

Title of Lesson/Unit: The Great Bug Expedition

Elementary K- 4

Big Ideas:

- All living things sense and respond to the environment
- Plants and animals have observable features

Curricular Competencies - Students are expected to be able to do the following:

- Demonstrate curiosity and a sense of wonder about the world
- Make and record observations using their senses
- Experience and interpret the local environment
- Ask questions about familiar objects and events
- Express and reflect on personal experiences of place
- Local First People's knowledge of the local landscape, plants and animals.

Concepts & Content - Students are expected to know the following:

- Biodiversity in their local environment
- Characteristics and names of local plants and animals
- basic needs of plants and animals
- the interconnection between living and non-living things

Objectives for This Activity:

- Students will be able to identify species of insects in their local forest.
- Students will be able to speculate about the habitat's ability to meet the needs of these insects
- Students will be able to record their observations
- Students will be able to share their observations about living things in their local environment to help others learn about their "place"

Pre-Class Preparation – watch [All About Insects](#) or [Introduction to Insects](#)

Or, ["The Next Time you See a Pillbug"](#)

Or read in class ["Next time You See a Pillbug"](#) by Emily Morgan or ["A Pill Bugs Life by John Himmelman."](#)



Tell students they will be going outside to do a bug investigation. They will need to bring a

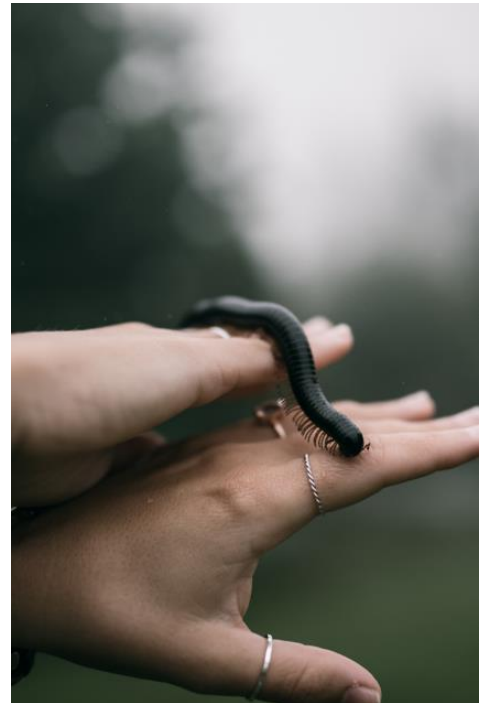
pencil and the following materials. The worksheets will be done over a few visits to a local stump or rotten log (adapt worksheets to ability).

MATERIALS:

- plastic pill vial, magnifying glasses
- Bugs - "Physical Characteristics Worksheet"
- Bugs - "Behaviour Worksheet"
- Bugs - "Movement Worksheet"
- Bugs - "Classification Worksheet"
- Bugs - "Location Worksheet"
- Bugs - "Lifecycles Worksheet"
- Bugs - "Interactions Worksheet"

Resources:

- [Insects of BC](#) (538 listings) (ticks, spiders, beetles, butterflies, bees etc. with photos and descriptions) or this "[Bug Guide](#)".
- [Spiders of BC](#)
- [Inventing Insects Scholastic Lesson Plan](#)
- [3D Insect App](#)
- [Insect body parts images](#)
- [INaturalist](#)
- [Scientists in School: Backyard Bugs](#)



Assessment/Evaluation

- Experience and interpret the local environment
- Compare observations with those of others
- Make simple inferences based on their results and prior knowledge
- Sort and classify data

Extensions/Additional Activities:

- BC [Indigenous culture](#) relies heavily on a close connection with the forest for wellbeing. Connect with local First Peoples and invite an elder or other member to share their stories of your local community and its history with students.
- Physical and Health Education: [Identify and describe practices that promote mental well-being](#). Explain how participation in [outdoor activities](#) supports connections with the community and environment.

- Art Education: Experience, [document](#) and [share](#) creative works in a variety of ways. Students create an [Arts and Crafts](#) display (Bug Wall) of the various drawings from their observations and share with others. Use recycled materials/modelling clay to make a pill bug model.

ACTIVITY:

Carefully examine the rotten log or stump for insects. Do not tear apart the rotten log as this may result in the destruction of the environment that you are studying.

Using the plastic pill vials, collect some insects in order to better study them. When you are finished examining them, return them unharmed to their natural habitat.

Compare the information on your worksheet to the insects you have collected to study.

Complete the accompanying worksheets (included below).

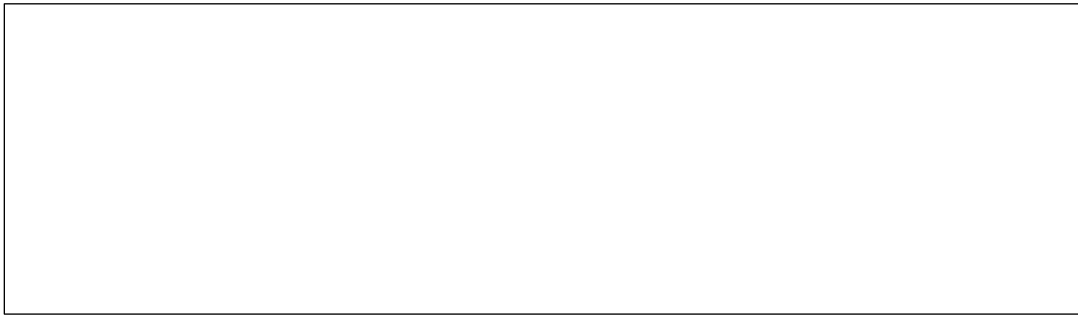


BUGS - PHYSICAL CHARACTERISTICS WORKSHEET

COMPLETE THE FOLLOWING:

1. How many body parts does your bug have? How many legs?

2. What shape is the body? What shape are the legs? Make a small sketch of them.



3. What has the bug done to help it hide? (Camouflage)

4. Is your bug an insect? How do you know?

5. What can you tell about the bug by looking at its mouth?

BUGS - BEHAVIOR WORKSHEET

COMPLETE THE FOLLOWING:

1. How does your bug react when it is removed from its environment?

2. Do all the bugs from this environment react this way?

3. Will a bug accept a different environment?

4. How do bugs react when shaded? Touched? Put in the presence of a different bug?

5. What kinds of food do insects prefer? What will they do to get it?

6. How do bugs try to hide? Protect themselves?

BUGS - MOVEMENT WORKSHEET

COMPLETE THE FOLLOWING:

1. How many different ways of movement can you see bugs using?

2. How many different ways of moving does each kind of bug use now? Later in their life?

3. Which ways are faster than others?

4. How can you (gently) make a bug move faster? Slower? Stay still?

5. Can any of the bugs you found fly now? How do you know?

6. Will any of your bugs be able to fly later in their life? What makes you think so?

7. When are bugs the most mobile/ Least mobile?

8. Compare types of locomotion of bugs to other animals.

BUGS - CLASSIFICATION WORKSHEET

COMPLETE THE FOLLOWING:

1. What is an insect?

2. Are all your bugs insects? If not what are they?

3. Would you group the bugs in the same way when they are eggs, pupae, larvae, adults? Why or, why not?

4. Make an identification key for the bugs you have found. Use [Identification Key](#) support.

This "[app](#)" allows you to take a picture of your insect and identify it. Additional [photo-based BC insect sites here](#).

Physical description:

How many legs?

Wings (yes or no)

What is your bug?

BUGS - LOCATION WORKSHEET

COMPLETE THE FOLLOWING:

1. Where did you find your bug?

2. Can you find the same kind of bugs in other locations?

3. Is your bug found throughout the rotten log? Is it more prevalent in some areas?
If so, where?

4. Look at both "new" and "old" rotten logs. Are the same types of bugs found in both?

5. Where can you find evidence of bugs in the log? What kind of evidence?

BUGS - LIFE CYCLES WORKSHEET

COMPLETE THE FOLLOWING:

1. What is a life cycle?

2. Do all animals have one?

3. What "stages" do the bugs go through?

4. Do they live all their life in a rotting log?

5. Do the bugs eat during all stages of their life cycle?

6. Do they eat the same things throughout their life?

7. Compare the life cycles of two or more bugs. Compare the life cycles of bugs and other animals.

BUGS - INTERACTIONS WORKSHEET

COMPLETE THE FOLLOWING:

What is a predator? What is a prey?

Can a bug be both during its life? Explain.

What is a food chain? How do bugs fit on a rotten log's food chain?

Do some bugs 'live' together? What do you think their relationship is?

Does your rotten log have any ["social" bugs](#)? What is a [social bug](#)?

What is a decomposer?

How can you tell which bugs are decomposers?