**Section 18.4 Color**  
*(pages 550–553)*

This section explains how a prism separates white light. It also discusses factors that influence the various properties of color.

**Reading Strategy** *(page 550)*

**Venn Diagram**  As you read, label the Venn diagram for mixing primary colors of light. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.

**Mixing Colors of Light**

1. What did Isaac Newton’s experiments with a prism in 1666 show?  

2. What happens when white light passes through a prism?  

3. Circle the letter of the process in which white light is separated into the colors of the rainbow.  
   a. reflection  
   b. dispersion  
   c. absorption  
   d. polarization  

4. How does a rainbow form?  

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**Separating White Light Into Colors** *(page 551)*

1. What did Isaac Newton’s experiments with a prism in 1666 show?  

2. What happens when white light passes through a prism?  

3. Circle the letter of the process in which white light is separated into the colors of the rainbow.  
   a. reflection  
   b. dispersion  
   c. absorption  
   d. polarization  

4. How does a rainbow form?
Chapter 18  The Electromagnetic Spectrum and Light

The Colors of Objects (pages 551–552)

5. List two factors that determine the color of an object seen by reflected light.
   a. 
   b. 

6. Is the following sentence true or false? I see a red car in sunlight because the color of light reaching my eyes is mostly red light. 

Mixing Colors of Light (page 552)

Match the colors of light with the correct type of color.

<table>
<thead>
<tr>
<th>Type of Color</th>
<th>Colors of Light</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. primary colors</td>
<td>a. Cyan, yellow, and magenta</td>
</tr>
<tr>
<td>8. secondary colors</td>
<td>b. Blue and yellow</td>
</tr>
<tr>
<td>9. complementary colors</td>
<td>c. Red, green and blue</td>
</tr>
</tbody>
</table>

Match each color of light to its definition.

<table>
<thead>
<tr>
<th>Type of Color</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. primary colors</td>
<td>a. Formed when two primary colors combine</td>
</tr>
<tr>
<td>11. secondary colors</td>
<td>b. Combine in varying amounts to form all possible colors</td>
</tr>
<tr>
<td>12. complementary colors</td>
<td>c. Combine to form white light</td>
</tr>
</tbody>
</table>

Mixing Pigments (page 553)

13. What is a pigment?

14. List four natural sources of pigments.
   a. 
   b. 
   c. 
   d. 

15. The primary colors of pigments are , , , and magenta.

Match the primary colors of pigment to the color they produce when combined.

<table>
<thead>
<tr>
<th>Primary Colors</th>
<th>Color Produced</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Cyan and magenta</td>
<td>a. green</td>
</tr>
<tr>
<td>17. Cyan and yellow</td>
<td>b. red</td>
</tr>
<tr>
<td>18. Yellow and magenta</td>
<td>c. blue</td>
</tr>
</tbody>
</table>

19. Any two colors of pigments that combine to make black pigment are colors of pigments.