

Organizing Cells

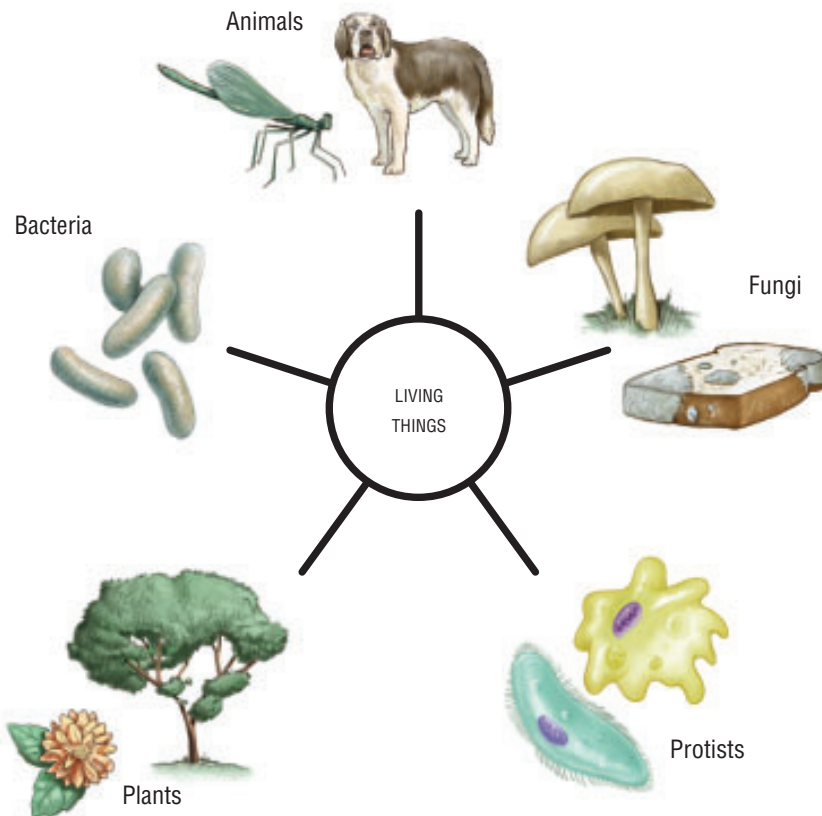
BIG Ideas

- ✓ Cells are the basis of life.
- ✓ Cells organize into tissues, tissues into organs, organs into organ systems, and organ systems into organisms.
- ✓ Healthy cells contribute to healthy organisms.
- ✓ Systems are interdependent.

Looking Back

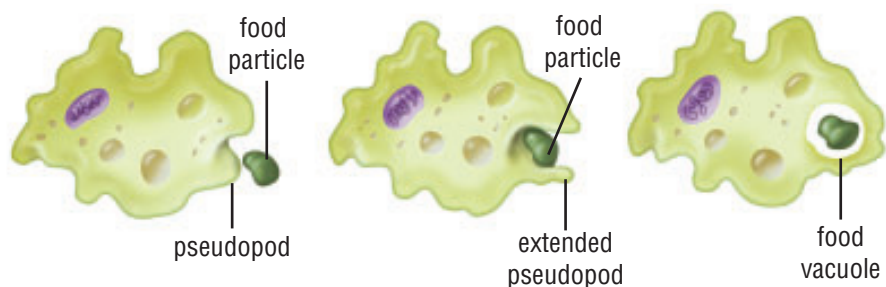
Organisms can be made up of one cell (unicellular organisms) or many cells (multicellular organisms).

- Unicellular organisms are made up of only one cell. Multicellular organisms are made up of many cells.
- Organisms can be classified into five groups based on their characteristics: plants, animals, fungi, protists, and bacteria.



Unicellular organisms perform all of the processes necessary for life using a single cell.

- Unicellular organisms obtain nutrients, exchange gases, and remove wastes.
- Many unicellular organisms have special structures that they use for movement, locomotion, and nutrition.

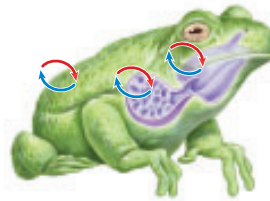
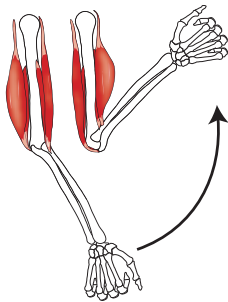


The skills of analysis can be used to study organisms.

- Unicellular organisms can be observed using the compound microscope.
- Locomotion in unicellular organisms can be studied using wet mounts containing glycerine.

In multicellular organisms, cells organize into tissues, tissues into organs, and organs into organ systems. Multicellular plants and animals depend on systems of organs to carry out life processes.

- Cells undergo differentiation to develop characteristics that make them able to perform only one specific task.
- In multicellular organisms, organ systems such as the musculoskeletal system are used to perform life processes.
- Plants organize their cells into tissues, organs, and organ systems. They have a root system and a stem system, which they use to perform the processes of life.
- A multicellular organism cannot survive on one system alone. In humans, for example, the respiratory and circulatory systems work together to provide the cells in the body with oxygen.
- Different organisms perform the processes of life in different ways.



When cells are not able to perform their functions, the health of the organism is affected.

- Unicellular organisms can be beneficial to the health of many multicellular organisms. The human digestive system, for example, relies on many micro-organisms to digest food and to provide certain vitamins.
- Some micro-organisms, such as bacteria and protists, can cause human illnesses and diseases, such as strep throat and malaria.
- Cells that are not able to function properly can cause diseases in humans. Diabetes and cancer are caused in this way.
- All organ systems work together and depend on each other. If one system fails, the health of the organism is jeopardized.

VOCABULARY

organism, p. 140
unicellular organism, p. 140
multicellular organism, p. 140
vertebrate, p. 140
invertebrate, p. 140
fungi, p. 141
protist, p. 141
bacteria, p. 141
movement, p. 145
locomotion, p. 145
cellular differentiation, p. 149
tissue, p. 149
organ, p. 149
organ system, p. 150
xylem vessel, p. 154
phloem vessel, p. 154

