

Dear Parents and Caregivers,

Willow Oaks Second Graders just finished up a terrific science unit with teachers from the Palo Alto Junior Museum and Zoo (JMZ). You can help solidify your child's learning, and foster a life-long love of science at the same time. Simply ask your child to talk about it! Use the class descriptions below, as well as our suggested questions and web links to guide your discussions, and have fun learning together!

Unit Title: Science Sampler

This unit was designed to introduce your child to a variety of different science concepts and ideas. In an animal study class, students learned about the special characteristics and adaptations of arthropods (ex: insects, crabs, spiders) and met some live arthropods from the JMZ. In a physics lesson, they learned about energy, friction, gravity and traction as they built roller coasters with bendable tubing around the classroom. In a geology lesson, students learned about the properties and origins of sand, as well as the diverse varieties of sand found around the world. And, finally, through hands-on exploration of artifacts from the JMZ's collection, they learned how fossils hold secrets to our Earth's past.

Questions:

Humans have internal skeletons, while arthropods have exoskeletons (skeletons on the outside of their bodies). What do you think it would be like to have an exoskeleton? How does an exoskeleton benefit an arthropod?

What is the difference between energy, friction and gravity? How do energy and gravity work together to speed up a roller coaster, and how does friction slow it down?

Sand often comes from rocks. What do you think causes rocks to break down into sand? Why do you think some sand grains are finer, or smaller, than others?

What do you think our world looked like a long, long time ago? How do you think fossils help scientists make such great guesses about what dinosaurs looked like?

Web Links:

http://www.globio.org/glossopedia/article.aspx?art_id=15

<http://www.learner.org/interactives/parkphysics/>

<http://www.sand4students.net/en/textbook/text02.html>

<http://www.sdnhm.org/kids/fossils/index.html>

The Palo Alto Junior Museum and Zoo (JMZ), located at 1451 Middlefield Road in Palo Alto, is a small children's museum with educational exhibits and live animals. Daily admission to the Museum is free, and they also offer many science classes for families and schools. Each year, JMZ science teachers teach approximately 180 classes in Willow Oaks Elementary School (provided at no cost). Lessons include close encounters with live animals or authentic artifacts, hands-on exploration of science concepts, and work with real scientific tools and equipment. We encourage you to take advantage of this important learning resource by visiting the JMZ often with your child.

Enjoy!

Sincerely,

Willow Oaks Elementary School
Second Grade Teachers