

Calvert 5th Grade Science covers a wide-range of topics. Presented in 10 units, this course captivates students with lessons on cells, plant life cycles, animal life cycles, fossils, transformation of energy, and cycles in nature.

PLANTS: LIFE CYCLES | Unit 2



Flowering plants grown for their fruit

Structure of flowering plants. The main purpose of the flower in a reproduction. Each part of the flower's structure is designed so it can occur. However, even if reproduction in the flower does not and it can still be pleasing to see and smell.

Most of the common flowering plants have a structure that contains both male and female parts. For reproduction to take place in plants, both male and female parts do not need to be present in the same flower.

The tulip is a flower that contains within itself both male and female parts of the flower located inside the petals.

delicate parts of the flower may fertilize the egg cells of pollen so that the sperm may fertilize the egg cells.

To observe the other parts of a flower, it is helpful to look now at a cross-section of a flower that contains the parts of the flower that you will examine these parts of a flower.

Let us first consider the female part of the flower. It consists of three smaller parts, all of which are located below the petals. The ovary contains the egg cells in a connecting tube to allow the egg cells to be captured. Once the pollen is captured down the style to the ovary.

CELLS | Unit 1



1.12 Complete this activity. Draw a typical three-part cell on a separate sheet of paper and label the three basic parts of a cell.

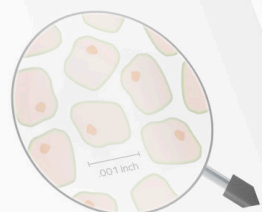


INTERNET NOTICE: There are many good resources on the Internet giving information about cells and the life of cells. A lot of these internet sites have excellent drawings, illustrations, and animations showing the detailed parts of cells. You can use keywords like "cells" and "nucleus" to find out more details on cells. We will cover more details on cells in Section 2 of this unit.

Size. Almost all cells are **microscopic**. This means that most cells are so tiny that they require a microscope to be seen. In fact, the period at the end of the last sentence would hold about 500 average-sized cells! These average-sized cells would be about 1/1000 of an inch in diameter (0.0025 centimeter). The human body has more than 10 trillion (10,000,000,000,000) cells!

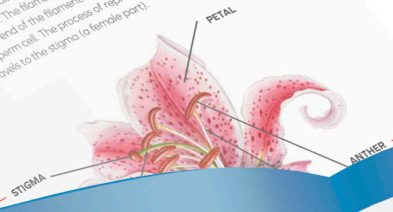
However, other cells can be larger. The largest cell of all is the yolk of an ostrich egg. It is about 3 inches in diameter (7.5 centimeters), yet it consists of only one cell!

Shape. Cells also come in a variety of shapes. There are round cells, oval cells, cubed cells, **columnar** cells, **elongated** cells, and irregular cells. Other cells are shaped like doughnuts or pancakes. There are even cells shaped like hearts and commas and corkscrews! There is no typical cell shape.



Unit 2 | PLANTS: LIFE CYCLES

The male parts of the flower are contained in the **stamen**. The stamen consists of two important parts: the **filament** and the **anther**. The filament grows out of the center section of the flower. Each grain of pollen holds a sperm cell. The process of reproduction can occur when pollen from the anther (a male part) travels to the stigma (a female part).



Viewing Cells

The only way to view most cells is to use a microscope. There are different types of microscopes. An optical microscope is the one you will normally see and use. It can magnify a cell up to about 2,000 times so that we can easily see the basic parts of the cell. However, some cells are too small to be seen by an optical microscope. For these, an electron microscope is needed. An electron microscope can magnify a cell by one million times! These electron microscopes not only allow us to see the smallest of cells, they also will cover some of these subparts of cells in Section 2.)

It is also helpful to use dyes to view cells. The dyes stain certain parts of the cell—such as the cell membrane and the nucleus—so that they stand out more clearly when we view the cells under a microscope (You will use iodine as a dye in some of the experiments.)

Scope & Sequence

Unit 1	<p>CELLS</p> <ul style="list-style-type: none"> • Cell composition • Plant and animal cells • Life of cells • Growth of cells 	Unit 6	<p>PHYSICAL GEOLOGY</p> <ul style="list-style-type: none"> • Layers of the earth • How volcanoes are formed • Erosion and weathering
Unit 2	<p>PLANTS: LIFE CYCLES</p> <ul style="list-style-type: none"> • Seed producing plants • Spore producing plants • One-celled plants • Classifying plants 	Unit 7	<p>RECORDS IN ROCKS: FOSSILS</p> <ul style="list-style-type: none"> • Fossil types • Fossil location • Identifying fossils • Reading fossils
Unit 3	<p>ANIMALS: LIFE CYCLES</p> <ul style="list-style-type: none"> • Invertebrates • Vertebrates • Classifying animals • Relating function and structure 	Unit 8	<p>RECORDS IN ROCK: GEOLOGY</p> <ul style="list-style-type: none"> • Features of the earth • Rock of the earth • Forces of the earth • Changes in the earth
Unit 4	<p>BALANCE IN NATURE</p> <ul style="list-style-type: none"> • Needs of life • Dependence on others • Prairie life • Stewardship of nature 	Unit 9	<p>CYCLES IN NATURE</p> <ul style="list-style-type: none"> • Properties of matter • Changes in matter • Natural cycles • Phases of the moon
Unit 5	<p>TRANSFORMATION OF ENERGY</p> <ul style="list-style-type: none"> • Work and energy • Heat energy • Chemical energy • Energy sources 	Unit 10	<p>LOOK AHEAD</p> <ul style="list-style-type: none"> • Plant and animal life • Balance in nature • Earth's structures • Records of rock

