Answer Key
Classifying and Exploring Life

Lesson 1

Before You Read
1. disagree
2. agree

Read to Learn
1. Living things are organized, grow and develop, reproduce, respond, maintain certain internal conditions, and use energy. Nonliving things may have some characteristics of life but not all of them.
2. Possible answers: digestion, movement, breathing, and circulation
3. reproduction, growth, and development
4. the changes in an organism during its lifetime
5. Possible answers: hunger, thirst, and pain
6. External stimuli are changes outside the organism; internal stimuli are changes inside the organism.
7. homeostasis
8. It makes cells able to function the way they should.
9. Possible answers: extreme heat and extreme dryness
10. All living things are organized, grow and develop, reproduce, respond, maintain internal conditions, and use energy.
11. from longnose snakes, golden-mantled squirrels, and sagebrush lizards
12. Possible answers: Organization—the digestive and circulatory system in a cat; Growth and Development—a baby learning to walk; Reproduction—an apple tree growing fruit; Response to Stimuli—a person running away from fire; Homeostasis—a person sweating after running; Use of Energy—a dog eating a biscuit

After You Read
1. Possible answer: Unicellular organisms are made of only one cell, and multicellular organisms are made up of more than one cell.
2. Possible answers:

<table>
<thead>
<tr>
<th>Characteristic of Life</th>
<th>Personal Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>Cells in my digestive system work together to digest food.</td>
</tr>
<tr>
<td>Growth and Development</td>
<td>I have grown taller and developed greater strength in the last few years.</td>
</tr>
<tr>
<td>Reproduction</td>
<td>My mom just had a baby.</td>
</tr>
<tr>
<td>Response to Stimuli</td>
<td>When I burn my finger on the stove, I withdraw it quickly.</td>
</tr>
<tr>
<td>Homeostasis</td>
<td>When I drink a lot of water, I go to the bathroom more often.</td>
</tr>
<tr>
<td>Use of Energy</td>
<td>I got energy from breakfast this morning.</td>
</tr>
</tbody>
</table>

3. Students should explain how making flash cards helped them learn the important terms in the lesson.

Lesson 2

Before You Read
3. agree
4. disagree

Read to Learn
1. cell type, habitat, how the organism gets food and energy, structure and function of its features, and common ancestry
2. Dogs take in food rather than absorb it.
3. Eukarya
4. People worldwide use the same name for the same species, making communication about organisms easier.
5. *Peromyscus maniculatus* or *Peromyscus leucopus*
6. A dichotomous key is used to identify organisms; a cladogram is used to show how species are related.
7. the hamster and chimpanzee

After You Read
1. Possible answer: I would use a dichotomous key to identify the species of a bird I saw, based on its characteristics.
2. From top to bottom: domain, kingdom, phylum, class, order, family, genus, species
Lesson 3

Before You Read

5. agree
6. disagree

Read to Learn

1. They showed that living things are made of cells.
2. \(10 \times 4 = 40\times\)
3. An object might be placed under the microscope or mounted on a slide. Staining might also be necessary.
4. With TEMs, electrons pass through the object to produce the image. Only dead organisms can be viewed with a TEM. With SEMs, electrons bounce off the surface of the object to produce the image in three dimensions.
5. Possible answers: in surgery, to teach, to study body fluids
6. Possible answers: for surgery, to study body fluids, in police work, to study fossils, to look for impurities in steel or precious stones

After You Read

1. Possible answer: A compound microscope is a special kind of light microscope that uses more than one lens to magnify an object.
2. Today’s light microscopes: have better resolution and magnification, compound microscope uses more than one lens; Electron microscopes: even better resolution and magnification, use magnetic field to focus beam of electrons through an object or onto an object’s surface, one type (TEM) can display only dead organisms
3. Students should explain how writing down questions about microscopes and then discussing their answers helped them understand what they read.