

SPLASH, FLASH, CRANK, SLIDE, ALIVE!

This is a general science tour with plenty of hands-on action in the areas of life cycles, adaptation, fossils, energy, water cycle, friction, and gravity. Your class will explore Discovery Center animals, water table, shadow room, and super slide.

6th GRADE

Standards:

Science

Language Arts

Social Studies

Life Science

Standard 2. INTERDEPENDENCE:

Conceptual Strand 2: All life is interdependent and interacts with the environment.

GLE 0607.2.1. Examine the role of consumers, producers, and decomposers in a biological community.

Teacher Questions, Pre-Tour

Q: Have students define “consume,” “produce,” and “decompose.” Knowing what they have previously learned about food cycles, have them give examples of producers (plants), consumers (animals that eat plants or other animals), and decomposers (animals that eat dead plants/animals).

Teacher Questions, Post-Tour

Q: Name some of the producers, consumers, and decomposers that may exist in the wetlands at the Discovery Center. What would happen if there were no producers? No consumers? No decomposers in the wetlands?

GLE 0607.2.2. Describe how matter and energy are transferred through an ecosystem.

Teacher Questions, Pre-Tour

Q: Have students describe how energy is transferred from the sun to themselves via a lunch of hamburger with bun, French fries, a salad, and milk. Which foods have more ‘steps’ (energy levels) from the sun to their plate? (the hamburger and milk).

Teacher Questions, Post-Tour

Q: Describe the energy transfer from the sun to a Great Horned Owl, using at least 5 steps (sun, plant, mouse, snake, skunk, Great Horned owl --- could leave out the snake or the skunk if necessary). Is energy gained or lost with each succeeding level? Why do you think so?

trophic level: energy transfer through an ecosystem. [Art]. In *Britannica Online for Kids*.

Retrieved from <http://kids.britannica.com/comptons/art-90132>

Physical Science

Standard 10. ENERGY:

Conceptual Strand: Various forms of energy are constantly being transformed into other types without any net loss of energy from the system.

GLE 0607.10.1. Compare and contrast the three forms of potential energy (gravitational, elastic, and chemical potential energy.)

Teacher Questions, Pre-Tour

Q: What is the difference between potential energy and kinetic energy?

An example of potential energy becoming kinetic energy would be...?

Teacher Questions, Post-Tour

Q: At the Discovery Center slide, when did you experience potential gravitational energy?

When/where did you experience the pull of gravity (you experience it all the time---that's why you don't float away!) especially? (on the slide). What force works against the pull of gravity on the slide? (Friction).

How do you think you could go faster on the slide? (remove sources of friction or add something to reduce friction---like sitting on a piece of slick fabric or waxed paper).

More activities may be found here:

<http://www4.uwsp.edu/cnr/wcee/keep/Mod1/Whatis/experiments.htm>

Standard 12. FORCES IN NATURE:

Conceptual Strand: Everything in the universe exerts a gravitational force on everything else; there is an interplay between magnetic fields and electrical currents.

GLE 0607.12.1. Describe how simple circuits are associated with the transfer of electrical energy.

Teacher Questions, Pre-Tour

Q: When you switch on a lamp in the room, or turn on a computer, what should happen? (The light or the computer should come on.) What is one thing to check if that doesn't happen? (Check that the lamp or computer is plugged into the wall socket.) Why would you check this first? (The lamp or computer should come on, because the electrical energy should be transferred from the plug through the cord --- a wrapped wire --- to the lamp or computer.)

Teacher Questions, Post-Tour

Q: On your tour at the Discovery Center, describe the electromagnet you made. What was the source of electrical power, and how did you design a complete circuit?

What "broke" the circuit?

Language Arts

Recommended Reading:

Nonfiction:

A Drop Around the World by Barbara McKinney. (1998). Ages 5 and up. **Lexile measure: 820L.**

City Animals (Zoobooks Series) by John Bonnett Wexo.
Come to Your Senses (All Eleven of Them) by Milan Tytla. (1993).
Cool Gravity Activities: Fun Science Projects about Balance (Cool Science) by James Hopwood.
DK Eyewitness Books: Fossil by Paul Taylor (2004). Ages 8 and up.
Ducks, Geese, & Swans (Zoobook Series) by John Bonnett Wexo
Hamsters, Gerbils, Guinea Pigs, Rabbits, Ferrets, Mice, and Rats: How to Choose and Care for a Small Mammal (American Humane Pet Care Library) by Laura S. Jeffrey. (Ages 5 and up, 48 pages).
Janice VanCleave's Energy for Every Kid: Easy Activities That Make Learning Science Fun by Janice VanCleave (2005). Ages 9 and up.
Learning to Care for Small Mammals (Beginning Pet Care with American Humane) by Felicia Lowenstein Niven. (Grades 3 and up)
Nocturnal Animals (Zoobooks Series) by John Bonnett Wexo. (Grades 4 and up)
Owls (Zoobooks Series) by Timothy L Biel. (Grades 4 and up)
Salamander Rain: A Lake & Pond Journal by Kristin Joy Pratt-Serafini. (Grades 3 and 4).
Skunks and Their Relatives (Zoobooks) by John Bonnett Wexo. (Grades 4 and up)
Turtles (Zoobooks Series) by Timothy L. Biel. (Grades 4 and up)
Understanding Your Senses by Rebecca Treayes (1997) Upper elementary.
Snakes! (Zoobook Series) by John Bonnett Wexo. (2001).
Snakes! Strange and Wonderful by Laurence Pringle. (2009). Elementary.

Fiction:

(Hybrid: fiction and nonfiction) Near One Cattail: Turtles, Logs And Leaping Frogs by Anthony D. Fredericks. (Ages 4 and up)
The Magic School Bus Explores the Senses by Joanna Cole. (2001). Grades 1-4.
The Magic School Bus Gets Eaten: A Book About Food Chains by Pat Relf. (ages 4 and up, 32 pages)
The Magic School Bus Inside the Human Body by Joanna Cole. (2011). Grades 2-5
The Magic School Bus Wet All Over: A Book About the Water Cycle by Pat Relf (1996). Grades 3-5.

For teachers:

Ranger Rick's NatureScope series titles:

Amazing Mammals, Part I (1998, National Wildlife Federation, McGraw-Hill)
Amazing Mammals, Part II (1998, National Wildlife Federation, McGraw-Hill)
Endangered Animals: Wild and Rare (1997, National Wildlife Federation, McGraw-Hill)
Let's Hear It for Herps (1997, National Wildlife Federation, McGraw-Hill)
Wading Into Wetlands (1997, National Wildlife Federation, McGraw-Hill)

Social Studies

Standard 6. INDIVIDUALS, GROUPS, and INTERACTIONS:

Content Standard 6.0: Personal development and identity are shaped by factors including culture, groups, and institutions. Central to this development are exploration, identification, and analysis of how individuals and groups work independently and cooperatively.

GLE 6.6.01. Recognize the impact of individual and group decisions on citizens and communities.

Teacher Questions, Pre-Tour

Q: Whether you live in the city or the county, you need services that can be provided to a group of citizens. Can you name some of these services? (light/electricity, water, heat, fire protection, crime prevention and protection, waster removal services, etc.)

Teacher Questions, Post-Tour

Q: Does each family buy its electric power individually from the source? (No, we usually buy it as a group, sometimes call a “coop” or cooperative, which helps save money for the individual family or consumer.) This is an example of citizens working as a group (cooperating) to provide something all of them need and use.