Contoocook Valley Explorations in Sustainability

HARRIS CENTER FOR CONSERVATION EDUCATION
PARTNERSHIP with the CONVAL SCHOOL DISTRICT

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For 46 years, the Harris Center has been working with ConVal School District to help students, teachers, and families learn about the natural world through first-hand experience. Harris Center naturalists and classroom teachers work collaboratively to link each grade level's Next Generation Science Standards with studies using local forests, waters, farms, and buildings as laboratories for the students' discoveries.

2nd Grade • Seed Design Challenge: How do plants depend on animals to move their seeds around?

How do plants that stay still move their seeds to new places? How might animals help to move seeds? Using microscopes and hand lenses, second graders find the structures that enable seeds to stick to animal fur. Students design their own seeds, build them, test them on real bear fur, then re-design and re-test them until they can stick to a bear's fur as it ambles along for 50 feet.

3rd Grade • How do the birds we see in NH respond to seasonal change?

Why do we see some birds in NH all year long and others only in the spring and summer? What enables some birds to survive the brutal NH winter? How do birds' physical traits determine where they live and thrive? Students work with the Harris Center's museum mount bird collection and explore outside to answer these questions.

4th Grade • What do wild NH mammals do in the woods outside our school in winter and what evidence can we find to prove it?

Fourth graders get to know a woodland near their school and learn about its importance as wild mammal habitat. They identify and practice the knowledge and skills needed to read clues left behind by wild animals in the winter landscape; explore outdoors and make a map that represents their findings; raise questions; and investigate a question based on what they find outside.

5th Grade • What are the abiotic and biotic factors influencing an ecosystem outside our school?

Fifth graders inventory and analyze abiotic and biotic factors at a study site just behind their school. They look for patterns in the organisms they find and identify abiotic factors that affect the biotic communities. Using tools such as field guides, dichotomous keys, hand lenses, nets, thermometers, soil corers, and graphs, students become field ecologists and gain a deeper understanding of patterns in their local landscape.

6th Grade • How does food get to our tables? What does it take to grow food in NH?

How do climate, water, and soil resources impact food production in NH and around the world? Sixth graders conduct scientific experiments to explore how physical conditions influence plant growth. They also solve an engineering/design puzzle such as building a portable chicken pen or school garden beds.

7th Grade • Solar Sprint Engineering Challenge: Designing, building and testing solar-powered cars

Students are challenged to create a model car that runs off a solar panel. At the regional Solar Sprint race hosted by the Harris Center, students from six area schools meet to race their cars and win awards such as Fastest Car, Best Use of Recycled Materials, and the Peoples' Choice Award.

8th Grade • Investigating Local Biodiversity Through the Seasons: Surveying macroinvertebrates as indicators of water quality, exploring deer ecology and management, and conducting biodiversity inventories

Using a variety of surveying techniques and tools, students collect data and make meaning from their findings. Each season's field trip draws on the Harris Center's network of environmental experts to bridge the gap between students in school and natural resource management practitioners.

9th Grade • What evidence can you find of heat loss in the energy-efficient Harris Center building? What can be done to minimize heat transfer in buildings?

Using energy-audit technology such as infrared cameras and blower door test equipment, students will determine areas of air infiltration and heat loss within the Harris Center building. Based on their data, they suggest and prioritize solutions to improve the building's energy performance and then communicate their recommendations to the Harris Center.

10th Grade • What is the impact of invasive plant species and what can we do in our community to manage their spread?

Students identify invasive plants using dichotomous keys and careful observation of plant anatomy, and evaluate how invasive plant adaptations foster a competitive advantage and lead to a dramatic impact on New England landscapes. Tenth graders survey study plots each year on the ConVal campus. They develop species-specific management plans, hand-pull invasive plants, and track the success of their efforts.

9-12th Grades • The Harris Center supports ConVal's 9th-12th grade Envirothon Team. ▶

What ConVal Teachers Say is Most Valuable About Collaboration with the Harris Center for Conservation Education

"As always, this experience was rich and meaningful for all of my students, but I always am particularly pleased with the way it can make struggling students shine and be leaders among their peers."

"The naturalist's preparation and enthusiasm is unbelievable. My students thoroughly enjoy every minute."

"The lessons taught were directly linked to the science curriculum/NGSS. I enjoyed watching the students interact with the hawk mounts. Having an up-close interaction was priceless."

"I loved the program and was happy that the naturalist left materials with me to continue working with the class. The students had more time for observations and felt proud that they were trusted with the materials."

"It was great — classroom and field work! Having aquatic macroinvertebrates in the classroom before we went out was just what the kids needed to get excited about going to the brook. It gave them knowledge, made them more confident in their ability to identify the creatures, and definitely got them immediately engaged."

"Keep doing what you're doing. I am so grateful that the Harris Center brings hands-on investigative science to our school district."