Telescopes

This section describes electromagnetic radiation. It also explains how different types of telescopes work and where they are located.

Use Target Reading Skills

The first column in the chart lists key terms in this section. Write what you know about the key term in the second column. As you read, write a definition of the key term in your own words in the third column. Some examples are done for you. Connecting what you already know about key terms helps you to remember them.

<table>
<thead>
<tr>
<th>Key Term</th>
<th>What You Know</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telescope</td>
<td>You use it to see distant objects better.</td>
<td>Device that makes objects far away seem closer</td>
</tr>
<tr>
<td>Electromagnetic radiation</td>
<td>You can see only some types of it.</td>
<td>Energy in the form of waves that moves through space</td>
</tr>
<tr>
<td>Visible light</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wavelength</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spectrum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optical telescope</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refracting telescope</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convex lens</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflecting telescope</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radio telescope</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observatory</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Telescopes (continued)

Electromagnetic Radiation
1. What is electromagnetic radiation?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

2. The light you see with your eyes is called ________________________.

3. The distance between the crest of one wave and the crest of the next wave is called a(n) ________________________.

4. A range of light of different colors and different wavelengths is called a(n) ________________________.

5. What colors form the spectrum of visible light?
________________________________________________________________________
________________________________________________________________________

6. What wavelengths are included in the electromagnetic spectrum?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Types of Telescopes

7. What do telescopes collect and focus?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

8. What is a convex lens?
________________________________________________________________________
________________________________________________________________________
9. Complete the table to compare and contrast different types of telescopes.

<table>
<thead>
<tr>
<th>Telescopes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
</tr>
<tr>
<td>Refracting telescope</td>
</tr>
<tr>
<td>Reflecting telescope</td>
</tr>
<tr>
<td>Radio telescope</td>
</tr>
</tbody>
</table>

d. How is a radio telescope different from both a refracting and a reflecting telescope?
____________________________________________________________________
____________________________________________________________________
e. How is a radio telescope similar to both a refracting and a reflecting telescope?
____________________________________________________________________

10. Which telescope uses convex lenses? ________________________

11. The largest visible light telescopes are now all ____________________.

**Observatories**

12. A building that contains one or more telescopes is called a(n) ____________________.

13. Why have astronomers built the largest optical telescopes on the tops of mountains?
____________________________________________________________________
____________________________________________________________________

14. Why have astronomers placed telescopes in space?
____________________________________________________________________
____________________________________________________________________

15. Why can the Hubble Space Telescope make very detailed images in visible light?
____________________________________________________________________
____________________________________________________________________