

Sample pages for:

# **Plant and Animal Cell Model Activity Set**

## **SB25311M**

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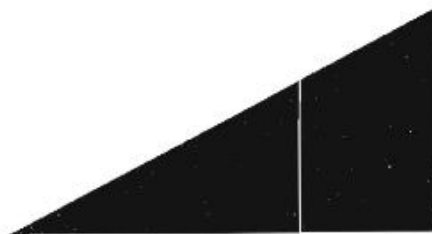
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# Plant & Animal Cell Models

MODEL ACTIVITY SET



# THE ANIMAL CELL MODEL

## BACKGROUND INFORMATION

In a universe that is forever fascinating, many times the magical distinction is between animate and inanimate, living and non-living. The primary key to all living matter, in that artfully simple and yet masterfully complex core unit of existence, is the **cell**. The importance of the cell in the distinction between the living and non-living was described early in the **cell theory** of life. Although this is still referred to as a theory, the key points remain valid today. The structure of individual animal cells differ based on the specific function of the cell, however there are general structures and functions that are common to all animal cells regardless of whether the organism is uni-cellular or multi-cellular.

Scientists who investigate the form and function of cells are called **cytologists**. Their task of understanding the form and function of the cell have been greatly enhanced with the increased availability of advanced technology. Without the use of the electron microscope, much of what is currently known about the structure and function of the cell would still be a mystery. As the technology available to researchers is refined and improved, the details of cell structure and function will continue to be refined and the complexity of the cell will be better understood.

## USING THE ANIMAL CELL MODEL

This Hubbard Animal Cell model is one in a series of two models that make up a coordinated program of cell structure. The cell model is completely assembled. Observation of the model is often more fruitful after a discussion of the parts and functions of a cell and when used with the Hubbard Plant Cell model for comparison purposes, but even this may be preceded by a curiosity-provoking initial examination of the model by the learners. Learners can be encouraged to use the cell model in groups or as individuals when exploring, explaining, or reviewing the structure and function of the cell. Touching and handling the model permits learning using the tactile sense as well as the visual and auditory senses. Transparencies (Product 2057 only) have been provided for the use of the teacher when working with large groups. Black line masters (Product 2057 only), keyed to the model, have also been provided for learner use.

# ACTIVITIES

## BASIC QUESTION

*What are the basic parameters of the cell theory?*

## ACTIVITIES

Place the learners in small groups of 3-4.

Ask the learners to make a list of things that are common to all living organisms. (At this point learners may not consider similarities on a microscopic level. The teacher should encourage discussion revolving around this aspect as well.)

Combine learner groups and have them combine their respective lists and come up with one list.

Create a master list from the class for discussion purposes.

Use the class master list to describe the main points of the cell theory. Emphasize that even though cells with different or very specific functions, each has similar components.

## BASIC UNDERSTANDING

Key Points of the Cell Theory:

1. All living things are composed of cells.
2. Cells are the basic unit of structure and function in living organisms. Each cell performs all the fundamental life processes, such as taking in its food, using food for energy, and getting rid of the waste and surplus.
3. All cells come from preexisting cells.

In addition . . .

- \* Multicellular organisms are fantastically complex combinations of different kinds of cells, although, theoretically, all evolved from simple single-celled plants and animals.
- \* There are many different kinds of specialized cells, varying as broadly as the imagination can conceive, yet each has similar parts.
- \* Each part of any cell has a special job or function. There is no "extra baggage" in the cell.