Active Learning Lesson Plan

Physics - Force and Motion

Position and movement (Conceptboard)

School :	XXX Secondary School		
Subject :	Physics		
Form :	S4	Date:	DD/MM/YYYY
Number of students:	24	Time:	50 minutes
Topic :	Motion graphs		

Prior Knowledge:

- Functions and graphs
- Vectors, uniform motion, displacement, velocity and acceleration

Learning Objectives:

- Present information on displacement-time graphs, velocity-time graphs and acceleration-time graphs for moving objects
- Use displacement-time graphs to determine the displacement and velocity of objects
- Use velocity-time graphs to determine the displacement, velocity and acceleration of objects

Learning activities planned for this lesson:

- Present information on various graphs base on another type of graphs 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)
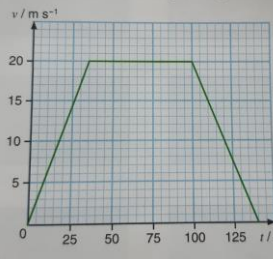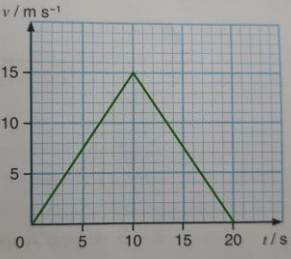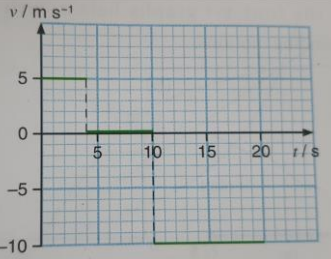Teacher helps students to recall the prior knowledge including:

- Concepts of vectors and uniform motion
- Concepts of displacement, velocity and acceleration
- Displacement-time graphs, velocity-time graphs and acceleration-time graphs

Teacher's demonstration and explanation (20 mins)
Teacher teaches the following concepts.

- How to convert displacement-time graphs to their corresponding velocity-time graphs and vice versa
- How to convert velocity-time graphs to their corresponding acceleration-time graphs and vice versa

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** 1 - 3. For the v-t graph on the right (refer to Pic 1-3 respectively), plot the corresponding s-t graph below. 4 - 6. For the v-t graph on the right (refer to Pic 1-3 respectively), plot the corresponding a-t graph below. Pic 1 Pic 2 Pic 3 	 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