

Polar focus fascinates Project New Start

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Friday, April 04, 2008

http://www.azdailysun.com/articles/2008/04/04/news/20080404_front_page_6.txt



Jillian Worssam, left, helps Marisol Tafolla, 14, with a science project in her Project New Start classroom.

During a scientific experiment in a Project New Start classroom, students peered through the microscope lens at fingernail-sized otoliths.

By analyzing the detail of the fish ear bones of the arctic species of cod and pollock, students were able to draw conclusions about the relative age and health of the creatures. Eighth-grader Marisol Tafolla, 14, said because the bones were thick, they must have been healthy.

Following the experiment, the students decided that the fish must have been from the same population age range due to their similarity in size.

Outside the classroom, a second group of burgeoning arctic researchers took cores of ponderosa pines in order to determine the age and environmental conditions the trees experienced through their life.

"You can tell with this one that it wasn't very healthy because the rings are so close together," eighth-grader Derek Miller, 14, explained.

These experiments were just a few the seventh- and eighth-grade students are conducting as part of their comparative study of Flagstaff and the Earth's arctic regions.

This summer, their instructor, Jillian Worssam, will travel to the Bering Sea to spend one month on the U.S. Coast Guard Research Vessel Healy. There, she will meet with teachers from throughout the world to participate in polar research, working closely with scientists as a pathway to improving science education.

"She's a nature freak," Manuel Batriz, 14, said of his teacher. "She really likes to go on outdoor adventures."

LEARNING BY COMPARISON

Worssam was selected through a rigorous process to join 36 U.S. teachers and a professional research team to explore the environments, cultures, history and science.

PolarTREC teachers will learn about cutting-edge scientific research on topics ranging from atmospheric chemistry to seabird ecology and will share their experiences with scientists, educators, communities, and hundreds of students of all ages across the globe.

In preparation for Worssam's journey, her students are centering many of their curricular studies on the comparison of their home in the high pines with the far reaches of the globe.

In English, the students are composing research papers and comparative essays.

From the arctic regions, the students are studying and writing about herbivores, carnivores, arctic muskox, salmon, moose, arctic fox and hare, grizzlies, polar bears and seals. These are compared with northern Arizona wildlife including squirrels, brown bears, elk and deer.

They are also composing letters to scientists currently on the ship.

In social studies, the students will learn of the human history of the North Pole regions by discussing Inuit peoples, as well as early explorers of European American origin.

During math, the class will equate life spans of various creatures as well as reproductive rates.

WORLDWIDE CONNECTION

Students are also actively engaged in monthly Webinars connecting scientists in the Beaufort Sea and Antarctica with classrooms in Europe, the Americas, Africa and many other locations. Through this virtual meeting, students and teachers who will head to the poles this summer are provided with the opportunity to discuss changes in Arctic and Antarctic ecosystems and more.

"It felt like we were on MySpace," Batriz said.

As students from Africa asked their questions through the Internet, the New Start youth were amazed.

"We got to hear how their questions are similar to ours," he said.

Tafolla and her classmates said the project has inspired them to learn about other regions of the world and explore opportunities to someday travel to distant lands.

Currently, the class is making plans to visit the Page Springs Fish Hatchery to analyze local species, as well as Oak Creek to experience the low river beds.

The PolarTREC program builds on the past TREK program (Teachers and Researchers Exploring and Collaborating in the Arctic) to encompass learning experiences in both the Arctic and Antarctic.

It is just a portion of the International Polar Year (IPY), which began in March 2007 and continues until 2009. The IPY is a program of international research and education focused on the Arctic and Antarctic regions.

Other class members include: Raymond Bacca, Richard Campbell, Annaly Corral, Justin Dennison, Kristopher James, Derek Miller, Micah Hickman and Uriel Rivera.

For more information about the International Polar Year and the PolarTREK visit: www.polartrec.com/gallery/2008/high-arctic-change-08 Rebecca Jacobs can be reached at 556-2250 or rjacobs@azdailysun.com.

Project New Start student ecosystem essays

Different Ecosystems

By Annaly Coral

... There are different kinds of ecosystems in this world. They all have different species depending on what side of the world they are on. For example polar bears are found in the arctic not in the Antarctic. All ecosystems are important because humans need them...that's why our world is good right now. If humans destroy these ecosystems, the humans are going to die.

Ecosystems

By Ricky Campbell

An ecosystem is a habitat of a particular environment. This paper is focusing on Flagstaff and the Arctic. In winter the Arctic has 24 hours of night (which is our winter) and in their summer the Arctic has 24 hours of light (which is our summer). Flagstaff has a lot of the diverse animals that the Arctic has, like bald eagles and black bears. There are also trees in the Arctic that Flagstaff has. These also include sub alpine fir, Engelmann spruce and the rocky mountain bristlecone. If there were only one ecosystem in the world it would be boring and the diversity would die off. If there were only one ecosystem in the world then it wouldn't survive because some animals need a warm climate while others need a cold climate. If these ecosystems didn't exist then the Earth would die and become a dead planet. That's why we need different ecosystems.