

INL Grant

Project Title Insects Larger Than Life
Grade Level and Subject Area Spectrum 1-3 - Science
Number of Students 25

Project Summary

Briefly describe the reason for equipment request. **Justify the need for the equipment and provide supporting documentation on how it will enhance student interest in science, math, or technology.** (Maximum of 300 words.)

Working in groups of five, students will collect insect specimens, mount them and then identify the parts of the insect under the magnification provided by the visual presenter which is a high resolution camera that displays the object in actuality to an interactive whiteboard connected to a projector and a computer. While it is projected the students will observe, collect the data and evaluate it. They will be able to see how insects are suited to live in different habitats and how they adapt to their environment. Students can collect materials from the physical environment to camouflage the insect and understand why camouflage is important to insects and their survival. The camera has a 3x optical zoom and double lamp design to provide optimal lighting for viewing the objects which is greater than the visual from the naked eye. It also can store up to 240 jpg images, audio and video clips. I already have the interactive whiteboard, the projector, and the laptop computer.

I have found that children master concepts when the lesson is visual and interactive. Showing the students a picture of an insect from a book does not compare to their collecting the bug and then displaying it to the class in this interactive method. Students are dealing with the actual item and their interest is enhanced and enlightened because they can actually see the working parts of an insect.

In a series of science books I have written entitled *Brown Bag Science*, one of the lessons compares the dragonfly to the damselfly. Under this enhanced magnification, the students will be able to easily identify these differences. They can also draw pictures of the metamorphosis of different insects and display them from the camera. When children display their own ideas they take ownership of the project.

STEM Goals and Objectives

How does your proposal relate to your school and/or district goals and objectives? Explain how the goals and objectives correlate with the Idaho standards? Explain. (Maximum of 300 words.)

Students will be able to make observations, collect data and evaluate it (State Standard 573.02 a)

Students will use appropriate tools and techniques to gather and display data (State Standard 574.01c)

Students will discuss how insects are suited to live in different habitats and how they adapt to their environment (State Standard 547.01b)

Students will be able to recognize and label the parts of the insect (State Standard 3.S.1.1.1)

Students will practice cooperation and interaction skills (State Standard 1.S.1.7.1)

Students will observe and describe the life cycles of an insect (State Standard 1.S.1.3.1.1)

Briefly describe student connection.

How will the equipment be used to link to specific learning objectives? Include examples of teaching methods and strategies that will be used to accomplish the project. (Maximum of 300 words.)

- Students will be collecting and identifying insects to display to class members
- Students will be identifying the different parts of an insect
- Students will compare and contrast their insects
- Students will model the insects in various media
- Without the visual presenter students are unable to see the details of the insect and they are unable to display their efforts to the other members of the class in an effective method. A microscope is a one person tool and there is limited interaction between the students because of this. With the visual presenter the item is viewed by the entire class which stimulates group and class discussion.
- I realize this tool is not limited to looking at insects but with time-lapse image capture, I can set the time-lapse to capture the important moments of an experiment. Whether I want to document a chemical reaction or a butterfly slowly emerging from its cocoon, this image capture feature will allow me to present lessons that increase and enrich understanding in all areas of the curriculum.

Budget

Provide an itemized list of equipment costs with vendor quotes and, if applicable, professional development related to equipment operation. Your budget should be reasonable, appropriate and specific. Materials should be for sustained rather than one-time use.

<u>Item</u>	<u>Supplier</u>	<u>Estimated Cost</u>
1 Lumens DC260 SXGA Digital Visual Presenter	OETC	\$636.35
Shipping		20.40
5 Field Backpack Insect Collecting Kits	Education Science	299.75
Shipping		18.00
TOTAL		974.50