

F CUSED FIELD TRIPS

Sixth Grade Student Investigation

600 E. WASHINGTON • PHOENIX, AZ 85004 • 602-716-2000 • AZSCIENCE.ORG

ARIZONA
SCIENCE
CENTER 

Updated December 2011

This Investigation contains activities on a variety of topics found throughout the Center. Exhibits are also sometimes removed temporarily for repair or refurbishment, or may be in use by other groups, so be prepared to be flexible.

Investigation Activities

Level 1: All About Me in the Steele Foundation Gallery

Respiratory and Circulatory

Do you know how your lungs work or how blood affects your body? By learning about how oxygen is transferred from the air into our blood we must study how our lungs work.

Where to go

Gas Em Up, Take a Deeeeeeep Breath

What to do

Find: “Gas ‘Em up” and watch how the blood carries oxygen from the lungs to the entire body.

Find: “Take a Deeeeeeep Breath.” Push the level up and down to inflate the balloons.

How do you think this is similar to our lungs filling up with air?

Level 3: Forces of Nature in the Sybil B. Harrington Galleries

Earth’s Processes and Systems

How do you think the weatherman predicts the weather on earth? It is by studying how the earth works and how the atmosphere affects our climate that we can begin to understand how water, air, and our oceans affect us on a daily basis. By learning more about the earth’s atmosphere we can also gain valuable information on how pollution affects our air, water, and climate as well.

Where to go

The Ocean in Motion, Magic Planet

What to do

Find “The Ocean in Motion.”

How do you think ocean currents affect Earth’s climate?

What do you think would happen if the currents changed paths or direction?

What do you think would happen if the currents stopped altogether?

Now find The Magic Planet in the Wells Fargo Room. Use the buttons on the monitor to control the Planet so that you can examine weather data – including past hurricanes!

What can you learn from examining weather data?

In what ways can this knowledge help us?

Changes in Environments

The weather in Arizona can vary greatly, from scorching heat in the summer to a violent rainstorm during the monsoon season. Many different types of natural hazards can create many different affects on this planet: floods, droughts, hurricanes, tornadoes, etc.

Where to go

Immersion Theater, Air Wall

What to do

Go to the Forces of Nature movie stage and watch, listen and feel phenomena such as lightening and thunder, desert heat, earthquakes, hurricanes and more!

Find the “Air Wall” and read about hurricanes, dust storms and lightening.

Have you ever been in a hurricane?

How can weather affect humans?

Can weather affect landforms?

Level 4: Solarville in the APS Solar Gallery

Photovoltaic Activity

Light energy from the sun, in the form of **photons**, can be harnessed as a source of electricity. Photons are captured by **solar panels** via the **photovoltaic effect**. Photovoltaics is the direct conversion of light into electricity at the atomic level. Some materials exhibit a property known as the photoelectric effect that causes them to absorb photons of light and release electrons. When these free electrons are captured, an electric current results that can be used as electricity. (NASA)

Where to go

How a Solar Panel Works

Updated December 2011

What to do

Find How a Solar Panel Works and flip through each layer of a solar panel.

What particles are in a stream of sunlight?

List the **five** layers of a solar panel:

- 1.
- 2.
- 3.
- 4.
- 5.

What does the metal layer do?

What is the role of boron in the silicone layer?

Renewable Energy

Every day we rely on various sources of energy to heat and cool our homes, run our cars, wash our clothes, cook our food, turn on lights and make the products we use. Without energy we wouldn't be able to watch TV or talk on the phone. Over the years our scientists have discovered many ways to generate the energy we need to live comfortably. Some of this energy is from non-renewable sources; once it is used up, we can't get any more. Other energy comes from renewable sources such as the sun.

Where to go

Renewable Energy

What to do

Read the panel on renewable energy.

The United States leads in what two renewable energy sources?

How is geothermal energy produced?

What produces most of the world's energy?