

The Cell Cycle

TEACHER INFORMATION

Learning Objectives

14-16 years

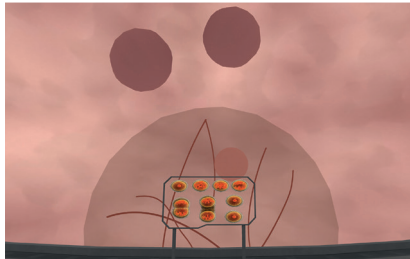
- Know the purpose of the cell cycle
- Know the stages of mitosis
- Describe the stages of mitosis

Overview & Key Elements:

This scene lets students explore a typical cell undergoing the cell cycle. Here they will observe replication of chromosomes and mitosis taking place.

Students will develop an understanding of what needs to happen for new genetically identical cells to be made and the purpose for their production.

• The purpose of the cell cycle



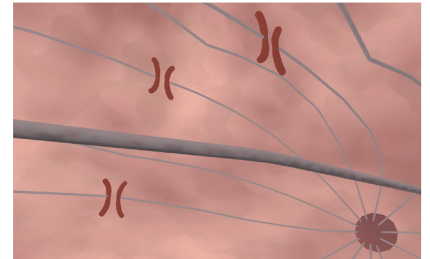
All living things that are made of cells will carry out the process known as the cell cycle.

• The process of mitosis in the cell cycle



Mitosis involves 4 phases, and is the stage of the cell cycle immediately after replication.

• Cell division and telophase



Near the final stage of the cell cycle a tidying up exercise happens before cell division.

Student Information and Scene Tasks:



The Cell Cycle

- 1 Students will learn about the cell cycle and the main stages in it: Replication, mitosis, and cell division.
- 2 Students will be asked to observe the cell and replication taking place. Here they will be asked to observe the activity and identify clues that indicate the chromosomes are replicating by observing single chromosomes doubling.

Mitosis

- 2 Students will also learn to identify the phases of mitosis.
- 2 Students will be asked to observe the cell cycle again and this time observe the part modelling mitosis. Students will be asked to identify clues showing the stages and think about how to describe these stages.

Cell Division

- 3 Students will learn about what happens to a cell after replication and mitosis comes to an end.
- 3 Students will be asked to explore the scene a final time and appreciate that replication, mitosis and cell division are one fluid process. However, the stages can be identified as they are distinct. Students are encouraged to think about the key points that can be used to describe the stages and how they can be identified.