

**Activity Sheet**  
**Chapter 4, Lesson 3**  
**The Periodic Table and Energy Level Models**

Name \_\_\_\_\_

Date \_\_\_\_\_

Your group will receive a set of cards with information about the energy levels of a particular atom.

Your job is to figure out which atom the card describes and to place it in the area in your classroom for that atom. Use the activity sheet from lesson 2 along with this activity sheet as a reference.



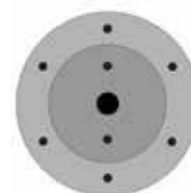
**Energy levels**

Electrons surround the nucleus of an atom in regions called **energy levels**. Even though atoms are spherical, the energy levels in an atom are more easily shown in concentric circles.



**How do you know the model at the right represents oxygen?**





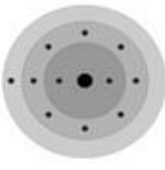

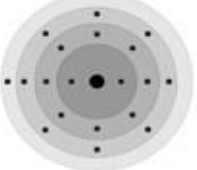



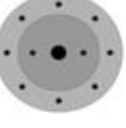

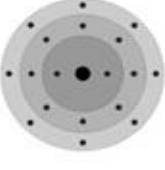





The larger dot in the center of this atom represents the nucleus, which contains both protons and neutrons. The smaller dots surrounding the nucleus represent electrons.



To figure out which atom this represents, count the number of electrons. There are 8 electrons in this atom. Because the number of electrons and protons is the same in an atom, this atom has 8 protons. Look at the chart **Periodic Table, Elements 1–20**. The number of protons is the same as the atomic number, so this drawing represents the atom whose atomic number is 8 (oxygen).

# ENERGY LEVELS ELEMENTS 1-20

Complete each energy level model by drawing the correct number of electrons in their corresponding energy levels.

<p><b>HYDROGEN</b> 1</p>  <p>1.01</p>	<p><b>HELIUM</b> 2</p>  <p>4.00</p>
<p><b>LITHIUM</b> 3</p>  <p>6.94</p>	<p><b>BERYLLIUM</b> 4</p>  <p>9.01</p>
<p><b>SODIUM</b> 11</p>  <p>22.99</p>	<p><b>BORON</b> 5</p>  <p>10.81</p>
<p><b>POTASSIUM</b> 19</p>  <p>39.10</p>	<p><b>CARBON</b> 6</p>  <p>12.01</p>
<p><b>MAGNESIUM</b> 12</p>  <p>24.31</p>	<p><b>NITROGEN</b> 7</p>  <p>14.01</p>
<p><b>NEON</b> 10</p>  <p>20.18</p>	<p><b>OXYGEN</b> 8</p>  <p>16.00</p>
<p><b>ARGON</b> 18</p>  <p>39.95</p>	<p><b>FLUORINE</b> 9</p>  <p>19.00</p>
<p><b>ALUMINUM</b> 13</p>  <p>26.98</p>	<p><b>SULFUR</b> 16</p>  <p>32.07</p>
<p><b>CALCIUM</b> 20</p>  <p>40.08</p>	<p><b>CHLORINE</b> 17</p>  <p>35.45</p>