



Making a difference...together

SLUGS AND SLIME!

Educators Guide

Program at a Glance

On this fun and informative program, we inspire curiosity and a sense of wonder about slugs, one of nature's greatest recyclers. The unique features and the behaviors they use to navigate their forest home will amaze students. We begin with a dress up activity to learn about the basic features of slugs. In smaller groups, we explore the forest trails and look for banana slugs and licorice slugs to observe. Through hands-on, engaging activities the students will develop an understanding of the important role that slugs play as decomposers in our forest environment.



In this program, your students will

- Observe and enjoy seasonal changes in the forest
- Identify slugs and learn about their unique features and behaviors
- Explore the forest and see how it provides the basic needs for slugs
- Discover the unique value that banana slugs have in the forest
- Evaluate the impact of our actions on banana slugs and their forest home

Curriculum Connections

Our place based school programs directly relate to the K-5 science curricula. Below you will find some big ideas, curricular competencies and content that will be addressed on your program.

Big Ideas from BC Curriculum:

- Plants and animals have observable features (K)
- Daily and seasonal changes affect all living things (K)
- Living things have features and behaviors that help them survive in their environment (Grade 1)

Curricular Competencies from BC Curriculum:

- Demonstrate curiosity and sense of wonder about the world
- Make exploratory observations using their senses
- Experience and interpret the local environment
- Discuss observations
- Identify simple patterns and connections
- Consider environmental consequences of their actions
- Share observations and ideas orally and in role-play
- Express and reflect on personal experiences of place

Content from BC Curriculum:

- Identify the basic needs of plants and animals (K)
- Understand changes that forest animals have to make to accommodate seasonal cycles (K)
- Adaptations of local plants and animals (K)
- Structural features of living things in local environment (Grade1)
- Behavioral adaptations (Grade 1)
- Names of local plants and animals (Grade1)

Suggested Pre-Trip Activities

- Draw pictures about your fieldtrip and make predictions about what they might see.
- Create a K-W-L chart (what I know, what I want to know, and what I learned), for slugs and fill out the first two categories.
- Read stories about slugs and snails, to help understand their roles in the forest.
- Search for slugs or signs of slugs (slime trails) in the schoolyard.
- Have a sharing circle about how students feel about slugs.

Follow-up Activities

- Make changes to their slug drawings or predictions based on new knowledge.
- Make a slug mural, showing the importance of slugs in the forest community.
- Revisit the K-W-L chart, and fill in the “L” (what I learned).
- Have a slug awareness day in your classroom or school, and have students make posters to help other people understand the importance of slugs.
- Follow up sharing circle to talk about how students feel about slugs since their field trip.

Background Information on Slugs

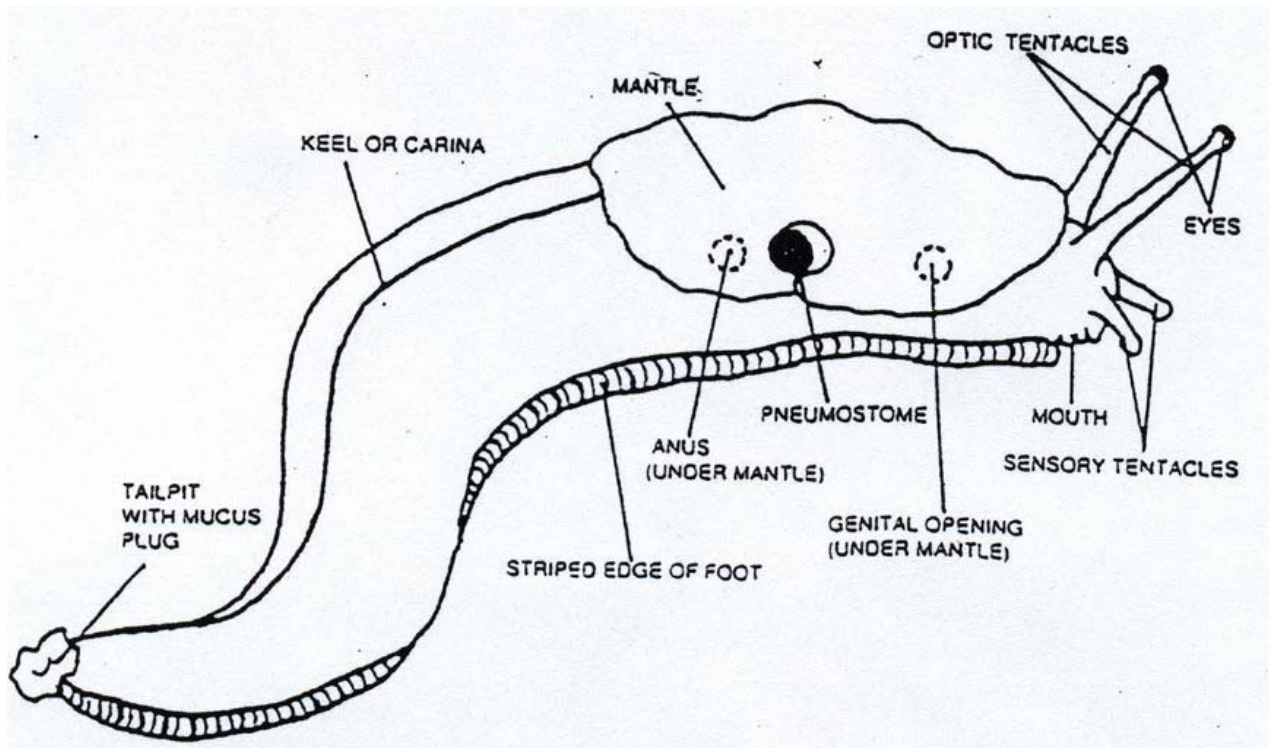
Many people consider slugs to be nothing more than slimy garden pests that eat all of our plants and squish under one's feet in the dark. This program is designed to provide a different picture of slugs, one in which they play a vital role as garbage collectors, decomposers and recyclers in our Pacific Coast forests. Slugs are vitally important contributors to a healthy forest community. The children will have an opportunity to meet, touch and examine slugs first hand, while learning fascinating facts about their structure and lifestyles. We hope teachers and parents will leave with some new insights as well.

Slugs belong to the class Gastropoda (literally translated as 'stomach foot'). All gastropods belong to the phylum Mollusca, which also includes other invertebrates such as clams, oysters, squids, octopus and snails. Slugs are basically a shell-less snail.

There are a number of different species of slugs, many of which came from Europe in cargo or on imported plants. The two slugs most likely to be seen in our parks are:

- 1) The **Banana Slug** (*Ariolimax columbianus*), is native to BC and is the largest slug found here; it grows as big as nine inches long. It most often keeps to its native habitat of forests and fields away from home gardens. It can be identified by its keeled greenish yellow body, often blotched with large black spots on its back.
- 2) The **Licorice Slug** (*Arion ater*), also called the Black Velvet Slug or Black Slug, is not native to BC. This dark European slug can be quite a problem in the garden. It is a bit thicker and not quite as long as the banana slug, and is dark black or reddish in colour. Its body has pronounced ridges or furrows.

Slug Anatomy



Key Word Definitions

decomposer - an organism (bacteria, fungi, slug) that feeds on dead organic materials and causes its mechanical or chemical breakdown, allowing its components to be recycled into the environment.

mantle - on the slug, this is located over the front part of the body and head. In snails, the mantle secretes the shell. In slugs, this outer layer of fleshy tissue tends to be rather tough and leathery, and may provide some protection.

radula - a horny band or ribbon in most molluscs, including slugs, that bears minute teeth on its dorsal surface and tears up food and draws it into the mouth.

slime - a mucous that slugs secrete. This slime functions in a number of ways: helps slugs to retain moisture; acts as a smooth surface for the slug to move; during cold winters to protect the slug; protects the slug's body as it moves over rough surfaces

tentacles - slugs have two sets of tentacles: on the top of the slug's head are the 'optic tentacles'. Each of these two long arm-like appendages has a small black dot at its end. This "slug eye" does not perceive detailed images but responds to light intensity. The sensory tentacles' are located on the lower portion of the slug's head. These shorter tentacles are sensory organs for feeling and smelling.

Resources

Teacher References

Burke, Thomas E. Land Snails and Slugs of the Pacific Northwest. Oregon State University Press, 2013.

Forsyth, Robert G. Land Snails of British Columbia. Royal BC Museum, 2004.

Gordon, David G. Field Guide to the Slug, The Western Society of Malacologists. Seattle: Sasquatch Books, 1994.

Harper, Alice B. The Banana Slug. Aptos, California: Bay Leaves Press, 1988.

Swanson, Diane. A Toothy Tongue and One Long Foot. Vancouver/Toronto: Whitecap Books, 1993.

Student References and Storybooks

Duncan, Pamela. Some Smug Slug. Harper Collins Canada, 1998.

Gauthier, James A, JD. Anna Banana: A Golden Yellow Banana Slug. Trafford Publishing, 2015.

Gravel, Elise. The Slug: The Disgusting Critter Series. Penguin Random House, 2014.

Jennings, T. Slugs and Snails. (*Junior Science*). New York: Gloucester Press, 1989.

Ryder, J. The Snails Spell. Puffin Books, 1988.

Ryder, J. Snail in the Woods. New York: Harper and Row, 1979.

Zoehfeld, Kathleen Wiedner. What Lives in a Shell? (Let's-Read-and-Find-Out Science 1). Harper Collins, 2015.