



## Lesson 4: Exploring Our Watershed

**Focusing Question:** *What does our watershed look like, both up close and "on the ground"? How do human actions and decisions affect this watershed? Who inhabits—lives in— this watershed? How are these inhabitants living in relation to the watershed?*

**Overview:** Before taking students to the quest site, teachers will visit the site alone or with an expert to make sure it will work for their purposes. Students visit the quest site to develop a relationship with the site and to collect data. This lesson can be repeated with differing activities at the site as many times as desired.

### **Materials:**

- Paper
- Pencil
- Clipboards for each student
- Detailed site maps (enlarged so that students can make field notes)
- Field guide(s) to native plants and wildlife

**Length of time to complete:** 2-4 hours.

Note: This lesson can be repeated two to four times to deepen student knowledge of the watershed. At each visit, begin with journaling and follow with two "outdoor classroom" activities focusing on a specific aspect of the watershed (monitoring water quality; field trip to sewage treatment plant; field trips upstream to source or downstream to sea).

### **Teacher Preparation:**

**1. In preparation for your first site visit,** you will want to have (a) previewed the site to make sure that it will work for your purposes; (b) lined up a visitor/specialist (if necessary and/or appropriate) who can help your group understand and interpret what you find on your site; and (c) found an appropriate map that helps you explore the quest site.

- a. As you preview the quest site: look for a safe place for group pickup and drop-off; find a spot to meet and review instructions; determine that the site can accommodate your group size; and determine that this stretch of watershed offers a glimpse of the watershed that they can see and understand. You are looking for a mix of natural features, cultural features and impacts. You may not get both the source and the sea—it is enough to get a little bit of “in-between.”
- b. If you are thoroughly versed in watersheds, wonderful. But if you are not, there are many people within your community who, given ample notice, can help you explore it. Take the time to find them, then invite them to participate. Their participation will help build community and help students (and you as well) learn more from your site.
- c. A variety of maps may be available. Focus in on your chosen site, then enlarge that portion of the map to legal or even ledger (11” x 17”) size so it is easy to read and use out in the field.

## **2. Begin each site visit with short 5- to 10-minute field**

**journaling exercise.** This helps move out of the energy of “transit” and into the site itself. Have students spread out; work with a specific prompt. A good first prompt is to have each student create a sketch that can later serve as part of the border for your quest clues and map. Give the students a small “frame” to look through; then give them strips of paper to draw on (see annotated map of sample quest in lesson #2).

**3. Reconvene and begin to survey your route.** As students reach landmarks, they should place a point and number on their map that indicates that point. Then, in the margin or on a second page, students should make field notes about that feature. Model this process for your first few stops.

- a. Periodically, stop and be silent for 1 to 2 minutes, in order to make fresh visual and aural observations. Based on what you observe and hear, you can begin to develop a “species list” for the site.
- b. For some sites, it will work well to establish small plots (1 square meter, 3 square meters, etc.) and have groups create master lists of what they find. For other sites, pairs or trios of students can work with different orders (trees, birds, insects, etc.) or different functions (producers, consumers, recyclers).
- c. In our experience, students can work well and stay focused for 35 to 40 minutes. If this is the case with your students, begin with the journaling, follow with a field session, switch to a second location and/or activity, then reconvene and close.

**Assessment:**

1. Map is annotated with points, notes and field observations.
2. Make sketch for quest map border.
3. Make contributions to watershed species list

**Evaluation Rubric:**

<b>PRODUCT</b>	<b>Unacceptable</b>	<b>Beginning to progress</b>	<b>Getting closer</b>	<b>Meets standard</b>	<b>Exemplary</b>
<b>Annotated Map</b>	Does not legibly display points, notes or observations	Shows either points, notes or field observations	Displays some points, notes or field observations	Includes points, notes and field observations	Meets standard, plus is well executed and has rich details
<b>Sketch for quest map border</b>	Has not been created	Is sloppy, with no attention to detail	Is either sloppy or has no attention to detail	Is both neat and detailed	Meets standard, plus is well executed and has rich details
<b>Species list</b>	0–1 species noted	2–3 species noted	4–5 species noted	6 species noted	More than 6 species noted