DISCOVERING SCIENCE 7
TEACHER'S RESOURCE

FOLDABLES™

by

Dinah Zike

CHAPTER 1: AN ECOSYSTEM IS ALL THE LIVING AND NON-LIVING THINGS IN A PARTICULAR PLACE.

Foldable: Concept Map

Extension and Application of Skills and Foldables: Have students make two more Foldable concept maps like the one illustrated on page 33, and glue them inside a sheet of 11" × 17" paper folded in half like a hamburger. Glue one Foldable on each side of the folded booklet. Students then select two ecosystems and use them to label the top tabs of the two concept maps. Label the tabs *Abiotic Parts and Biotic Parts* and explain and list examples of each as they relate to the two selected ecosystems. Based upon their Foldable notes and lists, have students use what they have learned to compare and contrast the two systems. What do they have in common? How do they differ? Do the two systems affect each other? How?

Close to Home: Complete the above activity, but use two local ecosystems for comparison. Select one of the abiotic or biotic parts of each ecosystem that is measurable, collect data, and make a table to organize and display the data. Glue or staple the graph to the back of the booklet.

CHAPTER 2: LIVING AND NON-LIVING THINGS INTERACT IN ECOSYSTEMS.

Foldable: Venn Diagram

Extension and Application of Skills and Foldables: Make a three-tab Foldable by following steps 1 - 4 on page 33, and use it to record observations. Label the tabs with the following: *Week 1*, *Week 2*, and *Week 3*.

Collect a living leaf from a tree and observe what happens to it over a period of three weeks. Record dates and observable changes under the tabs of the Foldable.

Make a three-tab book and use it to illustrate how energy moves through an ecosystem.

Examples: Sun – Plants – Animals
Sun – Producers – Consumers
Producers – Consumers – Decomposers

CHAPTER 3: NATURAL EVENTS AND HUMAN ACTIVITIES CAUSE CHANGES IN ECOSYSTEMS.

Foldable: Two-tab

Extension and Application of Skills and Foldables: Have students make a two-tab Foldable as illustrated on page 67, and label the tabs *Pros* and *Cons*. Use this Foldable to collect information on the pros and cons of conservation.

While researching conservation on the Internet or in periodicals, ask students to watch for bias in reporting. Why? On the back of the Foldable have students record their opinions on conservation. What are their biases? Challenge them to think about who or what influences their thinking?

Make a two-tab Foldable and have students use it to record how a specific change in a local ecosystem has led to 1. the loss of habitat and contributed to 2. the decline and/or loss of one or more species living in or dependent upon the changed ecosystem. On the back of the Foldable, record how these changes will affect other living organisms in the community.

CHAPTER 4: TEMPERATURE DESCRIBES HOW HOT OR COLD AN OBJECT IS.

Foldable: Shutterfold

Extension and Application of Skills and Foldables: Have students make a shutterfold as illustrated on page 109 using 8.5" × 11" photocopy paper instead of 11" × 17". Label the left tab of this small shutterfold "Temperature Rise" and draw an arrow pointing upward, and label the right tab "Temperature Decline" and draw an arrow pointing downward. Select an object for observation and testing and describe the object on the back of the Foldable including information on its current temperature. Under the left shutterfold tab, students apply what they have learned in the chapter to predict and write ways in which the temperature of the selected matter might be raised, and under the right tab list ways it might be lowered.

Select several student-made Foldables and have groups of students design experiments that use thermometers to test the predicted changes.

CHAPTER 5: SCIENTISTS USE THE PARTICLE THEORY OF MATTER TO DESCRIBE TEMPERATURE.

Foldable: Layered Foldable

Extension and Application of Skills and Foldables: Ask students to make a layered Foldable as illustrated on page 135, using two sheets of paper instead of three. Label the top, title-tab *Change in Temperature*, and label the three lower tabs – *Solid*, *Liquid*, and *Gas*. Under the tabs, have students describe the three states of matter. Next students are asked to explain how these states of matter react to changes in temperature. Remind students to use the terms *expansion* and *contraction* and relate their responses to the *particle theory*.

Alternate Foldable: Use two long sheets of bulletin board paper to make a giant Foldable and label the tabs as described above. All students contribute to this class project by writing and defining terms, finding pictures of states of matter, pictures or diagrams of matter changing due to changes in temperature, information cards, and other student-generated materials.

CHAPTER 6: HEAT IS TRANSFERRED FROM ONE PLACE TO ANOTHER BY THREE DIFFERENT PROCESSES.

Foldable: Pyramid

Extension and Application of Skills and Foldables: As a chapter review, have students convert the Foldable they made (page 173) and used for note-taking into a mobile. One mobile can be made per student group, each student might make a mobile, or one mobile can be made by and for the class. Use the mobile to collect and display examples of matter that illustrate each method of heat transfer.

To make the mobile, have students nip off the top point of the pyramid Foldable forming a small hole. Run a string through the hole. Instead of tying a knot that will pull through the hole, wrap a large piece of tape on the end of the string and use the string to hang the mobile. Punch holes along the bottom centre of each of the three sides (?" from the bottom edge). Tie a string to each side of the mobile and use the strings to display hanging pictures, word cards, and other examples that illustrate the three featured terms.

Example: The sun might be used as an example of a form of radiation and a picture of the sun could be taped to the string hanging from the radiation side of the Foldable.

CHAPTER 7: MATTER CAN BE CLASSIFIED AS MIXTURES OR PURE SUBSTANCES.

Foldable: Shutterfold with tabs

Extension and Application of Skills and Foldables: Using poster board, make two shutterfolds as illustrated in steps 1 and 2 on page 231. These giant Foldables will be used by the class as display boards. Divide the class into two groups. One group of students will label their display Foldable *Heterogeneous Mixtures* and the second group will label theirs *Homogenous Mixtures.* Working in groups, have students find examples of and report on these different types of mixtures. Students can make pockets or use envelopes glued to their projects to collect information cards. Students might use digital cameras to take pictures of heterogeneous or homogenous mixtures found in their class, school, home, and community. Encourage students to use the Internet to collect information on the common mixtures found in the world around them.

CHAPTER 8: SOME SUBSTANCES DISSOLVE TO FORM SOLUTIONS FASTER AND MORE EASILY THAN OTHERS.

Foldable: Three-pocket Foldable

Extension and Application of Skills and Foldables: Two-pocket Foldable

Have students use a sheet of 8.5" × 11" paper to make a small two-pocket Foldable. Fold the sheet of paper in half instead of thirds, and proceed as illustrated in the Foldable instructions on page 253. Label the left pocket *Safe Solutions* and the right pocket *Dangerous Solutions*. Use quarter sheets of notebook paper or 3" × 5" index cards to name and record information on solutions encountered in daily life. Sort and store note cards in the appropriate pocket. On the back of all cards placed in the dangerous solutions pocket, have students describe how they might be used, stored, and disposed of safely. If students are not sure of proper procedures, have them use the Internet to research safety procedures.

CHAPTER 9: MANY USEFUL PRODUCTS DEPEND ON TECHNOLOGY FOR SEPARATING MIXTURES AND SOLUTIONS.

Foldable: Two-tab Matchbook

Extension and Application of Skills and Foldables: Make the following Foldables using two colors of paper – one color to indicate known mixtures and the second color to indicate unknown mixtures.

Using one color of paper, have groups of students make several matchbook Foldables as illustrated on page 277, without cutting the top section. Students label the front of each matchbook with the name of a known mixture. Under the tabs students collaboratively explain how they would choose and use a technique to separate each mixture.

Using a second color of paper, have students make several matchbook Foldables and label the front of each with the name of or description of an unkown mixture. Under the tabs students collaboratively explain how they would choose and safely use a technique to separate them.

The matchbooks made by students can be sorted and displayed on a bulletin board. New cards can be added over time.

CHAPTER 10: EARTH'S CRUST IS MADE UP OF ROCKS AND MINERALS.

Foldable: Layered Foldable

Extension and Application of Skills and Foldables: Use two sheets of notebook paper or photocopy paper to make a Layered Foldable as seen on page 315. Label the top, title-tab *Rock Cycle*, and label the next three tabs – *Igneous*, *Sedimentary*, and *Metamorphic*. Under the tabs, describe the formation and characteristics of each type of rock. Through research and observations, find how these rocks are used in Newfoundland and Labrador.

Make the Foldable seen on page 315 using 5 sheets of paper. Label the tabs from top to bottom with the following levels of the Mohs Scale: 10 = diamond, 9 = Corundum, 8 = Topaz, 7 = Quartz, 6 = Feldspar, 5 = Apatite, 4 = Fluorspar, 3 = Calcite, 2 = Gypsum, 1 = Talc. Use this classification key to help identify minerals. Record examples of minerals tested under the appropriate tabs. Compare and contrast minerals from different levels of the scale.

CHAPTER 11: EARTH'S CRUST IS CONSTANTLY CHANGING.

Foldable: Layered Foldable

Extension and Application of Skills and Foldables: Make another Foldable as illustrated on page 355. Turn the Foldable so the staples are along the bottom instead of the top. Tabs will now open downward. Use a large plastic plate as a pattern to draw a curved line along the top edge of the Foldable. Cut along the line. This cut will represent the curvature of the Earth. Label the top tab *crust* and label each of the following tabs – *mantle*, *outer core*, and *inner core*. Have students determine how they might sketch or diagram the mantle, outer core, and inner core on the front tabs of their Foldable. Under the tabs, have students record what they learn about each level. Ask students to record questions that might arise about inner Earth and have students research the answers to these questions using the Internet. Describe how the inner workings of Earth affect its surface as seen by the location of mountains, earthquakes, and volcanoes.

CHAPTER 12: SOIL IS THE LIVING COMPONENT OF EARTH'S CRUST.

Foldable: Three-tab Foldable

Extension and Application of Skills and Foldables: Have students make a three-tab Foldable as illustrated on page 407. Students collect three different examples of soil. If soil is damp allow it to dry thoroughly before continuing this activity.

Have students use three-inch strips of 2" clear tape to display small amounts of each soil sample on front tabs of the Foldable. Under the tabs, students describe the characteristics of each sample and attempt to classify the soil based upon what they have learned in this chapter.

Use a sheet of 11" × 17" paper to make a large three-tab Foldable to be used by the class. Find pictures of or take digital photos of natural or human-made objects within your community that are affected by weathering. Select three of these objects and feature their pictures on the front of the three tabs. Extra photos might be glued to the back of the Foldable. Divide the class into three groups and have each group investigate, describe, and explain the weathering taking place and determine if it is a positive or negative effect. Groups record information under the appropriate tabs of the Foldable. (Positive effects might include the formation of soil or sand, while negative might be seen in the weathering of sculpture.)