

Year 9 Term 1

Biology

Homework	10%
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Photosynthesis

Weeks 1 - 2	Topic	In this unit pupils will learn...
	<ul style="list-style-type: none"> • Factors affecting plant growth • Photosynthesis 	<ul style="list-style-type: none"> • about photosynthesis as the key process producing new plant biomass • that the carbon dioxide for photosynthesis comes from the air and that the water is absorbed through the roots • that chlorophyll enables a plant to utilise light in photosynthesis • how knowledge about the gases in the air has led to development of ideas about photosynthesis

Week 3	Project	10%
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Week 4 - 5	Topic	In this unit pupils will learn...
	<ul style="list-style-type: none"> • Leaf structure • Testing a leaf for starch 	<ul style="list-style-type: none"> • about the role of the leaf in photosynthesis • about the importance of photosynthesis to humans and other animals • to interpret data and graphs using scientific knowledge and understanding • how to investigate photosynthesis in pond weed, controlling relevant variables

Week 6	Revision and Test	10%
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Plants for Food

Weeks 7 - 8	Topic	In this unit pupils will learn...
	<ul style="list-style-type: none"> • Food webs linked with humans • Plants storing food • Insecticides and Pesticides 	<ul style="list-style-type: none"> • about humans as part of a complex food web • about factors affecting plant growth • how management of food production has many implications for other animal and plant populations in the environment • some of the issues involved in sustainable development of the countryside

Week 9	Project	10%
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Week 10 - 11	Topic	In this unit pupils will learn...
	<ul style="list-style-type: none"> • Fertilisers • Lack of plant nutrients • Plant competition 	<ul style="list-style-type: none"> • how to present information in tables and graphs • how to investigate the effects of fertiliser on plant growth • how to survey weeds growing in a habitat, using an appropriate sampling technique

Week 12	Revision and Test	10%
Week 13	Exam Revision	
Week 14	Exams	50%

Chemistry

Homework		10%
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Elements and Compounds

Weeks 1 - 3	Topic	In this unit pupils will revise...
<ul style="list-style-type: none"> • Revise atoms and elements • Revise compounds and mixtures 		<ul style="list-style-type: none"> • chemical reactions in which new compounds are formed and the formation of mixtures • an approach to find out whether a substance is an element or not

Week 4	Revision and Test	10%
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Reactions of Metals

Weeks 5 - 7	Topic	In this unit pupils will learn...
<ul style="list-style-type: none"> • Metals and non-metals • Neutralising an acid • Acids and metals 		<ul style="list-style-type: none"> • to explore the properties of metals and non-metals • that different acids react in similar ways with metals and metal oxides • to represent elements by symbols and compounds by formulae • to devise and evaluate a method for preparing a sample of a specified salt

Week 8	Project	15%
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Weeks 9 - 11	Topic	In this unit pupils will learn...
<ul style="list-style-type: none"> • Acids and carbonates • Balancing equations 		<ul style="list-style-type: none"> • that different acids react in similar ways with metal carbonates • to use word and symbol equations to describe these reactions

Week 12	Revision and Test	15%
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Week 13	Exam Revision	
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Week 14	Exams	50%
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Physics

Homework		25%
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Weeks 1 - 2	Topic	In this unit pupils will revise...
	9I. Energy and	

	electricity	
<ul style="list-style-type: none"> Energy (most important topic in physics) 		<ul style="list-style-type: none"> explore a range of useful energy transfers and transformations discuss the use of electricity as a convenient way to transfer energy to do useful things study how electricity is generated, with reference to environmental impacts use the principle of conservation of energy to identify ways in which energy is dissipated during transfers

Weeks 3 - 5	Topic 9I. Energy and electricity	In this unit pupils will learn...
<ul style="list-style-type: none"> Electricity Current Voltage Ohms law 		<ul style="list-style-type: none"> associate the concept of voltage with the transfer of energy in a circuit investigate the voltage of cells use models to explain observations relating to electric currents use scientific knowledge to frame a question for investigation measure voltage in circuits identify patterns in the measurements of voltage in series circuits and use these to draw conclusions

Week 6 - 8	Project: make an electric motor explaining energy transfers	15%
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Week 8	Revision and Test	5%
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Weeks 9 - 12	Topic 9J. Gravity and space	In this unit pupils will learn...
<ul style="list-style-type: none"> Gravity Orbits Weight and mass Galileo and how our ideas have changed 		<ul style="list-style-type: none"> learn about the gravitational pull between bodies; how it depends on the masses of bodies and the distance between them relate the movement of planets around the Sun, and that of satellites around the Earth, to gravitation study how artificial satellites are used to observe the Earth and provide information about the solar system and the universe find out about space exploration consider different views of the nature of the solar system and evaluate them against relevant evidence discover how scientists work together to gather and interpret evidence from space make predictions from patterns in data consider and evaluate conflicting evidence

Week 13	Project: how our ideas have changed	15%
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Week 14	Exams	50%
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Year 9 Term 2 Biology

Homework		10%
Fit and Healthy		
Weeks 1 - 4	Topic	In this unit pupils will learn...
	<ul style="list-style-type: none"> • Pulse rate • Fitness • Joints and muscles 	<ul style="list-style-type: none"> • how the human respiratory, digestive and circulatory systems interact to maintain activity • about the functions of the skeleton • how to work collaboratively to collect sufficient valid and reliable data to form conclusions • how to evaluate conflicting evidence
Week 5		Project 10%
Week 6 - 9	Topic	In this unit pupils will learn...
	<ul style="list-style-type: none"> • Drugs • Smoking • Alcohol 	<ul style="list-style-type: none"> • about ways in which diet, exercise, smoking, alcohol and drugs affect health • how scientists linked diseases to a lack of specific nutrients • how to investigate reaction time
Week 10		Revision and Test 10%
Week 11		Exam Revision
Week 12		Exams 50%

Chemistry

Homework		10%
Patterns of Reactivity		
Weeks 1 - 4	Topic	In this unit pupils will learn...
	<ul style="list-style-type: none"> • Corrosion and rusting • Water and metals • Reactive metals • Unreactive metals 	<ul style="list-style-type: none"> • that although metals react in a similar way with oxygen, water and acids, some react more readily than others • to represent chemical reactions by word and symbol equations • to present qualitative data in a way which enables patterns to be described
Week 5		Project 20%
Weeks 6 - 9	Topic	In this unit pupils will learn...
	<ul style="list-style-type: none"> • Reactivity series of metals • Displacement 	<ul style="list-style-type: none"> • to establish and use a reactivity series for metals • to use a proposed reactivity series to make predictions • to investigate the relative reactivity of different

	metals, identifying and controlling relevant variables	
Week 10	Revision and Test	20%
Week 11	Exam Revision	
Week 12	Exams	50%

Physics

Homework	25%
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Weeks 1 - 6	Topic	In this unit pupils will learn...
<ul style="list-style-type: none"> Calculating speed Forces and what they do Drag and parachutes Speed and distance time graphs 		<ul style="list-style-type: none"> use the concept of speed consider the relationship between forces (including balanced forces) on an object, and its movement study the effects of water and air resistance on speed, and how streamlining reduces these effects use ideas of balanced and unbalanced forces to explain the movement of falling objects measure and calculate, with appropriate precision, the speed of objects in a range of situations consider a range of techniques for measuring time and evaluate their relative accuracy and appropriateness for different situations construct and interpret speed-time graphs, describing patterns or

Week 6-8	Project	25%
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Weeks 8 - 10	Topic	In this unit pupils will learn...
<ul style="list-style-type: none"> IGCSE practice questions 		<ul style="list-style-type: none"> Students in class will spend time applying their knowledge of forces, speed and distance graphs to IGCSE questions

Week 11	Exam Revision	
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Week 12	Exams (including IGCSE Qs)	50%
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Year 9 Term 3

Biology

Homework	10%
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Inheritance and Selection

Weeks 1 - 4	Topic	In this unit pupils will learn...

<ul style="list-style-type: none"> • Variation • Cloning • Selective breeding 	<ul style="list-style-type: none"> • that characteristics are inherited and how this is used in selective breeding • why selective breeding is important • about variations arising from environmental differences
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Week 5	Project	10%
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Week	Topic	In this unit pupils will learn...
6 - 9	<ul style="list-style-type: none"> • Plant fertilisation • Plant breeding 	<ul style="list-style-type: none"> • to look for patterns in data • how to evaluate the strength of evidence • how to investigate the effect of selective breeding on a plant variety

Week 10	Revision and Test	10%
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Week 11	Exam Revision	
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Week 12	Exams	50%
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Chemistry

Homework		10%
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Environmental Chemistry

Weeks	Topic	In this unit pupils will learn...
1 - 3	<ul style="list-style-type: none"> • Soil pH • Water cycle • Acid rain 	<ul style="list-style-type: none"> • that rocks, soils and building materials have a variety of chemical characteristics • that chemical weathering alters rocks and building materials over time • how the atmosphere and water resources are affected by natural processes and the activity of humans

Week 4	Project	10%
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Weeks	Topic	In this unit pupils will learn...
5 - 6	<ul style="list-style-type: none"> • Global Warming • Ozone layer • Saving the Earth 	<ul style="list-style-type: none"> • how environmental conditions are monitored and controlled • to distinguish between different environmental issues • how scientists work to monitor the environment • how evidence for climate and environmental change needs careful interpretation • to evaluate evidence

Week 7	Revision and Test	10%
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Using Chemistry

Weeks	Topic	In this unit pupils will learn...
6 - 7	<ul style="list-style-type: none"> • Combustion • Hydrocarbons 	<ul style="list-style-type: none"> • more about how chemical reactions can be used as an energy source

<ul style="list-style-type: none"> Polymers Making new products 	<ul style="list-style-type: none"> how chemical reactions are used to make new materials how the particle model and knowledge of gases helped change earlier ideas about burning
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Week 8	Project	10%
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Week 9	Topic	In this unit pupils will learn...
<ul style="list-style-type: none"> Alternative fuels Conservation of mass 		<ul style="list-style-type: none"> to use the particle model to explain that matter is not lost how scientists work together to develop a new product to make observations and measurements of temperature, mass and voltage to investigate changes in mass when magnesium burns

Week 10	Revision and Test	10%
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Week 11	Exam Revision	
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Week 12	Exams	50%
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Physics

Homework		20%
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Weeks 1 - 3	Topic 9L: Pressure and moments	In this unit pupils will learn...
<ul style="list-style-type: none"> Pressure Pressure in fluids Basic levers 		<ul style="list-style-type: none"> study pressure on solids and describe applications of this in everyday appliances study hydrostatic pressure in fluids and describe an application, eg hydraulic jack describe the operation of levers, including examples from the human body, which depend on the turning effect of a force

Weeks 5 - 6	Topic 9L: Pressure and moments	In this unit pupils will learn...
<ul style="list-style-type: none"> Experiments exploring turning moments Moments calculations 		<ul style="list-style-type: none"> learn about the principle of moments make an appropriate number of measurements with adequate precision account for anomalous results in terms of experimental technique investigate balance about a pivot, evaluating strengths and weaknesses in their methods the conditions of equilibrium

Week 7	Revision and Test	10%
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Weeks 6 - 7	Topic 9L: Pressure and	In this unit pupils will learn...

	moments	
• IGCSE drills		• IGCSE level questions, developing problem solving skills
Week 8	Project	10%
Week 9	Topic 9I, 9J, 9K and 9L	In this unit pupils will learn...
• Reviewing 9I, 9J, 9K and 9L		• Reviewing and drawing together concepts from 9I, 9J, 9K and 9L
Week 10	Revision and Test: 9L	10%
Week 11	Exam Revision	
Week 12	Exams : Combined 9I, 9J, 9K and 9L	50%