

Amoeba

By Cindy Grigg

¹ Living things are made of cells. Some things consist of only one cell. They are called unicellular organisms. One of the simplest living things, an amoeba, is made of only one cell. Amoebas (sometimes spelled amebas or amoebae) are too small to be seen without a microscope, but they are commonly found in ponds and lakes. They are "shape-shifters" that sometimes appear as a round blob, sometimes appear to have feet, and sometimes appear to have arms that can surround their food. Amoebas are characterized by their flowing movements, considered to be the most primitive form of animal locomotion, or movement. Some are well-known parasites of plants, animals, and humans. It should be noted that amoeba are not animals; however, they are classified in the protist kingdom.



² An amoeba's single cell appears to be not much more than cytoplasm held together by a flexible cell membrane. Floating in this cytoplasm, several kinds of cell bodies can be found. The most easily identified is the nucleus. Some species have only one nucleus; others may have hundreds of nuclei. The nucleus or nuclei control the growth and reproduction of the amoeba. Amoebas reproduce by fission, or splitting in two. The "parent" cell divides into two smaller copies of itself. The nucleus also divides into two. The cell membrane allows oxygen from the water the amoeba lives in to come into the cell and carbon dioxide to pass out of the cell. In this way, the amoeba "breathes."

³ Amoebas are able to change their shapes. They can extend parts of themselves into what are called pseudopodia and then flow in the direction in which they wish to go. Pseudopodia means "false feet." If they find something to eat, they can engulf it with their pseudopodia and pull themselves around it to digest it. They can "ooze" and surround their food by making their cytoplasm more liquid and able to flow.

⁴ To understand how they move, we have to know more about the amoeba's anatomy. The cytoplasm can easily change from a fluid into a solid state and back again. When the amoeba moves, the liquid flows through the center of the cell toward the front. When the liquid moves to the sides, it becomes the more solid gel. This way the cell can propel itself as a whole, but it can also send its false feet in many directions. This enables the amoeba to capture food.

⁵ Amoebas eat algae, bacteria, plant cells, and other unicellular organisms. It

engulfs or surrounds its prey and usually forms a kind of dome that makes escape impossible. Then, and only then, does the amoeba touch its prey. Scientists speculate that they must have some sort of chemical detection system since they can find prey without touching it. That's a pretty clever trick for a simple blob! Amoebas seem to use different engulfing tactics to suit the various types of prey. They can detect if prey needs a fast approach, such as a paramecium, or can be feasted on as a slow meal, such as algae that cannot move.

⁶ Some amoebas are parasites. Amoebic dysentery is transmitted by contaminated water and is well known as travelers' dysentery or "Montezuma's Revenge," particularly in Mexico. The disease causes severe diarrhea and liver infection. It can be treated with antibiotics.

⁷ Amoebas, though small, are complex and interesting creatures. The next time you look at pond water, imagine what might be living in it!

Name _____

Science Pd: _____

Amoeba

<p>1. Unicellular organisms are _____.</p> <p><input type="radio"/> A One-celled animals</p> <p><input type="radio"/> B Amoebas</p> <p><input type="radio"/> C One-celled plants</p> <p><input type="radio"/> D Living things consisting of only one cell</p>	<p>2. Amoebas are _____.</p> <p><input type="radio"/> A One of the simplest living organisms</p> <p><input type="radio"/> B Unicellular</p> <p><input type="radio"/> C Multi cellular</p> <p><input type="radio"/> D Both A and B</p>
<p>3. Why did the author call amoebas "shape-shifters"?</p> <p><input type="radio"/> A The amoeba can change its shape.</p> <p><input type="radio"/> B The amoeba can shift its body by flipping over.</p> <p><input type="radio"/> C The amoeba can camouflage itself.</p> <p><input type="radio"/> D The amoeba is a boggart like in Harry Potter and the Prisoner of Azkaban.</p>	<p>4. What is inside the cell of an amoeba?</p> <p><input type="radio"/> A A nucleus or several nuclei and cytoplasm</p> <p><input type="radio"/> B Many chloroplasts</p> <p><input type="radio"/> C Nothing</p> <p><input type="radio"/> D Mitochondria</p>
<p>5. How do amoebas reproduce?</p> <p><input type="radio"/> A By having live babies</p> <p><input type="radio"/> B By splitting into two</p> <p><input type="radio"/> C By changing forms</p> <p><input type="radio"/> D By laying eggs</p>	<p>6. What does pseudopodia mean?</p> <p><input type="radio"/> A False name</p> <p><input type="radio"/> B Made-up name</p> <p><input type="radio"/> C False feet</p> <p><input type="radio"/> D Encyclopedia</p>
<p>7. How does an amoeba move?</p> <p><input type="radio"/> A By changing its cytoplasm from a liquid to a solid</p> <p><input type="radio"/> B By using pseudopodia</p> <p><input type="radio"/> C With feet</p> <p><input type="radio"/> D Both A and B</p>	<p>8. What do amoebas eat?</p> <p><input type="radio"/> A Algae, bacteria, plant cells, and other unicellular organisms</p> <p><input type="radio"/> B Only plants</p> <p><input type="radio"/> C Steak and potatoes</p> <p><input type="radio"/> D Only other amoebas</p>