

LETTER TO PARENTS

SCIENCE NEWS

Dear Parents,

Every day something happens that most of us take for granted. The Sun comes up and the Sun goes down. Of course, we know that it's actually Earth rotating on its axis that makes the Sun appear to make this daily journey. Earth wouldn't be the same without the daily dose of sunshine supplied by our local star. Most life on Earth depends on the light and heat energy from the Sun.

In the FOSS **Solar Energy Module** we will focus our investigations on the Sun's energy. We'll start by tracking shadow patterns for a day and think about the information we can get from the constantly changing shadows. We will use thermometers to record temperature changes in earth materials as a result of solar heating, and conduct experiments to discover what materials hold the Sun's energy most effectively. We will go on to make solar water heaters, sorting out the variables that influence the temperature and heating rate of a water-heater system. In our last investigation we will investigate model solar homes and identify some of the variables, such as insulation and direct sunlight, that support energy-efficient solar space heating.

You can extend your child's experiences in the classroom in a number of ways. Spend some time identifying and talking about the various ways you use energy in your home and finding out where the energy you use originates. Find a place to "shadow watch" (e.g. a flagpole, tall tree, fence posts) for several weeks and months and begin to identify the pattern and make predictions about where shadows will appear. Consider what you should wear when you go out on cold days—should you wear a light-colored or dark-colored sweatshirt? You might look through the yellow pages for businesses that deal in solar water and space heaters for homes and equipment powered by solar cells, which make electricity directly from sunshine. We won't be studying solar cells in this unit, but if your child is interested in this important application of solar energy, he or she might choose to do a project to share with the rest of the class.

Watch for the home/school connections that I will be sending home from time to time. These suggest ways for family and friends to extend the solar investigations into your community. This is a chance to take a peek into a future when solar energy will assume a much more important role in meeting the energy demands of the world. If you have questions or expertise to share with the class, please stop by our classroom. We're looking forward to a couple of months of enlightening investigation into solar energy.

Comments

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Dear Parents,

Human beings make their homes at the surface of the planet we know as Earth. The shapes that decorate Earth's surface include a variety of landforms, including mountains and valleys, canyons and ridges, volcanoes, basins, hills, sand dunes, and moraines. Each landform is the result of one or more processes that create and change Earth's surface.

In the **FOSS Landforms Module** students begin to look at ways to represent the features of Earth's surface at smaller scales. First, they work in three dimensions by creating desktop models of their schoolyard. They learn to transfer the features in their models to a two-dimensional map. Along the way, they learn that symbols can represent landforms, structures, and other features of an area.



They continue their study of the landforms by investigating the effects of water running over Earth's surface. The Grand Canyon is the focus of their investigations as they set up a model plateau in a stream table. As they observe the effects of water running over solid earth materials, they learn new landforms and vocabulary, including canyons, deltas, erosion, and deposition. They design and set up investigations to study how changes made by people affect the processes of erosion, deposition, and stream flow.

You can extend your child's experiences in the classroom in a number of ways. Take trips to nearby parks that feature landforms common to your region. Watch the erosion and deposition that take place during and after a rainstorm. Visit your local library and check out books that include information about the local landscape. Have your child help you plan the route and destination for your next family vacation, keeping in mind the interesting and unusual landforms you could encounter along the road.

Watch for Home/School Connection sheets that I will be sending home from time to time. On them you will find suggestions for activities you can do at home with the whole family to extend and enrich the investigations we will be undertaking in our classroom. If you have any questions or comments, call or come in and visit our class.

We're looking forward to weeks of exciting investigations into the features of Earth's surface.

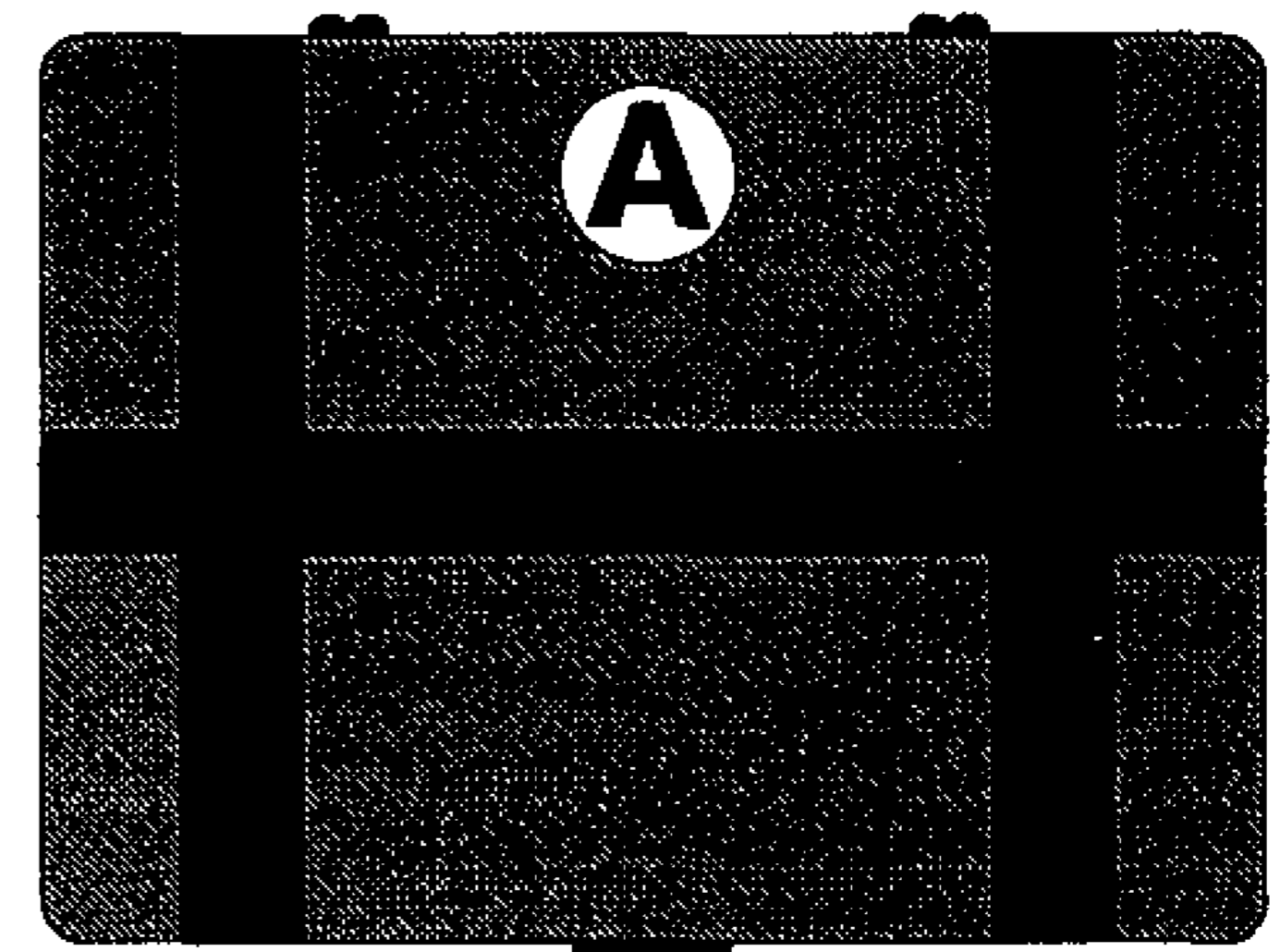
Comments

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Science News

Dear Parents,

Our class is beginning a new science unit using the **FOSS Models and Designs Module**. We will assume the roles of scientists as we try to figure out what hidden systems look like and how they work. Then we will change into engineers as we try to design self-propelled carts from simple construction materials. We have an interesting and exciting couple of months ahead.



In this module, children learn about scientific models. A scientific model explains a natural system or process that is not totally accessible to direct investigation. An example from geology is the ongoing struggle to figure out what our planet is like from crust to core. Each advance in scientific technology provides scientists with more information, and the model for the structure of Earth is refined. But it's still a model—no one knows for sure whether it's correct, because no one has been there for a firsthand look. In class we will be confronting less-imposing systems, but the processes of gathering evidence, sharing ideas with peers, creating models, and modifying them based on additional evidence are the same. We will learn how to think productively about the unknown.

After we tackle models and expand our points of view and ways of thinking about systems, we will become engineers who design and create products. We will be designing and building carts from sticks, paper clips, wire, rubber bands, and the like. With each passing investigation students face more demanding engineering challenges, and I expect to see a lot of creativity brought to bear on the problems.

From time to time I will be sending home/school connection sheets home with your child. These describe activities for the whole family, to share a little bit of the fun we will be having at school with models and designs. If you have any questions or comments, call or come in and visit our class.

Comments _____

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Dear Parents,

We are about to begin a study of objects in the sky—the Sun, Moon, and stars. We'll start with the Sun and use a variety of tools to observe and record its position in the sky. To orient our observations, we'll use a compass. And to monitor the Sun, we will use our shadows. While we use the language that the Sun rises in the east and sets in the west, we know that it really isn't the Sun moving but the rotation of Earth on its axis that makes it appear that the stationary Sun is moving across the sky. We will be studying the predictable pattern of the Sun as it travels across the sky during the day and during different seasons.

Then we will study the Moon. We will start as a class by observing the Moon during the day and follow that up with night-sky observations. Since we aren't in school at night, this must be a homework assignment. As a bridge to what we have been studying in class, students will look for the Moon and other objects in the night sky when they are at home.

To make night-sky observations, take your child outside at about the same time each evening (when it's dark) and observe the sky. Take a few minutes to enjoy the night sky together. Talk about what you see. For example, if it's cloudy, you won't see anything but clouds. If it's clear, you will see stars (you might want to point out a constellation or two), planets (points of light that appear larger and brighter than stars), and sometimes the Moon. Discuss the changes in the night sky from night to night, especially the changing appearance of the Moon, and where you see it in the sky. (You can check your local newspaper to find out when it rises.)

Have your child record his or her observations on the Night-Sky Log (sample below) when I send it home, and bring it to school on the following Friday morning. To complete an entry, your child records the date and time. Have your child write a few sentences about what he or she observed and draw a picture to show what the Moon looks like.

Thanks for your help! And look for the Night-Sky Log coming home soon.

MONDAY

Date February 28

Time 6:10 p.m.

Observations

The Moon was oval. It was high in the sky.

There were lots of stars.

One star in the west was brighter than the rest.

