magical rituals to keep evil spirits away.

Name _____

Date _____

E. Relationships of Practitioner to Economic Activities and Political Organization of Societies

Example: The Inuit practiced hunting-gathering in bands and used shamans as healers.

Example: The Aztecs, having a highly organized agricultural system and state, used priests as religious intermediaries.

F. Supernatural Forces

Example: Greek mythological figures were of non-human origin and considered gods.

Example: In Zoroastrianism, spirits support the forces of good and evil.

G. Nature of Religious Activity

Example: Ancient Egyptians created a priestly class to support the cult of the Pharaoh.

Example: The Dobu of New Guinea rely on magic and sorcery and are suspicious of relationships.

H. Rites of Passage

Example: Baptists initiate novices as adults into the religion through baptism.

Example: Young Australian aboriginal males engage in a walkabout to prove their manhood.

Lesson 36
Language

Objectives

- To comprehend the difference between communication and language
- To examine the debate over nonhuman primate communication
- To explore the use of language in various social settings

Notes to the Teacher

The study of language, linguistics, is an integral element of anthropology. Students need to understand the differences among communication, speech, and language. A critical and debatable issue is the definition of language itself and whether it is uniquely human. Historical linguistics can be very helpful to the anthropologist since word choice and use can indicate when societies merged or split. Historical linguists trace words to see if there exists a proto-language. Sociolinguistics examines how language changes as a result of social setting, uses, purposes, and media.

Students examine the components of language and its differentiation from other communication. Using the components of language as criteria, students evaluate whether nonhuman primate communication is truly language. Then students see how language changes depending upon its use.

Procedure

1. Ask students, especially those with pets, if animals have language. Allow students to discuss this question for a few minutes. If the discussion does not generate the issues of what constitutes language and the capabilities of various animals (including humans), raise these topics. Tell students they are going to investigate language in more detail.

2. Distribute **Handout 73**. Write on the board the elements of language: communicates, uses signs and symbols, expresses an infinite number of ideas, has rules, can indicate time and space. Have students write these elements on their copy of the handout in the appropriate space in part A. Have students give examples of these elements (Let's meet for lunch next Friday at one o'clock at the corner of First and Main.). Through class discussion, answer the remaining questions in part A.

   Suggested Responses:

   2. *Although language involves communication, it is much more complex. Language involves the use of rules, symbols or signs, and can communicate an infinite number of ideas. Screaming in pain is an example of communication, not language.*

   3. *Speech is the ability to form words whereas language creates meaning out of symbols.*

3. Assign part B of **Handout 73** on nonhuman primate communication. Review students' answers.

   Suggested Responses:

   1. *In these examples, the nonhuman primates communicate using signs and symbols. It is unclear whether they can communicate an infinite number of ideas, use rules consistently, and indicate place in time and space.*

   2. *Although these experiments suggest that nonhuman primates can communicate with humans, they do not prove that nonhuman primates have language. These experiments indicate that some nonhuman primates can acquire language.*

   3. *In order to prove that nonhuman primates have language, the primates would have to be studied in the wild communicating with one another. Additionally, when observing nonhuman primates communicating with grunts and pant hoots, humans must determine if, in fact, there is a pattern of communication present.*

   4. *Such animals do not appear to have language. They can communicate, however, and be taught certain commands through classical and operant conditioning, but cannot communicate an infinite number of ideas in time and space.*

4. Distribute **Handout 74** and have students complete part A. Introduce the concept of sociolinguistics, and explain that language changes depending upon the participants, the social context, and the purpose. Review students' answers.

   Suggested Responses:

   3. *Differences exist in the formality of the language and the social status of the addressee.*

   4. *Differences exist because the purpose of the exchange is different. In first exchange, the purpose is to complain; in the second exchange, the purpose is to correct the perceived injustice.*

5. Assign **Handout 74**, part B for homework. Review students' responses and use them as a springboard for discussion.

   Suggested Responses:

   1. *probably not*

   2. *involuntary conversion, wash sale, stock splits, average basis, original issue discount, etc.*

   3. *The IRS could test the ability of the average taxpayer in discerning the meaning of the passage, use examples, use pictures, etc.*

6. Conclude by having students write an informative essay giving directions on a topic requiring specific terminology such as computers, medicine, or assembly of a product. Share completed essays, and help students analyze and evaluate them.

Extension

1. Investigate the research on nonhuman primate language in the wild. Write a report on whether nonhuman primates use language when communicating with each other. The following Web site may be of assistance: www.indiana.edu/~primate/primates.html. Submit your report for extra credit.

2. View any one of a number of excellent videos on primate communication. The National Geographic Society and *Nova* on PBS are good starting points. Summarize the data presented, and evaluate the work that has been done in the field.

3. Write to your congressperson, and ask for his or her views on the rewriting of the tax code. With your teacher's permission, ask your congressperson to address your class on the use of language in government and politics.

4. Rewrite the tax code (or selected portions of it) in language decipherable to the average American.

Name _____

Date _____

Nonhuman Primate Communication

Part A.

Take notes on the elements of language, and answer the questions that follow.

1. Language includes the following abilities:

   a.

   b.

   c.

   d.

   e.

2. What is the difference between communication and language?

3. What is the difference between speech and language?

Part B.

Read the following examples of nonhuman primate communication, and answer the questions that follow.

Washoe

In one of the earliest examples of nonhuman primate communication, Beatrice and Allen Gardner taught a chimpanzee, named Washoe, signs of American Sign Language (ASL). Washoe could conduct short dialogues using three- to five-sign sentences. She also signed to herself and taught ASL to other chimpanzees.

Koko

Francine Patterson taught a gorilla, named Koko, over five hundred signs of ASL. Koko used the signs to communicate as well as to get out of trouble by lying.

Kanzi

Sue Savage Rumbaugh taught a bonobo, named Kanzi, how to use a lexigram to communicate. Kanzi understands human speech and can respond by action or by symboling.

Sarah

David Premack taught a chimpanzee, named Sarah, to use plastic pieces of different shapes and sizes to string ideas together into sentences.

Name _____

Date _____

1. Do these examples fit the criteria for language? Explain which, if any, criteria are met, and which, if any, criteria are not met.

2. What do these experiments prove?

3. How could linguists prove that nonhuman primates use language?

4. Using the criteria listed, do animals such as cats and dogs have language? Why or why not?

Name _____

Date _____

Sociolinguistics

Part A.

Complete the exercises below, and be prepared to explain your responses.

1. Write a few lines of dialogue that might take place between you and your friend about a grade you thought was unfair.

2. Write a few lines of dialogue that might take place between you and your teacher about a grade you considered unfair.

3. What are the differences in the exchanges in questions 1 and 2?

4. Why are there differences in the exchanges in questions 1 and 2?

Name _____

Date _____

Part B.

Read the following excerpt from the 1997 Form 1040 Instructions for Schedule D, Capital Gains and Losses, Parts I and II Column (e)—Cost or Other Basis, and answer the questions. Be prepared for class discussion.

> In general, the cost or other basis is the cost of the property plus purchase commissions and movements, minus depreciation, amortization, and depletion. If you inherited the property, got it as a gift, or received it in a tax-free exchange, involuntary conversion, or "wash sale" of stock, you may not be able to use the actual cost as the basis. If you do not use the actual cost, attach an explanation of your basis.
>
> When selling stock, adjust your basis by subtracting all the non-taxable distributions you received before the sale. Also adjust your basis for any stock splits. See Pub. 550 for details on how to figure your basis on stock that split while you owned it.
>
> You can choose to use an average basis for mutual fund shares if you acquired the shares at various times and prices and you left the shares on deposit in an account handled by a custodian or agent who acquired or redeemed those shares. For details on how to figure average basis, see Pub. 564.
>
> The basis of property acquired by gift is generally the basis of the property in the hands of the donor. The basis of property from a decedent is generally the fair market value at the date of death. See Pub. 544 for details.
>
> Increase the cost or other basis of an original issue discount (OID) debt instrument by the amount of the OID that has been included in gross income for that instrument.
>
> If a charitable contribution deduction is allowed because of a bargain sale of property to a charitable organization, the adjusted basis for purposes of determining gain from the sale is the amount which has the same ratio to the adjusted basis as the amount realized has to the fair market value.
>
> Increase your cost or other basis by any expense of sale, such as broker's fees, commissions, state and local transfer taxes, and option premiums, before making an entry in column (e), unless you reported the net sales price in column (d). For more details, see Pub. 551.[1]

1. If you were filling out your tax return, would you be able to follow these instructions?

2. Give three examples of specific terminology you would need to define to begin to follow these instructions.

3. What could the IRS do to make these instructions more intelligible?

[1]Department of the Treasury—Internal Revenue Service, *1997 1040 instructions*, D-4.

Lesson 37
Potlatch

Objectives

- To explore some effects of surpluses within the economy
- To define and give examples of social ranking relative to conspicuous consumption
- To analyze a case study in conspicuous consumption: the potlatches of the Kwakiutl

Notes to the Teacher

In American society, the acquisition of wealth is usually accompanied by a display of that wealth. Economist Thorstein Veblen described such manifestation of wealth as conspicuous consumption. At all divisions of society, whether by age or social status, conspicuous consumption is evident in cars, houses, hats, jeans, sunglasses, and even babies' overalls. The concept of "keeping up with the Joneses" and buying the most popular brand names is prevalent in America. The Kwakiutl of British Columbia also practice a form of conspicuous consumption where wealth is not only displayed but also distributed to other members of the tribe.

Students examine the concepts of conspicuous consumption and gift giving in American society. Then students read and analyze a nonindustrial example of these concepts among the Kwakiutl. The practice of potlatch is scrutinized to determine its practice and effects on the society.

Procedure

1. Present students with the following scenario: your birthday is today and a friend, though not a close one, gives you a very expensive present. The gift is so elaborate (for example, a stereo system) that it actually makes you feel uncomfortable. This person's birthday is next week. What kind of gift do you buy? Have students briefly explore their feelings and responses to this friend. Alter the scenario to include other examples of gift giving such as religious holidays where gift giving is simultaneous.
2. Define the concept of *conspicuous consumption* as displays of wealth to demonstrate rank, status, or power. Brainstorm with students how this concept is evident in American society (for example, cars, clothes, even types of behavior). Ask student to relate gift giving and conspicuous consumption. (*Wealthy people give expensive gifts to demonstrate their wealth or less wealthy families spending large portions of their income on lavish gifts at giving time.*)
3. Distribute **Handout 75,** and have students read the case study of potlatch and answer the questions that follow the reading. Review students' answers, and use them as a springboard for discussion.

Suggested Responses:

1. *Potlatches are public ceremonies that announce significant events and that are accompanied by the giving of gifts from the host to all guests.*
2. *Potlatches occur at times of marriages, deaths, adoptions, coming of age; claiming of names, rights, and privileges; and as penalties for breaking taboos.*
3. *The host can demonstrate his prestige.*
4. *Gifts are given to demonstrate the importance of the giver and the receiver.*
5. *All guests receive gifts. The size of the gift is proportionate to the receiver's tribal importance.*
6. *Gifts are redistributed at a later potlatch.*
7. *Gifts include money, boats, blankets, flour, kettles, fish oil, sewing machines, furniture, pool tables, and coppers.*
8. *The giver becomes poor as of result of giving such a large gift.*
9. *Potlatchers sing, dance, feast, give and hear speeches.*
10. *The offender can give gifts to elevate his own status.*
11. *Rivalries are settled by destroying the gift, thus demeaning its value, and then returning it to the rival.*
12. *It shows his contempt for the gift.*

13. *The witnesses judge the success of the potlatch.*

14. *Potlatchers redistribute wealth, while Americans hoard wealth.*

15. *Potlatches may provide for the less fortunate members of the society and/or it may alleviate conflict as a substitute for warfare among tribes.*

4. Discuss the differences in conspicuous consumption between the Kwakiutls' potlatches and students' experiences of gift giving in American society. Have students write an essay evaluating which system is better economically and socially for its respective group.

5. Conclude by sharing the completed essays and discussing whether potlatch or the American system of gift giving and conspicuous consumption is healthier for a society. Poll the class to determine if a consensus was reached.

Extension

1. Research the trade patterns of shell necklaces among the Trobriand Islanders of the South Pacific. Compare and contrast the purposes of this trade to the potlatches of the Kwakiutl. Present a written report to your teacher for extra credit.

2. Study the ideology of Karl Marx's communism. Summarize his thinking on the redistribution of wealth. Compare and contrast the purposes of communism in its ideal form to the experience of the Kwakiutl. Present a written report to your teacher for extra credit.

Name _____

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Case Study: Potlatch among the Kwakiutl

Read the passage below and answer the questions that follow. Be sure your answers are complete and be prepared to explain them.

The Potlatch

Among the Kwakiutl Indians of British Columbia, the potlatch is the most important public ceremony for the announcement of significant events and the claiming of hierarchical names, hereditary rights, and privileges. Such announcements or claims are always accompanied by the giving of gifts from a host to all guests. The guests are invited to witness, and later to validate, a host's claims, and each receives gifts of varying worth according to his rank.

Potlatches are held to celebrate births, marriages, deaths, adoptions, or the coming of age of young people. They may also be given as a penalty for breaking a taboo such as behaving frivolously or performing ineptly during a sacred winter dance. A potlatch to save face can be prompted by an accident even as trivial as the capsizing of a canoe or the birth of a deformed child. Among the most extravagant potlatches are those given for rivalry or vengeance.

All potlatches are public. The host, with the support of his family, numima (the next largest tribal subdivision), or tribe, invites other families, numimas, or tribes. The size of the gathering reveals the affluence and prestige of the host. At the ceremony, he traces his line of descent and his rights to the claims he is making. Every name, dance, or song used by the host must be acknowledged and legitimized by the guests. No announcement or claim is made without feasting and the distribution of gifts. Gifts are given to guests in the order of their tribal importance and of a value relative to this prestige. Clearly high-ranking chiefs receive more gifts than lesser men, but the value and quantity of gifts distributed at a potlatch reflect less on the recipients than on the donor. The gifts he gives away—or in some cases the property he publicly destroys—are marks of his wealth, rank, generosity, and self-esteem. Over a period of time, they also measure the power and prestige that he will be able to maintain over others of high status. For, at a later potlatch, each high-ranking guest will try to return as much, or preferably more, than he received. To keep track of the gifts distributed and the precise hierarchy of guests, each donor has the assistance of a "potlatch secretary" whose records are needed to maintain correct social form and avoid offense.

Potlatch gifts vary widely, from money to property. They include boats, blankets flour, kettles, fish oil, and, in former times, slaves. More recently, gifts have included sewing machines, furniture, even pool tables. Probably the most valuable potlatch material has little intrinsic worth but enormous symbolic value. These are coppers—large pieces of beaten sheet copper shaped like shields with a ridge running down the center of the lower half. They are painted with black lead and a design is incised through the paint. Each copper has a name and its potlatch history determines its value. One copper, called "All other coppers are ashamed to look at it," had been paid for with 7500 blankets; another known as "Making the house empty of wealth" was worth 5000 blankets.

During a potlatch, which can last several days and long into each night, speeches, songs, and dances are mixed with the giving of gifts, snacks, and more lavish feasting. The host is not the only speaker; usually high-ranking guests also speak or supervise the singing, dancing, and drumming. Elaborate ceremonial

Name _____

Date _____

costumes are worn by the speaker—who holds a "speaker's staff"—by dancers and musicians; the hall where the potlatch is held is decorated with painted hangings and tribal insignia.

All potlatch ceremonies are marked by exacting standards of etiquette and behavior. Impropriety, whether intentional or accidental, requires an immediate response. Mistakes in procedure, public quarreling, or an accident witnessed by others brings a sense of shame and indignity on its perpetrator, who must immediately "cover (or wipe off) the shame, "making a payment to re-establish his self-esteem. Often, blankets are torn into strips and each witness is given a piece.

The Kwakiutl respond similarly to insults. Potlatchers sometimes deliberately insult a guest by calling his name out of order, by spilling oil on him, by throwing him his gift, or by presenting him with an inappropriate portion of food. The offended guest retaliates immediately by giving gifts himself, or by destroying something valuable of his own while denouncing the potlatcher. Violence sometimes erupts. On some occasions the host ignores a face-saving gesture of a guest and this may precipitate a rivalry potlatch. If a host mistakenly offends, a guest restores his pride by giving the host a reprimand gift. Embarrassed by his carelessness, the correct host will make restitution in double the amount of the reprimand gift.

Rivalries also develop when two men compete for the same name, song, or other privilege. Each contestant recites his closest genealogical connection with the claim and tries to outdo his rival in the amount of property he can give away. In the heat of such rivalries, contestants sometimes break off a piece of copper, thereby destroying its value, and give the piece to their rival. The rival might then bring out his own copper of at least equal value, break it, and give both pieces back to the opponent. Great merit came to the man who threw his copper into the sea, "drowning it," thus showing his utter contempt for property and implying that his importance was such that what he destroyed was of little concern to him. At times this ostentatious destruction of property included canoes, house planks, blankets, and even slaves, in former days.

The witnesses to these dramatic acts of the potlatch act as judges to the claims; ultimately, they decide the victor. A powerful and prestigious man can sway public opinion by recognizing the claim of one contestant over another at a subsequent potlatch. Indeed, this is a basic principle of the potlatch; a successful potlatch in itself cannot legitimize a claim. It is the behavior of other hosts at later potlatches that validates a claim for once and for all.

In the case of the potlatch, a surplus is created for the express purpose of gaining prestige through a display of wealth and generous giving of gifts. But, unlike conspicuous consumption in our own society, the emphasis is not so much on the hoarding of goods which would make them unavailable to others. Instead, the emphasis is on giving away, or at least getting rid of one's wealth goods. Thus, potlatch serves as a leveling mechanism, preventing some individuals from accumulating too much wealth at the expense of other members of society.[1]

[1]Ronald P. and Evelyn C. Rohner, *The Kwakiutl: Indians of British Columbia,* Holt, Rinehart and Winston, Inc., 1970), 95, 97–98, 103–104.

Name _____

Date _____

1. What is a potlatch?

2. When are potlatches held?

3. Why are potlatches public?

4. Why are gifts given?

5. To whom are gifts given?

6. What happens to the gifts?

7. Describe the types of gifts that are distributed?

8. Why do some gifts make “the house empty of wealth”?

Name _____

Date _____

9. What activities occur at a potlatch?

10. The passage states that "potlatchers deliberately insult a guest." Why would such behavior occur?

11. How are rivalries settled?

12. Why would someone throw his gift of copper into the sea?

13. How is a potlatch evaluated as successful?

14. What is the difference between a potlatch and conspicuous consumption in our own society?

15. What other purposes might a potlatch serve?

Lesson 38
Art

Objectives

- To visit a local art museum or historical society
- To compare and contrast works of art or artifacts in time and space
- To recognize that art reflects the society that created it

Notes to the Teacher

Works of art have been created by humans since at least twenty-five thousand years ago. Humans have left behind their thoughts, actions, and emotions through art in various forms. The most notable of these works are housed in museums, historical societies, and libraries. Too often, however, when people visit such repositories of art, they walk from room to room looking quickly at most of the collection. Frequently, the experience becomes a blur of images. As a result, children, adolescents, and even adults often balk at the suggestion of visiting a museum. The lesson presented here can become a lifelong skill in appreciation of art and museum visiting, for it focuses the viewer on one exhibit or pieces of art that are united by a concept. The outcome is a more worthwhile and pleasant experience.

Teachers need to choose, in advance, what conceptual framework is to be followed. This may depend on the resources available in your community. Students are to examine four pieces of art or artifacts. The four pieces of art may be from the same time period but in different areas of the world, or the pieces of art may be from various times within the same region. For example, teachers may choose to have students examine eighth century C.E. art from Ghana, England, India, and Mesoamerica. Or if teachers choose to have students investigate how art has changed in one region over time, a visit to an Asian art museum/exhibit might show the differences in art from the Shang Dynasty to the Communist period.

Students visit a local museum or historical society and examine a few pieces of art or artifacts. They take notes and make sketches as they progress through the exhibits. Students report their experience to the class and emphasize how the pieces studied reflect the society that produced them.

Procedure

1. Ask students what the general trend was for twentieth-century art (*generally, abstract*). Have students speculate as to the style of art in the twenty-first century. Write students' suggestions on the board. Ask students why they chose their responses. Help students draw the conclusion that art reflects the society that creates it.
2. Explain to students that they are to visit a museum or historical society (whichever is more convenient for students). Assign them the task of examining four pieces of art from the museum or artifacts from the historical society. These works of art are to be related by a common theme. (See Notes to the Teacher.) Explain the chosen theme to students.
3. Reproduce enough copies of **Handout 76** so that each student has four copies. Distribute **Handout 76**. Review the handout so that students understand their assignment. Answer any questions they may have about the activity. Assign a realistic due date.
4. When students have made the visit and completed their work, have students present the information they gathered to the class. Allow ample time for questions and explanations.
5. Distribute **Handout 77**, and have students complete the questions. Have students give their analysis of the work they observed. Discuss how the art reflects the time and/or place in which it was created.

6. Conclude by drawing the Olympic symbol of the five interconnected circles on the board. Ask students what the symbolism is of this geometric image. Relate this image to their study of art.

Extension

1. Interview one of the art teachers in your school about how artistic composition, the various media employed, and the materials used help convey an artist's message.

2. Investigate how music as an art form also reflects the time and place in which it was created. Choose four pieces of music from the same region over time. Describe the similarities and differences among the pieces. Play the music and present your analysis to your class as an extra credit project.

Name _____

Date _____

Museum Visit

Observe four pieces of art or artifacts according to the theme your teacher has given you. While you observe, note the information listed below. Make your notes for each of the four pieces selected.

1. Title of the art object _____

2. Artist (if given) _____

3. Type (painting, sculpture, architecture, etc.) _____

4. Date _____

5. Where was the piece created? _____

6. What is the subject of the piece? _____

7. On another piece of paper, sketch the piece as best as you can. (You will not be judged on your artistic ability!)

8. Describe the piece. Indicate size, materials used, color, design, texture, etc.

9. Note any information that the museum provided about the piece.

10. Interpret the piece. What is the artist's message? What does it "say" to you?

11. What is the function of the piece?

Name _____

Date _____

Analysis of Works of Art

Answer the following questions. Base your responses on your observation of art or artifacts.

1. List the four pieces, their dates, and locations.

Title (or description)	Date	Location
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

2. What do the pieces have in common?

3. Is there a common theme or subject that runs through all four pieces? If so, what is the theme, and how is it demonstrated in all four works?

4. How does each piece reflect the political, economic, and/or social conditions of its time and place?

5. What is your favorite piece? Why?

Lesson 39
Anthropology of Sports

Objectives

- To explore how sports reflect the nature of a society
- To analyze a subculture that exhibits the major social institutions
- To demonstrate another sport that exhibits the GREEF model

Notes to the Teacher

Sports can be used as an effective means by which the nature of a society can be illustrated. Sports may be a reflection of the basic values and institutional structure of the society that embraces a particular athletic activity. For example, in competitive western societies, a singular winner is the emphasis in most athletic events. The Mbuti Pygmies, a hunting-gathering society, stress cooperation in games whereby "winning" occurs when everyone succeeds. In the reading, American football is described in an essay that looks at the sport from an etic viewpoint.

Students examine sports in American society and recognize the competitive nature of sports as a reflection of society as a whole. Using the game of football, students analyze how the social institutions operate even within organized sports. Students then choose another sport, either from American society or elsewhere, to investigate the workings of the social institutions and to explore how the sport reflects the nature of a dominant society.

Procedure

1. Without elaborate explanation, distribute and assign the reading in **Handout 78**. When students have completed it, ask them what society this passage is describing and how they recognized it (*American football*).
2. Distribute **Handout 79** and assign part A, which helps students analyze the reading. Part A may be done individually as homework or as a whole class activity. Review correct responses.

   Suggested Responses:

   1. *owners*
   2. *players*
   3. *games in the fall*
   4. *league commissioner or judge*
   5. *those attending the game*
   6. *cheerleaders*
   7. *U.S. government*
   8. *quarterback*
   9. *officials*
   10. *college, training camp*
   11. *It was the way professional football was before the emergence of free agency and the excesses of contemporary football.*

3. Assign part B of **Handout 79.** Be sure students understand how the sport developed social institutions to its society.

   Suggested Responses:

   1. *It was autocratic. The owner had absolute power over the players on the team. The owner owned not only the team but also the rights to its players.*
   2. *As moral judges, officials decided on the proper behavior of players. Officials were so sacred that they couldn't be touched for fear of penalties or being thrown out of the game.*
   3. *Owners made money by charging admission and controlling concessions. Other businesses paid to display their products through advertisements at the stadium. Players made money as long as they performed. They could be traded, sold, or fired.*

4. *Most football players have attended college (playing for the collegiate team). If they are good enough, they are drafted by the professional ranks. They must perform at expected levels, however, to play professionally.*

5. *The owner controlled the lives of his players much the way a child is controlled by a father (for example, Papa Bear, George Halas). The owner protected the players but commanded their loyalty.*

4. Conduct a class discussion on how football represents the values of American society. Have students enumerate ways that football does this (*competition, profit, uses of mass media, rules of the game, judges to arbitrate*).

5. Divide the class into small groups. Have each group choose a sport other than football with which they are familiar, such as lacrosse, track and field, soccer, cricket, baseball, etc. Have the group describe how its sport is a society unto itself and how the sport has developed social institutions to help it function. Recommend both team and individual, American and non-American sports. Have the groups present their analogies of these sports to the class. Explain that this may require some research into the history of the sport. (Encyclopedias should be sufficient.)

Extension

1. Attend a sporting event, and conduct an observation using the objective style of an anthropologist. Note how the social institutions of GREEF operate.

2. Interview one of the coaches from your high school teams about how the sport he or she coaches imitates society.

3. Read *How Life Imitates the World Series* by Thomas Boswell, and make a comparison to football. Write an essay for extra credit.

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GREEF: A Case Study

Read the following passage, and be prepared to answer the questions that follow.

Until quite recently, a society existed that exemplified many aspects of the GREEF model set forth in previous lessons. This society had many facets that can be fascinating to the student of anthropology. The society we wish to examine had a government structure that was largely autocratic. Noblemen in a designated locale had absolute power over workers in their area. The nobility was highly competitive with others of the same rank. Combats were organized between their workers to demonstrate which nobleman had the most talented persons in his employ. Following a pattern of weekly struggles at harvest time each year, these contests would be observed closely by the nobility, who had the time and money to watch and foster them. Their passion for supremacy in this field would often have to be placated by a power higher even than their own, the chief priest. The chief priest often would have to offer his services as an arbiter in their frequent feuds. Realizing how much they themselves enjoyed witnessing these competitions, the noblemen opened them up to the townspeople at large and charged a fee to anyone who wished to behold the spectacle. As the popularity of these events increased, elaborate arenas were built to accommodate the patrons. These arenas eventually were enlarged with comfortable seats and areas enclosed from inclement weather for those who could afford them. But generally, benches or standing plots sufficed for most. For a fee, many were afforded permanent places which were jealously coveted by the townspeople. There were instances when these traditional viewing places were so highly valued they would be held in a family's name and could be passed down from generation to generation. On contest day nearly all of the other activities in the town would cease; such became the interest in these events.

The trappings surrounding the tussle became so elaborate that they began to take on a greater significance than the actual event. Townspeople would don appropriately colored clothing to show their support of the local workers. In some regions not noted for brotherly love, wearing the wrong color could bring derision and even bodily harm to an individual so attired. Some individuals were so rabid in their support of their favorites that they painted their bodies in hues that emulated the proper colors. Traditional songs were sung honoring the workers while scantily-clad maidens encouraged endorsement for them from the patrons. Local guilds of craftsmen competed feverishly to underwrite some portion of the occasion as a means of evincing their sympathy for the workers to the nobleman and the populace. At the beginning of each contest, the gathered throng stood in unison silently while homage was paid to the ultimate governing authority. Wild cheers followed this reverent and seemingly incongruous change in mood. The contest itself took place in a large clearing covered with verdant vegetation. This lush surface was covered with ceremonial markings that followed very strict geometric patterns. The object of the ordeal was for one set of workers to physically move an ether-stuffed animal bladder from one end of the clearing to the other. Deception and guile were as essential as strength in a victorious outcome. The competitors wore armor for their protection because the conflict could be dangerously violent. Each worker was encouraged to inflict as much physical damage as possible on his opponent—without being so aggressive as to impart a fatal injury. This fine line was always a difficult one for any worker to follow. The combatants followed a highly ritualized set of behavior in the contest. They would remain perfectly still while a foreman shouted orders in an ancient and indecipherable language known

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only to the workers of his region. Strict rules governed the performance of the combatants, and various penalties, including banishment, would be meted out by priests who would supervise the proceedings. These priests were regarded as sacred individuals, and the mere touching of one of them could mean a stiff fine and banishment for life. They governed the rites wearing a special garb and would use a strange kind of sign language to inform the populace of what interpretations of the law they had divined from the omens presented before them as the contest unfolded. On some occasions, the indications of the will of the gods were so complex that the priests formed a tight circle in the center of the clearing to divine the meaning of what had transpired. Throughout the event the observers would continue to consume food and drink offered for a fee by the nobleman and maintained their enthusiasm for the local workers by yelling encouragement for tasks performed well and derision for mistakes made in the working process. Those who witnessed the struggle would even offer succor to each other at a setback for the foreman or embraces when he was particularly successful at a difficult procedure. Deities were frequently invoked during the heat of the contest. In some cases, a worker would call for divine condemnation for a particular act or a specific combatant. Workers, and especially foremen, would be remembered and memorialized as great practitioners if their efforts consistently surpassed the norm of a day's work.

The aristocrats could buy and sell workers at will to other nobles and set the wages for those who were in their employ. They frequently exchanged workers with one particular talent to other aristocrats when they needed someone who had a talent lacking in their own specific locale. The lion's share of the wealth in the region was controlled by the nobleman, but he would recompense workers for their efforts as long as they remained productive. Once a worker had a diminution of his talent, he was either sold off or merely released from his servitude and forced to fend for himself, receiving no compensation from the lord now that his usefulness had evaporated. Workers were procured from a variety of sources, but most went through apprenticeships that were appropriate for those with the physical, emotional, and, in some rare cases, intellectual talents required by the elite. Those who proved most promising were fiercely sought after by these extremely ambitious nobles, who wished to appear to have the most productive workers in relation to their peers. Various blandishments and promises of rich compensation enticed these neophytes into actively seeking the employment offered. Once employed, a rigorous training program would commence in which the novices were tested to ascertain if they had the mettle required to withstand the rigors of working for the lord. If the newcomer passed these tests satisfactorily, he was on his way, he hoped, to a life of success and financial reward. Those who did not fare well as initiates were either sold to another lord or merely left bereft of comforts and forced into a life of considerably lesser economic and social standing.

As time progressed, the workers began to realize that their services were an essential commodity that enhanced the fortune of the nobility. Each spectacle became more extravagant, causing a perceived need on the part of every lord to outdo each other in the opulence of their arenas and the production of each meeting. The populace had their heroes, and the lords needed the revenue produced by the efforts of the workers. The avarice of the elite combined with their highly competitive nature had created a situation in which the workers saw their opportunity. With the approval of the chief priest, they began to offer their services to

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the highest-bidding nobleman in any locale. As nobles competed for workers, admission prices spiraled, and the populace began to question the efficacy of their traditional form of leisure. Thus, the pastime that was once a source of diversion had grown to proportions that had never been envisioned. The populace, ever so fickle, began to return to amusements that centered on home and hearth. The older patrons continued to attend the combats, but the young, excluded from the exorbitantly priced entertainments, turned elsewhere. And the era of the great combats became but a memory.

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Analysis of the GREEF Model: Who Are These Guys?

Part A.

Using the previous handout, answer the following questions.

1. Who are the noblemen?

2. Who are the workers?

3. What are the weekly struggles during harvest time?

4. Who is the chief priest?

5. Who are the townspeople?

6. Who are the scantily-clad maidens?

7. What is the ultimate governing authority?

8. Who is the foreman?

9. Who are the priests?

10. What is the apprenticeship?

11. Why is the reading written in the past tense?

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Part B.

Describe how football conforms to the GREEF model by answering the following questions.

1. What was the government structure of football and its team?

2. What religious aspects does football include?

3. How does economy function in football?

4. What is the educational component of football?

5. How did football operate as a family?

Lesson 40
The Yanomamo: A Case Study

Objectives

- To examine the culture of the Yanomamo
- To define the appropriate anthropological terminology of an ethnography
- To recognize the Yanomamo as a typical example of a horticultural society yet as having its own unique characteristics

Notes to the Teacher

Cultural anthropology is best understood through studying a great number of ethnographies. Napoleon Chagnon has studied the Yanomamo in detail and presented a vivid and thorough picture of the Yanomamo of South America. By examining the Yanomamo, students can synthesize their investigation of the five social institutions of government, religion, economy, education, and family. Additionally, one can see the elements that make societies unique. Be careful that students do not place their own values on other societies.

Students read a description of the Yanomamo, connecting it to previous lessons. They identify and define anthropology-related vocabulary contained in the passage on the Yanomamo. Then students answer questions that are related to the reading and that incorporate many of the concepts learned throughout the course. This handout may be used as part of a final examination or as a review for the examination. (Note that the introductory activity may be omitted if this lesson is being used as final examination material.)

Procedure

1. Present students with the following scenario.

   James wants to attend a big dance at his school but doesn't have a date. He is interested in a classmate named Pat. What can James do to reach his goal?

   (*Call her, talk to her friends, get friendly with her siblings, make himself noticed, bribe her, bring her gifts, flattery, etc.*)

   Be sure students explore a great number of possibilities. Explain to students that they will be reading about a society that goes to great extremes to reach its goal of securing marriageable women.

2. Distribute and assign **Handout 80.** Review students' responses, and use them to generate class discussion. Stress the importance of cultural relativism.

   Suggested Responses:

   1. *society, patrilineal, tribal organization, headman, slash-and-burn horticulture, shamans, rites of passage, patriarchal, polygynous, exogamous, endogamous, cross-cousin, bride services, kinship*

   2.
      - *society—a group of people sharing a culture*
      - *patrilineal—descent line and inheritance is through the male's family*
      - *tribal organization—a number of small bands led by a headman in a horticultural system*
      - *headman—a leader who relies on success and charisma to keep his position*
      - *slash-and-burn horticulture—a farming technique that cuts the forests and burns the underbrush to allow for planting*
      - *shamans—religious people who typically heal, excise demons, etc.*
      - *rites of passage—ceremonies that mark the transition from one stage of life to another*
      - *patriarchal—authority lies in the father of the family*
      - *polygynous—having more than one wife at a time*
      - *exogamous—a marriage pattern in which the partners are from a different village or clan*
      - *endogamous—a marriage pattern in which the partners are from the same village or clan*

- *cross-cousin marriage—a marriage takes place between the father's sister's child and the mother's brother's child*
- *bride service—payment by the groom to the bride's family for the bride*
- *kinship—the group that is considered family*

3. *government, religion, economics, education, family*
4. government—*The leader has no formal power and maintains his position by skill in battle and charisma.*

   religion—*Shamans cast spells on enemies, cast out demons, and cure illnesses often through the hallucinatory effect of drugs.*

   economics—*The Yanomamo hunt, gather, fish, plant, and trade.*

   education—*Education is based on observation and imitation, and oral tradition.*

   family—*The family of the Yanomamo are patriarchal and patrilineal. Marriages are exogamous in regard to lineage. They follow a cross-cousin pattern and may be polygynous.*
5. *Women are sought after for marriage and may be the cause of war. Yet, as wives, women are frequently the object of violence. Men may take more than one wife. Female infants are frequently killed. Women see their scars as a compliment from her husband.*
6. *The leader must be successful in war to keep his position; shamans cast spells on enemies; trading alliances may forestall hostilities; boys are taught the elements of warfare through observation and imitation; the need for marriage is often a cause for war.*
7. *The Yanomamo are typical of tribal organization. The headman gains and keeps power by skill in battle; they farm and herd using simple technologies; they are organized as many villages. See circular chart in Lesson 32.*
8. *observation, careful record keeping, objectivity*
9. *emphasis on warfare*

3. Conclude by discussing further the apparent contradiction in the male-female relationships. Use the following questions as a springboard for discussion:
   - Why do they practice female infanticide if women are so valued?
   - Why do women permit the beatings they receive?
   - Why is there a bride service in a patriarchal, patrilineal society?
   - Why do women raise sons who will beat their wives?

   Although there are no real answers to these questions, use them to help students clarify their own thought processes.

Extension

1. Diagram the kinship system of the Yanomamo and the bilateral cross-cousin marriage pattern. Place the diagram on a large poster and, (with your teacher's permission) post it on the bulletin board of your classroom.
2. Read Napoleon Chagnon's *Yanomamo: The Fierce People* (New York: Holt, Rinehart and Winston, 1983). Prepare and deliver an in-depth oral presentation that focuses on one of the social institutions.

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The Social Institutions of the Yanomamo

Read the selection below, and answer the questions that follow.

Living in the rainforests of the Amazon Basin in both northern Brazil and Venezuela, the Yanomamo have come to be known in anthropological circles as the Fierce People. Although modern technology, the centralized governments of Brazil and Venezuela, and encroachment by miners and lumberjacks are modifying the way of life of the Yanomamo, they remain a clearly identifiable society whose way of life persists.

The Yanomamo live in villages of varying sizes generally composed of two patrilineal descent lines. The size of the village is important because small villages must take extra measures to avoid conflict. The leader of the village is typical of tribal organization; that is, he has no formal authority and maintains powers because he is charismatic and skillful in battle. Typically, the headman emerges from the larger of the patrilineages in the village.

Economically, the Yanomamo survive by hunting wild game such as turkeys, deer, and pigs using bows and arrows with poison tips; fishing; and gathering fruits, nuts, and berries. Their main sustenance, however, comes from slash-and-burn horticultural techniques. They clear part of the forest, burn the underbrush, and plant various crops such as sweet potatoes, manioc, tobacco, and plantains, a major part of the diet. (Slash-and-burn horticulture is not considered hazardous by environmentalists.) Trade alliances are established with other villages, and items of pottery are typically exchanged. The purpose of this trade is not so much economic as political, since animosities can be forestalled by such arrangements.

Their religion is consistent with other tribes living in such environments. Shamans hold religious significance and can cast spells on enemies, cast out demons, and cure illness. Only men be shamans, and many Yanomamo men are trained for these responsibilities. Hallucinogenic drugs are used to see the spirits around them and to exorcise demon spirits from those possessed. Ceremonies exist for rites of passage into adulthood and the next world. Girls are confined at their first menses and receive new clothes for their new status. Upon the death of an adult, the body is burned. After the fires cool, the bones are pulverized and given to the relatives to keep. Some of these pulverized bones are poured into a banana soup that is then drunk by those in attendance.

Education is based on observation and imitation. Both boys and girls learn their position in the social order. Girls learn to cook and clean and boys learn to fish and hunt. Yanomamo history, though not written, is passed on through an oral tradition of storytelling which is regularly about warfare.

The families of the Yanomamo are patrilineal and patriarchal. Polygynous marriages are permitted, which is unusual in a society where men outnumber women. Such marriages denote higher social status. Marriage is also exogamous in regard to lineage but can be endogamous in terms of the village depending on its size. Small villages are likely to be exogamous in order to make alliances through marriage with another small village and, therefore, diminish the possibility of warfare. Frequently, marriages are arranged through sister exchanges. The typical pattern of marriage follows the cross-cousin pattern in which the children of the father's sister marry the children of the mother's brother. The new husband lives with the wife's family for a number of years in order to pay bride service. Men outnumber women in this society as a result of female infanticide. Marriageable women, therefore, are frequently the object of raids between warring villages.

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Warfare and violence is a constant in Yanomamo society. Women are often beaten, bitten, and scarred by their husbands. Both men and women see such battles as complimentary. Mistreated women are frequently protected by their brothers, resulting in conflict between husband and brother. Men engage in chest-pounding and side-slapping duels using axes, clubs, and poles. Warfare with neighboring villages may stem from long-standing conflicts or the need to seize women. Spells and curses calling for revenge also cause violence and warfare. Warfare, then, becomes the common denominator for Yanomamo society. The need for women for marriage and kinship system, the position of the headman, the trading alliances, the education of the young boy, and the shaman's power are all related to the existence and perpetuation of war and violence.

1. Go back through the reading, and circle all of the words that are pertinent to anthropology.
2. Define each of the terms. In some cases, the reading helps you define the terms. In other cases, you will need to rely upon your prior knowledge, your textbook, or other resources.

3. Name the five social institutions.

4. Describe how each of the five social institutions operates within Yanomamo society.

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5. Explain the relationships between men and women.

6. Why is warfare considered the common denominator for all social institutions?

7. How are the Yanomamo typical of tribal organization?

8. If you were an anthropologist studying the Yanomamo, what techniques would you use in preparing your ethnology?

9. What makes Yanomamo life unique?

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