

Sounds of the Wild (and not so Wild) – Outdoor lesson

Grade Third Grade (3rd)

Lesson Fall Outdoor **NOTE: this one comes before the Indoor lesson!**

Time 60 minutes

Materials *From the Portable:*

- Backpack for sites 1*, 2/3**, 4, 5, 6, 7, and 8 with:
- Decibel Meter
- Walkie Talkie (tuned to channel #6)
- Clipboard
- Laminated Sound Inventory Sheet for writing down observed sounds and their decibel measurement
- Grease Pencil
- Watershed map (in backpack)
- Plastic bag for collecting garbage on the way there/back ***
- Beads for watershed Necklaces (give to teacher at end)
- Rain Boots (if needed)

** The lesson is designed for 6 or 7 groups based on the number of available decibel meters. If you only have 6 groups you can omit site 1 since it is very close to the road and furthest down the road.*

*** Sites 2 and 3 are so close to each other they are almost one site. They are also both accessed via the same path from the road. Since you will only have 6 or 7 groups total, you can combine sites 2 & 3 together and treat them as a single site for the purposes of this lesson.*

**** Students earn a bead if they pick up at least 1 piece of garbage on the way to/from the watershed or while in the watershed. Even if they pick up more than 1 piece of garbage they still only earn 1 bead. There are plastic bags available in the watershed portable cabinets if the backpacks do not have one.*

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Objective:

3rd grade students will already have been learning about Sound in their science unit. They should be familiar with some basic concepts of sound from their science lessons, and their teacher will let them know the purpose of the watershed visit in advance of the outdoor lesson.

The objective of the outdoor lesson is to observe, measure, and document the sounds in the watershed environment and in the school environment for the purposes of the indoor lesson, which will occur afterwards, in which they will:

- chart the sounds they observed on a decibel chart
- compare the noise levels in the two environments
- identify sources of “noise pollution”
- discuss how noise pollution can impact wild life

Much research has been done on the impact of human encroachment and environmental pollution into wildlife habitats. Less is known about the impact of human-induced noise pollution on wildlife in their natural habitats.

Some limited field research and laboratory studies suggest that that the wildlife population may be affected by noise pollution in several important ways

- 1) Hearing loss
- 2) Masking – the inability to hear important environmental cues and animal signals
- 3) Stress – increased heart rate and respiration and other general stress reactions
- 4) Behavioral –changes in mating, predation and migration behaviours, abandonment of territory

At Least 1 day before the lesson:

1. A couple of days before the outing send reminder email to the volunteers and let them know to arrive at the watershed portable at least 15 minutes before the scheduled departure.
2. Obtain the parent/student list from the teacher. This is the list of what students will be going with each volunteer parent.

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On the day of the lesson, 30-60 minutes before start:

1. Arrive at the Watershed Portable about 30-60 minutes before the outing, to assemble the materials in the backpacks and review the lesson.
2. When you check in at the office, ask Kathy Conrad to turn on her walkie-talkie and let her know of your outing time.
3. Check the walkie talkies to make sure they are working and set to channel #6; replace batteries if needed; test to make sure they can send/receive.
4. Check the decibel meters to make sure they are working; replace batteries if needed; test the microphone and make sure it registers noise. Decibel meters take 9V batteries. There should be spares available in the watershed portable.
5. Wipe the laminated Sound Inventory Sheets clean from any previous lessons if they have not already been cleaned.
6. Check the backpacks and make sure they are equipped with all of the listed materials.
7. If you have time, you can pre-populate each of the sound inventory sheets with the volunteer's name, site #, and student names. Otherwise have each of the volunteers do this when the lesson starts.
8. Visit the classroom to see who needs boots and either bring the students to the portable to get them or find out their sizes and bring them to the classroom. The wetlands get soggy in the fall rain, and you will also be sending some of your groups down by the stream so try to make sure all students have boots.
9. When the volunteers arrive, introduce yourself and review the contents of the backpack. Let them know there is a Map and First Aid kit in the backpacks as well.
10. Review the lesson with the volunteers:
 - a) Go over the objective of the lesson
 - b) Demonstrate how the decibel meters work
 - c) Let them know they will be assisting the students taking sound measurements with the decibel meters, and then noting the sound source and the decibel level on the Sound Inventory Sheet.
 - d) Demonstrate how the walkie talkies work if needed.
 - e) Review the watershed map and let them know what their assigned site is, and how to find it.
11. Give each parent the assigned list of students they will have in their group for the outing.

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12. Remind volunteers that students need to stay with their assigned groups at all times. Volunteers need to stay with students until they are back in the classroom with their teacher.
13. Answer any questions. Give the parents the time they should start heading back to the portable for the end of lesson.

The Lesson:

1. Introduce yourself to the students and ask them some questions as a group.
 - a. Who remembers what we are going to do on our outing today?
(Teacher should have given them a brief explanation of the purpose of the outing in a previous lesson.) We're going to observe, measure, and document the sounds in the watershed environment as well as sounds that we hear around the school on the way to and from the watershed.
 - b. Where do you think you will observe the quietest sounds – in the watershed or on the school grounds?
 - c. Where do you think you will observe the loudest sounds?
 - d. Remember to stay with your assigned parent leader and follow the guidelines for working in the watershed.
2. Have the groups start walking as a class to the watershed sites. Group cross at the crosswalk, stopping the entire group and reminding them to “stop, look and listen”. Have a parent or two go out and guard the crosswalk. Remind students and parents that students are on the inside of the white line and parents are on the white line.
3. Approximately 10 minutes before the students are due back at the portable for the end of the lesson, notify parents by walkie talkie that it is time to finish up and start walking back to the portable. Remind them that they are to also measure sounds that are not made by nature on the way back if they hear any.
4. Be sure to verify that all groups have left their site and are returning to the portable before you leave the watershed.

Finishing Up:

1. Have students return boots and follow teacher's directions on returning to the classroom.

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2. If time permits, have parents put the new watershed bead on student's necklaces; otherwise, give beads to teacher to have put on necklaces as their schedule allows.
3. Collect the sound inventory sheets that the groups used to record their sound sources and levels. You will need these for the indoor lesson. If the indoor lesson is being held at a later time, you will need to make photo copies of the sound inventory sheets. Either take the photo copies with you if you are also leading the indoor lesson, or turn them in to the teacher so the teacher can make sure the indoor lesson leader gets them.
4. Remove materials from backpacks and return them back to their place in the watershed portable. Wipe down any wet and muddy backpacks or other materials before putting them away. Make sure decibel meters and walkie talkies are turned off before being put away.
5. Thank the parent volunteers! You can also send them an email later.
6. **IMPORTANT:** The indoor lesson that follows the outdoor lesson will require the students to refer back to the Sound Inventory Sheets that they filled out. If you are conducting your indoor lesson on a different day than the outdoor lesson you will want to make photo copies of the laminated Sound Inventory Sheets that each group completed, just in case another classroom uses them for their outdoor lesson before you have a chance to complete your indoor lesson.
7. When you check out at the office, let Kathy Conrad know that the outing is complete and she can turn off her walkie talkie.
8. Remember to fill out the Lesson Feedback form on the website.

Lesson Resources / Information Sources

- U.S. National Park Service Web Site: Effects of Noise
<http://www.nature.nps.gov/sound/effects.cfm>
- U.S. National Park Service Web Site: Annotated bibliography of Impacts of Noise on Wildlife
http://www.nature.nps.gov/sound/assets/docs/Wildlife_AnnotatedBiblio_Aug2011.pdf
- Energy Times: Noise in Nature
<http://www.energytimes.com/pages/features/0309/noise.html>
- Nature Sounds Society: Effects of Noise on Wildlife
<http://www.naturesounds.org/conservENW.html>