

**DISCOVERING SCIENCE 8
TEACHER'S RESOURCE**

FOLDABLES™

by

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CHAPTER 1: THE WATER CYCLE PLAYS A VITAL ROLE ON EARTH.

Foldable: Layered Foldable

Extension and Application of Skills and Foldables: Students can use the outside tabs and the inside sections of this Layered Foldable to outline the key concepts presented in the chapter and to record the main ideas and supporting facts that relate to each. Key concepts are always written on the front tabs of Foldables to keep students focussed on what they are learning. As students read the chapter, they take notes under the appropriate tab to describe the distribution of water on Earth, illustrate the water cycle, compare ocean water and fresh water, and identify sources of fresh water on Earth.

Alternate Foldable: Have students make another Chapter 1 Layered Foldable and use it to describe the main steps of the water cycle. Students can write the title *Water Cycle* on the top tab and label the three lower tabs *Evaporation*, *Condensation*, and *Precipitation*.

Alternate Foldable: Make a large classroom-sized Layered Foldable using two sheets of chart paper or butcher paper, and use it to investigate the effect of salinity on water. Write the title *Salt Water* on the top tab and label the lower tabs *Ocean Water*, *Saline Lakes*, and *Brackish Water*. Use this classroom poster to record information gathered as students investigate the effect of salinity on water density. Develop experiments to determine what happens to the minerals in salt water during the water cycle.

CHAPTER 2: OCEANS CONTROL THE WATER CYCLE.

Foldable: Concept Map Foldable

Extension and Application of Skills and Foldables: Students can make a Concept Map Foldable and use it to describe how the oceans control the water cycle. Have students draw arrows from the title of their Foldable to each of the tab subtitles to indicate a connection. As students read the chapter, have them take notes under the appropriate tab to describe the features of Earth's ocean basins, define ocean currents and sediment movement, and describe how waves erode coastlines and how tides are linked to the Moon.

Alternate Foldable: Use poster board to make a large Concept Map Foldable. On the lower front of the Foldable, before the tabs have been cut, students can draw a diagram of a cross-section of the ocean to illustrate the relationship between depth and temperature.

Determine at what point on the diagram major temperature changes occur, and make cuts at these points. Students can determine the number of Foldable tabs needed by analyzing the data gathered. Have students record information about each of the temperature zones under the tabs.

Alternate Idea: Follow the instructions outlined above, but instead of drawing a diagram of the cross-section of the ocean, have students draw a diagram to show major features of the ocean floor. After drawing the diagram, students can determine where to cut tabs so that the illustrated features will be pictured on the front and information can be written underneath.

CHAPTER 3: BODIES OF WATER INFLUENCE CLIMATE AND SPECIES DISTRIBUTION.

Foldable: Layered Foldable

Extension and Application of Skills and Foldables: Students can use the outside tabs and the inside sections of this Layered Foldable to outline the key concepts presented in the chapter and to record the main ideas and supporting facts that relate to each. Key concepts are always written on the front tabs of Foldables to keep students focussed on what they are learning. As students read the chapter, have them take notes under the appropriate tab to explain how oceans affect climate, illustrate different aquatic habitats, and describe how humans impacted water systems.

Alternate Foldable: Use a sheet of poster board to make a large Concept-map Foldable as described in Chapter 2. Cut two tabs instead of three. Write a title, *Indicators of Water Quality*, on the top extended tab of the Foldable. Label the two tabs *Biotic Indicators* and *Abiotic Indicators*. Draw arrows from the title to each of the two tabs. As students read about and discuss water quality, use this classroom Foldable to list specific examples of indicators, explain cause-and-effect relationships affecting water quality, and evaluate the effect of human activities on water quality and quantity.

CHAPTER 4: MANY PROPERTIES OF LIGHT CAN BE UNDERSTOOD USING A WAVE MODEL OF LIGHT.

Foldable: Four-door Foldable

Extension and Application of Skills and Foldables: Students can make a Four-door Foldable, label the

tabs with main ideas as illustrated, and use it to take notes on what they learn as they progress through the chapter. As students read the chapter, have them take notes under the appropriate tab to describe the nature of light, properties of waves, properties of visible light, and the electromagnetic spectrum. On the back of the Foldable, have students draw and label a diagram of the electromagnetic spectrum, and describe its properties and uses.

Alternate Foldable: Have students make a Layered Foldable using four sheets of paper layered 1 cm apart vertically. Then fold up the bottom edges of the paper to form eight 1 cm tabs. Write the title *Electromagnetic Spectrum* on the top tab and label each of the remaining seven tabs with the following: *Radio*, *Microwave*, *Infrared*, *Visible*, *Ultraviolet*, *X ray*, and *Gamma Ray*. Students can draw a diagram of each wavelength on the front tabs, and explain each wavelength and their frequencies under the tabs.

Alternate Foldable: Use sheets of bulletin board paper or chart paper to make a giant Layered Electromagnetic Spectrum Foldable for classroom and/or cooperative learning group use. This Foldable makes a large interactive graphic organizer.

CHAPTER 5: THE LAW OF REFLECTION ALLOWS MIRRORS TO FORM IMAGES.

Foldable: Layered Foldable

Extension and Application of Skills and Foldables: Students can use the outside tabs and the inside sections of this Layered Foldable to outline the key concepts presented in the chapter and to record the main ideas and supporting facts that relate to each. Key concepts are always written on the front tabs of Foldables to keep students focussed on what they are learning. As students read the chapter, have them take notes under the appropriate tab to explain the law of reflection, describe the characteristics of images, and differentiate between the different types of mirrors.

Alternate Foldable: Students can use a sheet of paper to make a Concept Map Foldable as illustrated in Chapter 2. Cut two tabs instead of three. Write the title *Reflection* on the top extended edge of the Foldable. Draw arrows from the title to the two tabs and label the tabs *Specular* and *Diffuse*. Students can use the Foldable to find similarities and differences between these two types of reflection.

Alternative Foldable: Students can use a sheet of paper to make a Concept Map Foldable as illustrated in Chapter 2. Cut three tabs. Write the title *Ray Diagrams* along the top extended edge of the

Foldable. Draw arrows from the title to the three tabs and label the tabs *Plane*, *Concave*, and *Convex*. Students can use the Foldable to find similarities and differences between these three types of mirrors.

CHAPTER 6: LENSES REFRACT LIGHT TO FORM IMAGES.

Foldable: Bound-book Foldable

Extension and Application of Skills and Foldables: Students can make a Bound-book Foldable and use it to describe how lenses refract light to form images. As students read the chapter, have them take notes on the appropriate pages of their Foldable. Ask them to list and define new terms, as well as draw a diagram of, and record what they learn about, the following: convex lenses and ray diagrams, concave lenses and ray diagrams, lenses and human vision, and modern optical technologies.

Alternate Foldable: Students can use a sheet of paper to make a Concept Map Foldable as illustrated in Chapter 2. Cut four tabs. Write the title *Optical Devices* along the top extended edge of the Foldable. Draw arrows from the title to the four tabs, and label the tabs with the names of four devices used by the students to magnify objects. Students might label the tabs with any of the following titles: *Eyeglasses*, *Magnifying Glasses*, *Binoculars*, *Telescopes*, *Microscopes*, *Computer Screen Magnifiers*, and *Others*. Students can use the Foldable to research and record data on each device, and compare and contrast the devices using the information gathered.

CHAPTER 7: VISCOSITY DESCRIBES A FLUID'S RESISTANCE TO FLOW.

Foldable: Layered Foldable

Extension and Application of Skills and Foldables: Students can use the outside tabs and the inside sections of this Layered Foldable to outline the key concepts presented in the chapter and to record the main ideas and supporting facts that relate to each. Key concepts are always written on the front tabs of Foldables to keep students focussed on what they are learning. As students read the chapter, have them take notes under the appropriate tab to describe the three states of matter and changes of states, illustrate how to determine a fluid's flow rate, and explain how temperature affects the viscosity of liquids and gases.

Alternate Foldable: Use a sheet of poster board to make a large three-tab Concept Map Foldable as described in Chapter 2. Write a title, *How Particles*

Behave, on the top extended tab of the Foldable. Label the three tabs *Solids*, *Liquids*, and *Gasses*. Draw arrows from the title to each of the three tabs. As students read about and discuss viscosity, use this classroom Foldable to explain how particles behave in each of the states of matter listed. This same Foldable can be used to record information on how substances change states of matter and how that change affects particle behaviour.

CHAPTER 8: DENSITY DESCRIBES THE AMOUNT OF MASS IN A GIVEN VOLUME OF A SUBSTANCE.

Foldable: Foldable Table

Extension and Application of Skills and Foldables: Students can make, label, and use the Foldable Table to record what they learn as they progress through the chapter. Begin by having them define the states of matter in the *Define States* column of their Foldable. Students can then use the table to explain what happens to each state when heat is increased or decreased.

Alternate Foldable: Have students make a second Foldable Table. (If you would prefer that this Foldable be used as a classroom bulletin board, have students make one using a large sheet of chart paper or butcher paper.) Label the three rows *Mass*, *Volume*, and *Density*. Label the columns *Definitions*, *Formulas*, and *Use*.

CHAPTER 9: FORCES INFLUENCE THE MOTION AND PROPERTIES OF FLUIDS.

Foldable: Concept Map Foldable

Extension and Application of Skills and Foldables: Students can make a Concept Map Foldable and use it to describe the effects of force, pressure, and heat on fluids. Have students draw arrows from the title of their Foldable to each of the tab subtitles to indicate a connection. As students read the chapter, have them take notes under the appropriate tab to describe the effects that forces have on fluids, the effects that pressures have on fluids, and the effects that heat has on fluids.

Alternate Foldable: Use poster board to make a large Concept Map Foldable like the one used in Chapter 2. Write a title, *Buoyancy*, on the top extended edge of the Foldable. On the lower front of the Foldable, before the tabs have been cut, students can draw a cross-section diagram of a body of water. Students can then cut

the diagram tab in half to form two tabs. Label one side *Sink* and the other side *Float*. Students can use the Foldable to define each term, explain why objects sink or float in a fluid, and give examples of objects that would sink or float in different fluids.

CHAPTER 10: THE CELL IS THE BASIC UNIT OF LIFE.

Foldable: Layered Foldable

Extension and Application of Skills and Foldables: Students can use the outside tabs and the inside sections of this Layered Foldable to outline the key concepts presented in the chapter and to record the main ideas and supporting facts that relate to each. Key concepts are always written on the front tabs of Foldables to keep students focussed on what they are learning. As students read the chapter, they take notes under the appropriate tab to describe and differentiate between living and non-living things, discover the structure and function of plant and animal cells, and explain the history and importance of microscopes to the study of cells.

Alternate Foldable: Use a sheet of poster board to make a large three-tab Concept Map Foldable as described in Chapter 2. Write a title, *Comparing Cells*, on the top extended tab of the Foldable. Before cutting tabs, draw a giant Venn diagram on the front of the lower tab. Cut three tabs and label the left and right tabs *Plant Cells* and *Animal Cells*. Label the middle tab *Both*. Use the Foldable to record information learned by reading the chapter and discovered through cell observation. Determine what properties, structures, and functions plant and animal cells have in common, and record this information under the middle tab of the Venn diagram.

CHAPTER 11: HUMAN BODY CELLS ARE ORGANIZED AS TISSUES, ORGANS, AND SYSTEMS.

Foldable: Foldable Table

Extension and Application of Skills and Foldables: Students can make, label, and use the Foldable Table to record what they learn as they progress through the chapter. Begin by having students label the rows with the six systems illustrated—*Muscular*, *Nervous*, *Digestive*, *Excretory*, *Circulatory*, and *Respiratory*. Label the columns *Structure* and *Function*. Students can use the table to record general information on the structure and function of each system, and use the information gathered to compare and contrast systems.

Alternate Foldable: Have students make a second Foldable Table with four rows and three columns. (If you would prefer that this Foldable be used as a classroom bulletin board, have students make one using a large sheet of chart paper or butcher paper.) Starting with the second row, label the rows *Tissues*, *Organs*, and *Systems*. Draw an arrow from *Tissue* to *Organs*, and from *Organs* to *Systems*. Starting with the second column, label the columns *Descriptions* and *Examples*. Students can use the table to record what they learn about the organization of cells composing multicellular organisms, and give specific examples as they relate to a given system.

CHAPTER 12: THE HEALTH OF THE BODY DEPENDS ON THE HEALTH OF ITS INTERDEPENDENT SYSTEMS.

Foldable: Concept Map Foldable

Extension and Application of Skills and Foldables: Students can make a Concept Map Foldable and use it to collect information on body systems. Have students draw arrows from the title of their Foldable to each of the tab subtitles to indicate a connection. As students read the chapter, they can take notes under the appropriate tab to describe the positive and negative effects of various factors on the health of body systems.

Alternate Foldable: Use a large sheet of butcher paper or chart paper to make a giant Foldable Table. Fold the table to have four rows and four columns. Starting with the second row, label the rows *Diet*, *Exercise*, and *Stress*. Starting with the second column, label the columns with the names of three systems of the human body. Use the table to record how diet, exercise, and stress affect each of the featured systems.

Have students make a smaller version of this Foldable Table using a piece of legal size paper. Guide students as they label the rows and columns, and then have students complete the table independently. Use this Foldable as an assessment tool for the chapter.