



Year 10 Physics Curriculum Summary



YEAR GROUP: 10 FMS

SUBJECT: Physics

When?	Knowledge	Understanding	Assessment
<p>Radioactivity</p>	<p>Be able to:</p> <ul style="list-style-type: none"> Describe what a radioactive substance is Describe the different types of radiation give out by a radioactive substance Describe the different models of the atom Describe the differences between alpha, beta and gamma radiation Define and calculate half life 	<p>Students will carry out a range of practical experiments during these topics.</p> <p>Radioactivity key words:</p> <p>activity alpha radiation (α) atomic number beta radiation (β) gamma radiation (γ) half-life isotopes mass number nuclear fission nuclear fission reactor nuclear fusion radioactive contamination reactor core</p>	<p>Radioactivity assessment</p>
<p>Electric Circuits</p>	<p>Be able to:</p> <ul style="list-style-type: none"> Draw and interpret circuit diagrams Recall and apply the potential difference equation Describe how resistance changes under different conditions Draw and describe parallel and series circuits 	<p>Students will carry out a range of practical experiments during these topics.</p> <p>Electric Circuits key words:</p> <p>diode electrons light-dependent resistor (LDR) light-emitting diode (LED) Ohm's law parallel potential difference</p>	<p>Electric circuits assessment</p>



		resistance series thermistor	
Electricity in the home	<p>Be able to:</p> <ul style="list-style-type: none"> • explain the difference between direct and alternating potential difference • explain that a live wire may be dangerous even when a switch in the mains circuit is open • explain the dangers of providing any connection between the live wire and earth. • Recall and apply the charge flow equation 	<p>Students will carry out a range of practical experiments during these topics.</p> <p>Electricity in the home key words: alternating current (a.c.) direct current (d.c.) earth wire fuse live wire neutral wire oscilloscope plugs step-down transformers step-up transformers three-pin plug</p>	Electricity in the home assessment
Forces in balance	<p>Be able to:</p> <ul style="list-style-type: none"> • Define displacement, vector quantity and scalar quantity • Define resultant force and describe what happens under different conditions • Calculate the moment of 	<p>Students will carry out a range of practical experiments during these topics.</p> <p>Forces in balance key words: displacement driving force effort</p>	Forces in balance assessment



	<p>a force and describe why levers are force multipliers</p> <ul style="list-style-type: none"> Define centre of mass and calculate for a symmetrical object Calculate turning forces and their direction Describe the parallelogram of force and what it is used for 	<p>force multiplier forces free-body force diagram friction load magnitude moment Newton's first law of motion Newton's third law of motion parallelogram of forces principle of moments resultant force scalar vector</p>	
<p>Motion</p>	<p>Be able to:</p> <ul style="list-style-type: none"> recall typical values of speed for a person walking, running and cycling as well as the typical values of speed for different types of transportation systems make measurements of distance and time and then calculate speeds of objects explain the vector–scalar distinction as it applies to displacement, distance, velocity and speed determine speed from a distance–time graph 	<p>Students will carry out a range of practical experiments during these topics.</p> <p>Motion key words: acceleration deceleration displacement gradient (of a straight line graph) tangent velocity</p>	<p>Motion assessment</p>
<p>forces and motion</p>	<p>Be able to:</p> <ul style="list-style-type: none"> estimate the magnitude of everyday accelerations draw velocity–time 	<p>Students will carry out a range of practical experiments during these topics.</p>	<p>forces and motion assessment</p>



	<p>graphs from measurements and interpret lines and slopes to determine acceleration</p> <ul style="list-style-type: none">• estimate the braking force of a vehicle• calculate momentum and describe what it means for a closed system• calculate the extension of an object when it is stretched and describe elasticity.	<p>forces and motion key words:</p> <p>braking distance conservation of momentum directly proportional elastic extension gravitational field strength, g inertia limit of proportionality mass momentum Newton's second law of motion stopping distance terminal velocity thinking distance weight</p>	
<p>Force and pressure</p>	<p>Be able to:</p> <ul style="list-style-type: none">• Define pressure and use the pressure equation• Describe what the pressure of a liquid depends on• Define atmospheric pressure and explain why it changes with altitude• Describe what is meant by an upthrust on an object in fluid	<p>Force and pressure key words:</p> <p>upthrust</p>	<p>Force and pressure assessment</p>