Name Date Period

Chapter 1
Workbook Activity
1

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. METER—LITER
a. How they are alike

b. How they are different

2. CENTIMETER—MILLIMETER
a. How they are alike

b. How they are different

3. GRAM—METER
a. How they are alike

b. How they are different

4. BALANCE—GRADUATED CYLINDER
a. How they are alike

b. How they are different

5. WEIGHT—MASS
a. How they are alike

b. How they are different

Name Date Period

Chapter 1
Workbook Activity
2

Metric Terms Review

Part A

Directions: Match each term in Column A with its meaning in Column B. Write the correct letter on the line.

Column A		Column B
_____	**1.** gram	**a.** Amount of matter in an object
_____	**2.** mass	**b.** The basic unit of length in the metric system
_____	**3.** liter	**c.** The unit of mass in the metric system
_____	**4.** centimeter	**d.** The unit of length in the metric system equal to 1/1,000 of a meter
_____	**5.** meter	**e.** The basic unit of liquid volume in the metric system
_____	**6.** millimeter	**f.** A unit of length in the metric system equal to 1/100 of a meter

Part A

Directions: Unscramble the word or words in parentheses to complete each sentence below.

7. A _____ is a unit of metric mass equal to 1/100 of a gram.
(remacting)

8. A _____ is equal to 1,000 grams.
(magikrol)

9. A _____ is equal to 1,000 meters.
(trimekole)

10. A _____ is a system of measurements with units based on 10.
(tecrim metsys)

Name Date Period

Chapter 1
Workbook Activity
3

Systems of Measurement

Directions: The table below describes some unusual units of measurement. Each unit has a metric equivalent. Complete the table with the help of a dictionary or other reference. The first item is done for you as an example.

Uncommon Units of Measurement		
Unit	**Description**	**Equals (Metric)**
1. Knot	Unit used to measure air and wind speed: equals 1 nautical mile per hour	about 2 kilometers per hour
2. Carat	Unit of weight for gemstones	
3. Hand	Unit of length for measuring height of horses	
4. League	Unit of distance in measuring land: 2-1/2 to 4-1/2 miles	
5. Light year	Unit of distance equal to the distance light travels through space in one year	
6. Furlong	Unit of distance in measuring land: 220 yards	
7. Astronomical unit	Unit of distance based on the distance between Earth and the sun	
8. Fathom	Unit of length used to measure the depth of water: 6 feet	
9. Cable	Unit of length used at sea, equal to 100 to 120 fathoms	
10. Pica	Unit of length used in printing: about 1/6 inch	

Name Date Period

Chapter 1
Workbook Activity
4

Math Connection: Metric Measurements

Directions: Complete the indicated calculations, then simplify your answers.

1.
12 centimeters 5 millimeters
\+ 5 centimeters 3 millimeters

2.
10 meters 8 centimeters
\+ 9 meters 9 centimeters

3.
22 meters 4 centimeters
\+ 3 meters 5 centimeters

4.
20 meters 10 millimeters
\+ 23 millimeters

5.
10 centimeters 5 millimeters
\+ 22 centimeters 8 millimeters

6.
6 meters 2 centimeters
\+ 4 meters

7.
23 millimeters
\+ 3 millimeters

8.
11 meters 9 millimeters
\+ 8 meters 6 millimeters

9.
39 meters 9 millimeters
\+ 1 meter 6 millimeters

10.
20 meters 7 centimeters
\+ 5 centimeters

11.
19 meters 8 centimeters
− 7 meters 5 centimeters

12.
21 meters 12 centimeters
− 19 meters 10 centimeters

13.
12 meters 2 centimeters
− 9 meters 9 centimeters

14.
3 meters 7 centimeters
− 1 meter 8 centimeters

15.
18 meters 2 centimeters
− 9 centimeters

16.
7 centimeters
− 4 millimeters

17.
30 meters 4 centimeters
− 3 meters 7 centimeters

18.
8 meters 7 centimeters
− 5 meters 7 centimeters

19.
7 centimeters 6 millimeters
− 8 millimeters

20.
9 meters
− 6 centimeters

Name Date Period

Chapter 1
Workbook Activity
5

Math Connection: Metric Solutions

Part A

Directions: Perform the indicated operations, then simplify your answers.

1. 2.4 grams × 5 = _____
2. 20 grams × 10 = _____
3. 34.5 grams − 10 grams = _____
4. 13 cm − 5 cm = _____
5. 28 grams ÷ 7 = _____
6. 30 meters + 15 = _____
7. 39.39 meters ÷ 13 = _____
8. 8 centimeters × 7 = _____
9. 7 meters 5 centimeters × 6 = _____
10. 5 cm 8 mm × 11 = _____

Part B

Directions: Calculate these areas. Include the correct units.

11. 23 meters × 20 meters = _____
12. 45 centimeters × 16 centimeters = _____
13. 12 millimeters × 100 millimeters = _____
14. 3.6 centimeters × 100 centimeters = _____
15. 0.35 meters × 1,000 meters = _____

Part C

Directions: If beaker A = 25 mL, beaker B = 38 mL, beaker C = 58 mL, and beaker D = 7 mL, find the volumes below. Include the correct units.

16. beaker A + beaker C = _____
17. beaker C + beaker D = _____
18. The sum of beakers A, B, C, and D = _____
19. The difference between beakers A and C = _____
20. The difference between beakers B and D = _____

Name Date Period

Chapter 2
Workbook Activity
6

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. MOLECULE—ATOM
a. How they are alike

b. How they are different

2. ELEMENT—COMPOUND
a. How they are alike

b. How they are different

3. PROTON—ELECTRON
a. How they are alike

b. How they are different

4. NEUTRON—PROTON
a. How they are alike

b. How they are different

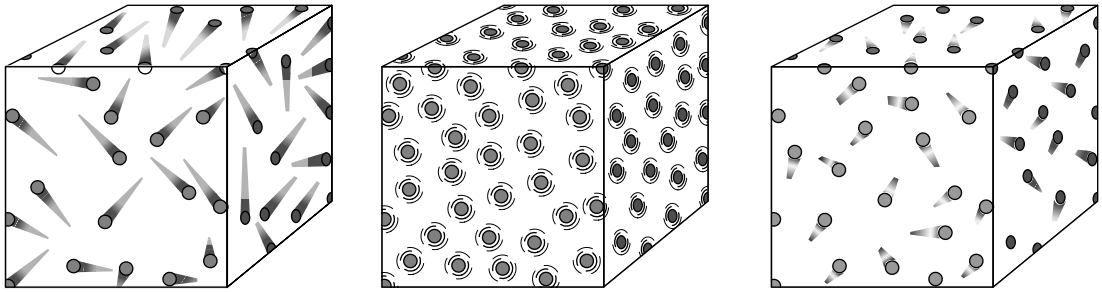
5. SOLID—LIQUID
a. How they are alike

b. How they are different

Solids, Liquids, and Gases

Part A

Directions: Use the diagrams to complete the following statements.



A **B** **C**

1. The diagrams show three _____ of matter.
2. Liquids are best represented by Diagram _____ .
3. Gases are best represented by Diagram _____ .
4. Solids are best represented by Diagram _____ .

Part B

Directions: Match each item with the diagram that best represents it. Write the letter of the diagram in the space provided.

5. ice cube _____
6. skateboard _____
7. feather _____
8. helium in a balloon _____
9. raindrop _____
10. gold ring _____
11. orange juice _____
12. cotton candy _____
13. air _____
14. neon in a sign _____

Name Date Period

Chapter 2
Workbook Activity
8

The Structure of Matter: Terms Review

Part A

Directions: Match each term in Column A with its meaning in Column B. Write the correct letter on the line.

Column A		Column B
_____	**1.** molecule	**a.** One of 92 natural substances that are the basic building blocks of matter
_____	**2.** atom	**b.** A particle found in the nucleus of an atom
_____	**3.** element	**c.** A particle with a negative charge
_____	**4.** electron	**d.** The smallest particle of a compound; made of one or more atoms
_____	**5.** neutron	**e.** The building block of matter
_____	**6.** nucleus	**f.** The central part of an atom

Part B

Directions: Unscramble the word in parentheses to complete each sentence below.

7. Scientists use _____ to show how atoms look and act.
(olmeds)

8. A _____ is a substance made of two or more elements combined chemically.
(modoncup)

9. A _____ is a particle found in the nucleus of an atom.
(troonp)

10. The periodic table is a chart that shows all the known _____ .
(sletmeen)

Name Date Period

Chapter 2
Workbook Activity
9

Words From Chemical Symbols

Directions: Read the clue in Column A. You can find the answer from the elements in Column B. In Column C, write the symbols for the elements in Column B. The word you form should be the correct answer for the clue. The first one is done for you.

	A	B	C
1.	A farm animal	cobalt-tungsten	CoW
2.	A person who doesn't tell the truth	lithium-argon	
3.	The opposite of *lose*	tungsten-iodine-nitrogen	
4.	A building material	bromine-iodine-carbon-potassium	
5.	Found on a door	potassium-nitrogen-oxygen-boron	
6.	Used to write on a blackboard	carbon-hydrogen-aluminum-potassium	
7.	A dog's sound	boron-argon-potassium	
8.	It's 150 million km away	sulfur-uranium-nitrogen	
9.	A source of energy	cobalt-aluminum	
10.	A funny person	chlorine-oxygen-tungsten-nitrogen	
11.	Used in hockey	plutonium-carbon-potassium	
12.	A cow's offspring	carbon-aluminum-fluorine	
13.	A form of money	cobalt-iodine-nitrogen	
14.	Show of affection	potassium-iodine-sulfur-sulfur	
15.	Another word for *ill*	silicon-carbon-potassium	
16.	The saint who visits on Christmas Eve	nickel-carbon-potassium	
17.	A form of transportation	calcium-boron	
18.	To make better	helium-aluminum	
19.	King of the beasts	lithium-oxygen-nitrogen	
20.	A form of precipitation	radium-iodine-nitrogen	

Name Date Period

Chapter 3
Workbook Activity
10

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. SUBSCRIPT—SYMBOL

a. How they are alike

b. How they are different

2. PHYSICAL CHANGE—CHEMICAL CHANGE

a. How they are alike

b. How they are different

3. FORMULA—RECIPE

a. How they are alike

b. How they are different

4. REACTANT—PRODUCT

a. How they are alike

b. How they are different

5. SOLUTE—SOLVENT

a. How they are alike

b. How they are different

Name Date Period

Chapter 3
Workbook Activity
11

Interpreting Chemical Formulas

Part A

Directions: Write the chemical formula for each compound described. Find the chemical symbols in the periodic table.

1. silver chloride = one atom of silver + one atom of chlorine

_____

2. hydrochloric acid = one atom of hydrogen + one atom of chlorine

_____

3. hydrogen peroxide = two atoms of hydrogen + two atoms of oxygen

_____

4. iron oxide = 2 atoms of iron + 3 atoms of oxygen

_____

5. magnesium carbonate = one atom of magnesium + one atom of carbon + three atoms of oxygen

_____

6. glucose = six atoms of carbon + twelve atoms of hydrogen + six atoms of oxygen

_____

Part B

Directions: Complete the table. Name the elements in each compound, and tell how many atoms of each element there are.

Compound	Elements	Atoms
7. potassium chloride, KCl		
8. sucrose, $C_{12}H_{22}O_{11}$		
9. ammonium bromide, NH_4Br		
10. calcium carbonate, ($CaCO_3$)		

Name Date Period

Chapter 3
Workbook Activity
12

Interpreting Chemical Equations

Use the Periodic Table on pages 36–37 of your book to find the names of the elements shown by symbols on this page.

Part A

Directions: Use the following chemical equation to answer questions 1 through 5.

$2H_2 + O_2 \rightarrow 2H_2O$

1. How many hydrogen atoms are on the left side of the equation? _____
2. How many oxygen atoms are on the right side of the equation? _____
3. What does the arrow mean? _____
4. Is the equation balanced? How can you tell?

   _____

   _____

5. Write the equation in words.

   _____

   _____

Part B

Directions: Use the following chemical equation to answer questions 6 through 10.

$AgNO_3 + NaCl \rightarrow NaNO_3 + AgCl$

6. What are the reactants? _____
7. What are the products? _____
8. How many atoms of silver are on each side of the equation? _____

   _____

9. How many atoms of nitrogen are on each side of the equation? _____

   _____

10. How many atoms *total* are on each side of the equation? _____

    _____

Name Date Period

Chapter 3
Workbook Activity
13

Chemical Reactions: Terms Review

Part A

Directions: Match each term in Column A with its meaning in Column B. Write the correct letter on the line.

Column A		Column B
_____	**1.** alchemist	**a.** Any chemical change
_____	**2.** reactant	**b.** A statement that uses symbols and formulas to describe a chemical reaction
_____	**3.** coefficient	**c.** A substance that dissolves in a solution
_____	**4.** reaction	**d.** A substance that enters into a reaction; found on the left side of the arrow in a chemical equation
_____	**5.** chemical equation	**e.** A person who tried to change various substances into gold and other precious metals
_____	**6.** solute	**f.** A number placed before a chemical formula, which indicates the number of molecules in a chemical equation

Part B

Directions: Unscramble the word or words in parentheses to complete each sentence below.

7. A _____ (cuptrod) is a substance that is formed during a reaction and shown on the right side of a chemical equation.

8. A _____ (novlest) is the substance in which a solute dissolves.

9. The law of _____ (introvosance) of matter states that matter cannot be created or destroyed.

10. A _____ (oilsnout) is one kind of mixture.

Name Date Period

Chapter 4
Workbook Activity
14

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. NEWTON—JOULE
a. How they are alike

b. How they are different

2. KINETIC ENERGY—POTENTIAL ENERGY
a. How they are alike

b. How they are different

3. DISTANCE—ELAPSED TIME
a. How they are alike

b. How they are different

4. MOTION—SPEED
a. How they are alike

b. How they are different

5. GRAVITY—AIR RESISTANCE
a. How they are alike

b. How they are different

Name Date Period

Chapter 4
Workbook Activity
15

Word Search: Energy and Motion

Directions: Write the correct word for each definition. As a check, find each vocabulary word in the puzzle below.

1. the ability to do work _____

2. a push or a pull _____

3. the force of attraction between any two objects that have mass _____

4. the distance traveled per unit of time _____

5. change in position _____

6. equals distance divided by speed _____

7. equals speed times time _____

S D A B C E N E R G Y I F N H
O P W J T S M Y A T X J O N L
D J E R T P I O X A V I O T D
S M L E O D I N I B F I M O G
O O W W D B R T X N T W R W R
A T M L H E R S S C R B V P A
M I V B L E E C I V S E L O V
Z O E K N D B R V E L X V P I
M N K I A T F R G O Y O U R T
V S C X P H S A C F O R C E Y
H E K F K X R I M I Z J G S W
D K L T Y E T D I S T A N C E
J T I M E Y S E Z S I P Y U G

Name Date Period

Chapter 4
Workbook Activity
16

Energy and Motion: Terms Review

Part A

Directions: Match each term in Column A with a phrase in Column B. Write the correct letter on the line.

Column A		Column B
_____	**1.** generator	**a.** The ability to do work
_____	**2.** gravity	**b.** A push or a pull
_____	**3.** energy	**c.** The distance traveled per unit of time
_____	**4.** force	**d.** The time that passes between one event and another
_____	**5.** speed	**e.** Converts mechanical energy to electrical energy
_____	**6.** elapsed time	**f.** The force of attraction between any two objects that have mass

Part B

Directions: Unscramble the word or words in parentheses to complete each sentence below.

7. Stored energy is called _____ energy.
(lopatinet)

8. The speed of a falling object is slowed by _____ .
(ira sarentesic)

9. _____ equals the product of speed and time.
(candetis)

10. The law of _____ states that gravity depends on mass and distance.
(savenuril tatairoving)

Name Date Period

Chapter 4
Workbook Activity
17

Math Connection: Calculating Speed

Speed is calculated by dividing the distance by the time.

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

Directions: Solve for the speed in each of the following problems. Include the correct unit in your answer.

1. $\text{speed} = \frac{120 \text{ millimeters}}{60 \text{ seconds}}$ _____

2. $\text{speed} = \frac{400 \text{ meters}}{80 \text{ seconds}}$ _____

3. $\text{speed} = \frac{700 \text{ centimeters}}{35 \text{ seconds}}$ _____

4. $\text{speed} = \frac{1{,}000 \text{ meters}}{100 \text{ seconds}}$ _____

5. $\text{speed} = \frac{12.5 \text{ millimeters}}{0.5 \text{ seconds}}$ _____

6. $\text{speed} = \frac{0.045 \text{ meters}}{0.05 \text{ seconds}}$ _____

7. $\text{speed} = \frac{0.015 \text{ millimeters}}{0.10 \text{ seconds}}$ _____

8. $\text{speed} = \frac{10.4 \text{ centimeters}}{10.0 \text{ seconds}}$ _____

9. Solve for the speed if the distance is 200 meters and the time is 50 seconds.

_____

10. Solve for the speed if the distance is 230 meters and the time is 45 seconds.

_____

11. Solve for the speed if the distance is 155 meters and the time is 10.0 seconds.

_____

12. Solve for the speed if the distance is 12.6 meters and the time is 0.3 seconds.

_____

13. Solve for the speed if the distance is 0.34 meters and the time is 0.17 seconds.

_____

14. Solve for the speed if the distance is 0.50 meters and the time is 10 seconds.

_____

Name Date Period

Chapter 5
Workbook Activity
18

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. FORCE—DISTANCE
a. How they are alike

b. How they are different

2. INCLINED PLANE—SCREW
a. How they are alike

b. How they are different

3. EFFORT FORCE—RESISTANCE FORCE
a. How they are alike

b. How they are different

4. RAKE—WHEELBARROW
a. How they are alike

b. How they are different

5. LEVER—PULLEY
a. How they are alike

b. How they are different

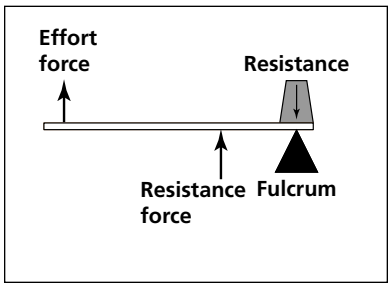
Name Date Period

Chapter 5
Workbook Activity
19

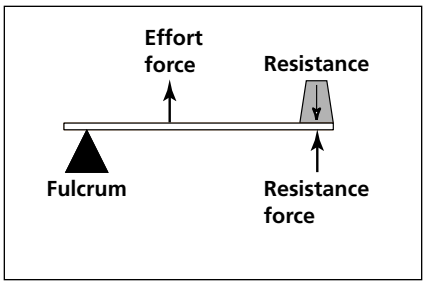
Classes of Levers

Part A

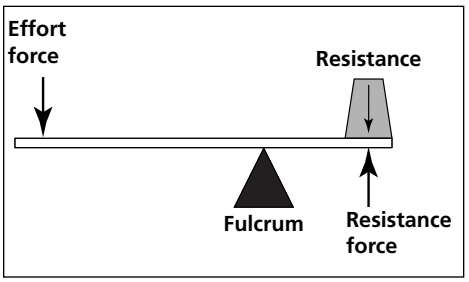
Directions: Name each class of lever shown below.



Lever A



Lever B



Lever C

1. Lever _____ is a first-class lever.
2. Lever _____ is a second-class lever.
3. Lever _____ is a third-class lever.

Part B

Directions: Identify which class of lever each of the following objects is.

4. A baseball bat is a _____-class lever.
5. A see-saw is a _____-class lever.
6. A nutcracker is a _____-class lever.
7. A punch-type can opener is a _____-class lever.
8. A wheelbarrow is a _____-class lever.
9. A tennis racquet is a _____-class lever.
10. A pair of scissors is two _____-class levers joined together at the fulcrum.

Name Date Period

Chapter 5
Workbook Activity
20

Simple Machines: Terms Review

Part A

Directions: Match each term in Column A with its meaning in Column B. Write the correct letter on the line.

Column A		Column B
_____	**1.** effort force	**a.** A type of simple machine that is used like a ramp
_____	**2.** resistance force	**b.** The number of times by which a machine multiplies effort force
_____	**3.** movable pulley	**c.** A pulley that does not move as the resistance moves
_____	**4.** inclined plane	**d.** A pulley that is not attached to a stationary object and is therefore free to move
_____	**5.** wedge	**e.** The force that is applied to a simple machine
_____	**6.** mechanical advantage	**f.** An inclined plane that is made to move in order to move the resistance
_____	**7.** fixed pulley	**g.** The force applied by the resistance

Part B

Directions: Unscramble the word or words in parentheses to complete each sentence below.

8. A _____ (cruflum) is the point around which a lever rotates.

9. A _____ (uplely) is a simple machine consisting of a wheel with a rope, string, or chain that wraps around the wheel.

10. A _____ (marp) is an inclined plane.

Name Date Period

Chapter 5
Workbook Activity
21

Math Connection: Calculating Work

Work = Force applied × distance moved
or
Work = F × d

Part A

Directions: Solve the following problems.

1. work = 10 newtons × 23 meters
= _____

2. work = 22 newtons × 15 meters
= _____

3. work = 38 newtons × 11 meters
= _____

4. work = 12.6 newtons × 2.0 meters
= _____

5. work = 120 newtons × 6 meters
= _____

6. work = 100 newtons × 0.5 meter
= _____

7. work = 20 newtons × 3.0 meters
= _____

8. work = 25 newtons × 1.0 meter
= _____

9. work = 3.2 newtons × 5.0 meters
= _____

10. work = 0.5 newtons × 1.5 meters
= _____

11. work = 0.75 newtons × 0.50 meter
= _____

12. work = 1.5 newtons × 0.75 meter
= _____

Part B

Directions: Solve the following problems. Convert units where necessary.

13. A teacher pushes a bookshelf, using a force of 10 newtons. If the teacher moved the bookshelf 20 feet, how much work did she do?

work = _____

14. A woman lifts a package, using a force of 3.0 newtons. If she lifts the package 5.5 feet, how much work will be done?

work = _____

15. A boy pulls a wagon with a force of 8.5 newtons. If he moves the wagon 18 feet, how much work will be done?

work = _____

16. A worker pulls a desk, using a force of 20 newtons. If he moves the desk 13 feet, how much work will be done?

work = _____

Name Date Period

Chapter 6
Workbook Activity
22

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. ICE—LIQUID WATER
a. How they are alike

b. How they are different

2. FAHRENHEIT SCALE—CELSIUS SCALE
a. How they are alike

b. How they are different

3. FREEZING POINT—MELTING POINT
a. How they are alike

b. How they are different

4. HEAT—TEMPERATURE
a. How they are alike

b. How they are different

5. RADIATION—CONDUCTION
a. How they are alike

b. How they are different

Name Date Period

Chapter 6
Workbook Activity
23

Math Connection: Converting Temperatures

Some temperatures are still commonly measured using the Fahrenheit scale. However, the Celsius scale is used in every country in the modern world. Scientists all use the Celsius scale. The following table lists some common temperature readings in both scales.

Reading	Degrees Fahrenheit	Degrees Celsius
Temperature of freezing water	32	0
Room temperature	68	20
Normal body temperature	98.6	37
Temperature of boiling water	212	100

You can convert temperatures from one scale to the other by using the following formulas.

Celsius temperature = 5/9 × (Fahrenheit temperature − 32)
Fahrenheit temperature = 1.8 × Celsius temperature + 32

Part A

Directions: Convert these temperatures into degrees Celsius or degrees Fahrenheit. Round to the nearest whole number.

1. 32°F _____

2. 212°F _____

3. 100°F _____

4. 48°F _____

5. 200°F _____

6. 37°C _____

7. 100°C _____

8. 10°C _____

9. 0°C _____

10. 20°C _____

Part B

Directions: Answer the following questions.

11. To bake a potato, you put it in the oven for an hour at 350 degrees Fahrenheit. What is this temperature in degrees Celsius? _____

12. Gold melts at 1,064°C. What is this temperature on the Fahrenheit scale?

_____

13. In each group of two temperatures, circle the hotter temperature.

65°F or 25°C 50°F or 5°C

Name Date Period

Chapter 6
Workbook Activity
24

Heat Energy: Applying Ideas

Directions: Answer the following questions in the space provided.

1. Suppose you are trying to open a jar, but the lid won't turn. The lid is metal. Someone suggests running hot water over the lid. Would that help? Explain why or why not.

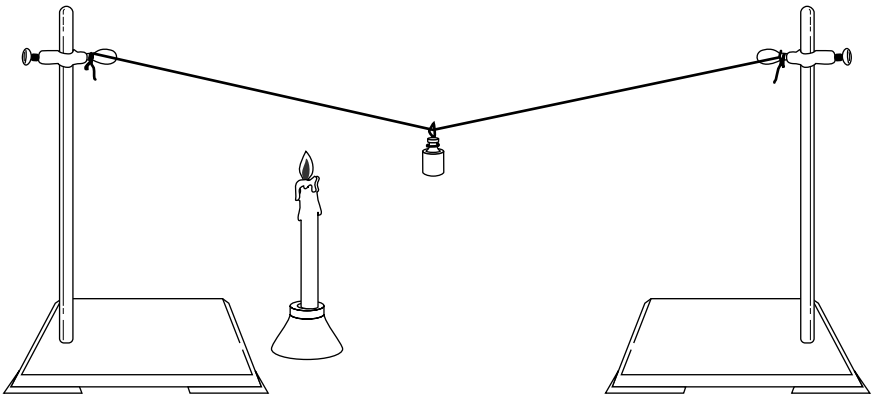
_____

_____

2. In the diagram, a mass is hanging from a wire. When the wire is heated as shown, will the mass move up or down? Why?

_____

_____



3. Suppose there are two bowls of hot soup with spoons in them. One spoon is plastic and the other is metal. Which spoon would feel hotter? Why?

_____

_____

4. Suppose you put a pan of water outside in a field on a clear day. If you measured the water's temperature at different times of day, when would you expect to get the highest reading? Why?

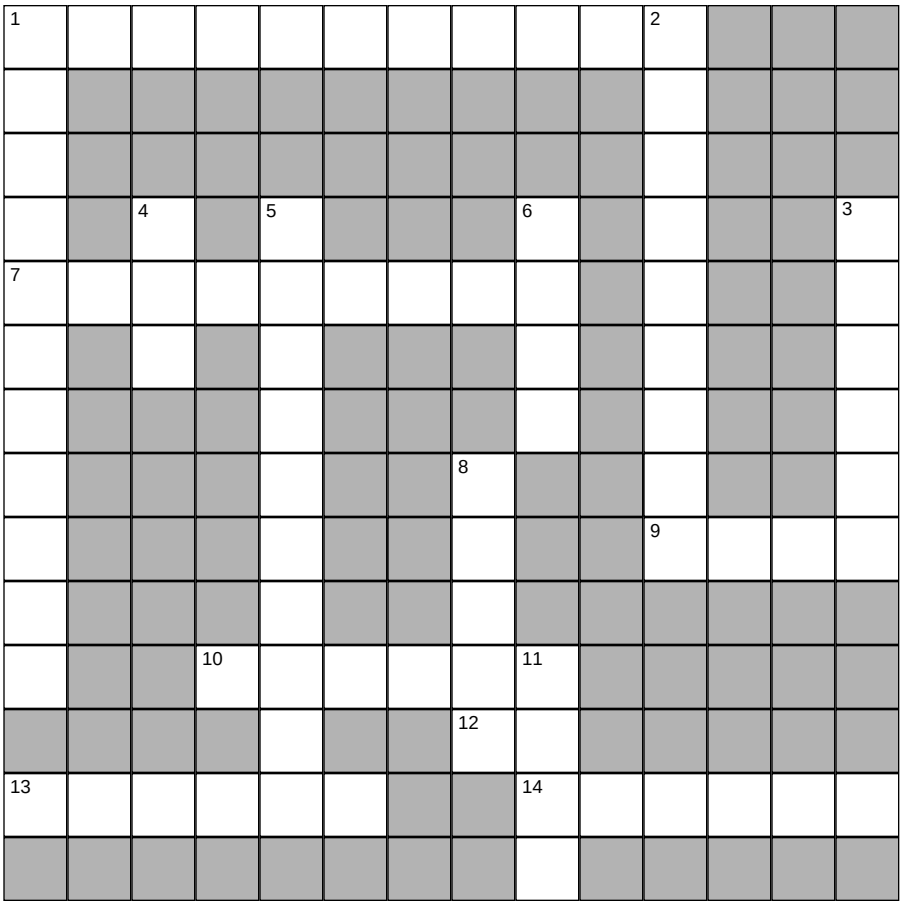
_____

_____

5. One problem that fireplace designers try to solve is how to get more of the fire's heat into the room. Where does the rest of the heat go? Why?

_____

Crossword: Heat



Across

1. Measures temperature
7. To change from liquid to gas
9. Three times three
10. Becomes solid above the melting point
12. To perform an action
13. To get larger when heated
14. Space with no matter

Down

1. Measurement of how fast the particles of a substance are moving
2. Energy carried across space
3. Unit of measurement on a temperature scale
4. Produced by evaporation
5. Heat transfer by bumping molecules
6. Results from the motion of particles in matter
8. Becomes liquid below the freezing point
11. A type of bird

Name Date Period

Chapter 7
Workbook Activity
26

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. SOUND WAVES—LIGHT WAVES
a. How they are alike

b. How they are different

2. REFLECTION—REFRACTION
a. How they are alike

b. How they are different

3. WHITE LIGHT—VISIBLE SPECTRUM
a. How they are alike

b. How they are different

4. LENS—MIRROR
a. How they are alike

b. How they are different

5. CONCAVE LENS—CONVEX LENS
a. How they are alike

b. How they are different

Name Date Period

Chapter 7
Workbook Activity
27

Sound and Light: Terms Review

Part A

Directions: Match each term in Column A with its best description in Column B. Write the correct letter on the line.

Column A

_____ **1.** image

_____ **2.** refract

_____ **3.** lens

_____ **4.** convex mirror

_____ **5.** reflect

_____ **6.** concave mirror

Column B

a. To bounce back light waves

b. Likeness produced by reflected or refracted light waves

c. To bend light waves

d. Mirror that makes an enlarged image

e. Mirror that makes a smaller image

f. A curved piece of clear material that refracts light waves

Part B

Directions: Unscramble the word or words in parentheses to complete each sentence below.

7. _____ are particles of light.
(topnosh)

8. A _____ separates white light into colors.
(smirp)

9. A _____ is a flat mirror.
(naple rimror)

10. The _____ is the band of colors that make up white light.
(blisive cumpters)

Name Date Period

Chapter 7
Workbook Activity
28

Word Search: Sound and Light

Directions: Write the correct word for each descriptive phrase. As a check, find each vocabulary word in the puzzle below.

1. bundles of energy that make up light _____
2. to move rapidly back and forth _____
3. a form of energy that can be heard _____
4. an object that separates white light into its colors _____
5. a copy or likeness _____
6. a clear, curved material that refracts light _____
7. a lens that is curved outward _____
8. to bounce back light waves _____
9. to bend light waves _____
10. a form of energy that can be seen _____

O Q F J B L K V N F P H G R
V T U Y S E Z E L I M A G E
X V L C Y N T C H O M A S F
E R H X O S J Y O F T C O R
P H O T O T S C Y Z O O D A
R A U L V T F D A T A N N C
I O E E B I B E H X F V U T
S O U W A D B G E L O E O C
M F Z N H V I R W H U X S Y
M T B T D L I B A O Y C A O
L Y C B P O I T C T C S N Q
R E F L E C T V L R E O P S
O V K N N T S O E H O N L J
C X S D C O O Y B W K F U S

Name Date Period

Chapter 8
Workbook Activity
29

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. NORTH POLE—SOUTH POLE

a. How they are alike

b. How they are different

2. HORSESHOE MAGNET—BAR MAGNET

a. How they are alike

b. How they are different

3. FUSE—CIRCUIT BREAKER

a. How they are alike

b. How they are different

4. OPEN CIRCUIT—CLOSED CIRCUIT

a. How they are alike

b. How they are different

5. REPEL—ATTRACT

a. How they are alike

b. How they are different

Name Date Period

Chapter 8
Workbook Activity
30

Electricity and Magnetism: Terms Review

Part A

Directions: Match each term in Column A with its meaning in Column B. Write the correct letter on the line.

Column A		Column B	
_____	**1.** static electricity	**a.**	Movement of electrons from one place to another
_____	**2.** lodestone	**b.**	A circuit with more than one path for the current
_____	**3.** series circuit	**c.**	A naturally magnetic stone
_____	**4.** ampere	**d.**	A buildup of electric charges
_____	**5.** magnetic field	**e.**	A circuit with only one path for the current
_____	**6.** electric current	**f.**	One end of a magnet
_____	**7.** parallel circuit	**g.**	Unit used to measure electric current
_____	**8.** magnetic pole	**h.**	Area of magnetism surrounding a magnet

Part B

Directions: Unscramble the word or words in parentheses to complete each sentence below.

9. One source of energy in a circuit is a _____ (trebtay).

10. To _____ (tarcatt) means to pull together.

11. Unlike a fuse, a _____ (rutcici krabeer) can be reset.

12. _____ (gavelot) is measured in volts.

Name Date Period

Chapter 8
Workbook Activity
31

Word Search: Magnets

Directions: Write the correct word for each definition. As a check, find each vocabulary word in the puzzle below.

1. a naturally magnetic stone _____
2. an object that attracts certain types of metals _____
3. area of lines of magnetic force (two words) _____
4. one of the two ends of a magnet; designated with N (two words) _____
5. to pull together _____
6. to push apart _____
7. a type of magnet shaped like a U (two words) _____
8. one of the two ends of a magnet; designated with S _____

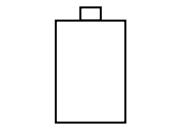
Y	A	M	Y	A	F	F	W	K	T	C	E	G	J	K	V
F	J	M	A	O	I	S	O	U	T	H	P	O	L	E	C
T	H	M	M	G	M	L	W	D	P	A	P	M	E	K	K
R	O	M	L	A	N	F	C	R	J	U	L	L	X	C	A
I	R	N	C	E	G	E	W	A	S	N	O	Z	S	P	G
P	S	E	F	L	S	N	T	R	T	P	E	X	X	V	A
I	E	H	S	E	W	K	E	I	H	T	S	E	D	H	E
I	S	E	J	C	X	A	Y	T	C	P	R	M	G	S	N
W	H	B	W	T	T	O	R	J	I	F	O	A	A	L	E
J	O	C	Z	R	E	O	K	C	G	Z	I	I	C	N	G
J	E	G	Q	O	N	A	T	X	Q	E	E	E	O	T	B
I	M	W	X	M	R	E	P	E	L	M	S	T	L	J	X
U	A	U	U	A	N	K	I	C	M	G	S	W	A	D	X
O	G	D	B	G	E	C	E	U	M	E	M	T	I	U	O
M	N	E	A	N	I	Y	N	X	D	K	N	F	X	M	F
J	E	M	W	E	H	B	A	O	A	G	H	V	X	N	I
E	T	O	Z	T	F	F	L	C	L	Y	E	X	J	H	T

Name Date Period

Chapter 8
Workbook Activity
32

Using Graphics: Schematic Diagrams

Part A
Directions: Identify each symbol shown below.



1. _____

2. _____

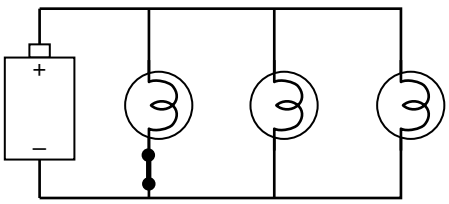
3. _____

4. _____

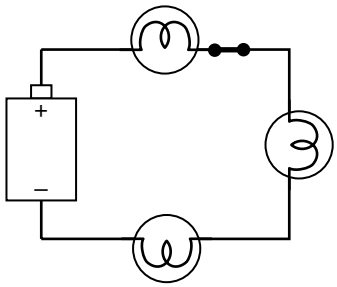
5. _____

Part B
Directions: Use the following diagrams to answer the questions below.

Circuit A



Circuit B



6. Is Circuit A a parallel circuit or a series circuit? _____

7. Is Circuit B a parallel circuit or a series circuit? _____

8. In which circuit would the bulbs shine brightest? _____

9. What would happen if the switch was opened in Circuit A? _____

_____

10. What would happen if the switch was opened in Circuit B? _____

_____

Name Date Period

Chapter 9
Workbook Activity
33

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. EQUATOR—PRIME MERIDIAN

a. How they are alike

b. How they are different

2. LINE OF LONGITUDE—LINE OF LATITUDE

a. How they are alike

b. How they are different

3. NORTH POLE—SOUTH POLE

a. How they are alike

b. How they are different

4. ROTATION—REVOLUTION

a. How they are alike

b. How they are different

5. DAY AND NIGHT—SEASONS

a. How they are alike

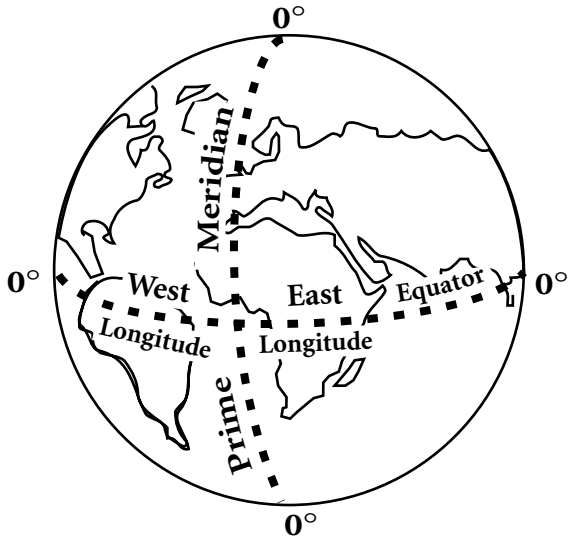
b. How they are different

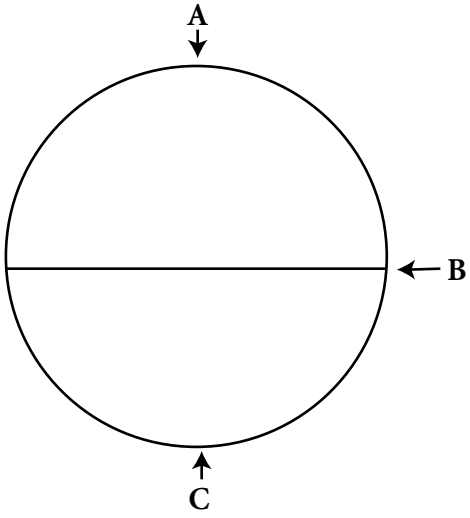
Name Date Period

Chapter 9
Workbook Activity
34

Using Graphics: The Globe

Directions: Suppose you have been asked to explain to a class the major lines on the globe. Use the illustrations below as a guide. Write what you will tell the class on the lines below.





Math Connection: Finding Percents

Directions: The table shows the size and area of the different continents. Complete the table. Find the percent of Earth's population that lives on each continent. The first continent, Asia, has been done for you. Use this formula to compute the percents.

Continent's Population	÷	Total Population	=	Continent's Percent of Population

Example: Asia

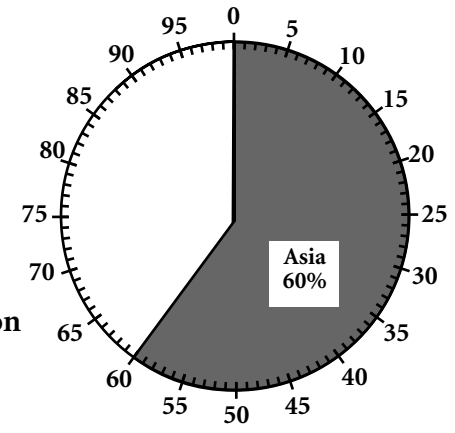
2,995 million ÷ 5,005 million = 0.598 ≈ 60%

Round to the nearest whole percent

Earth's Continents				
Continent	**Area (sq km)**	**Percent of Earth's Area**	**Population**	**% of Earth's Population**
Asia	43,608,000	29.2	2,995 million	60
Africa	30,355,000	20.3	580 million	
North America	25,349,000	17.0	410 million	
South America	17,611,000	11.9	280 million	
Antarctica	13,338,500	8.9		
Europe	10,498,000	7.0	725 million	
Australia	8,547,000	5.7	15 million	
TOTALS	149,306,500 (sq km)	100%	5,005 million	

Directions: Complete the circle graph. Draw sections to show the population of each continent.

Percent of Earth's Population on Each Continent



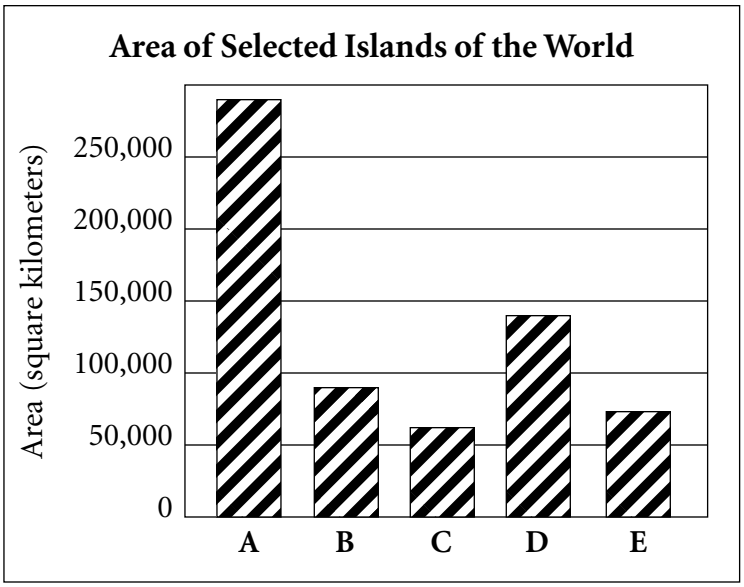
Name Date Period

Chapter 9
Workbook Activity
36

Using Tables and Graphs: Earth's Islands

Directions: Study the table and the graph to answer the questions below.

Island	Area (sq km)
Sumatra	294,405
Great Britain	142,963
Cuba	71,191
Java	82,171
Iceland	64,028



1. Use the table to find the area of each of the islands. Tell which bar in the graph matches each island.

Bar A is _____ .

Bar B is _____ .

Bar C is _____ .

Bar D is _____ .

Bar E is _____ .

2. Which listed island is the smallest? _____

3. Which island in the table is larger than 200,000 square kilometers? _____

4. How much larger is Great Britain than Cuba? _____

5. Approximately how many times larger than Cuba is Sumatra? Circle the correct answer.

a. twice as large

b. three times as large

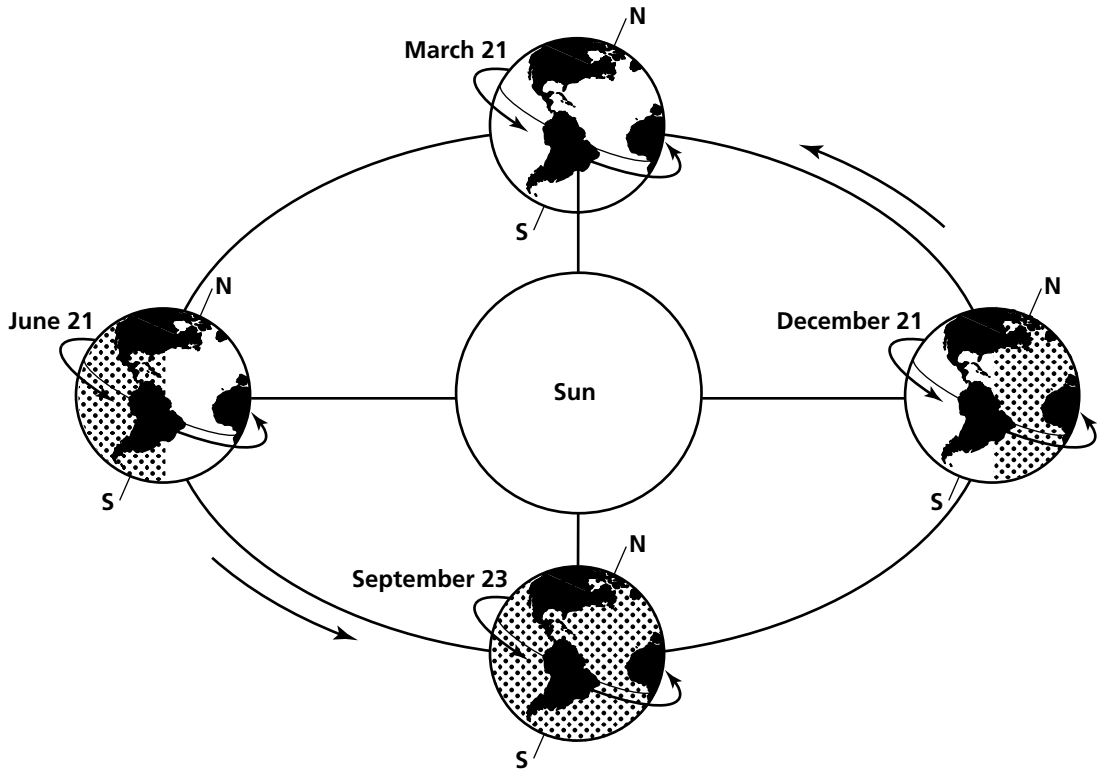
c. four times as large

Name Date Period

Chapter 9
Workbook Activity
37

Using Graphics: Earth's Seasons

Directions: Suppose you have been asked to explain to a class the seasons of the year. Use the illustration below as a guide. Write what you will tell the class on the lines below.



Name Date Period

Chapter 10
Workbook Activity
38

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. MAGMA—SEDIMENT
a. How they are alike

b. How they are different

2. MOHS SCALE—QUICK TEST
a. How they are alike

b. How they are different

3. STREAK—LUSTER
a. How they are alike

b. How they are different

4. IGNEOUS—METAMORPHIC
a. How they are alike

b. How they are different

5. ROCK—MINERAL
a. How they are alike

b. How they are different

Using the Mohs Scale of Hardness

Directions: Samples of two minerals from the list below were tested for hardness. Identify samples A and B by reading the test results and referring to the Mohs scale. Then answer the questions.

Mohs Scale of Hardness		
Mineral	**Hardness**	**Quick Test**
talc	1	scratched easily by fingernail
gypsum	2	scratched by fingernail
calcite	3	barely scratched by copper penny
fluorite	4	scratched easily by steel
apatite	5	scratched by steel
feldspar	6	scratches glass easily
quartz	7	scratches both glass and steel easily
topaz	8	scratches quartz
corundum	9	no simple test
diamond	10	no simple test

Hardness	Result
1. Did a penny scratch sample A?	no
2. Did a penny scratch sample B?	no
3. Did a steel nail scratch sample A?	yes
4. Did a steel nail scratch sample B?	yes
5. Did sample A scratch sample B?	yes

Conclusions

1. Sample A is _____ .

2. Sample B is _____ .

3. How would you determine the hardness of a mineral that is not listed on the Mohs scale?

_____

_____

Name Date Period

Chapter 10
Workbook Activity
40

Word Search: Minerals and Rocks

Directions: Write the correct word for each description. As a check, find each vocabulary word in the puzzle below.

1. a solid, natural material made of one or more minerals _____

2. measured according to the Mohs scale _____

3. the way a mineral shines _____

4. elements and compounds found in Earth's crust _____

5. hot, melted rock _____

6. a shiny luster _____

7. the color of the powder left on a tile _____

8. any of the characteristics that help to identify a mineral _____

9. the softest mineral on the Mohs scale _____

G M B X P S R C P F D D E C P
C S G L E F I K N L O R Y I S
F R T P I L F C J K V H T R N
U E A R L T M I N E R A L S P
H H Z A E A H H E G V I A S P
S J T W G A A O I L A R S L R
O E R M F M K N S I E E S B O
M M A D C D W C S P N M C H P
L I N V Z X D J L D H M E H E
U K I W L W W T R E F E H N R
S X U K T U P A C H A S R J T
T E C L E N H L G R A V I T Y
E O K P B M L C D H O H A L P
R K K G T K W P B F J A X G Q
K G K D P D U M N O O T V D E

Name Date Period

Chapter 11
Workbook Activity
41

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. WEATHERING—EROSION
a. How they are alike

b. How they are different

2. CHEMICAL WEATHERING—MECHANICAL WEATHERING
a. How they are alike

b. How they are different

3. BEDROCK—SOIL
a. How they are alike

b. How they are different

4. TOPSOIL—SUBSOIL
a. How they are alike

b. How they are different

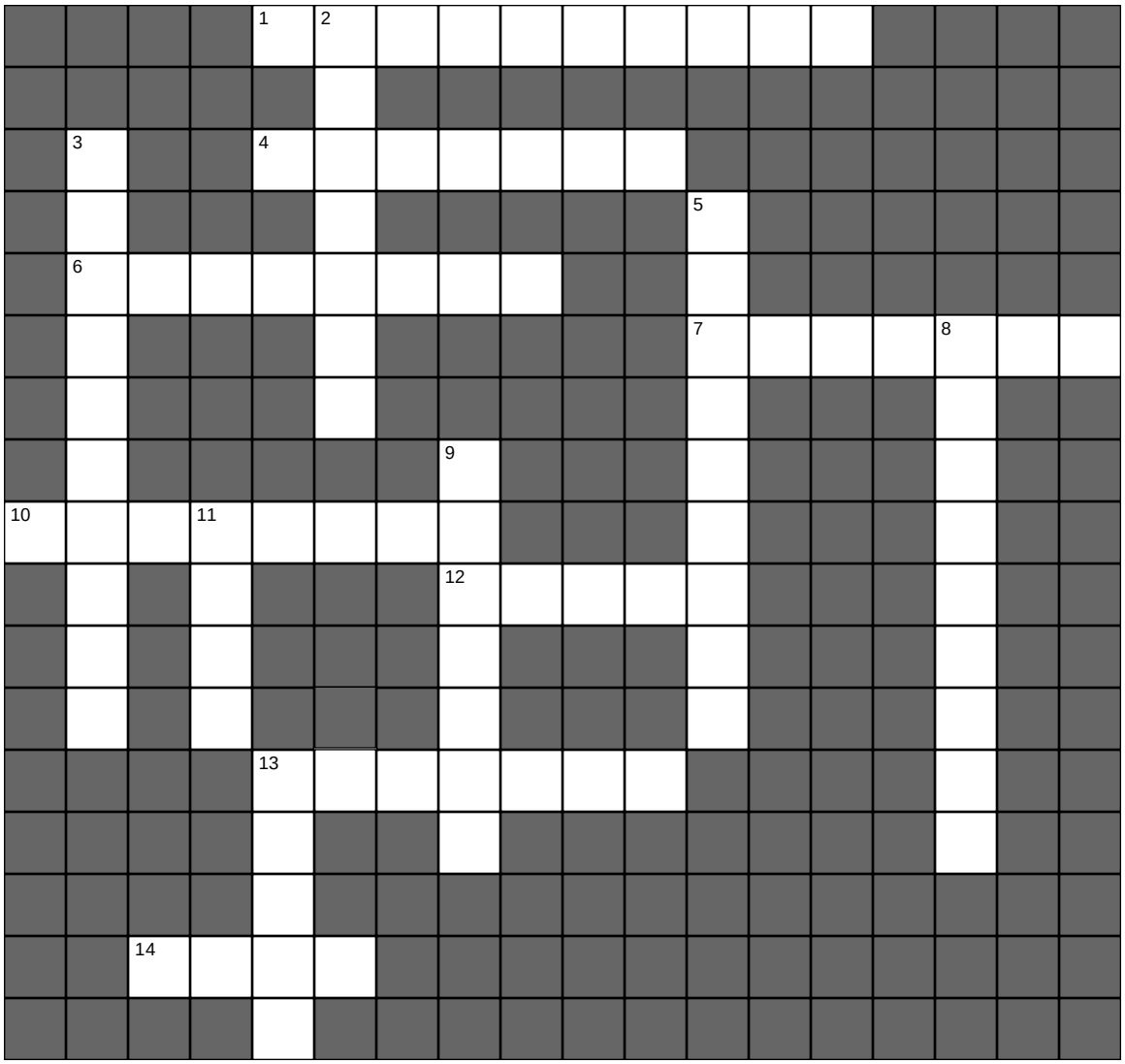
5. DELTA—ALLUVIAL FAN
a. How they are alike

b. How they are different

Name Date Period

Chapter 11
Workbook Activity
42

Crossword: Weathering and Erosion



Across

1. Process of breaking rocks apart
4. Ridge left by glaciers
6. Weathering that changes compounds
7. Richest soil layer
10. Water can _____ minerals.
12. Area formed where a river meets an ocean
13. Huge, moving mass of ice
14. Mound formed by wind deposition

Down

2. Process of moving weathered rock and soil
3. Kind of weathering that changes only the appearance of rocks
5. Niagara Falls is one example.
8. Process of oxygen combining with iron in rocks
9. Solid rock layer below subsoil
11. Mixture that develops three layers over time
13. A character in *Jack and the Beanstalk*

Name Date Period

Chapter 11
Workbook Activity
43

Language Arts: Weathering and Erosion Terms

Part A

Directions: Use the correct form of each word to complete each sentence.

weather	weathering	weathered	weathers

1. _____ is the process of breaking rock into particles.
2. Rain also _____ wood, wearing away the soft parts.
3. Even when the _____ is good, weathering continues.
4. All exposed rocks become _____ after a long period of time.

erode	erodes	eroded	erosion

5. _____ is the process of moving rocks and soil to different locations.
6. Some materials _____ faster than others.
7. _____ river banks sometimes collapse.
8. Limestone _____ faster than granite does.

deposit	deposits	depositing	deposition	deposited

9. _____ is the process of dropping eroded material.
10. Sand dunes are wind _____ .
11. A river will usually _____ its sediment in a fan shape when it joins a larger body of water.
12. A river is always _____ sediment as it flows.
13. Sedimentary rock layers begin to form after material has been _____ on the ocean floor.

Part B

Directions: Use two forms of each root word in a sentence.

14. _____
15. _____
16. _____

Name Date Period

Chapter 12
Workbook Activity
44

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. SEA-FLOOR SPREADING—FOLDING

a. How they are alike

b. How they are different

2. PRIMARY WAVES (P-WAVES)—SECONDARY WAVES (S-WAVES)

a. How they are alike

b. How they are different

3. CONTINENTS—PLATES

a. How they are alike

b. How they are different

4. EARTHQUAKE—VOLCANO

a. How they are alike

b. How they are different

5. FOLDED MOUNTAINS—BLOCK-FAULT MOUNTAINS

a. How they are alike

b. How they are different

Name Date Period

Chapter 12
Workbook Activity
45

Language Arts: Science Word Origins

Directions: The English words *volcano, mountain*, and *seismic* have roots from other languages. *Vulcan* is a Latin word that was the name of the Roman god of the forge (a furnace where metal is heated and made into tools). *Mont-* is a Latin root for "mountain," and *seismic* comes from the Greek word *seismos,* meaning "to shake." In the exercise below, each of the sentences following the group of words can be completed with one of the words that came to English from Greek or Latin. Use a dictionary to look up any words that are unfamiliar to you.

volcano	volcanic	volcanology	volcanologist

1. A _____ is a vent in Earth's crust.

2. _____ disturbances are of great interest to a _____ , a scientist who studies these forces.

3. A person interested in the forces of heat and pressure within the earth should study _____ in college.

mountain	mountainous	mountaineer

4. The sheep moved higher up the _____ in the winter in order to graze above the snow line.

5. The _____ was always looking for another challenging peak.

6. During the Cenozoic Era, Earth became more _____ because of the increase in plate movement.

seismic	seismology	seismograph

7. The study of _____ has increased in the hope of better earthquake prediction.

8. The _____ is a delicate instrument that records the three types of shock waves created by an earthquake.

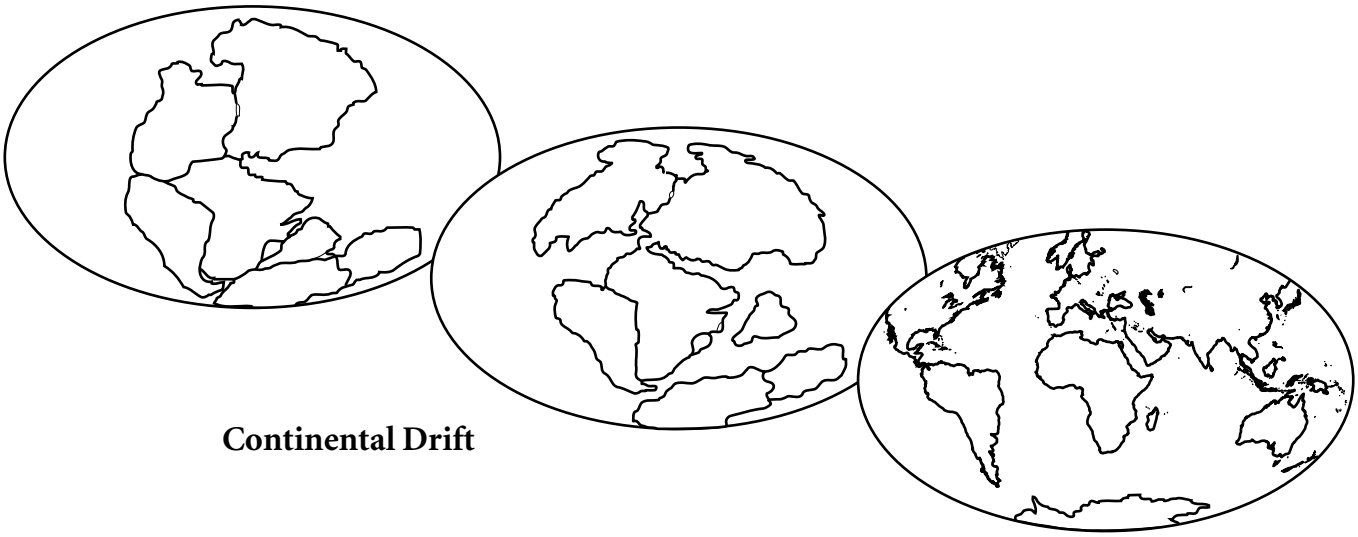
9. _____ disturbances occur more often at the edge of tectonic plates.

Name Date Period

Chapter 12
Workbook Activity
46

Using Graphics: Continental Drift

Directions: Suppose you have been asked to explain to a class the theory of continental drift. Use the diagrams below as a guide. Write what you will tell the class on the lines below.



Continental Drift

Name Date Period

Chapter 13
Workbook Activity
47

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. AMBER—PETRIFIED WOOD

a. How they are alike

b. How they are different

2. MOLD—CAST

a. How they are alike

b. How they are different

3. PETRIFICATION—PRESERVATION IN ICE

a. How they are alike

b. How they are different

4. ERA—PERIOD

a. How they are alike

b. How they are different

5. MESOZOIC ERA—CENOZOIC ERA

a. How they are alike

b. How they are different

Name Date Period

Chapter 13
Workbook Activity
48

Language Arts: Science Word Origins

Many words in our language have roots that come from other languages. Latin and Greek provide most of the roots for scientific words. A suffix is a group of letters added to the end of a word to change its meaning. The roots and suffixes combine to make word forms that all have to do with the same subject.

Directions: The suffix *-logy,* which comes from Greek, means "study" in English. Combine *-logy* with each of the roots listed below to form a word. Each word formed will stand for the study of the subject named by its root. Look up each word in a dictionary to check its spelling and write its meaning.

1. geo- + (-logy) = _____

which means _____

2. hydro- + (-logy) = _____

which means _____

3. litho- + (-logy) = _____

which means _____

4. meteor(o)- + (-logy) = _____

which means _____

5. bio- + (-logy) = _____

which means _____

6. paleo(nto)- + (-logy) = _____

which means _____

7. topo- + (-logy) = _____

which means _____

8 mineral- + (-logy) = _____

which means _____

9. zoo- + (-logy) = _____

which means _____

Name Date Period

Chapter 13
Workbook Activity
49

Word Search: Earth's History

Directions: Write the correct word for each definition. As a check, find each vocabulary word in the puzzle below.

1. traces or remains of organisms preserved in Earth's crust _____
2. the oldest and longest era in geologic time _____
3. a sea animal that lived millions of years ago _____
4. the era in which we are living today _____
5. a fossil that is an impression left in a rock _____
6. era known as the Age of Reptiles _____
7. process in which minerals replace the body tissues of a buried organism _____
8. a fossil that forms when minerals fill an impression _____

T R I L O B I T E F D S E C P
C S G L E F I K N L L R Y I S
F R T P I L F C J I V H T R N
U E A R L T M I S E R A L S P
H P Z A E A H S E G V I C S P
S R T W G A O O I L A R E L R
P E T R I F I C A T I O N B O
M C A D C D W I S P N M O H P
L A N V Z X D O L D H M Z H E
U M I W L W W Z R E F M O L D
S B U K T U P O C H A S I J T
T R C L E N H S G R A V C T Y
E I K P B M L E D H O A A L P
R A K G T K W M B F S A X G Q
K N K D P D U M N T O T V D E

Name Date Period

Chapter 14
Workbook Activity
50

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. GROUNDWATER—RUNOFF

a. How they are alike

b. How they are different

2. EVAPORATION—PRECIPITATION

a. How they are alike

b. How they are different

3. RIVER—LAKE

a. How they are alike

b. How they are different

4. LAKE—OCEAN

a. How they are alike

b. How they are different

5. TROUGH—CREST

a. How they are alike

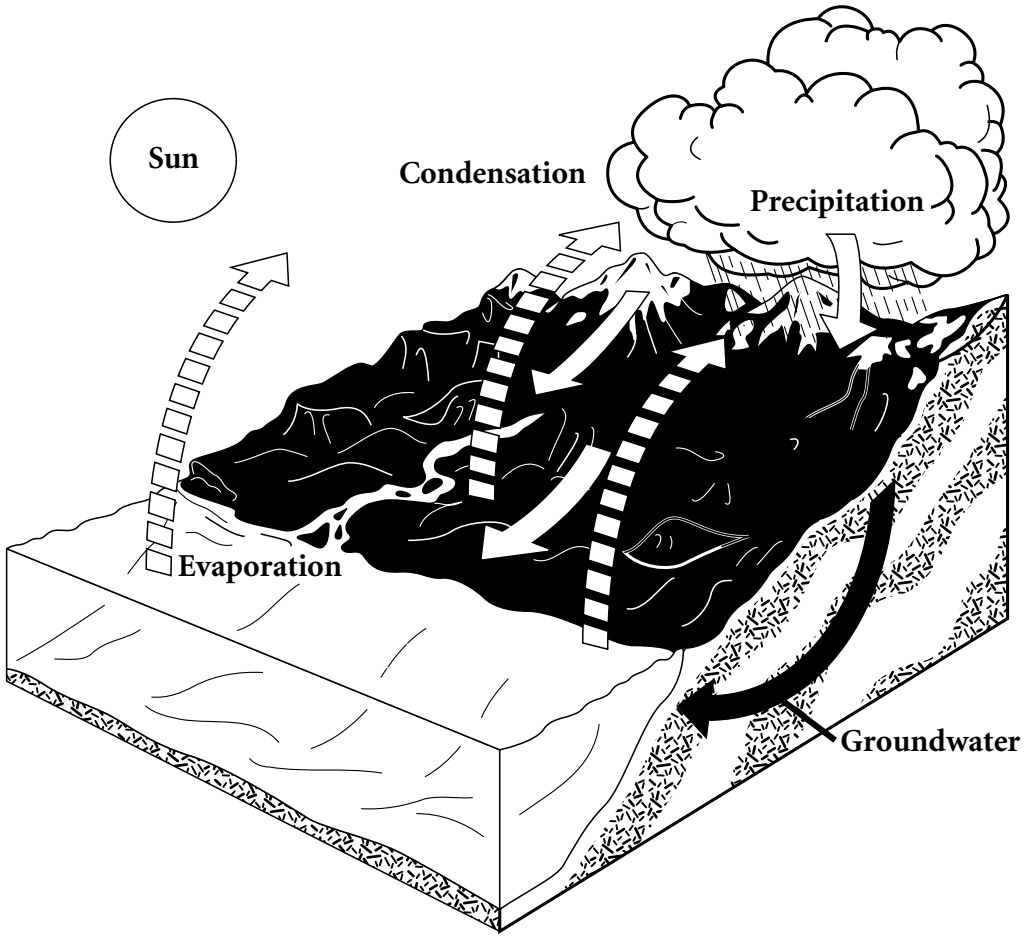
b. How they are different

Name Date Period

Chapter 14
Workbook Activity
51

Using Graphics: The Water Cycle

Directions: Suppose you have been asked to explain the water cycle to a class. Use the illustration below as a guide. Begin with precipitation and follow the water through the cycle and back into the clouds. Write what you will tell the class on the lines below.



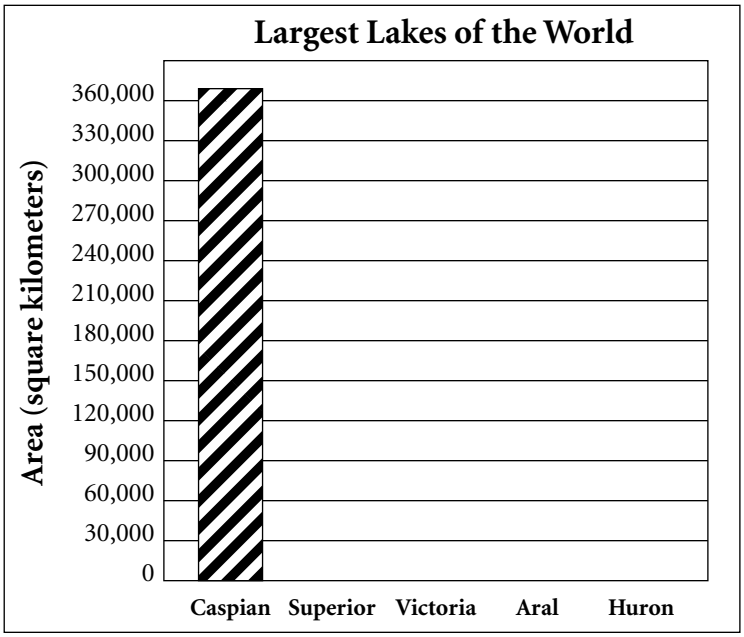
Using Tables: Lakes of the World

Directions: Study the table of lakes. Round the area for each lake to the nearest thousand. The first one has been done for you.

Area of Selected Lakes of the World

Lake	Area (square kilometers)	Approximate Area (sq km)
Caspian	370,992	371,000
Superior	82,103	
Victoria	69,484	
Aral	66,459	
Huron	59,699	

Directions: Use the approximate areas in your table above to draw bars on the graph at the right. Use the scale of the graph to make each bar the correct height. The names of the lakes are directly under their proper place in the graph.



Five of the 15 largest lakes in the world are the Great Lakes, located near the border of Canada and the United States. These lakes are visible on any map of the United States. List their names in the table. Match each lake's name with its area.

The Great Lakes	Area (square kilometers)
	82,103
	59,699
	57,757
	25,667
	19,554

Name Date Period

Chapter 15
Workbook Activity
53

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. NITROGEN —OXYGEN
a. How they are alike

b. How they are different

2. IONOSPHERE—TROPOSPHERE
a. How they are alike

b. How they are different

3. RAIN—WATER VAPOR
a. How they are alike

b. How they are different

4. CIRRUS—STRATUS
a. How they are alike

b. How they are different

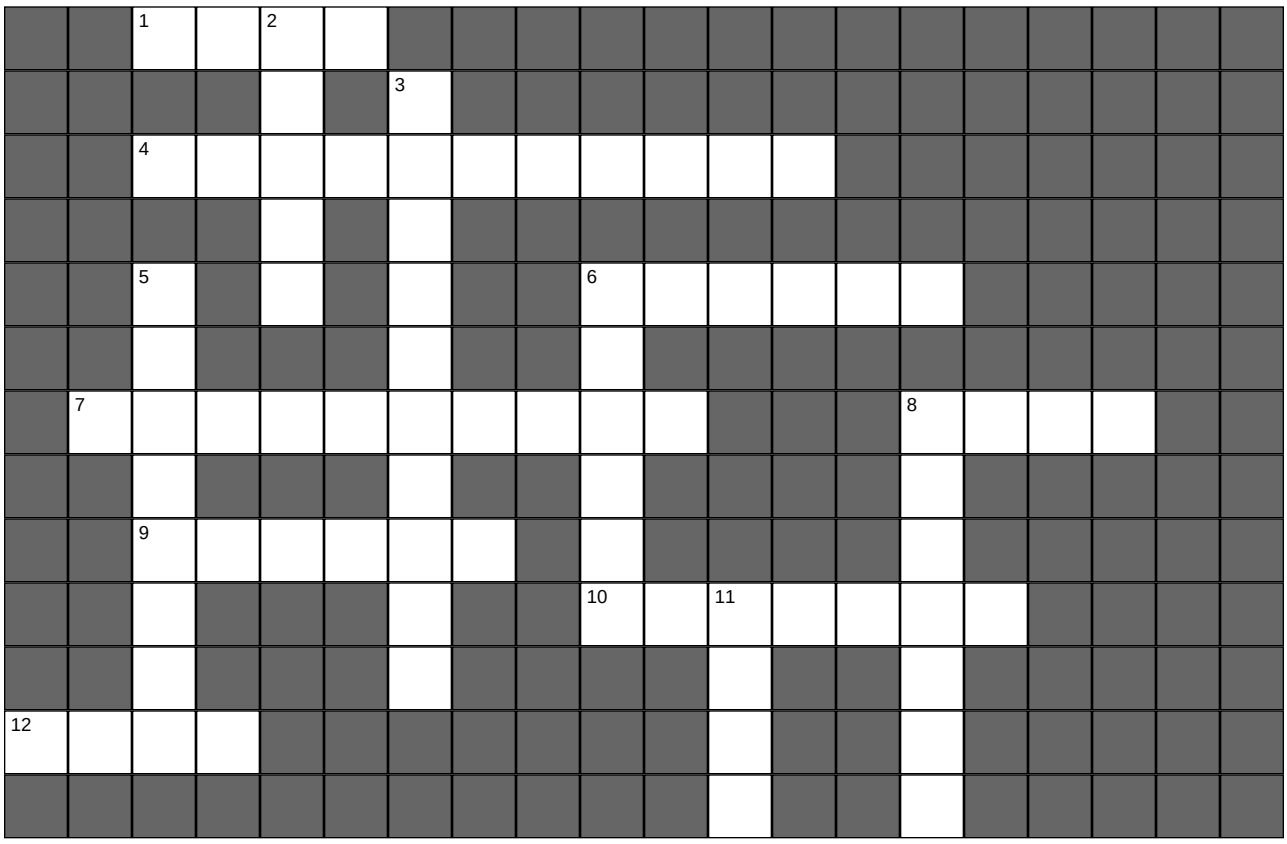
5. WIND—WIND BELT
a. How they are alike

b. How they are different

Name Date Period

Chapter 15
Workbook Activity
54

Crossword: Earth's Atmosphere



Across

1. Frozen rain that falls to Earth

4. Layer of air closest to Earth' surface

6. Large masses of water vapor in the air

7. Mixture of gases surrounding Earth

8. A wind _____ is a continuous cycle of air flow.

9. Gas in the atmosphere important to respiration

10. Low clouds

12. Moving air

Down

2. Form of oxygen that filters out harmful rays of the sun

3. Outermost layer of Earth's atmosphere

5. Gas that makes up 78% of Earth's atmosphere

6. High clouds

8. Fair weather clouds, found at middle altitudes

11. Water vapor condensed into liquid drops that fall

Name Date Period

Chapter 15
Workbook Activity
55

Word Search: Earth's Atmosphere

Directions: Write the correct word to complete each sentence. As a check, find each vocabulary word in the puzzle below.

1. _____ makes up 21% of Earth's atmosphere.
2. _____ makes up 78% of Earth's atmosphere.
3. The layer of air closest to Earth's surface is the _____ .
4. A _____ is a mass of tiny water vapor droplets.
5. Fluffy _____ clouds are found between 2,000 and 7,000 meters.
6. Fog is a layer of _____ clouds very close to Earth's surface.
7. The _____ layer filters out harmful rays of the sun.
8. Nimbus clouds are dark clouds that often produce _____ .
9. High, thin, wispy clouds are called _____ clouds.
10. The winds that affect most of the United States are the prevailing _____ .

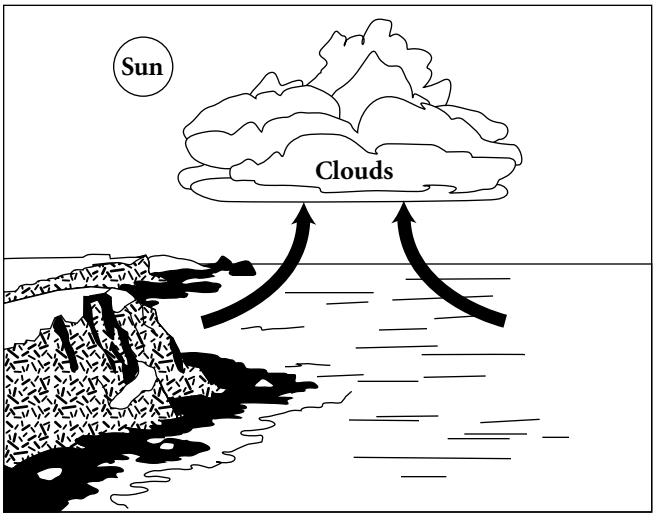
R	R	O	A	V	Q	R	S	N	G	K	L	O	S	T
P	B	B	F	L	P	Z	D	G	N	F	Z	E	E	L
C	L	V	E	O	L	D	R	R	M	S	S	E	I	J
S	U	N	I	T	R	O	G	E	N	U	T	K	L	E
E	T	M	S	L	E	E	T	O	R	U	D	E	R	C
S	O	R	U	H	A	I	L	R	Z	F	M	E	E	L
R	N	X	A	L	D	A	I	T	K	O	H	Z	T	O
L	H	I	L	T	U	C	T	N	H	P	N	H	S	U
O	R	O	V	A	U	S	R	P	S	Y	H	E	E	D
X	A	F	F	W	S	S	I	O	P	P	I	W	W	W
Y	I	M	O	L	J	T	P	W	T	A	A	Z	E	F
G	N	N	I	E	J	O	B	R	F	A	Y	K	F	L
E	S	N	T	P	R	F	W	R	R	P	U	X	C	U
N	Y	W	X	T	C	J	W	G	T	Y	W	Q	U	T
O	U	G	O	N	F	L	M	U	R	B	G	B	E	M

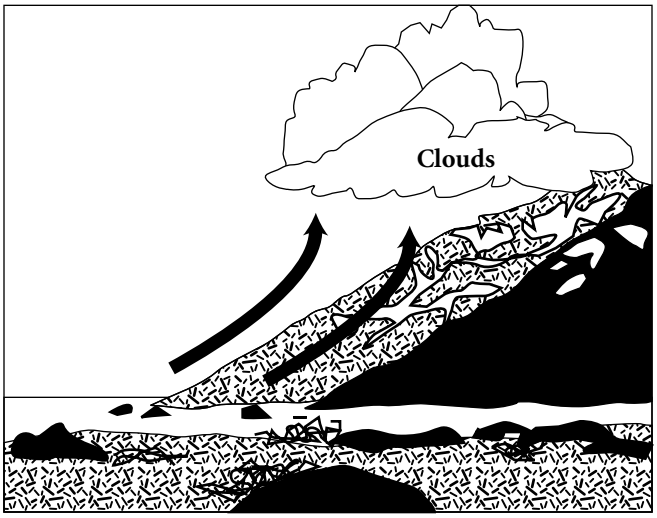
Name Date Period

Chapter 15
Workbook Activity
56

Using Graphics: How Clouds Form

Directions: Suppose you have been asked to explain to a class how clouds form. Use the illustrations below as a guide. Write what you will tell the class on the lines below.





Name Date Period

Chapter 16
Workbook Activity
57

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. WEATHER—CLIMATE
a. How they are alike

b. How they are different

2. COLD FRONT—WARM FRONT
a. How they are alike

b. How they are different

3. HIGH PRESSURE AREA—LOW PRESSURE AREA
a. How they are alike

b. How they are different

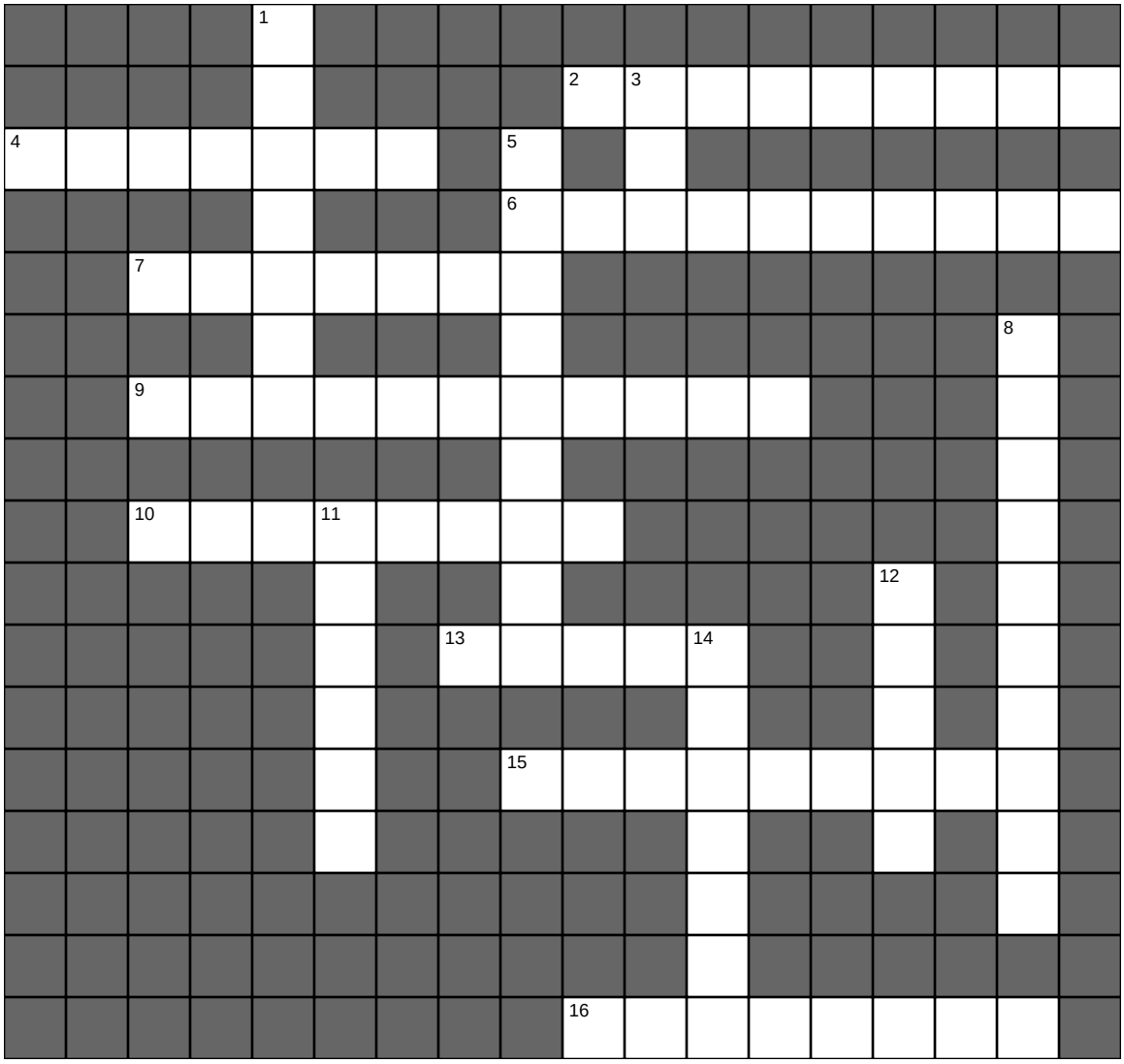
4. HUMIDITY—PRECIPITATION
a. How they are alike

b. How they are different

5. ANEMOMETER—WIND VANE
a. How they are alike

b. How they are different

Crossword: Weather and Climate



Across

2. Climate with the greatest seasonal changes

4. Zero degrees is freezing on this scale.

6. Measures wind speed

7. The changing conditions of the atmosphere

9. Measures temperature

10. Amount of water vapor in the air

13. The boundary between air masses

15. Large, violent storm formed over water

16. Climate near the equator

Down

1. Average weather conditions over a long period of time

3. The calm center of a hurricane

5. Measures air pressure

8. Water boils at 212 degrees on this scale

11. Line on a map connecting points that have equal pressure

12. Climate with coldest temperatures

14. A storm with a funnel-shaped cloud

Name Date Period

Chapter 16
Workbook Activity
59

Using Tables: Weather Data

Directions: Study the table of weather information for a certain city. The information covers the period from July 1 to July 31. Temperatures are in degrees Fahrenheit, and precipitation is in inches. Then answer the questions.

1. What was the total precipitation for the entire month? Round to the nearest tenth.

_____

2. What was the high temperature on July 21?

_____

3. What was the low temperature on July 4?

_____

4. On which day was the precipitation the highest?

_____

5. What was the highest of the high temperatures?

_____

6. What was the lowest of the low temperatures?

_____

7. The *Range* means the difference between the high and low temperatures for that day. Calculate the range for each day and place the number in the table.

8. Use your calculator to find the average high temperature for the month. (Add all of the numbers in the *High* column and then divide by 31.)

_____

Day	High	Low	Range	Precipitation
1	78	69		—
2	82	70		—
3	85	71		—
4	87	64		—
5	99	72		—
6	102	78		—
7	102	82		—
8	100	84		—
9	87	79		.13
10	90	73		—
11	84	70		—
12	96	72		.02
13	98	79		.53
14	93	73		—
15	91	70		—
16	88	72		.25
17	88	69		—
18	99	79		—
19	95	78		.02
20	88	70		2.21
21	92	72		—
22	88	72		—
23	91	75		—
24	90	75		—
25	92	76		—
26	94	78		—
27	91	75		—
28	97	74		—
29	99	79		.12
30	88	72		—
31	89	72		—

Name Date Period

Chapter 16
Workbook Activity
60

Applying: World Climates

Directions: One type of climate in each of the climatic zones is listed below. Read the characteristics for each climate. Then make a travel list of special clothing or supplies you would need if you were going to visit the area and spend time outside.

A. POLAR CLIMATE: Tundra
1. Temperature slightly higher than ice cap
2. Precipitation less than 25 cm per year
3. Soil frozen most of the year
4. Mosses and small shrubs

Special clothing, supplies, and equipment:

_____

_____

_____

B. TEMPERATE CLIMATE: Humid subtropical
1. Warm and humid summer, mild winter
2. Precipitation 75–165 cm per year
3. Heavy plant growth and forests

Special clothing, supplies, and equipment:

_____

_____

_____

C. TROPICAL CLIMATE: Tropical rain forest
1. Always hot and humid
2. Precipitation usually over 254 cm per year
3. Very thick forest and plant growth

Special clothing, supplies, and equipment:

_____

_____

_____

Name Date Period

Chapter 17
Workbook Activity
61

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. STAR—PLANET
a. How they are alike

b. How they are different

2. INNER PLANETS—OUTER PLANETS
a. How they are alike

b. How they are different

3. COMET—ASTEROID
a. How they are alike

b. How they are different

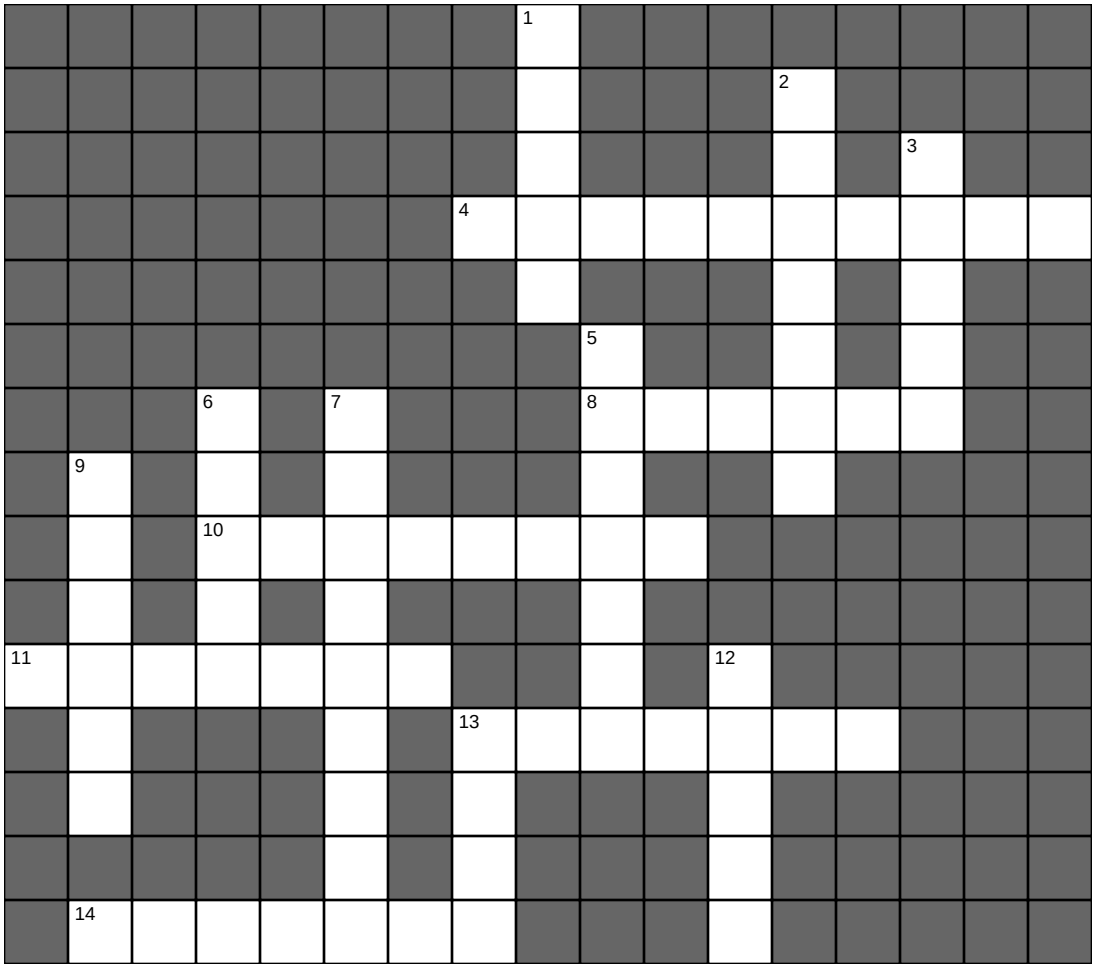
4. MERCURY—PLUTO
a. How they are alike

b. How they are different

5. SATURN—JUPITER
a. How they are alike

b. How they are different

Crossword: The Solar System



Across

4. An envelope of gas surrounding a body in space

8. Planet with an axis that tilts nearly sideways

10. Body in space that orbits a star and is smaller than a planet

11. Cooler, darker area on the surface of the sun

13. Fastest-moving planet

14. Large bodies in space that orbit the sun

Down

1. Planet that is third from the sun

2. Green planet; cannot be seen without a telescope

3. Planet that rotates in the opposite direction from the others

5. The largest planet

6. Objects in the sky that produce their own light

7. Part of an asteroid that hits the earth

9. The planet known for its rings

12. The five _____ planets, which are made mostly of gases

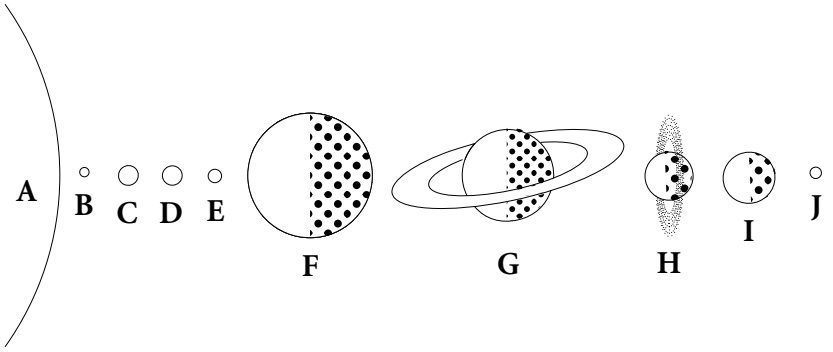
13. Planet named for the Roman god of war

Name Date Period

Chapter 17
Workbook Activity
63

Classifying: The Solar System

Directions: Identify each part of the solar system in the diagram below. Write the answer on each line. Then place each planet in the categories to which it belongs. Several planets will be used in more than one category. The number of lines shown may be more than you need.



A. _____

B. _____

C. _____

D. _____

E. _____

F. _____

G. _____

H. _____

I. _____

J. _____

1. Inner Planets

_____

_____

_____

_____

_____

2. Outer Planets

_____

_____

_____

_____

_____

3. Planets Without Moons

_____

_____

_____

_____

_____

4. Planets Made Mostly of Frozen Gas

_____

_____

_____

_____

_____

5. Planets with Two or More Moons

_____

_____

_____

_____

_____

6. Planets with Five or More Moons

_____

_____

_____

_____

_____

Math Connection: Finding Circumference

In mathematics, the symbol π stands for the number 3.14. π is found by dividing the circumference of a circle by its diameter. Read the following definitions.

Circumference—the distance around a circle
Diameter—the length of a straight line drawn through the center of a circle

Astronomers use π to calculate the circumference of a planet or star. Because π = circumference ÷ diameter, circumference = π times diameter.
Example: What is Earth's circumference?
The diameter of Earth is 12,800 kilometers.
Circumference = π times diameter
Circumference = 3.14 times 12,800
Circumference = 40,200 kilometers

Directions: Find the circumference for each object below. Write the answer in the circumference column in the chart. Round your answer to the nearest hundred.

Solar System Circumferences		
Object	**Diameter (kilometers)**	**Circumference**
Sun	1,380,000	
Mercury	4,900	
Venus	12,100	
Earth	12,800	40,200 kilometers
Moon	3,500	
Mars	6,800	
Jupiter	143,200	
Saturn	120,000	
Uranus	51,800	
Neptune	49,500	
Pluto	2,300	

Name Date Period

Chapter 18
Workbook Activity
65

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. GROWTH—DEVELOPMENT
a. How they are alike

b. How they are different

2. TISSUES—ORGANS
a. How they are alike

b. How they are different

3. FATS—CARBOHYDRATES
a. How they are alike

b. How they are different

4. PROTISTS—MONERANS
a. How they are alike

b. How they are different

5. PLANTS—ANIMALS
a. How they are alike

b. How they are different

Word Search: Living Things

Directions: Here are 22 terms about life and cells. Find each term in the puzzle. The words go across, down, and diagonally.

Carbohydrates	Fats	Organs	Salt
Cells	Food	Proteins	Sensing
Chemicals	Growing	Reproduce	Solution
Developing	Microscope	Respiration	Tissues
Digesting	Movement	Responding	Water
Excretion	Nutrients		

D T X C V F M I C R O S C O P E N E X S
X E C A Z T L R G T L D X R X M K S I L
C N V A G R O W I N G T K B W P M G X I
U D N E R L J N P V O L N Z L R C M K S
I S E K L B U R C L M O V E M E N T L S
K O A C U O O T R B H S B B M S G A E O
C E L L S D P H L I A T Y A G P C I X L
G X C T O D G I Y R L L X N I I O M C V
B F X S B N T G N D O X I P M R B C R E
N U T R I E N T S G R T I E V A E N E S
F A T S R I H K S D S A H H H T R R T T
B G N E T K S E R E E C T I O I E L I C
N E T C G V U V G F O O D E N O P A O R
S A A S W S O I E Z J G S F S N R L N R
W E L K S R D R T S O W U R P H O L K D
R S N I I X P G N W R E E E R J D P B R
J V T H S Y D I P C G B L J R D U G Y P
S A L T P D E D O D A V N S U N C T I B
X H W Q B T I O P R N R I Z N S E N U Y
A E Y B O W G D D O S O L U T I O N V P
B Y N R S Q Z V Q S B G I V J C G X Y H
N R P A F Z Q O R E S P O N D I N G A A

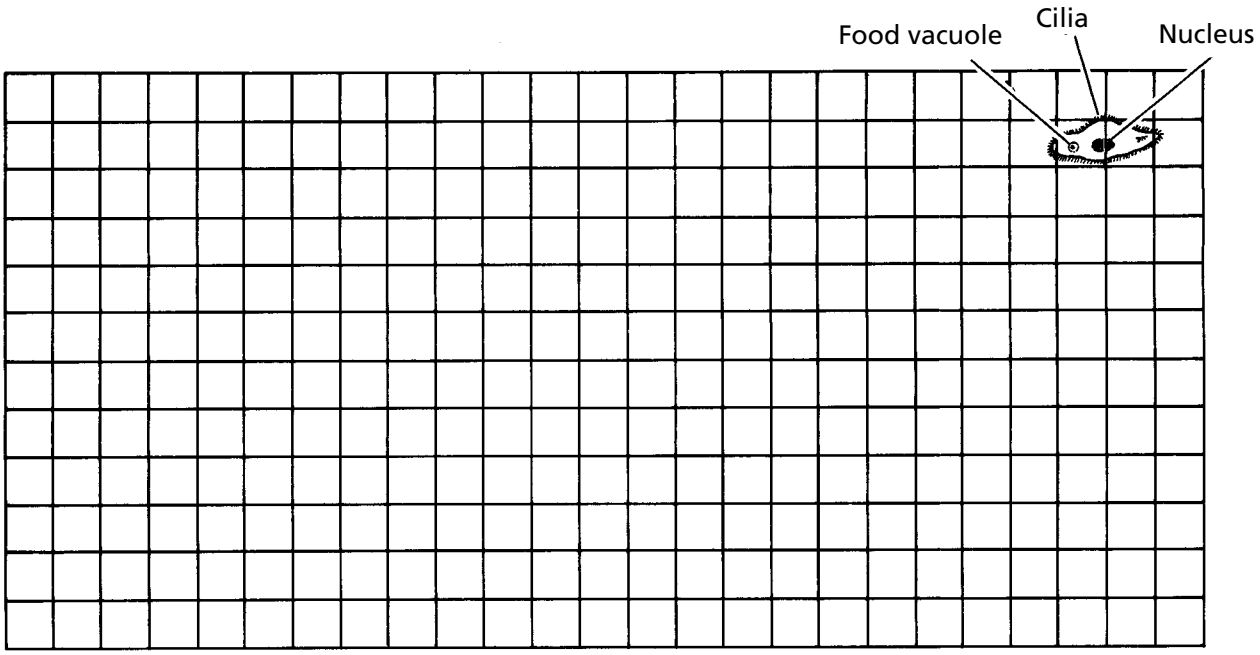
Name Date Period

Chapter 18
Workbook Activity
67

Making a Scientific Drawing

A paramecium is one type of protist. The paramecium has only one cell in its body. It has a nucleus in the center of the cell and tiny hairs called cilia around the edge of the cell.

Directions: The diagram of the paramecium in the grid below is enlarged to two units long and one unit wide. Draw a paramecium that is ten times larger than the one already drawn for you.



1. The original paramecium is two units long. How long is your enlargement?

_____

2. The original paramecium is one unit high. How high is your enlargement?

_____

3. The nucleus of the original paramecium is in the center. In your enlarged drawing, where is the center?

_____

4. How many squares, or square units, are in your enlarged paramecium? (Count each square that is half-covered or more as a whole square. Note that the small paramecium is in most of the space in *two* squares.)

_____

Living Things: Terms Review

Part A

Directions: Match each term in Column A with its meaning in Column B. Write the correct letter on the line.

Column A	Column B
____ **1.** cilia	**a.** an organism that absorbs food from another organism and harms it
____ **2.** moneran	**b.** a protist that has animal-like qualities
____ **3.** protist	**c.** one of the five groups into which living things are classified
____ **4.** protozoan	**d.** hair-like structures that help some one-celled organisms move
____ **5.** kingdom	**e.** an organism that usually is one-celled and has plant-like or animal-like properties
____ **6.** parasite	**f.** an organism that is one-celled and does not have organelles
____ **7.** flagella	**g.** whip-like tails that help some one-celled organisms move

Part B

Directions: Unscramble the word or words in parentheses to complete each sentence below.

8. Fungi release special chemicals on dead plant and animal matter to _____ them.
(mdeosepoc)

9. Large _____ called seaweeds can live in the ocean.
(geala)

10. Amebas move by pushing out part of their cell in a _____ .
(speduodpo)

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. COMMON NAME—SCIENTIFIC NAME
a. How they are alike

b. How they are different

2. VERTEBRATE—INVERTEBRATE
a. How they are alike

b. How they are different

3. AMPHIBIAN—REPTILE
a. How they are alike

b. How they are different

4. GASTROVASCULAR CAVITY—DIGESTIVE TRACT
a. How they are alike

b. How they are different

5. GILLS—LUNGS
a. How they are alike

b. How they are different

Name Date Period

Chapter 19
Workbook Activity
70

Word Search: Animals

Directions: Write the correct term to complete each sentence. As a check, find each vocabulary word in the puzzle below.

1. _____ is the science of classifying organisms according to their similarities.
2. Organisms that belong to the same _____ can breed and produce offspring like themselves.
3. _____ is a soft material found in the skeletons of sharks.
4. Animals that have a backbone are called _____ .
5. A bony fish uses its _____ to move up and down in the water.
6. A tadpole goes through a change known as _____ when it develops into a frog.
7. Female mammals nurse their young with milk from their _____ .
8. Animals with _____ symmetry have left and right halves that look the same.
9. A worm whose body is divided into sections is called a _____ .
10. Crustaceans and insects belong to the group of invertebrates known as _____ .
11. An arthropod sheds its external skeleton in a process called _____.
12. A caterpillar changes into a _____, which then changes into an adult butterfly.

B	A	X	E	T	A	X	O	N	O	M	Y	C	C	Y
R	I	L	I	U	Q	M	V	T	O	N	G	A	A	Z
K	A	L	V	G	E	A	W	M	F	U	P	R	R	N
S	R	K	A	J	H	M	G	F	D	U	S	A	T	G
W	T	M	E	T	A	M	O	R	P	H	O	S	I	S
I	H	L	Z	X	E	A	C	V	B	G	N	M	L	P
M	R	O	I	U	Y	R	T	R	N	E	W	Q	A	E
B	O	P	M	N	V	Y	A	I	C	X	A	S	G	C
L	P	K	T	R	Y	G	T	L	C	S	W	Z	E	I
A	O	O	L	N	E	L	R	F	V	B	G	T	Y	E
D	D	O	K	M	O	A	N	J	I	U	H	B	V	S
D	S	E	G	M	E	N	T	E	D	W	O	R	M	V
E	V	G	Y	T	F	D	C	X	D	R	E	S	Z	A
R	Q	S	V	W	D	S	V	E	G	N	R	H	M	W
I	M	T	V	E	R	T	E	B	R	A	T	E	S	U

Name Date Period

Chapter 19
Workbook Activity
71

Classifying Vertebrates

Directions: Complete the table by writing the letter of the correct description for each group of vertebrates. Then answer the questions at the bottom.

Descriptions:

a. Have dry, scaly skin. Lay eggs with a soft shell.
b. Have gills, scales, and a skeleton made of cartilage.
c. Have hair and mammary glands.
d. Have gills, scales, and a skeleton made of bone.
e. Have thin, moist skin. As adults, breathe with lungs or through their skin.
f. Have gills and a skeleton made of cartilage. Do not have scales or jaws.
g. Have feathers, hollow bones, and a horny beak. Lay eggs with a hard shell.

Features of Vertebrate Groups		
Group	**Description**	**Approximate number of species**
Bony fishes	1.	23,000
Sharks, rays, and skates	2.	800
Lampreys and hagfishes	3.	80
Amphibians	4.	4,000
Reptiles	5.	7,000
Birds	5.	9,000
Mammals	7.	4,400

8. Which of the groups listed in the table has the greatest number of species?
_____

9. Which group has the smallest number of species? _____

10. How many species of different kinds of fishes are there altogether?
_____

Classifying Invertebrates

Directions: The table below lists the features of eight major groups of invertebrates. In the left column, write the name of the group that fits each description. In the right column, give one example of an animal in each group. The first row has been done for you.

Features of Invertebrate Groups

Group	Description	Example
1. Flatworms	Have flat, thin bodies with bilateral symmetry.	tapeworm
2.	May have a shell that is coiled or made of two hinged pieces. Some have no shell. Some capture prey with tentacles.	
3.	Have radial symmetry and tentacles with stinging cells. Live only in water.	
4.	Have radial symmetry and tube feet. Live only in water.	
5.	Have segmented bodies, jointed legs, and an external skeleton. May have antennae.	
6.	Have long, smooth, round bodies that come to a point at the ends.	hookworm
7.	Simplest animals. Have bodies made of two layers of cells. Do not have tissues or organs.	(none needed)
8.	Have a body that is divided into many sections. Some tunnel through the soil. Others are parasites that feed on blood.	

Name Date Period

Chapter 20
Workbook Activity
73

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. VASCULAR PLANTS—NONVASCULAR PLANTS

a. How they are alike

b. How they are different

2. PHOTOSYNTHESIS—CELLULAR RESPIRATION

a. How they are alike

b. How they are different

3. ANGIOSPERMS—GYMNOSPERMS

a. How they are alike

b. How they are different

4. ROOTS—STEMS

a. How they are alike

b. How they are different

5. FERNS—MOSSES

a. How they are alike

b. How they are different

Plant Riddles

Directions: The riddles below involve terms used in classifying plants. Read each riddle and write the answer in the grid at the bottom of the page. The circled letters will spell out the name of the kind of organisms that you are studying in this chapter.

1. I am a group of nonflowering plants. The seeds in my plants are not enclosed in a fruit. What am I?

2. I am the largest group of plants in the world. I contain special reproductive bodies that make me more successful than other plants. What am I?

3. I am the internal system for carrying food and water to plants. I am made of conducting tubes. What am I?

4. I am a vascular plant that uses spores for reproduction. What am I?

5. I am the process in which plants make their own food. What am I?

6. I am a nonvascular plant that reproduces by spores. What am I?

1. _ _ _ _ _ _ (_) _ _ _

2. _ _ _ _ _ (_) _ _ _

3. _ (_) _ _ _ _ _ _ _ _ _ _ _ _ _ _

4. _ _ _ (_)

5. _ _ _ (_) _ _ _ _ _ _ _ _ _ _

6. _ _ (_) _

Name Date Period

Chapter 20
Workbook Activity
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Seed Plants and Seedless Plants: Concept Review

Part A

Directions: Circle the letter of the answer that best completes each sentence.

1. The plant part that contains a beginning plant and stored food is a _____ .
a. seed b. cone c. fruit

2. Seed plants have the _____ vascular tissue of all plants.
a. simplest b. most advanced c. least

3. Like seed plants, ferns are _____ plants.
a. nonvascular b. vascular c. evergreen

4. Because mosses are nonvascular plants, they are _____ ferns.
a. just like b. related to c. different from

5. Ferns and mosses reproduce by _____ .
a. seeds b. sori c. spores

Part B

Directions: Answer the following questions with complete sentences.

6. Why must nonvascular plants grow in damp, shady places?

_____

7. What is the purpose of a seed?

_____

8. What is the main difference between angiosperms and gymnosperms?

_____

9. What do the leaves of ferns look like?

_____

_____

10. Mosses do not have vascular tissue or true roots. How do they get water?

_____

_____

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Chapter 20
Workbook Activity
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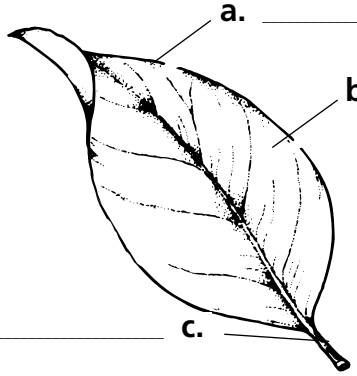
Labeling Plant Structures

Directions: Label the parts of each plant structure below. Number 1 has been started for you.

1.



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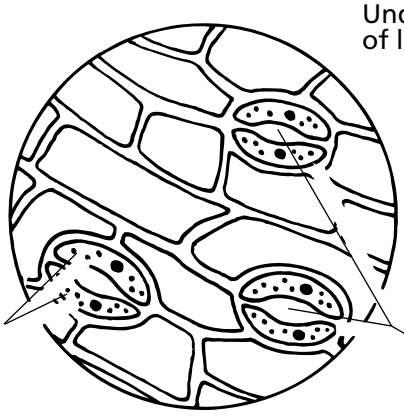

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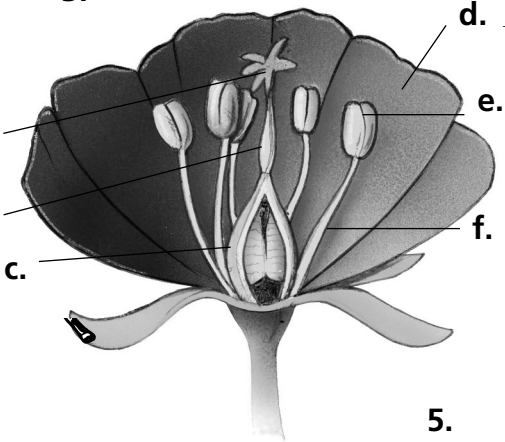

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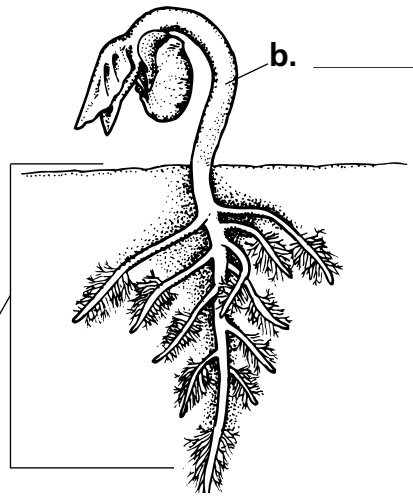
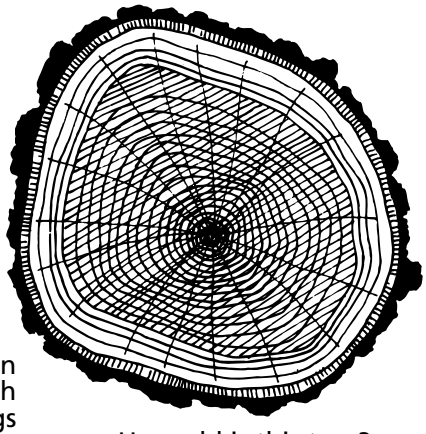


5.



Cross section of tree with growth rings

How old is this tree?

_____ years

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Chapter 21
Workbook Activity
77

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. POPULATION—COMMUNITY

a. How they are alike

b. How they are different

2. HERBIVORE—CARNIVORE

a. How they are alike

b. How they are different

3. FOOD CHAIN—FOOD WEB

a. How they are alike

b. How they are different

4. PRODUCERS—CONSUMERS

a. How they are alike

b. How they are different

5. CARBON CYCLE—OXYGEN CYCLE

a. How they are alike

b. How they are different

Name Date Period

Chapter 21
Workbook Activity
78

Food Chains and Webs: Review

Part A

Directions: Use the terms below to fill in the blanks and complete the paragraph.

small	food webs	decomposers
photosynthesis	second-order consumers	first-order consumers
food chain	third-order consumers	large

Every **(1)** _____ begins with a producer. Producers make their own food by **(2)** _____ . Producers are eaten by **(3)** _____ . Animals that eat other animals that eat plants are **(4)** _____ . They are eaten by **(5)** _____ . The food chain begins with a **(6)** _____ number of producers. It ends with a **(7)** _____ number of the last order of consumers. Because few consumers eat only one type of food, food chains are linked in **(8)** _____ . **(9)** _____ feed on dead animals.

Part B

Directions: Use the terms below to fill in the blanks and complete the paragraph.

consumers	decreases	food chain
chemical energy	energy	sun

Plants use **(10)** _____ from the sun to make food. They change light energy into **(11)** _____ . Organisms that eat other organisms because they cannot make their own food are **(12)** _____ . As organisms eat each other, energy moves through the **(13)** _____ . The amount of energy **(14)** _____ at higher levels of the food chain. The **(15)** _____ continuously provides energy.

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Chapter 21
Workbook Activity
79

Material Cycles: Review

Part A

Directions: Use the terms below to fill in the blanks and complete the paragraph.

used	bacteria	ammonia
cycle	carbon dioxide	respiration
water	released	oxygen

Chemicals continuously **(1)** _____ between organisms and the nonliving parts of ecosystems. In the **(2)** _____ cycle, evaporation and condensation are key processes that drive the cycle. In the carbon cycle, **(3)** _____ in the air is taken up during photosynthesis. The other important process in the carbon cycle is **(4)** _____, during which carbon dioxide is released back into the air. Photosynthesis and respiration are also important in the **(5)** _____ cycle. Oxygen is **(6)** _____ during photosynthesis. Oxygen is **(7)** _____ during respiration. Very important organisms in the nitrogen cycle are **(8)** _____ . They can change nitrogen gas into **(9)** _____ .

Part B

Directions: Answer the following questions with complete sentences.

10. Why must materials be cycled on Earth?

_____

_____

11. Why are decomposers important in cycles?

_____

_____

12. Explain how the carbon cycle, the oxygen cycle, and the water cycle are linked by photosynthesis.

_____

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Chapter 21
Workbook Activity
80

Ecology: Terms Review

Part A

Directions: Match each term in Column A with its meaning in Column B. Write the correct letter on the line.

Column A	Column B
____ **1.** acid rain	**a.** the place where an organism lives
____ **2.** resource	**b.** the interactions among the populations in an ecosystem and the nonliving things in their environment
____ **3.** habitat	**c.** rain that is caused by pollution and is harmful to organisms
____ **4.** ecosystem	**d.** anything added to the environment that is harmful to living things
____ **5.** omnivore	**e.** a consumer that eats both plants and animals
____ **6.** nitrogen fixation	**f.** the process by which certain bacteria change nitrogen gas from the air into ammonia
____ **7.** succession	**g.** a thing that an organism uses to live
____ **8.** pollution	**h.** the process by which a community changes over time

Part B

Directions: Unscramble the word in parentheses to complete each sentence below.

9. All of the biomes on Earth together form the _____ .
(biereosph)

10. The desert and the tundra are examples of _____ that are found over large geographic areas. (iobems)

11. Organisms of the same species that live in the same area form a _____.
(tippoaulon)

12. Organisms _____ with one another and with nonliving things in their environment. (inactter)

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Chapter 22
Workbook Activity
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Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. HEREDITY—ENVIRONMENT

a. How they are alike

b. How they are different

2. DNA—GENE

a. How they are alike

b. How they are different

3. MITOSIS—MEIOSIS

a. How they are alike

b. How they are different

4. MUTATION—NATURAL SELECTION

a. How they are alike

b. How they are different

5. VESTIGIAL STRUCTURE—HOMOLOGOUS STRUCTURE

a. How they are alike

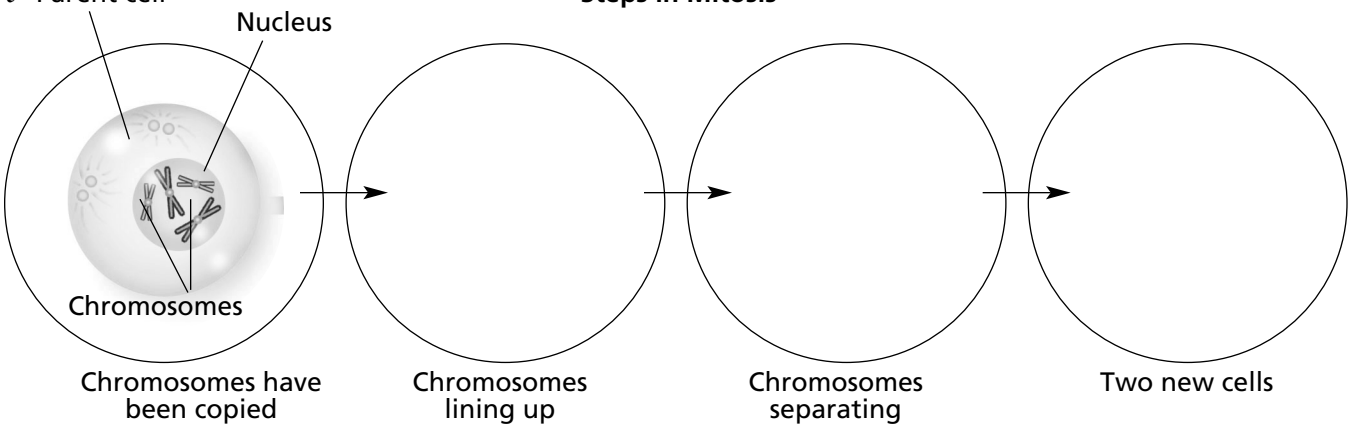
b. How they are different

Steps in Mitosis and Meiosis

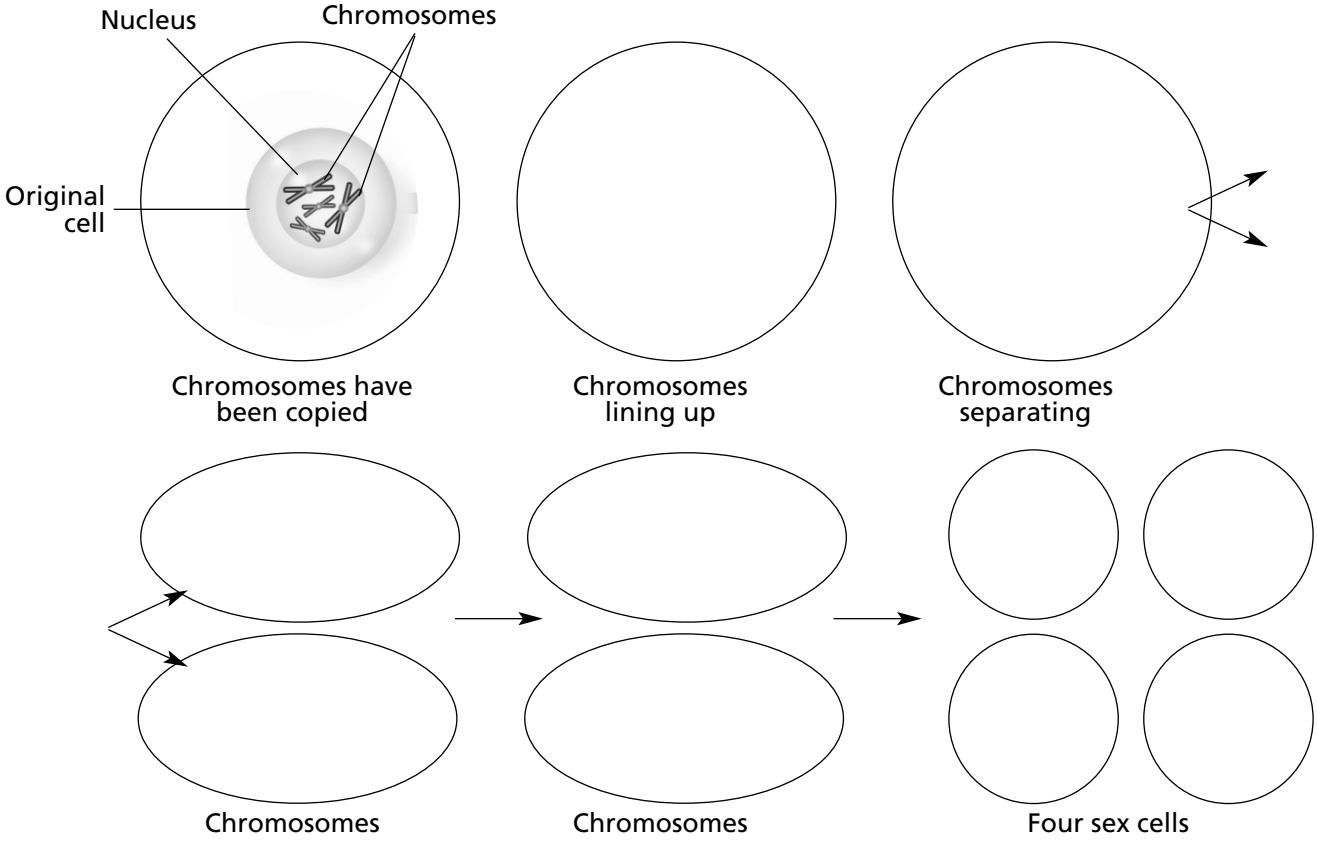
Directions: Draw a diagram for each step of mitosis and meiosis in the spaces provided. The first diagram for each process has been done for you. Refer topages 393–395 in your book for the information you need.

t Parent cell

Steps in Mitosis



Steps in Meiosis



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Chapter 22
Workbook Activity
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Heredity and Evolution: Terms Review

Part A

Directions: Match each term in Column A with its meaning in Column B. Write the correct letter on the line.

	Column A	Column B
____	**1.** mutation	**a.** the process of change over time
____	**2.** vestigial structure	**b.** a body part that is similar in related organisms
____	**3.** homologous structure	**c.** the study of heredity
____	**4.** adaptation	**d.** a change in a gene
____	**5.** evolution	**e.** the passing of traits from parents to offspring
____	**6.** heredity	**f.** a structure in a cell's nucleus that contains DNA
____	**7.** genetics	**g.** a body part that appears to be useless to an organism
____	**8.** chromosome	**h.** a trait that enables an organism to live in a certain environment

Part B

Directions: Unscramble the word in parentheses to complete each sentence below.

9. A _____ may be harmful or helpful to an organism.
(attnomiu)

10. The kind of cell division that produces two cells identical to the parent cell is called _____ .
(smotisi)

11. The kind of cell division that produces sex cells is called _____ .
(eimossi)

12. The theory of natural selection explains how _____ occurs.
(onulotive)

Name Date Period

Chapter 23
Workbook Activity
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Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. ARTERIES—VEINS
a. How they are alike

b. How they are different

2. SKELETAL MUSCLES—SMOOTH MUSCLES
a. How they are alike

b. How they are different

3. SMALL INTESTINE—LARGE INTESTINE
a. How they are alike

b. How they are different

4. LIGAMENTS—TENDONS
a. How they are alike

b. How they are different

5. RED BLOOD CELLS—WHITE BLOOD CELLS
a. How they are alike

b. How they are different

Sequencing Life Activities

Directions: Read the steps listed for each of the following life activities. For each life activity, order the steps in the correct sequence. Number each step until all steps have been ordered for each of the activities. Each sequence has been started for you.

A. Digestion

____ Stomach enzymes break down food.
____ Food moves through the esophagus.
____ Saliva starts the digestion of carbohydrates.
_1_ Food enters the mouth.
____ Undigested food travels to the large intestine.
____ Glands in the small intestine release digestive enzymes.

B. Circulation

____ Blood leaves the heart through the aorta.
____ Oxygen-rich blood returns to the heart and enters the left atrium.
____ Oxygen-poor blood enters the right atrium.
____ Oxygen-rich blood moves into the left ventricle.
_1_ Oxygen-poor blood travels in veins to the heart.
____ Blood is pumped from the right ventricle to the lungs.

C. Respiration

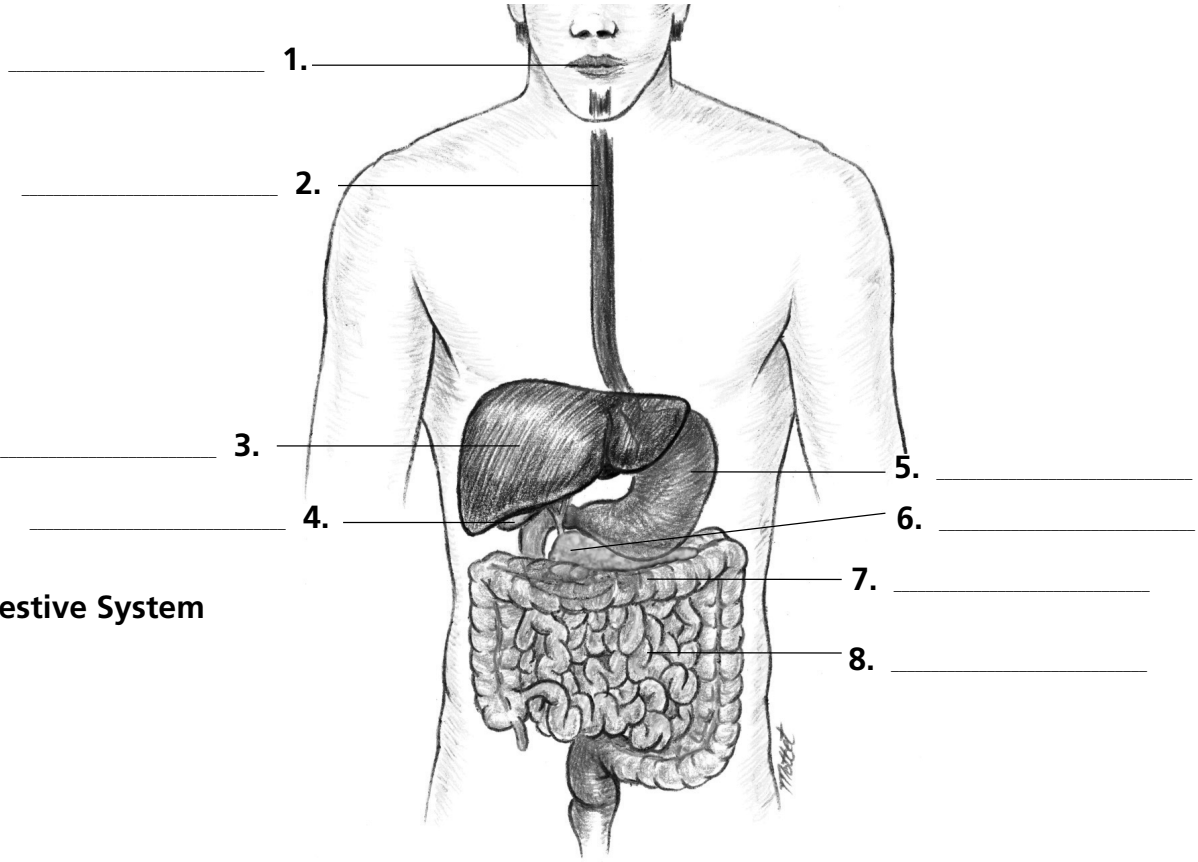
____ Air travels into the trachea.
____ Air then goes into the bronchi.
_1_ Air enters the body through the nose and mouth.
____ Air goes from the alveoli to the capillaries.
____ Air goes into the alveoli.

D. Urine excretion

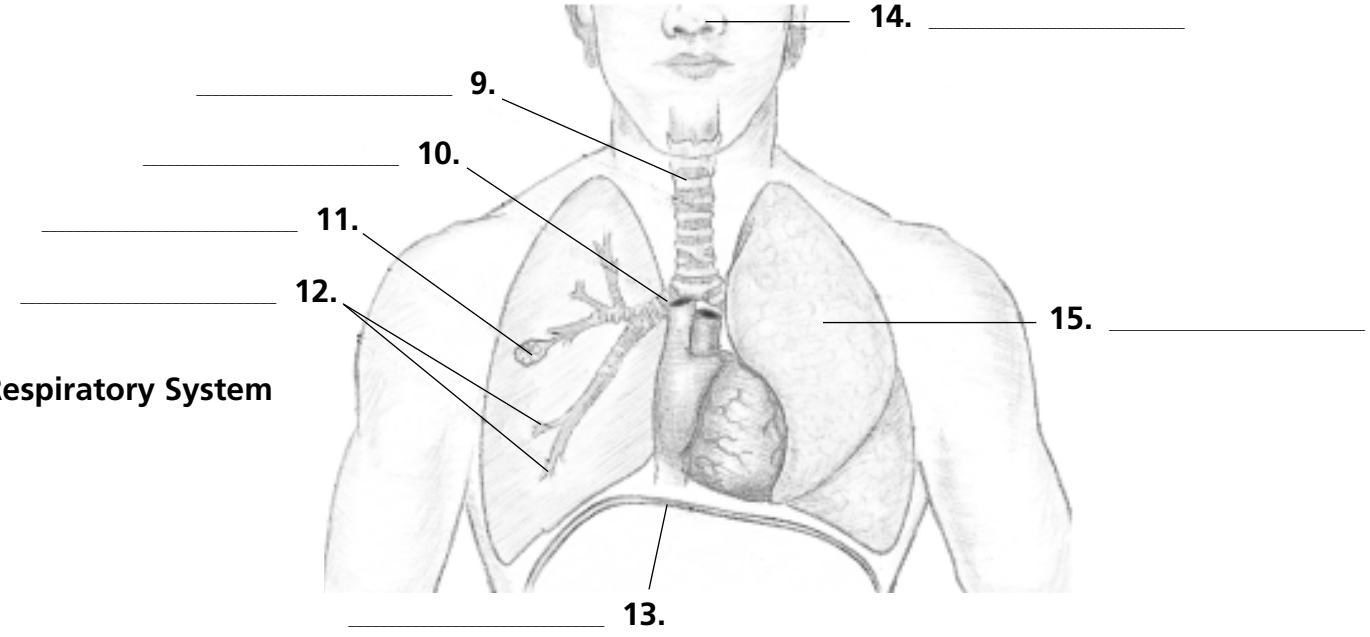
____ The bladder squeezes urine into the urethra.
____ The urethra takes the urine to the outside of the body.
_1_ The kidneys filter nitrogen wastes out of the blood.
____ A liquid waste, urine, is carried from the kidneys by ureters.
____ The urine goes into the urinary bladder.

Labeling Body Structures

Directions: Name each body part shown below.



Digestive System



Respiratory System

Name Date Period

Chapter 23
Workbook Activity
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Body Systems: Terms Review

Part A

Directions: Match each term in Column A with its meaning in Column B. Write the correct letter on the line.

	Column A	Column B
____	**1.** enzyme	**a.** proteins in the plasma that help a person resist disease
____	**2.** arteries	**b.** microscopic air sacs in the lungs
____	**3.** hemoglobin	**c.** oxygen-carrying protein in blood
____	**4.** antibodies	**d.** blood vessels that carry blood away from the heart
____	**5.** alveoli	**e.** a protein that causes chemical changes
____	**6.** veins	**f.** strong muscle below the lungs that helps you breathe
____	**7.** ligaments	**g.** blood vessels that carry blood to the heart
____	**8.** diaphragm	**h.** connective tissue that connects bones to bones

Part B

Directions: Unscramble the word in parentheses to complete each sentence below.

9. The _____ protects the reproductive organs.
(iplesv)

10. Thirty-three bones called _____ protect the spinal cord.
(ebretvare)

11. The human _____ is made up of 206 bones.
(nolkeset)

12. Most bones start out as _____ .
(getracila)

Compare and Contrast

Directions: When you compare and contrast things or ideas, you tell how they are alike and how they are different. Compare and contrast each pair below.

1. CEREBRUM—BRAIN STEM
a. How they are alike

b. How they are different

2. NEURON—SYNAPSE
a. How they are alike

b. How they are different

3. SENSORY NEURONS—MOTOR NEURONS
a. How they are alike

b. How they are different

4. CORNEA—IRIS
a. How they are alike

b. How they are different

5. OPTIC NERVE—AUDITORY NERVE
a. How they are alike

b. How they are different

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Chapter 24
Workbook Activity
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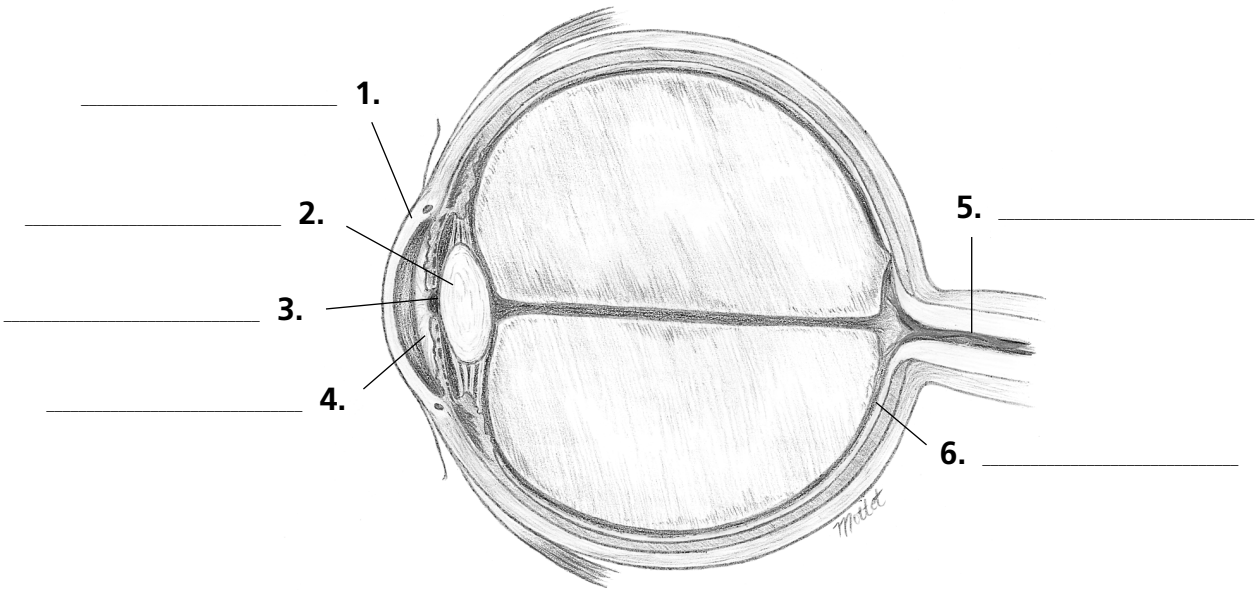
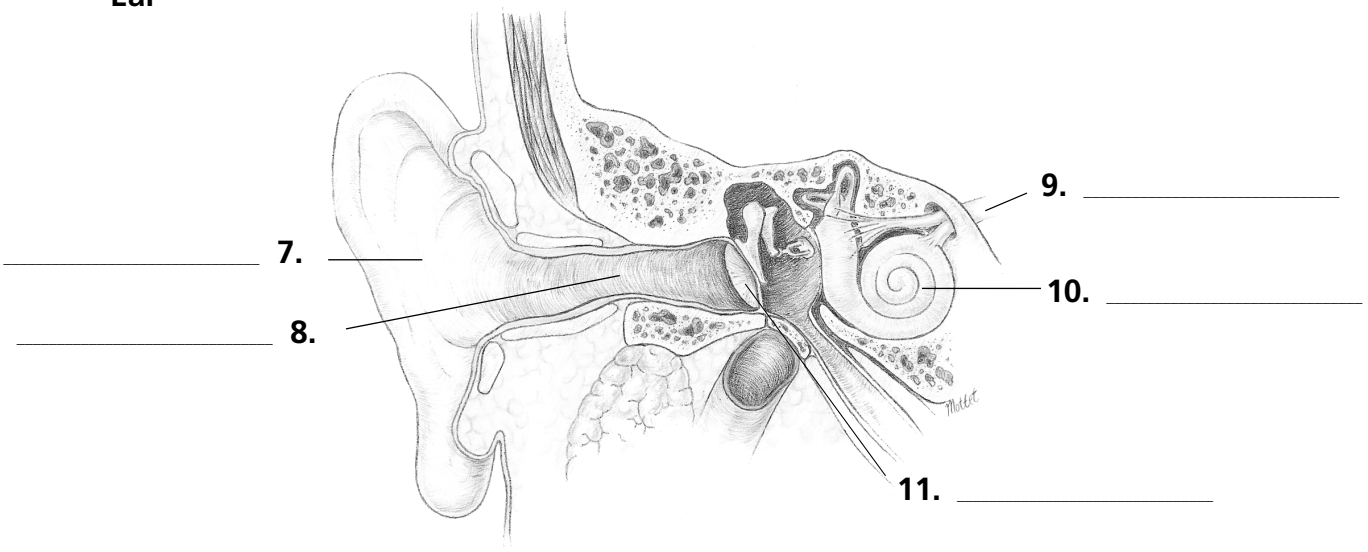
Labeling Body Structures

Directions: Name each part of the eye and ear shown below.

Eye



Ear



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Chapter 24
Workbook Activity
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Hand and Eye Dominance: Individual Variation

Purpose: To determine eye dominance in groups of students

Background Information: Most people prefer to use one hand over the other for common activities such as writing, throwing, and catching. The hand that is used more frequently is called the dominant hand. Most of us know which hand is our dominant one, but very few of us know which of our eyes is dominant. Perform this activity with five of your classmates and complete the chart below.

Activity: Look at a distant object. Hold up your index finger at arm's length. With one eye closed, look at the object just over the top of your finger. Note the object that you see. Without changing your position, close the other eye and look at the object. The background shifts and the distant object appears to shift position. Which of your eyes produces the image that was closest to the actual position of the object as you saw it with both eyes? That eye is dominant.

Student name	**Dominant hand**	**Dominant eye**

1. How many students in your group:

a. reported using their left hand for writing, catching, and throwing? _____

b. discovered that their right eye was dominant? _____

c. had a dominant eye on the same side as a dominant hand? _____

d. had a dominant eye on the opposite side from a dominant hand? _____

2. Compare your group with another student group. Are there any clear patterns between the two groups?

_____

_____