

Adaptations and Preparations – how Vermont animals prepare, adapt or behave for the cold of winter
Grade 2: Hibernation

Description

Students gather information to learn how some animals prepare, adapt or behave in order to help them survive in their habitats. Specifically, students will focus on the seasonal hibernation of three very different species: the woolly bear caterpillar (larvae Isabella tiger moth), the painted turtle and the torpor of the black bear. Students will work in teams to research, write, illustrate and create a charade about the hibernation of their selected animal. They will discover the differences in the ways these animals hibernate and their activity levels. Students will put on a winter charade (modified) for their peers, allowing their peers to guess which animal they are representing.

Lesson

- Read “Woolly Bear Winter: How North Woods Creatures Weather the Cold” as a hook for the lesson.
- Activate prior knowledge with a discussion about hibernation.
- Students identify some reasons why animals might hibernate.
- Students gather information to learn about the hibernation characteristics of woolly bear caterpillars, black bears and painted turtles. Including both behavior and biological changes.
 - >Students can access information through books from their library / learning center or via on-line resources.
 - >Help students search for, and organize, content with graphic organizers or simple worksheets.
- Ask students to explain how hibernation helps these animals to survive in their particular environment.
- Extension: Consider and research the effect of a warmer than usual winter, or a particularly warm period, on the animals studied. What behaviors do they exhibit? Do these behaviors put the animal at risk for survival?
- Ask students what they know about other Vermont animals as they might prepare for winter. Read the story “Woolly Bear Winter” to make connections between what they have learned in this lesson and a greater context of how different animals that live in the same environment prepare for the cold emphasizing the diversity of life in different habitats.
- Students brainstorm a list of other animals that they have observed in winter in Vermont.
- In their teams, divide up students to do writing, illustration and

charade development for their animals.

- Students will present their writing and illustration to the class.
- Charades (modified format) will begin. Teacher has a number of winter-time animals (from the brainstormed list), some which do not hibernate and these three hibernators on pieces of paper in a bag. Students, one by one, come up to select their assignment and act out the wintertime characteristics of the animal on the piece of paper. No sounds or words allowed. The class guesses!

Performance Expectations

2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats.

Clarification Statement: Emphasis is on the diversity of living things in each of a variety of different habitats.

Tips for Including the Performance Expectation

In this lesson students are describing how some animals hibernate in the winter in order to survive. These animals decrease body temperature and slow metabolic rates to survive in their particular environment. In this way, this lesson describes an interdependent relationship between some northern animals and their seasonal environment. Students are asked to compare and contrast three very diverse species who hibernate in the same environment.

Science and Engineering Practices

Planning and Carrying Out Investigations

Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.

Make observations (firsthand or from media) to collect data which can be used to make comparisons. (2-LS4-1)

Connections to Nature of Science

Science Knowledge Is Based on Empirical Evidence

Scientists look for patterns and order when making observations about the world. (2-LS4-1)

Tips for Including the Science and Engineering Practice

To connect with Science and Engineering Practice, students must discover answers and interpret data to support their own answers to questions posed in the lesson. They then must communicate that information using

a variety of methods. This allows connections to be made between information learned, application of individualized creative design, and communication of learned concepts through verbal presentations, graphic illustration, and performance art.

Disciplinary Core Ideas

LS4.D: Biodiversity and Humans

There are many different kinds of living things in any area, and they exist in different places on land and in water. (2-LS4-1)

Tips for Including the Disciplinary Core Idea

Teachers need to emphasize the idea that many animals live in any particular area and that they exist in different places on land and in water. Their physical environment has many factors that can aid in or reduce the ability of these animals to survive. Hibernation varies between land and water animals.

Common Core State Standard Connections

ELA/Literacy

W.2.7 - Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). (2-LS4-1)

W.2.8 - Recall information from experiences or gather information from provided sources to answer a question. (2-LS4-1)

Assessment:

General assessment of the intended goals of the lesson is easily achieved through monitoring students' discussion, their answers to guided questions, and their final writing, drawings and performances. It is also quite easy to revisit portions of the lesson in order to strengthen student understanding.

Note: This lesson format originally appeared in the NGSS@NSTA website titled "Cats and Their Coats" with free access. To view this resource in it's entirety and without changes visit:

<http://ngss.nsta.org/Resource.aspx?ResourceID=121>