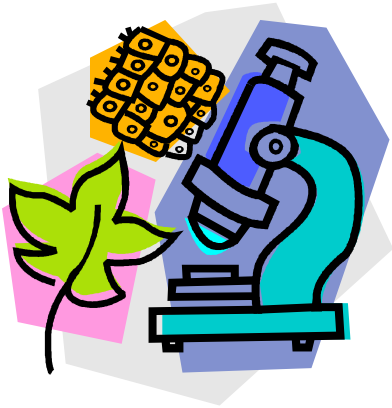


# The Science News- LIVE



We begin this fall with a unit on life. Look for the six kingdoms, needs of living things and cells. Some things to keep in mind:

Cells are the smallest unit of all living things. There are unicellular or multicellular organisms. In unicellular organisms that single cell is the organism's entire body while the body of a multicellular organism is made up of trillions of cells.

The body of a multicellular organism is made up of different kinds of cells. Many animals have bone cells, nerve cells, muscle cells, and blood cells. Each kind of cell in an organism performs a different function.

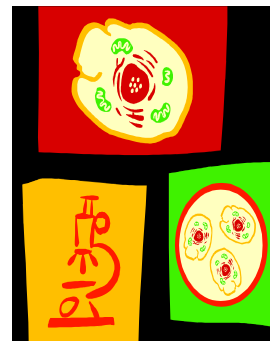
We will be observing and recording information on various types of life. The observations will include how the organisms meet their various needs for life including the need for food, water, and air.

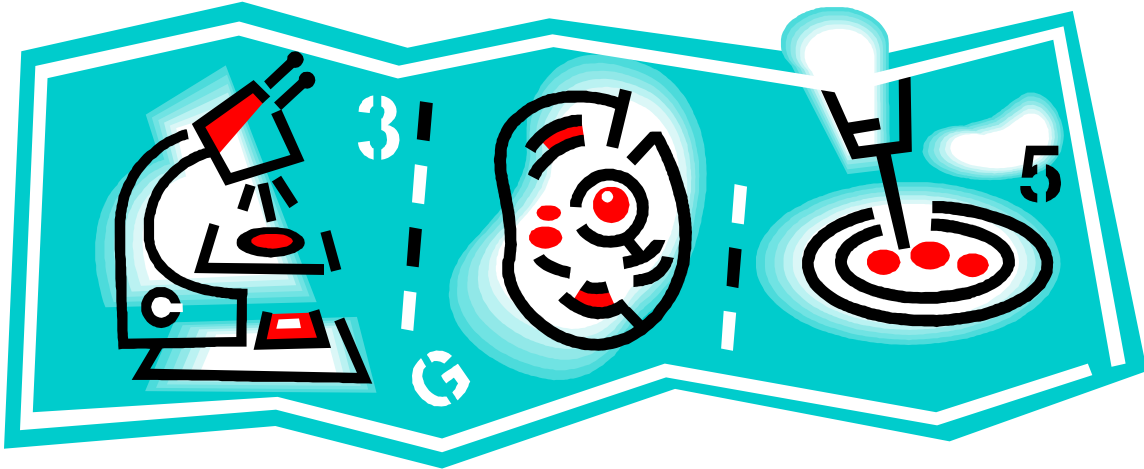
Animal cell parts and functions:

- Cell membrane- surrounds the cell; controls movement of substances into and out of cell; soft, flexible.
- Cytoplasm- jelly-like soup that fills most of cell; other cell structures float in the cytoplasm.
- Nucleus- controls everything the cell does.
- Vacuoles- storage spaces; store water and nutrients.
- Mitochondria- powerhouse of cell; combine oxygen with nutrients in food. This releases energy. Cell uses energy to carry out all its activities.

Plant cell parts and functions:

- Cell wall- outer covering of cell; stiff.
- Chloroplasts- makes food; hold chlorophyll.
- Cell membrane- surrounds; controls movement of substances in and out of cell.
- Cytoplasm- jelly-like soup that fills most of cell; other cell structures float in the cytoplasm.
- Nucleus- controls everything the cell does.
- Vacuoles- storage spaces; store water and nutrients.
- Mitochondria- powerhouse of cell; combine oxygen with nutrients in food. This releases energy. Cell uses energy to carry out all its activities.





## Genetics

- Genetics is primarily concerned with the understanding of biological properties that are transmitted from parent to offspring.
- Genes are the principle determinates of all life processes—they play a role in determining all aspects of the life of an organism.
- The genetic material of all life is DNA—found in genes of all organisms. In most higher organisms genetic material is put together with proteins to create linear chromosomes.
- Gregor Mendel—“father of modern genetics”, first to understand the principles of inheritance. His groundbreaking work with pea plants was completed in the mid-nineteenth century and provides the basis for Charles Darwin’s work on evolution.
- Much of the early research into genetic principles was completed on plants, as it is easier to control variables and observe traits in plants than in animals.
- Character—heritable feature.
- Traits—each variant of a particular character
- Hereditary Traits—characteristics of an individual that are transmitted from one generation to another.
- Recessive traits—phenotype only seen when a person has both genes necessary for the trait.
- Dominant traits—phenotype seen with only one gene inherited from the parents.

