

# Stop Motion Mitosis Animation Project

**Stop motion** is an animation technique in which objects are physically manipulated to give the impression of movement. The object is moved in small increments between individually photographed frames, creating the illusion that it is moving independently when the series of frames is played as a continuous sequence.

## Objective

Study the events that occur during the cell cycle and explain the importance of cell division.

## Materials

- Arts & Crafts materials - such as buttons, pipe cleaners, straws, noodles, yarn, clay/Play-Doh, paper clips, felt, etc.
- Camera
- Animation stand
- Video editing software
  - Google Chrome has an extension, [Stop Motion Animator](#), that is a simple tool to create stop motion videos. iMovie or Windows Movie Maker is also available, but it will be a little more labor intensive. You are welcome to use any software to complete this project.

## Procedure

Review the *Grading Rubric* and complete the *Planning Sheet*, which includes a storyboard and script for your video. Using the available materials, construct a model of a eukaryotic cell for each stage of the cell cycle. Take pictures that illustrate the major events that occur, making very small changes to transition from phase to phase. Label the stages and important parts of the cell as they occur. Upload these into a stop motion software to create your video.

## Schedule

### **Day 1 - Introduction, Team Planning Day**

Review project outline and rubric, form groups and define roles, complete the *Planning Sheet*

### **Day 2 & 3 - Setup, Stop Motion**

Setup materials, record stop motion animation, begin the *Procedure & Analysis*

### **Day 4 - Video Editing**

Upload to computer and create/edit animation video, complete the *Procedure & Analysis*

### **Day 5 - Presentations, Group Evaluations**

Present projects, complete the *Self & Peer Evaluations*

## Phase Requirements

These stages should be included in your stop motion video:

- Interphase
- Prophase
- Metaphase
- Anaphase
- Telophase
- Cytokinesis

## Grading

Three grades will be taken during this project

- 1 daily grade for the *Planning Sheet*
- 1 test grade for the final project (see *Grading Rubric*)
- 1 daily grade for peer/group evaluation

# Grading Rubric

Carefully review the rubric below. Consider the following questions as you complete your project:

- Are all the phases included and labelled?
- Are the important cell parts included and labelled?
- Is the video high quality?
- Are all procedure and analysis questions answered accurately?

	<b>Mastery (5 points)</b>	<b>Accomplished (4 points)</b>	<b>Developing (3 points)</b>	<b>Beginning (2 points)</b>	<b>Incomplete (1 points)</b>
<b>Phases</b>	Phases are shown accurately; all important events are included with excellent detail	Phases are shown accurately; most important events are included, some detail is missing	Phases are shown with some inaccuracies; most important events are included, some detail is missing	Multiple phases are missing or represented inaccurately; many important events and detail are missing	Most phases are missing or are inaccurate; many important events and detail are missing
<b>Labels</b>	All important cell parts and phases are labelled accurately and neatly	All important cell parts and phases are labelled accurately, but are difficult to read	Most important cell parts and phases are labelled accurately, but are difficult to read	Many important cell parts and phases are not labelled or are inaccurate	No cell parts or phases are labelled
<b>Product Quality</b>	Superior video quality and attention to detail; excellent transitions through each frame	Good video quality and attention to detail; some transitions are not fluid	Good video quality but some details are overlooked; transitions are discontinuous	Poor video quality with many details overlooked; transitions are discontinuous	Video quality is very poor with a disregard to details, little effort is shown
<b>Procedure &amp; Analysis</b>	Responses are accurate, written in complete sentences, and demonstrate an excellent understanding of content	Responses are accurate, written in complete sentences, and demonstrate a sufficient understanding of content	Responses are mostly accurate and demonstrate an adequate understanding of content	Responses are inaccurate and demonstrate a limited understanding of content	Responses are inaccurate and demonstrate a minimal understanding of content

Before you submit, evaluate and grade your project using the rubric.