

F. Assessment Tool

For a non-formal educator, assessment of an activity can be just as important for the educator as it is for the students. When preparing and delivering many activities to different classrooms, we often ask ourselves afterward – “How did that go? How well did the students take in the concepts I was demonstrating?” Assessments help to gauge if a group was simply quiet that day or if they missed concepts from the activity. This is also vital to determining if adjustments and improvements are needed for the next class. Since non-formal educators are often visiting a classroom for a day or activity period, oral assessments at the end of the activity are generally most useful. When a relationship can be developed with the classroom teachers, non-formal educators can ask them to provide written assessments within a few days of the activity and submit the results back to the guest speaker.

Here are is one example of an oral assessment for this unit, taken from the macroinvertebrate lesson:

In an oral review of the on-site station, the students will be asked to demonstrate to the station leader that they can successfully navigate the key to identify a macro of their choice. If they select the wrong identification but use the key correctly and are then able to find the correct identification, they are still deemed proficient at using the tool. For example, the student correctly uses the key to navigate to a certain point, but then misses the actual number of tails present and ends up with a misidentification. If the station leader points out the actual number of tails and the student is then able to make the correct identification from the key, the student is deemed proficient at using the tool.

Mastery of the station is measured by students being able to correctly identify a given macro, defend their identification, and state it's relation to water quality. For example, a student correctly identifies a stonefly, defends their identification by stating it has six legs and two tails, and that it's a sensitive organism, so its presence indicates good or excellent water quality in the stream.

In this example, the students are working individually or in pairs to identify the macroinvertebrates they have collected. As they are working, the station leader will go around to each student or pair and ask them to identify what they are currently working on. This way, the station leader is making sure that each student is assessed by this method, and it is done in a way that the other students are busy working on their other identifications and filling out their water quality assessment worksheets. The worksheets are a great outcome of the activity, but doing this oral assessment ensures to the station

leader that each of the students can identify the macros correctly, understand the meaning of those identifications, and have learned how to use their identification tools correctly. The goal for the station is for at least 90% of the students to be proficient and at least 80% to master the station.

If the teacher is willing to assign a follow up assignment after the activity, the option of sketching some of the macros has been provided.

An optional assessment for this lesson includes a student made poster or a thank-you card for the helpers on their field experience. Teachers can encourage students to sketch a macro of their choice on the cover of the card and review the cards before sending them to the people who helped with their classes. Again, an example of mastery of the station would include a student sketching in sufficient detail so that the macroinvertebrate could be identified by their sketch. An elongated insect body with six legs and two tails would suffice for a stonefly.

By sending a thank you card to the guest speaker, this person can view for themselves how well the students learned the concepts presented in the activity. Both the oral and written assessments for this lesson would be summative assessments. Formative assessments, to determine how the students are picking up on knowledge throughout a lesson, are also important for non-formal educators.

Here is an example of a formative assessment from the Enviroscope lesson:

In the classroom, students will learn about watersheds using an Enviroscope watershed model. The model depicts various land uses, contains several streams and a lake, and incorporates food coloring to show the flow of water and pollutants in a watershed.

The activity is designed to be inquiry-based, where students are first asked what natural elements are found in the watershed (i.e. the forests, rivers, a lake, fish and wildlife). As a student names one of these elements, they can place the object on the model. Next, the students are asked what human elements are found in the watershed (i.e. homes, roads, farms, and an industrial site). Again, as a student answers a question, they get to place that element on the model. Students are then asked what types of pollution could come from each of those sources, and the students who answer get to place dye on the model accordingly.

Since non-formal educators often do not know their students as well as their everyday teacher, it is important for us to gauge the group in the introduction and early stages of the activity and modify our teaching techniques or the activity as needed. By asking questions to begin this lesson, the guest speaker is able to determine how much the

students already know. If the students are quiet and reluctant to answer, encouragement can be given and the depth of concept later in the lesson can be adjusted. Many of our favorite classes to attend are those whose teachers have done a few introductory lessons with their students to prepare them for the activity being brought in. By knowing some of the basic concepts already (and also getting the class excited for this special activity), the demonstrations done by the non-formal educator often include a lot of discussion and enthusiasm from the students. However, the guest speakers are sometimes used as the introduction to a topic as a way to get the students excited to start a new unit with their teacher. In this case, the guest speaker simply needs to adjust the activity so that the concepts are either being introduced or explored in further detail, as appropriate for each particular class. The Enviroscene lesson still ends with an oral summative assessment to see where the students ended up.

Immediately after the lesson, the instructor leads the students in an oral review of the types of pollution that can enter a watershed, their source, and what conservation practices can help reduce that type of pollution. The list can be compiled on the class white board or the student's individual unit/field notebooks. Each student should be able to name one type of pollution that enters a stream, where it comes from, and one way to reduce or prevent that pollution from entering the stream. The station leader can determine that each student can meet these expectations either by making sure to call on each of the students for an answer (if feasible, depending on group size) or by asking each student to write their answers in their unit/field notebooks.

Oral and written assessments help to gauge if a group was simply quiet that day or if they missed concepts from the activity. Oral assessments provide immediate feedback to the non-formal educator, while written assessments require more coordination with the classroom teacher and are useful to determine how well students retained the information beyond the end of the lesson.