

Authentic Assessment

can result in genuine, authentic self esteem

AUTHENTIC ASSESSMENT

What is authentic assessment? Many teaching methods achieve authentic assessment, some of which have been incorporated into PETERSON'S POND. Authentic assessment involves looking at more than a single test to judge a student's ability in an area of study. Before judging a student's work, it helps to look at his/her progress over a period of time. At the end of a unit of study, a student should be able to show thoughtful understanding of a complex idea. A student can demonstrate knowledge and skills orally, in writing, and through photographs, videos, and projects. Interact simulations are ideal tools to use for authentic assessment because an emphasis is placed upon students facing challenges and then producing something to demonstrate their accomplishments.

Achieving authentic assessment In this simulation, students accomplish a great deal. They use and understand the scientific method, and acquire skills and knowledge which will benefit them throughout their lives. They write down thoughts, ideas, observations, and experiments in a science journal. After the simulation has been completed, you may want to use each student's science journal as an assessment tool to determine and to demonstrate to parents what learning has taken place.

You take time in PETERSON'S POND to observe how students work together in their groups during daily T.E.A.M. group problem solving. During the daily debriefing session, students also give evidence of what they learned during that session and provide you with information on how well they are understanding concepts covered that day. If additional discussion is needed, you have the opportunity to provide that *immediately*. Of course, having students complete daily science activities to your satisfaction is a type of authentic assessment.

Extensions Finally, you may decide to have certain (or all) students do an extension on this simulation as described in the optional Phase 3. Students put the skills they learned in this simulation to practical use as they work on one of the options described. (Students may also develop their own extensions.) A completed phase 3 project is an ideal way to demonstrate authentic assessment.


Final essay If you choose not to have students complete an extension project (as described in phase 3), ask students to write an essay at the end of Phase 2. This essay will demonstrate to each student, you, and others that learning has taken place. As a result, your students will feel a sense of closure and accomplishment; this feeling, of course, is an example of *genuine, authentic self-esteem*.

Scientific Detective Record Form

Using the Scientific Method

- 1** What mystery are you trying to uncover? (“**the question**”)
- 2** What do you expect to be the answer to this mystery? (“**the hypothesis**”)
- 3** What clues have you uncovered so far, and what other clues will you look for to help solve this mystery? (“**data gathering**” and “**materials**”)
- 4** How will you determine if what you suspect to be true about the mystery is correct? (“**the experiment**” or “**method**”)
- 5** After completing steps 1-4, what do you now believe is the answer to your mystery? (“**conclusion**”)
- 6** As a result of doing this experiment, does a new mystery come to mind? (“**extending the experiment**”)

Now that you have read the newspaper articles on pages 1 and 2, please read this letter which was sent to you by someone in your community who knows about your teacher and your class. Then ask yourself, “How should we answer this letter from Mr. Peterson?”



“And now, Mike, we have creatures dying in a pond in our town!”

Dear Students,

I am writing this letter to ask for your help in solving a problem I noticed during the past month. I have a pond in the back of my house. Local people refer to it as Peterson’s Pond because of my last name. As a little boy, I spent time at the pond with my Grandfather Frank, who owned both the house and pond. We fished together and talked about what lived in the pond. When my grandfather died, my father inherited the house and pond, and when he died, he gave me both of them.

The pond has been a happy place until just recently. A month ago I noticed that creatures from my pond were dying in higher numbers than they usually die. At first, I didn’t think much of this problem. However, I became really worried after I noticed dozens of dead fish last week.

I can’t think of any reason why these creatures started dying during this past month. The water in the pond looks fine, and I haven’t noticed any unusual happenings taking place. I really want to discover why so many creatures are dying before they all die. That is why I am asking for help.

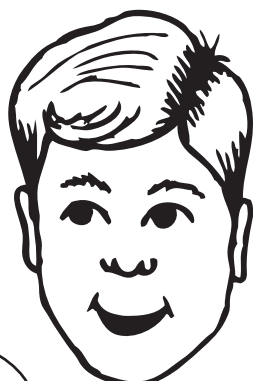
I would conduct this investigation myself, but I work during the day and I don’t have access to any scientific materials. My first thought was to ask some local scientists to study my pond and determine what was wrong. Then I remembered that students in school often have science materials available and I heard about your outstanding teacher. I hope you will become science detectives who find out why my pond’s creatures are dying.

I’m sorry to put pressure on you, but I need to have this problem solved quickly. If you can’t find out what the problem is in two weeks, I will have to bring in some scientists to discover what is happening. Otherwise, Peterson’s Pond may become an empty pond.

Please let me know as soon as possible if you will be able to assist me.

Sincerely,

Richard Peterson



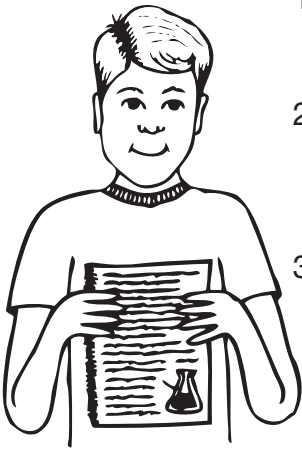
“There’s a picture of the pond on pages 4 and 5.”

YOUR SCIENCE JOURNAL

Scientists and detectives: Scientists are really detectives who work diligently to solve a problem. Like detectives who work for the police department, scientists have tools they use to solve mysteries. For example, both scientists and detectives keep notebooks (or journals). Here they carefully document what they find, observe, question, or believe to be a possible solution to the mystery they are attempting to solve.

Keeping a journal: As you work through the Peterson’s Pond mystery, you will keep a journal, just as a real scientist or real detective does. This science journal will be important because in it you will record *everything you learn!*

“I’ve even been drawing some pictures in my journal.”



Making an authentic journal: To keep an authentic—that is, a real and worthwhile—science journal, you should include the following elements:

1. **Dates:** Every time you write in your science journal, you *must* include the date! This date will help you keep track of when activities, experiments, and observations were done.
2. **Complete descriptions:** Descriptions of all activities, experiments, and observations must be very complete so that someone with no knowledge of ponds or the activities and experiments you did could pick up your journal, read it, and understand *exactly* what you did.
3. **Illustrations:** Have you heard the expression, “A picture is worth a thousand words”? Illustrations will help someone reading your journal to understand even more than they would from words alone. Illustrations do not have to be complex; they can be simple diagrams or sketches. These illustrations will not only help someone reading your journal; they will also help you when you look back at your notes. Scientists often take pictures at different points in their experiments. If you have a camera, you may also take pictures as you work through this Peterson’s Pond mystery.
4. **Important questions:** Scientists use their journals to record carefully any questions that occur to them as they are working. These questions help them determine what should be studied further. You should include questions you have in your science journal as you work through this mystery.
5. **Possible solutions:** Scientists are always thinking about the solution to the problem troubling them. In their journals, they record possible solutions whenever one comes to mind. *Do the same thing in your science journal.*



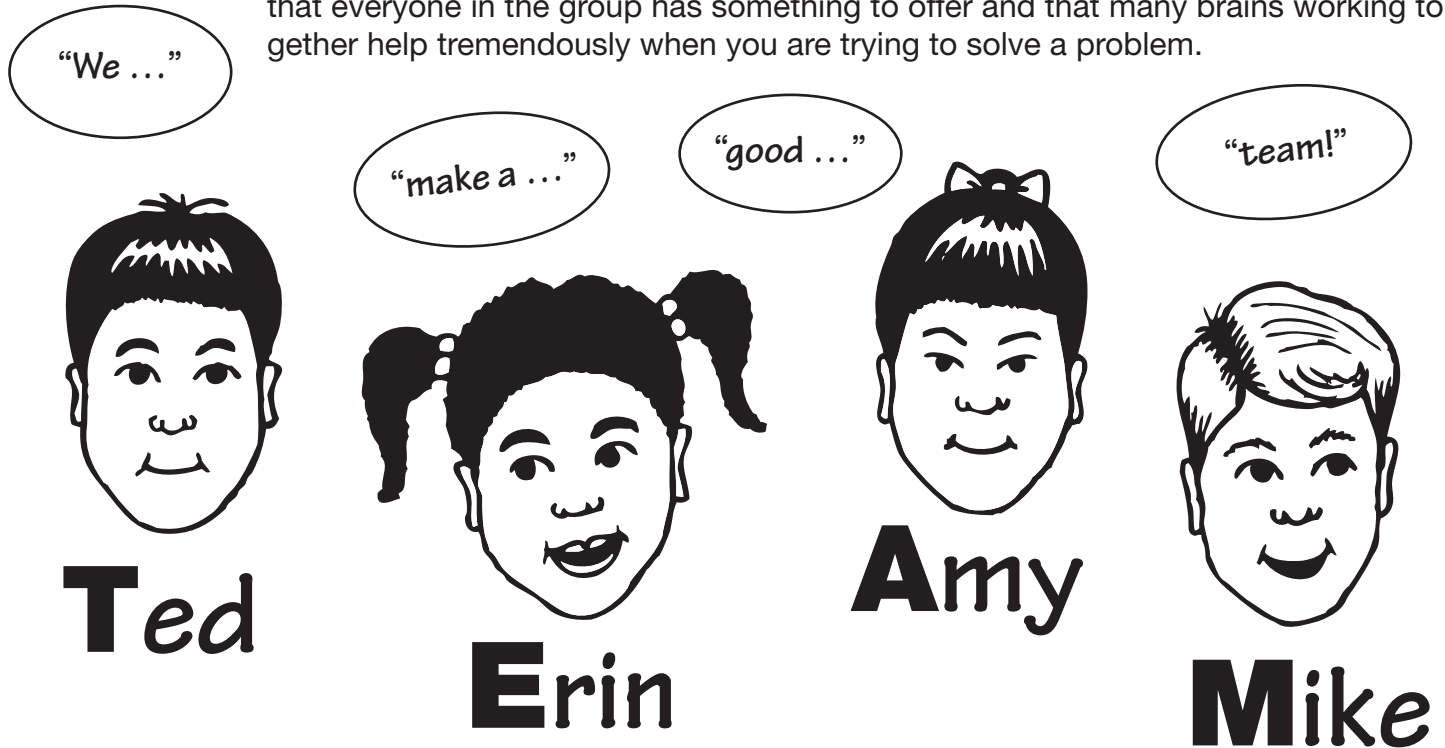
“I’m recording questions that need to be answered.”

Good luck with your science journal. It will help you keep track of most of your thoughts and actions as you solve this intriguing mystery.

YOUR T.E.A.M. ACTIVITIES

What are T.E.A.M. Activities?

For the next few days, you will be doing T.E.A.M. Activities with your group members. T.E.A.M. stands for **T**ogether **E**veryone **A**ccomplishes **M**ore. Each T.E.A.M. Activity will not only give you important information about the pond that you will need to solve the mystery; it will also give you the opportunity to work together with other group members to solve a problem. As you do each activity, you will discover two things: that everyone in the group has something to offer and that many brains working together help tremendously when you are trying to solve a problem.



How are T.E.A.M. Activities done?

1. Your team's goal is to solve the problem presented to your group.
2. Each member of your group will be given some special information that no one else in your team has.
3. To solve the problem, all the information (clues) given to each group member will be needed.
4. Information can be shared only one way—*orally*.
5. No one may take or look at another group member's clues.
6. Everyone in the group has to participate! (Of course, clues may be repeated orally, if needed.)
7. Once all members have individually shared their clues, each group member should continue to contribute to solving the activity.
8. One or two group members should not do all the talking. Instead, everyone should give ideas or opinions.
9. And what is the most important skill you all must practice? *Listening!* It is very important that everyone listens carefully while other members of the group are talking since we can all learn from one another.

Good luck on your T.E.A.M. Activities! You will enjoy uncovering the information each day and using it to solve the Peterson's Pond mystery.