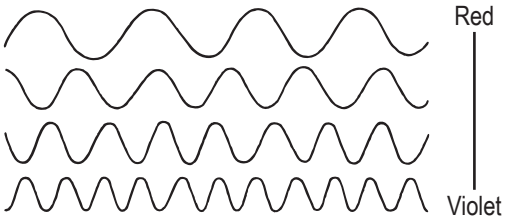
Making a Rainbow

Name: _____

Directions: Read the passage. Answer the questions below.

White light from the Sun hits drops of water still in the air after a rainstorm. The colors are split up inside each drop of water. This is the same thing that happens in a prism, which is a triangular piece of glass designed to refract or break light into its component colors. The seven colors of the rainbow are red, orange, yellow, green, blue, indigo, and violet.



Each color has a different wavelength and is bent or refracted at a different angle. Light coming from the Sun is refracted different amounts because it has different wavelengths. Red has the longest wavelength. It is followed by orange with the next longest. The third color is yellow, followed by green, which is in the center. The last three colors have shorter wavelengths. They are blue, indigo, and the shortest of all is violet. Students of science use this acronym to keep the colors in mind in their correct order: ROY G. BIV.

1. What do you think happens if you put a glass of water on a large white sheet of paper in the sun?

_____

_____

2. Which time of the day do you think that you would see the best spectrum of color? Why?

_____

_____

3. How can you make a small rainbow with the spectrum of colors at home or at school with a hose or hand sprinkler?

_____

_____

4. What kind of day would work best for the rainbow? Why?

_____

_____

5. How would the Sun affect making the rainbow?

_____

_____

Answer Key

Unit 17

Page 105 Molecules in Motion

1. A **3.** B **5.** soap
2. B **4.** D

Page 106 Molecule Magic

1. chemical
2. No. Shapes include pyramids, spirals, circles, and others.
3. 2 atoms
4. water
5. Yes, colored water
6. They would dissolve into sugar water molecules.
7. Evaporate the water by heating it.

Page 107 What Are Atoms?

1. A **2.** D **3.** C **4.** C

What Am I? Subatomic

Page 108 Atoms and Molecules

1. hydrogen; oxygen
2. sodium; chlorine
3. nitrogen; oxygen
4. carbon; hydrogen
5. iron; oxygen
6. calcium; carbon; oxygen
7. aluminum; oxygen
8. carbon; oxygen
9. carbon; oxygen
10. nitrogen (1 atom) and hydrogen (3 atoms)

Page 109 Molecules Word Study

Answers will vary.

Unit 18

Page 110 What Are Rainbows?

1. C **2.** B **3.** B **4.** A

Who Am I? ROY G BIV

Page 111 What Is the Spectrum?

1. Answers will vary.
2. red
3. violet
4. water
5. Accept well-supported answers that include the limitations of what can be seen by the human eye.

Page 112 Making a Rainbow

1. Light will shine in and through the water and a rainbow will appear on the paper.
2. It will probably work best from about 10 AM to 4 PM. The Sun will shine most directly at the window at that time.
3. Spray water in the direction of the Sun or across the path of the Sun's rays.
4. A bright, sunny day will provide lots of light to shine through the water.
5. The Sun is essential for making the rainbow.

Page 113 Why Is the Sky Blue?

1. A **3.** C **5.** Saturn
2. D **4.** B

Page 114 Why Sunsets Are Red

1. C **2.** B **3.** D **4.** D

What Am I? Ultraviolet Light

Page 115 Rainbow Word Study

Answers will vary.

Unit 19

Page 116 Take a Tour Through the Solar System!

1. A **2.** D **3.** B **4.** D

What Am I? Venus

Page 117 Planet Peculiarities

Neptune – strongest winds
Uranus – rotates on its side from south to north
Saturn – rings
Jupiter – the largest planet/Great Red Spot
Mars – tiny tornados/two small moons
Venus – intensely hot/great pressure
Mercury – strange orbit

Which planet would you most like to visit? Answers will vary.

Who Am I? Great Red Spot

Page 118 Neptune: The Windy Planet

1. B **2.** C **3.** C **4.** D

Who Am I? Johann Galle

Page 119 Computing Planetary Circumference

Mercury – 9,517.34 miles
Venus – 23,612.8 miles
Earth – 24,887.64 miles
Mars – 13,241.38 miles
Jupiter – 278,627.9 miles
Saturn – 235,437.2 miles
Uranus – 99,742.1 miles
Neptune – 96,555 miles
Pluto – 4,496.48 miles
Earth's Moon – 6,782.4 miles

Largest – Jupiter
Smallest – Mercury

Who Am I? Pluto