

# Active Learning Lesson Plan

## Biology - Cells and Molecules of Life

### Cell cycle and division (Badaboom!)

School :	XXX Secondary School		
Subject :	Biology		
Form :	S4	Date:	DD/MM/YYYY
Number of students:	24	Time:	50 minutes
Topic :	Nuclear division		

#### Prior Knowledge:

- Structures and functions of nucleus and chromosomes
- Basic concept of cell cycle

#### Learning Objectives:

- Recognise the various stages of cell cycle.
- Outline and compare the processes of mitosis and meiosis.

#### Learning activities planned for this lesson:

- Review the concepts related to mitosis and meiosis using **Badaboom!**.

### Flow/Breakdown of lesson

#### Review and Warm-up (10 mins)

Teacher helps students to recall the prior knowledge including:

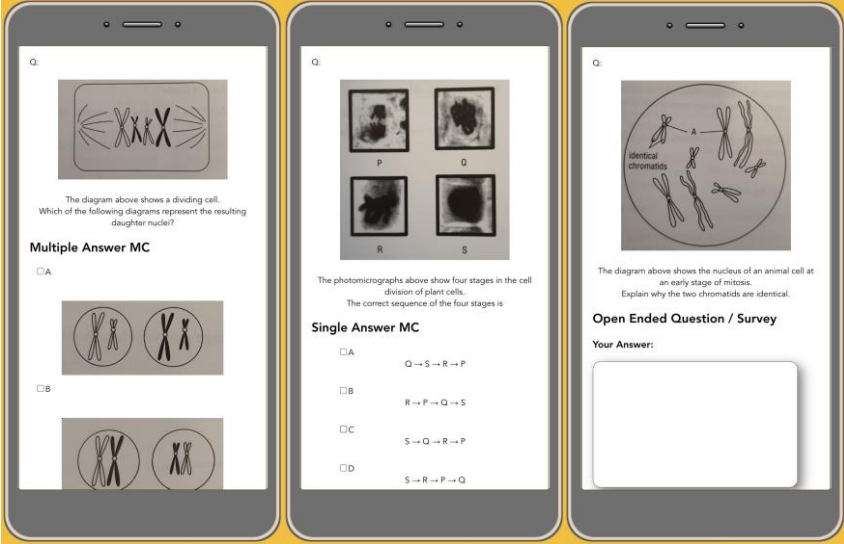
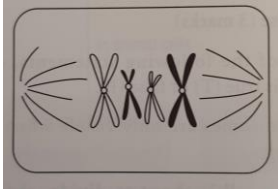




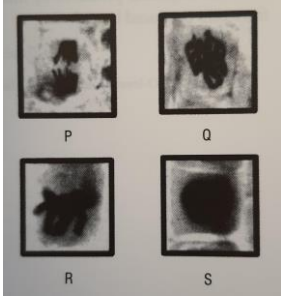


- Structures and functions of nucleus and chromosomes
- Three main stages of cell cycle

#### Teacher's demonstration and explanation (30 mins)

Teacher teaches the following concepts.

- Introduce two types of nuclear division, mitosis and meiosis
- Explain the processes of mitosis and meiosis.
- Compare the processes of mitosis and meiosis.

## Conclusion and Homework assignment (10 mins)

Teacher's Activity	Students' Activity
<p><b>Badaboom!</b> will be used to test their understanding of this lesson's new knowledge.</p>  <p><b>Q1. [Answer Type: Multiple Answer MC]</b>        The diagram above shows a dividing cell.        Which of the following diagrams represent the resulting daughter nuclei?</p>  <p>A.  B. </p> <p>C.  D. </p> <p><b>Q2. [Answer Type: Single Answer MC]</b>        The photomicrographs above show four stages in the cell division of plant cells.        The correct sequence of the four stages is</p> <p>A. Q → S → R → P        B. R → P → Q → S        C. S → Q → R → P        D. S → R → P → Q</p> 	 <p>Enter the game room by scanning the QR code and entering the game pin.</p> <p>Actively work out the solution and participate in <b>Badaboom!</b> gaming competition.</p> 

Q3. [Answer Type: Single Answer MC]

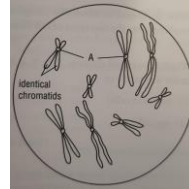
Which of the following statements about mitosis is incorrect?

- A. Two daughter cells are produced, each of which is identical to the parent cell.
- B. It can take place in the skin.
- C. Two haploid cells are formed.
- D. The process occurs when an organism grows.

Q4. [Answer Type: Text Answer]

The diagram above shows the nucleus of an animal cell at an early stage of mitosis.

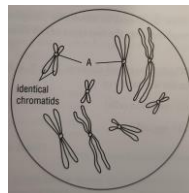
Name the structure that is labelled as A



Q5. [Answer Type: Open Ended Question / Survey]

The diagram above shows the nucleus of an animal cell at an early stage of mitosis.

Explain why the two chromatids are identical.



Teacher then concludes the lesson by recapping the concepts/objectives learnt in this lesson.

Assign homework to students.

**Total: 50 mins**