

MAKING A MODEL OF MITOSIS WITH CLAY

Name: _____

Date: _____

Lesson: _____

Model the stages of mitosis to see how a cell divides.

GOAL

To make a clay model that shows the stages of mitosis in a plant or animal cell.

MATERIALS

- Modeling clay (different colors)
- Toothpicks or small sticks
- Paper plate or tray
- Reference pictures of mitosis stages
- Label flags (small paper pieces) and tape
- Worksheet (this page)

CLAY COLOR GUIDE

-  Nucleus (or nuclear material)
-  Chromosomes
-  Centrosomes (or spindle poles)
-  Spindle fibers
-  Cell membrane

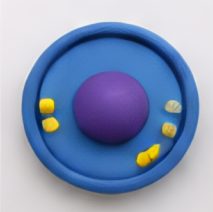
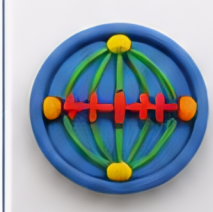
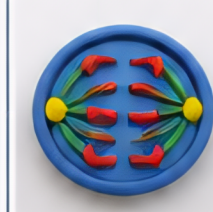
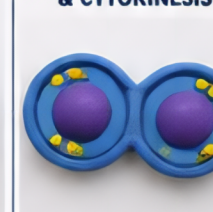
BACKGROUND

Mitosis is the process where one cell divides to make two identical daughter cells. It occurs in many body cells for growth, repair, and replacement. Mitosis has five main stages: Interphase, Prophase, Metaphase, Anaphase, and Telophase (followed by Cytokinesis).

INSTRUCTIONS

- Choose the five stages of mitosis below.
- Use clay to build a model for each stage.
- Use the colors in the Clay Color Guide to show the cell parts.
- Add label flags to identify the stage and key parts.
- Arrange your models in order on a tray or paper plate.
- Complete the chart and answer the analysis questions.

THE FIVE STAGES OF MITOSIS

1. INTERPHASE	2. PROPHASE	3. METAPHASE	4. ANAPHASE	5. TELOPHASE & CYTOKINESIS
				
The cell grows and copies its DNA. Chromosomes are not visible as separate pieces.	Chromosomes condense and become visible. Spindle fibers begin to form.	Chromosomes line up at the center of the cell. Spindle fibers are attached to each chromosome.	Sister chromatids separate and move to opposite ends of the cell.	New nuclei form. The cell pinches in two, creating two identical daughter cells.

Stage	What does it look like in your model?	What is happening in this stage?	Key parts shown
1. Interphase			
2. Prophase			
3. Metaphase			
4. Anaphase			
5. Telophase & Cytokinesis			

ANALYSIS QUESTIONS

- Why do you think the cell copies its DNA before mitosis? _____
- What is the job of the spindle fibers? _____
- How does mitosis help living things? _____
- What did you find most interesting about this activity? _____



TIP

Use reference pictures to help you, but make your model your own! Creativity helps you remember what you learn.