

## Objective

By the end of this lesson, the student will be able to identify and describe the stages of mitosis, understand the importance of cell division, and explain how mitosis contributes to growth and repair in living organisms.

## Materials and Prep

- Paper
- Pencil or pen
- Colored pencils or markers
- Timer (optional)

Before the lesson, the student should have a basic understanding of cells and their functions. It may also be helpful to review the cell cycle briefly.

## Activities

- **Mitosis Drawing Challenge:**

The student will create a series of drawings to represent each stage of mitosis (prophase, metaphase, anaphase, and telophase). They can use different colors to indicate key features, such as chromosomes and spindle fibers. This activity will help reinforce the visual aspects of mitosis.

- **Role Play:**

The student will act out the stages of mitosis using their body. For example, they can stretch their arms out to represent chromosomes lining up in metaphase. This kinesthetic activity will help the student remember the stages through movement.

- **Quiz Yourself:**

At the end of the lesson, the student will create a short quiz with questions about mitosis. They can then test themselves or have someone else quiz them. This will reinforce their understanding and retention of the material.

## Talking Points

- "Mitosis is the process by which a single cell divides to produce two identical daughter cells. It's essential for growth and repair."
- "The stages of mitosis are prophase, metaphase, anaphase, and telophase. Each stage has specific events that occur."
- "In prophase, the chromosomes condense and become visible, and the nuclear envelope begins to break down."
- "During metaphase, the chromosomes line up in the middle of the cell, and spindle fibers attach to them."
- "Anaphase is when the sister chromatids are pulled apart and move to opposite ends of the cell."
- "Finally, in telophase, the chromosomes reach the poles and begin to de-condense, and the nuclear envelope re-forms."
- "Mitosis is crucial for healing wounds and growing new tissue. Without it, we wouldn't be able to grow or recover from injuries!"
- "Remember, mitosis is just one part of the cell cycle, which also includes interphase, where the

cell prepares for division."