AQA GCSE Physics
Student Checklist

P9 Motion

Name ..... Class ..... Date .....

Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
P9.1 Speed and distance-time graphs	I can state that the gradient of a distance-time graph represents the speed.	☐	I can use the gradients of distance-time graphs to compare the speeds of objects.	☐	I can calculate the speed of an object by extracting data from a distance-time graph.	☐
	I can estimate typical speeds for walking, running, and cycling.	☐	I can describe the motion of an object by interpreting distance-time graphs.	☐	I can extract data from a distance-time graph to calculate the speed of an object at various points in its motion.	☐
	I can calculate the distance an object at constant speed will travel in a given time.	☐	I can calculate the speed of an object and the time taken to travel a given distance,	☐	I can perform calculations of speed, distance, and time which involve conversion to and from SI base units.	☐
P9.2 Velocity and acceleration	I can describe the difference between speed and velocity using an appropriate example.	☐	I can identify the features of a velocity-time graph.	☐	I can compare and contrast the features of a distance-time, displacement-time, and velocity-time graph.	☐
	I can recall he equation relating velocity, acceleration, and time.	☐	I can rearrange the acceleration equations in calculations.	☐	I can combine equations relating to velocity and acceleration in multi-step calculations.	☐
	I can calculate the acceleration of an object using the change in velocity and time.	☐	I can calculate the change in velocity for an object under constant acceleration for a given period of time.	☐	I can calculate a new velocity for a moving object that has accelerated for a given period of time.	☐
P9.3 More about velocity-time graphs	I can identify the feature of a velocity-time graph which represents the acceleration (the gradient), and compare these values.	☐	I can describe sections of velocity-time graphs, and compare the acceleration in these sections.	☐	I can calculate the acceleration of an object from values taken from a velocity-time graph.	☐
	I can identify the feature of a velocity-time graph which represents the distance travelled (the area beneath the line), and compare these values.	☐	I can calculate the distance travelled using information taken from a velocity-time graph for one section of motion.	☐	I can calculate the total distance travelled from a multi-phase velocity-time graph.	☐
	I can measure the acceleration of an object as it moves down a ramp.	☐	I can use a series of repeat measurements to find an accurate measurement of the acceleration of a moving object.	☐	I can evaluate an experiment into the acceleration of an object in term of precision based on the spread of repeat measurements.	☐

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P9.4 Analysing motion graphs	I can identify speed on a distance-time graph using change in gradient.	☐	I can calculate the speed of an object by extracting data from a distance-time graph.	☐	I can calculate the acceleration of an object by extracting data from a velocity-time graph.	☐
	I can identify acceleration on a velocity-time graph using change in gradient.	☐	I can use a tangent to determine the speed of an object from a distance-time graph.	☐	I can use the gradient of a velocity-time graph to determine the acceleration of an object.	☐
	I can calculate the distance travelled by an object at constant velocity using data extracted from a graph.	☐	I can use the equation $v^2 - u^2 = 2as$ in calculations where the initial or final velocity is zero.	☐	I can apply transformations of the equation $v^2 - u^2 = 2as$ in calculations involving change in velocity and acceleration where both velocities are	☐