Active Learning Lesson Plan

Biology - Cells and Molecules of Life

Cellular organisation (Conceptboard)

School :	XXX Secondary School		
Subject :	Biology		
Form :	S4	Date:	DD/MM/YYYY
Number of students:	24	Time:	50 minutes
Topic :	Structure of animal cells and plant cells		

Prior Knowledge:

- Using microscope

Learning Objectives:

- Compare the cellular organisation of animal and plant cells.
- Identify cell organelles as seen under light and electron microscopes.

Learning activities planned for this lesson:

- Identify cell organelles and describe their functions on the collaborative problem-based learning and peer assessment (Co-PBLa-PA) using **Interactive Online Whiteboards (IOWB)**.

Flow/Breakdown of lesson

Review and Warm-up (5 mins)

Teacher helps students to recall the prior knowledge including:

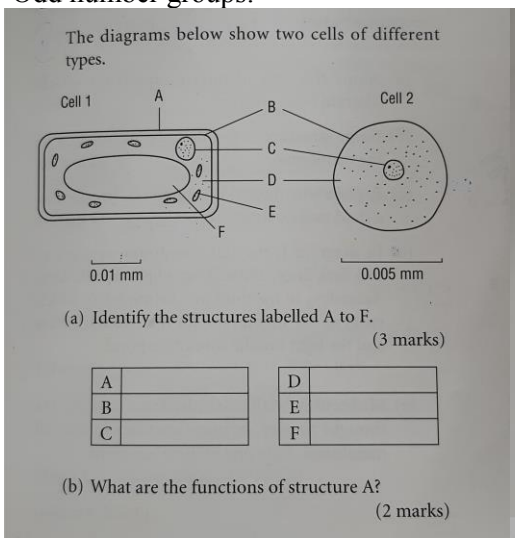
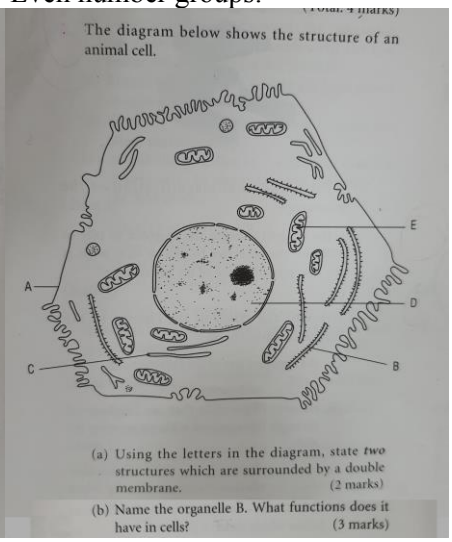
- Using microscope

Teacher's demonstration and explanation (20 mins)

Teacher teaches the following concepts.

- The cellular organisation of animal cells.
- The cellular organisation of plant cells.
- Various cell organelles found in eukaryotic cells and their functions

Collaborative Problem-based Learning and Peer Assessment (Co-PBLa-PA) Activities for Students (20 mins)

Teacher's Activity	Students' Activity
Interactive Online Whiteboards (IOWB) will be used for students to show their works. Teacher assigns students in groups to finish the questions on the **Interactive Online Whiteboards (IOWB)**. 1. Group students into 6 groups. 2. Students first finish questions in groups with a given time limit. 3. Students then are assigned to mark other groups' works. 4. Students share works/markings of their groups with the class and explain their ideas. 5. Teacher highlights the correct answers/ideas and corrects the misunderstandings/mistakes **Questions** Odd number groups:  The diagrams below show two cells of different types. Cell 1 Cell 2 A B C D E F 0.01 mm 0.005 mm (a) Identify the structures labelled A to F. (3 marks) A B C D E F (b) What are the functions of structure A? (2 marks) Even number groups:  The diagram below shows the structure of an animal cell. A B C D E (a) Using the letters in the diagram, state *two* structures which are surrounded by a double membrane. (2 marks) (b) Name the organelle B. What functions does it have in cells? (3 marks)	Enter the room by scanning the QR code. Actively engaging in discussion and working out the solution collaboratively using the **Interactive Online Whiteboards (IOWB)**. Students can ask questions through **YoTeach!**. 

Conclusion and Homework assignment (5 mins)

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

Assign homework to students.

Total: 50 mins