

Learning Programme – KS3 Science

1st Year Science: Autumn Term

| Topic/ Content | Objectives/Skills Success Criteria (Developing/Secure/Excellent) | Homework | Assessment | Stretch & Challenge (Thirst for Learning) | GCSE Spec Ref: |
|---|---|---|--|--|---|
| <p>1. Chemistry: Lab Safety and Working Scientifically</p> | <p>Lab safety D identify simple safety precautions that should be followed in a science lab. S identify each of the lab hazard symbols. E explain what each lab hazard symbol means and describe how you would safely handle the apparatus being used.</p> <p>Lab apparatus D recognise and name commonly used lab apparatus. S draw the scientific diagrams for each lab apparatus. E suggest what lab apparatus should be used to carry out particular investigations.</p> <p>Bunsen Burner D identify the different parts of a Bunsen burner. S describe how a Bunsen burner would be used safely in a lab. E describe how the flame changes when the air hole is open/close and suggest when these different flames would be used.</p> <p>Working Scientifically D state the definitions of commonly used HSW terminology S identify different variables (independent/dependent/control) for given experiments. E record and present results in an appropriate table and graph.</p> | <p>1 x assessed homework task: Working Scientifically (DSE success criteria provided)</p> | <p>1 x progress check (exam question practice). DSE success criteria provided.</p> | | |
| <p>2. Physics: Forces</p> | <p>Force types D state the unit of force and how forces are measured. S describe forces as a push or pull/contact or non-contact force. E describe what is meant by an interaction pair.</p> | <p>1 x assessed homework task: Journey of a car (DSE success criteria provided)</p> | <p>1 x progress check (exam question practice). DSE success criteria provided.</p> | | <p>AQA 4.5.1.2 4.5.1.3</p> |

| | | | | | |
|--|---|--|--|--|---------------------------------|
| | <p>Balanced and unbalanced forces (inc. resultant forces) D state what balanced and unbalanced forces are and state what is meant by a resultant force. S describe what happens when the resultant force on an object is not zero and when it is zero and calculate resultant forces using force diagrams. E predict the movement of an object based on its resultant force and explain how unbalanced forces change speed and/or direction.</p> <p>Mass and weight (inc. gravity) D describe the difference between mass and weight. S state and use the formula for calculating weight with different gravitational field strengths. E explain what gravity is and why objects stay in orbit.</p> <p>Friction D state what is meant by friction. S describe the factors that affect the size of the frictional force. E explain how friction can affect motion.</p> <p>Air resistance and streamlining D state what is meant by air resistance. S describe useful examples of air resistance as well as examples of when air resistance can be a problem. E explain how streamlining affects air resistance and give examples of streamlining.</p> <p>Hooke's Law D describe how forces deform objects (squashing and stretching) S use Hooke's Law to describe the relationship between force and extension. E compare the behaviour of a spring to other materials with reference to a linear relationship.</p> <p>Average speed D state and use the formula for calculating speed.</p> | | | | <p>4.5.1.4</p> <p>4.5.6.1.2</p> |
|--|---|--|--|--|---------------------------------|

| | | | | | |
|---------------------------------|---|--|--|--|---------------------------------------|
| | <p>S rearrange the formula for speed to calculate distance and/or time. E describe how the speed of an object depends on the movement of the observer.</p> <p>Distance-time graphs D state what a straight line or a curved line represents on a d-t graph. S calculate speed using a d-t graph and the equation for speed. E illustrate a journey with changing speed on a d-t graph.</p> <p>Stopping distances D describe how the stopping distance is calculated. S describe what factors increase the stopping distance E describe the effect of increasing speed on thinking distance and braking distance.</p> | | | | |
| <p>3. Biology: Cells</p> | <p>Life processes D identify examples of living things. S describe the characteristics that make things living (MRS GREN). E explain how examples given follow the 7 life processes.</p> <p>Animal and plant cell structure D identify the different organelles found in animal and plant cells. S describe the function of the organelles found in animal and plant cells. E compare and contrast animal and plant cells and be able to suggest why these cells have different organelles within them.</p> <p>Specialised cells D name examples of specialised cells in both animals and plants. S describe how cells are specialised (shape/structure etc). E explain how the shape/structure of specialised cells help them to perform a particular function.</p> | <p>1 x assessed homework task: Making a specialised cell model (DSE success criteria provided)</p> | <p>1 x progress check (exam question practice). DSE success criteria provided.</p> <p>1 x end of term assessment (Biology/Chemistry/Physics) -exam question practice. DSE success criteria provided.</p> | | <p>OCR Gateway B1.1a B1.1.b B1.1c</p> |

| | | | | | |
|--|---|--|--|--|--|
| | <p>Visualising cells-microscopes</p> <p>D identify parts of a light microscope and describe how to use a light microscope to observe cells.</p> <p>S prepare a slide to visualise cells using a light microscope.</p> <p>E evaluate whether a light microscope would be appropriate to observe a particular specimen and explain reasoning for this.</p> <p>Evaluate the accuracy of scientific drawings of specimens.</p> <p>Levels of organisation</p> <p>D identify examples of cells, tissues, organs and organ systems.</p> <p>S describe the order of hierarchy of organisation in a multicellular organism, recalling the definition for each term.</p> <p>E explain why multicellular organisms need organ systems to survive, explaining how the organs in these systems work together to perform a particular function.</p> | | | | |
|--|---|--|--|--|--|

The homework highlighted in red or green is used when forming judgements/interim grades. The final grades are based on the one off end of unit assessment. Tasks highlighted in green will be self or peer assessed with marks recorded. Tasks highlighted in red will be teacher assessed with diagnostic feedback provided.