

11 Physics - Module 1: Kinematics

#	Learning Intention The goal of this lesson is to...	Lesson Activities To achieve this goal we will...	Success Criteria I will know I have achieved this goal when I can...
1	Analyse the straight-line motion of object.	<ul style="list-style-type: none"> Perform an investigation to collect and analyse data about the average speed of an object. Analyse distance-time graphs to describe the motion of objects. Analyse velocity-time graphs to describe the motion of objects. Solve problems related to rectilinear motion. 	1. Gather and analyse first-hand data related to average velocity. 2. Describe the motion of objects using distance-time graphs. 3. Describe the motion of objects using velocity-time graphs. 4. Analyse graphical representations of motion and the links between graphs. 5. Use appropriate equations of motion to solve problems.
2	Describe and predict motion in a straight line.	<ul style="list-style-type: none"> Compare scalar and vector quantities. Analyse situations involving the motion of objects undergoing rectilinear motion. Solve problems using scalar and vector quantities. 	6. Define and provide examples of scalar and vector quantities. 7. Define distance, displacement, speed, velocity, acceleration and time. 8. Use vector quantities to solve problems involving motion.
3	Understand the use of scientific notation and errors in calculations.	<ul style="list-style-type: none"> Examine the use of scientific notation in Physics. Solve problems involving very large and very small numbers. Conduct an investigation to measure quantities and errors and perform calculations with errors. Analyse data and determine the accuracy, reliability and validity of the data. 	9. Convert quantities using scientific notation. 10. Perform calculations using scientific notation. 11. Measure absolute error. 12. Calculate the percentage error in measurements and calculations. 13. Make an assessment of the limitations of measurements and errors.
4	Analyse the motion of objects on	<ul style="list-style-type: none"> Analyse quantities that can be represented as vectors. 	14. Resolve vectors into their horizontal and

	a plane.	<ul style="list-style-type: none"> • Add and subtract vectors using graphical and algebraic techniques. • Conduct investigations using vectors. 	vertical components. 15. Add vectors to obtain a single vector. 16. Represent distance and displacement using vectors. 17. Analyse the motion of objects using algebraic expressions for vectors.
5	Understand the relative motion of objects.	<ul style="list-style-type: none"> • Analyse problems involving relative motion. • Analyse problems involving navigation. 	18. Add and subtract vectors. 19. Use vectors to show the relative motion of objects on a plane. 20. Determine the motion of an object relative to a stationary object. 21. Determine the motion of an object relative to another moving object.