



Montana Natural History Center

Connecting People with Nature

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Meeting Science Standards through Nature Education

The Montana Natural History Center’s Visiting Naturalist in the Schools (VNS) program supports the 4th- and 5th-grade science curriculum through the study and exploration of natural history. Through hands-on inquiry-based experiences, VNS addresses numerous key science curriculum areas targeted in NGSS and the Montana Science Standards for fourth and fifth grades.

VNS lessons give students hands-on opportunities to participate in a variety of science and engineering practices, including:

- Asking Questions and Defining Problems
- Planning and Carrying Out Investigations
- Using Models
- Analyzing and Interpreting Data
- Constructing Explanations
- Engaging in Argument from Evidence
- Obtaining, Evaluating, and Communicating Information

At its core, each VNS lesson uses the relationship of **structure and function**, one of the crosscutting concepts in NGSS and the new Montana Science Standards, as a lens for students to examine the natural world. Each month, students learn to look closely at the varied structures that all plants and animals have, and to explain how these diverse structures relate to specific functions in order for these organisms to survive. Additional crosscutting concepts addressed in VNS lessons include **Patterns** and **Cause and Effect**.

VNS lessons are hands-on, and **provide specific, repeated, and connected opportunities to help students meet the performance expectations about adaptation**. In a sequentially planned curriculum students:

- study plants to learn how flowers produce seeds, then unique fruit structures as dispersal methods for successful reproduction;
- explore animal teeth and sensory structures (in relation to food and hunting habits);
- experiment to learn how overall size impacts animals’ ability to stay warm); and
- use models to examine how the structures of different bird beaks relate to food choices, and more.

Demonstration of standards for engineering design practices for 3rd-5th grades are also supported with a series of three lessons in the spring that **focus on scientific inquiry**. Through these participatory experiments and following discussions, students gain a clearer understanding of the **definition of a “fair test”** as one that involves careful planning of experiments with **identified variables and controls**.

Finally, relating to all aspects of science standards, students learn to **use and understand the vocabulary of scientific language and practice making scientific arguments based on evidence** throughout their participation in the year-long VNS curriculum.

For more information about the Visiting Naturalist in the Schools program, contact us at 406.327.0405 visit our website: MontanaNaturalist.org/visiting-naturalist-program/.



Our mission is to promote and cultivate the appreciation, understanding, and stewardship of nature through education