

## LESSON 12 The Cell: Unit of Life

Grade Level: 8-9

### 1. Grades 8-9

**2. Overview** All living things are made up of simple units called cells. Both plants and animals are made up of cells which are the building units. But a close examination shows that there is a difference between the plant and animal cell. That notwithstanding, the cells of plants and animals contain similar basic parts.

**3. Purpose** The purpose of this lesson is to show the basic structure of both plant and animal cells.

**4. Objectives** Students will be able to:

- i. Describe how samples of plant and animal cells can be obtained.
- ii. Identify the different parts of a plant and an animal cell
- iii. Compare plant and animal cells.

### 5. Resources/materials

- Prepared slides-plant cell, animal cell
- A microscope
- Onion, iodine solution, microscope slides, droppers

**6. Activities and Procedures** This lesson will demand both the ingenuity and organisational ability of the teacher. The students will be expected to use the microscope, possibly for the first time. The teacher must plan the lesson so that group work can effectively be undertaken. It is unlikely that each child will be privileged to have a microscope for personal use.

All living things are built up of single units called **cells**. So there are animal cells and there are plant cells. There are similarities and differences between the animal and plant cells. In describing cells, the following words will be introduced into the student's vocabulary-cell wall, vacuole, cytoplasm, nucleus, membrane and cell sap.

One approach to this lesson is for the teacher to obtain already prepared slides-animal cell and plant cell. These slides could be mounted in the microscopes and the students organised to view and record their observations. Comparison of the animal and plant cells can then be done, preferably in groups. This is the easier approach.

It is also possible for the teacher to organise the students to produce their own cell slides. An onion skin and scrapings from the inside of cheek serve as samples for a

plant cell and an animal cell. When these samples are mounted on slides and viewed in the microscope, the similarities and differences in the cells can be observed. We would like to advise that teachers who find making the slides difficult, should seek the help of the staff in the Biology Department. This lesson may demand quite a lot of time from the teacher, so be prepared to make the sacrifice. Similarly, the microscopes for this lesson could be borrowed from the Biology Department.

**7. Tying it all together** The point to emphasise in this lesson is the fact that the cells are like building blocks in a house. Many living organisms are made up of many cells, like a house is made up of many blocks. Organisms which have more than one cell are known as multi-cellular. That includes human beings. There are however some animals, like the amoeba, that have only one cell. Such an organism is known as uni-cellular.

**8. Assessment** Comparing a plant cell with an animal cell could be organised in a Table in which all the possible parts of a cell are listed. Ticks can then be used to indicate what is present.

**9. Author(s)** N. E. U. Inyang University of the Cross River, Uyo  
S.T. Bajah [stan@alpha.linkserve.com](mailto:stan@alpha.linkserve.com)

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