



BIG Ideas + Science = FCAT Success!!



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Goals and Objectives



The ultimate goal of **BIG Ideas + Science = FCAT** **Success!** is to decrease preparation time and increase the amount of quality teaching time with the students. The “Big Idea” lessons are a wonderful way to introduce or reinforce a new concept in science.

These lessons should be used in conjunction with a state adopted textbook, in order to provide the students with accurate vocabulary, graphics and illustrations that will facilitate comprehension. As the students experiment with scientific concepts, they will understand complicated science information and be able to express themselves in scientific terms.

This new understanding will in turn help the students read, comprehend and express themselves in writing on the science portion of the state standardized test (FCAT).

Sunshine State Standards



Processes of Life

SC.F.1.2 The student describes patterns of structure and function in living things.

SC.G.1.2 The student understands the competitive, interdependent, cyclic nature of living things in the environment.

SC.G.2.2 The student understands the consequences of using limited resources

SC.H.1.2 The student uses the scientific process and habits of mind to solve problems.

Processes that Shape the Earth

SC.D.1.2 The student recognizes the processes in the lithosphere; atmosphere, hydrosphere, and biosphere interact to shape the Earth.

The Nature of Matter

SC.A.1.2 The student understands that all matter has observable, measurable properties.

SC.B.2.2 The student understands the interaction of matter and energy.

Course Outline



BIG Ideas + Science = FCAT Success! is a

wonderful way of motivating student to achieve higher scores on a standardized test and maximize comprehension. These lessons are designed to introduce or reinforce science topics in physical, earth and life science. Using a hands-on approach to teaching science, the students will explore the wonders of science as they develop science skills and learn about earth, life, and physical science topics.

As the students complete science experiments and complete the hands-on activities, their lab teams can earn points in order to become “Master Scientists.” The groups can earn points by hypothesizing, experimenting, and evaluating their findings.

The teams with the most points can participate in extra-curricular activities such as; leading the class in whole-group experiments and becoming “**BIG Idea**” tutors; where they demonstrate easy and interesting science experiments to younger students. Field Trips to the Museum of Science and Discovery would be a wonderful culminating activity to a year filled with scientific fun!

Sample Lesson Plans



Life Science

Web Weavers

The students will be motivated to learn with this easy food web activity. In advance, cut two six-foot lengths of yarn for each student in the class. Write the word “sun” and the name of different plants and animals from the provided list on a different index card. Give each student a card and two lengths of yarn. Instruct each student to read the card and then find a classmate whose card is connected to theirs in the food web. Have the student hold one end of the yarn and give the connected classmate the other end. Tell the students to make as many connections as they possibly can.

Have extra lengths of yarn handy so that the students can make additional connections. At the conclusion of the activity, the students will be surprised to see that the entire class is joined in one big web!

fox	ground beetle	meadow plants	person	bear
mole	robin	fungi	garter snake	ant
earthworm	caterpillar	cow	toad	bat
rabbit	falcon	bee	deer	box turtle
squirrel	grasshopper	fly	raccoon	seeds & nuts
snail	mouse	spider	owl	fruits & berries

Earth Science

Chip off the Old Rock!

Have you ever looked at grains of sand closely? If you do, you might notice that each grain looks different from the next. This is because sand comes from rock particles. The student will act as ‘investigators’ to explore the different types of rocks found in sand. The students will be paired up and provided with the

following supplies; 2 tbsp. of sand in a small cup, hand lens, 2 craft sticks, paper plate, reference books about rocks and minerals (textbook), paper and pencil.

Directions:

1. Make a chart similar to the one shown below.
2. Place three or four pinches of sand on the plate.
3. Look through the hand lens. Use the craft stick to separate the sand grains by color and other visible properties.
4. Draw boxes around each sand group.
5. Use the reference book or textbook in order to determine the types of rock or minerals from which each sand ground may have come.
6. Complete the chart by writing the rocks and the number of sand grains found for each type of rock.

Rock Type					
Number of Grains of Sand					

Physical Science

Edible Mixture and Solutions

Your students will be eager to learn the difference between a mixture and a solution with this yummy activity!

Materials:

1. A bag of chocolate chip cookies
2. Powdered Kool-Aid mix
3. Sugar
4. Napkins
5. Paper cups
6. Toothpicks

Directions:

Explain that some foods are solutions. *A solution is a type of mixture formed when one substance dissolves into another*, demonstrate this by making the Kool-Aid drink according to the packet instructions. Then pour a small amount in a cup for each student. Have the students observe the Kool-Aid. Ask the students if they can see the separate parts in the drink.

Next, explain to the students that some foods are mixtures. *A mixture is a combination of two or more substances that are not chemically combined*. Give each student a napkin, toothpick and a chocolate chip cookie. Direct the students to cut the cookie in half and observe it. Ask which parts can be easily separated. Have the students use the toothpick to pick out the chocolate chips.

Finally, as the students to enjoy their snacks, and have them brainstorm a list of foods they eat each day that are mixture or solutions.



Bibliography



Lifesaver Lessons Science 4th-5th

Science in a Box – The Education Center

Quick & Easy Science Fun - Mailbox

Adapter Information



For more information concerning IMPACT II opportunities Adapter and Disseminator Grants, please contact:

The Education Fund

(305) 892-5099

Email: lvalle@educationfund.org

Website: www.educationfund.org

See attached application for more information