

Year 7 Medium Term Plan Terms 1&2

Unit Title and Lesson Number	Lesson Intent	Knowledge Goal	Practical Work	Steps to Success & Vocabulary	Assessment Opportunities & Homework
Biology Terms 1 & 2 lesson 1	<p>To understand how we can see very small objects.</p> <p>Feeds on from KS2 Micro-organisms topic where students learnt that living organisms are often too small to see.</p> <p>Feeds forward to Year 9 cell Biology Unit where students learn about different ways of viewing organisms too small to see with the human eye.</p>	To examine the structure of a microscope.	Viewing and drawing pre-prepared slides.	<ul style="list-style-type: none"> • I can label the parts of a light microscope. • I can correctly use a variety of lenses to view slides. • I can calculate the total magnification of two lenses. • I can draw detailed images of objects. <p><u>Vocabulary</u> Stage, eye piece, objective lens, slide, magnification, image, miniscule, structure, microscope.</p>	Answers to retrieval questions.
Biology Terms 1 & 2 lesson 2	<p>To use knowledge of microscopes to view animal cells.</p> <p>Feeds on from lesson 1 so that students are able to use equipment to view very small structures.</p> <p>Feeds forward to Year 9 Cell Biology unit where students learn how to calculate magnification, actual size and image size.</p>	To describe the structure of an animal cell.	Preparing skin cells.	<ul style="list-style-type: none"> • I can describe what cells are. • I can label the organelles in an animal cell. • I can explain the function of each organelle. • I can describe how to prepare slides of animal cells. <p><u>Vocabulary</u> Cell membrane, nucleus, ribosomes, mitochondria,</p>	Answers to retrieval questions.

				cytoplasm, organelles, methylene blue.	
Biology Terms 1 & 2 lesson 3	To use knowledge of microscopes to view plant cells. Feeds on from KS2 Green Plants where students start to look at what makes up the parts of plants they have previously learnt. Feeds forward to Year 8 photosynthesis where students learn about how plants produce food and the factors that limit this.	To describe the structure of a plant cell.	Preparing onion cells	<ul style="list-style-type: none"> I can label the organelles in a plant cell. I can explain the function of each organelle. I can describe how to prepare slides of plant cells. I can compare animal and plant cells. <p><u>Vocabulary</u> Cell wall, vacuole, chloroplasts, chlorophyll, iodine.</p>	Answers to retrieval questions. <u>Homework:</u> KS3 Science Workbook Pages 1 and 2
Biology Terms 1 & 2 lesson 4	To use knowledge of animal and plant cells to describe their differences. Feeds on from KS2 Scientific enquiry where students have learnt to plan and measure to draw conclusions. Feeds forward to GCSE required practicals where students will need to plan, carry out and analyse in detail.	To undertake a required practical.	KS3 Required practical booklet - RP1	<ul style="list-style-type: none"> I can follow a standard procedure to obtain results. I can use my results to answer questions about what have seen and done. <p><u>Vocabulary</u></p>	Answers to retrieval questions. Answers to required practical exam style questions.
Biology Terms 1 & 2 lesson 5	To use knowledge of animal and plant cells to explain how cells	To explain how cells are adapted to their roles.		<ul style="list-style-type: none"> I can name a variety of specialised plant and animal cells. 	Answers to retrieval questions.

	<p>have to be different to do their jobs.</p> <p>Feeds on from KS2 Adaption topic where students learnt about differences between organisms.</p> <p>Feeds forward to Year 7 digestion where students learn how the body is designed to carry out digestion.</p>			<ul style="list-style-type: none"> I can identify adaptations in cells. I can explain how these special features make the cell suitable to do its job. <p><u>Vocabulary</u> Xylem, phloem, nerve, palisade, epithelial, sperm, egg, blood, specialised, adaptation.</p>	Answers to homework pages.
Biology Terms 1 & 2 lesson 6	<p>To use knowledge of cells to explain how very simple organisms survive.</p> <p>Feeds on from KS2 Life processes where students learnt about the life processes to keep organism alive.</p> <p>Feeds forward to Year 9 cell biology unit where students learn how substances are transported in and out of cells.</p>	To describe the structure of unicellular organisms.		<ul style="list-style-type: none"> I can define the term unicellular. I can label a bacteria cell. I can calculate the size of a cell using $A=l/M$ <p><u>Vocabulary</u> Unicellular, flagella, magnification, millimetre, micrometre</p>	<p>Answers to retrieval questions.</p> <p>Exit Ticket 1</p> <p><u>Homework:</u> 6 mark question on cell structure</p>
Biology Terms 1 & 2 lesson 7	<p>To use knowledge of cells to explain how they get the resources they require.</p> <p>Feeds on from KS2 nutrition unit where students learnt about healthy diet and dietary requirements.</p>	To describe diffusion and its importance	Shark attack investigation Aerosol can, potassium permanganate, beetroot cores, phenolphthalein cubes etc...	<ul style="list-style-type: none"> I can describe the term diffusion. I can suggest how temperature and surface area affect diffusion. I can explain where diffusion is important. 	Answers to retrieval questions.

	<p>Feeds forward to year 9 cell biology unit where students learn about the substance's cells need and why they need them.</p>			<p><u>Vocabulary</u> Diffusion, concentration, gradient, surface area, temperature, rate.</p>	
<p>Biology Terms 1 & 2 lesson 8</p>	<p>To use unicellular knowledge to explain why large organisms have different structures.</p> <p>Feeds on from KS2 nutrition where students learn about dietary requirements.</p> <p>Feeds forward to year 7 digestion where students learn about why we need all the requirements of a balanced diet.</p>	<p>To describe the differences between unicellular and multicellular organisms.</p>		<ul style="list-style-type: none"> • I can define the term multicellular. • I can describe the differences between unicellular and multicellular organisms. • I can calculate surface area and volume. <p><u>Vocabulary</u> Multicellular, ratio, surface area, volume, organism, organisation.</p>	<p>Answers to retrieval questions.</p>
<p>Biology Terms 1 & 2 lesson 9</p>	<p>To use knowledge of types of cells to explain how they work together in complex organisms.</p> <p>Feeds on from KS2 circulation where students learnt how blood is pumped around the body.</p> <p>Feeds forward to year 7 digestion where students learn about how many organs can work together.</p>	<p>To describe how organs work together.</p>		<ul style="list-style-type: none"> • I can describe and give examples of tissue. • I can describe and give examples of organs. • I can describe and give examples of organ systems. <p><u>Vocabulary</u> Tissue, organ, digestive, nervous, respiratory.</p>	<p>Answers to retrieval questions.</p> <p>Feedback on 6 mark question</p> <p><u>Homework</u> William Perkins reading and comprehension task.</p>

<p>Biology Terms 1 & 2 lesson 10</p>	<p>To use knowledge of cell types to explain how we support ourselves. Feeds on from KS2 movement where students learnt about the importance of muscles and skeleton. Feeds forward to year 7 forces and motion where students learn about the forces involved in moving.</p>	<p>To describe the roles of the skeleton.</p>		<ul style="list-style-type: none"> • I can name the main bones in the human skeleton. • I can describe function of each bone. • I can explain how bones are connected. <p><u>Vocabulary</u> Skull, ulna, radius, tibia, fibula, scapula, patella, phalanges, femur, humerus, sternum, ribs, vertebrae, pelvis, bone marrow.</p>	<p>Answers to retrieval questions.</p>
<p>Biology Terms 1 & 2 lesson 11</p>	<p>To use knowledge of our skeleton to explain how we can move in different ways. Feeds on from KS2 movement where students learnt about the importance of muscles and skeleton. Feeds forward to year 7 forces and motion where students learn about the forces involved in moving.</p>	<p>To describe the structure and movement of different joints.</p>	<p>Chicken wing dissection.</p>	<ul style="list-style-type: none"> • I can name four types of joint. • I can give examples of these joints and describe their movement. • I can explain why some muscles need to be stronger than others. • I can describe how antagonistic muscle pairs work. <p><u>Vocabulary</u> Hinge, pivot, ball and socket, fixed, antagonistic, ligament, tendon, relax, contract.</p>	<p>Answers to retrieval questions.</p> <p>Answers to homework task.</p>
<p>Biology Terms 1 & 2 lesson 12</p>	<p>To consolidate all of our learning in the unit.</p>	<p>To prepare for assessment</p>		<ul style="list-style-type: none"> • I can identify my areas to develop. 	<p>Answers to retrieval questions.</p>

				<ul style="list-style-type: none"> I can use a variety of resources to support my revision. 	Exit Ticket 2 Homework: Revision (Seneca, mats, bitesize)
Biology Terms 1 & 2 lesson 13	To check what we know.	To undertake assessment	Low stakes assessment and go through identifying misconceptions.		Low stakes end of topic assessment.
Chemistry Terms 1 & 2 lesson 1	To understand what materials are made from. Feeds on from KS2 Classifying materials where students learnt to compare everyday objects. Feeds forward to year 10 particle model where students learn about forces and energy in physical changes.	To describe solids, liquids and gases.	Marble models	<ul style="list-style-type: none"> I can describe how the particles are arranged in solids, liquids and gases. I can explain how the particle arrangement leads to certain properties. I can classify substances based on their properties. I can explain diffusion using the particle model. Vocabulary Solid, liquid, gas, arrangement, uniform, regular, compact, compress, flow, volume, shape, container, vibrate, random.	Answers to retrieval questions.
Chemistry Terms 1 & 2 lesson 2	To use knowledge of particle arrangement to explain what happens when substances change state. Feeds on from KS2 Classifying materials	To describe what happens when substances change state.	Melting ice	<ul style="list-style-type: none"> I can name five changes of state. I can explain the energy changes during a change of state. I can represent my data on a line graph. 	Answers to retrieval questions.

	<p>where students learnt to compare everyday objects.</p> <p>Feeds forward to year 10 particle model unit where students learn about forces and energy in physical changes.</p>			<p><u>Vocabulary</u> Melting, freezing, boiling, condensation, sublimation, energy, continuous, state, kinetic, potential.</p>	
Chemistry Terms 1 & 2 lesson 3	<p>To use knowledge of particle arrangement to explain why materials expand and contract.</p> <p>Feeds on from KS2 changing materials where students learnt to compare everyday objects.</p> <p>Feeds forward to year 7 forces where students learn about energy and forces.</p>	To describe what happens when objects are heated and cooled.	Ball and ring, expansion tubes, bar and gauge.	<ul style="list-style-type: none"> • I can define the terms expansion and contraction. • I can explain the energy changes involved in expansion and contraction. • I can describe everyday examples of expansion and contraction. <p><u>Vocabulary:</u> Expansion, contraction, bimetallic, force, energy, vibration.</p>	<p>Answers to retrieval questions.</p> <p><u>Homework:</u> KS3 Science workbook pages 69-71</p>
Chemistry Terms 1 & 2 lesson 4	<p>To use the idea of particle arrangement to explain why the temperature doesn't change during changes of state.</p> <p>Feeds on from KS2 changing materials where students learnt to compare everyday objects.</p> <p>Feeds forward to Year 10 particle model unit where students learn</p>	To explain the energy changes during a change of state.	Cooling curves (Salol).	<ul style="list-style-type: none"> • I can state the link between temperature and energy. • I can accurately record temperatures. • I can identify changes of state on a cooling/heating curve. <p><u>Vocabulary:</u></p>	Answers to retrieval questions.

	about forces and energy in physical changes.			Accuracy, resolution, interval, temperature, kinetic, potential,	
Chemistry Terms 1 & 2 lesson 5	To use knowledge of particle arrangement to describe why objects have certain shapes. Feeds on from KS2 classifying materials where students learnt to compare everyday objects. Feeds forward to year 10 particle model unit where students learn about forces and energy in physical changes.	To describe how liquids and gases exert pressure.	Collapsing can, glass and card trick	<ul style="list-style-type: none"> I can define the term pressure. I can explain how the pressure of a gas can change. I can apply my understanding to everyday examples. <p><u>Vocabulary:</u> Pressure, expand, contract, balanced, explosion, implosion.</p>	Answers to retrieval questions. Exit Ticket 1 <u>Homework:</u> 6 mark question on particle arrangement
Chemistry Terms 1 & 2 lesson 6	To use the idea of particles to explain why some materials are heavier than others. Feeds on from KS2 classifying materials where students learnt to compare everyday objects. Feeds forward to year 10 particle model unit where students learn about forces and energy in physical changes.	To explain density	Eureka cans and blocks.	<ul style="list-style-type: none"> I can define the term density. I can explain the particle arrangement in dense and less dense materials. I can calculate density. <p><u>Vocabulary:</u> Mass, volume, density, particles, closely packed, area.</p>	Answers to retrieval questions. Answers to homework pages.
Chemistry Terms 1 & 2 lesson 7	To use particle knowledge to explain how changes can change properties. Feeds on from KS2 changing materials	To describe how purity affects properties	Salt solutions	<ul style="list-style-type: none"> I can describe pure substances and mixtures. I can describe how impurities affect 	Answers to retrieval questions.

	<p>where students learnt to compare everyday objects.</p> <p>Feeds forward to year 9 atomic structure and the periodic table where students learn about the uses of purity.</p>			<p>melting and boiling points.</p> <ul style="list-style-type: none"> I can identify pure substances for data I can explain some applications for pure and impure substances. <p><u>Vocabulary:</u> Pure, impure, mixture, application, melting point, boiling point.</p>	
Chemistry Terms 1 & 2 lesson 8	<p>To use the idea of particles to explain how mixtures can be separated.</p> <p>Feeds on from KS2 separating mixtures where students learnt how to separate simple mixtures.</p> <p>Feeds forward to year 9 atomic structure and the periodic table where students learn how to explain methods of separation and their uses.</p>	To explain how filtering and evaporation work	Bucket of fun.	<ul style="list-style-type: none"> I can explain how separate mixtures using filtration. I can explain the process of dissolving. I can explain how to separate mixtures using evaporation. <p><u>Vocabulary:</u> Filtration, evaporation, dissolving, energetic, distribution,.</p>	<p>Answers to retrieval questions.</p> <p>Feedback on 6 mark question</p>
Chemistry Terms 1 & 2 lesson 9	<p>To use the idea of particles to explain how mixtures can be separated.</p> <p>Feeds on from KS2 separating mixtures where students learnt how to separate simple mixtures.</p>	To explain how chromatography works	Chromatography of felt tip pens	<ul style="list-style-type: none"> I can define the terms soluble and insoluble. I can describe mobile and stationary phases. I can calculate retention factors. 	<p>Answers to retrieval questions.</p> <p><u>Homework:</u> Stellar Atmospheres reading and comprehension task.</p>

	<p>Feeds forward to year 9 atomic structure and the periodic table where students learn how to explain methods of separation and their uses.</p>			<ul style="list-style-type: none"> I can analyse chromatograms. <p><u>Vocabulary:</u> Chromatogram, soluble, insoluble, retention, mobile, stationary.</p>	
<p>Chemistry Terms 1 & 2 lesson 10</p>	<p>To use the idea of particles to explain how mixtures can be separated.</p> <p>Feeds on from KS2 separating mixtures where students learnt how to separate simple mixtures.</p> <p>Feeds forward to year 9 atomic structure and the periodic table where students learn how to explain methods of separation and their uses.</p>	<p>To explain how distillation works</p>	<p>Distillation of ethanol and water or coloured water using 2 beakers</p>	<ul style="list-style-type: none"> I can describe how to separate mixtures of liquids. I can explain the importance of evaporation and condensation in this process. I can apply my understanding to everyday situations. <p><u>Vocabulary:</u> Distillation, evaporation, condensation, boiling point, condenser.</p>	<p>Answers to retrieval questions.</p>
<p>Chemistry Terms 1 & 2 lesson 11</p>	<p>To take knowledge of separation techniques and apply it to a practical problem.</p> <p>Feeds on from KS2 Scientific enquiry where students have learnt to plan and measure to draw conclusions.</p> <p>Feeds forward to GCSE required practicals where students will need to plan, carry out and analyse in detail.</p>	<p>To undertake a required practical</p>	<p>KS3 RP 2</p>	<ul style="list-style-type: none"> I can select which separation techniques to use. I can explain why these separation techniques will work for my mixture. I can successfully carry out my planned separation. <p><u>Vocabulary:</u> Dissolving, evaporation, filtering, magnetic.</p>	<p>Answers to retrieval questions.</p> <p>Answers to homework pages.</p>

Chemistry Terms 1 & 2 lesson 12	To consolidate all of our learning in the unit.	To prepare for assessment		Purple pen corrections of revision mats and retrieval questions. Exit ticket 2	Answers to retrieval questions. Exit Ticket 2 Homework: Revision (Seneca, mats, bitesize)
Chemistry Terms 1 & 2 lesson 13	To check what we know.	To undertake assessment	Low stakes assessment and go through identifying misconceptions.		Low stakes end of topic assessment.
Physics Terms 1 & 2 lesson 1	To know how we work out how fast an object is moving. Feeds on from KS2 forces and motion where students learnt about forces stopping movement. Feeds forward to year 9 energy where students learn how to calculate kinetic energy.	To measure and calculate speed.	Running walking speed etc	<ul style="list-style-type: none"> I can state what speed is. I can calculate average speed. I can manipulate formula to calculate other quantities. Vocabulary: Speed, distance, time, seconds, metres, rearrange, average, instantaneous, velocity.	Answers to retrieval questions. Homework: KS3 Science workbook pages 159/160
Physics Terms 1 & 2 lesson 2	To think about that affect how fast an object will move. Feeds on from KS2 forces and motion where students learnt about forces stopping movement. Feeds forward to year 9 energy where students learn how to calculate kinetic energy.	To investigate the factors that affect speed	Trolleys and ramps	<ul style="list-style-type: none"> I can explain the factors that affect the speed of an object. I can collect and analyse data to prove how these factors affect the speed of an object. Vocabulary: Mass, height, speed, time, distance, light gates,	Answers to retrieval questions.

<p>Physics Terms 1 & 2 lesson 3</p>	<p>To analyse graphs using their knowledge of speed. Feeds on from KS2 force and motion where students learnt about forces stopping movement. Feeds forward to Year 11 forces where students learn to interpret speed/time graphs.</p>	<p>To draw and interpret distance-time graphs</p>		<ul style="list-style-type: none"> I can describe changes in motion. I can interpret a distance time graphs. I can calculate speed from a distance time graph. <p>Vocabulary: Axis, gradient, stationary, constant speed,</p>	<p>Answers to retrieval questions.</p> <p>Answers to homework pages.</p>
<p>Physics Terms 1 & 2 lesson 4</p>	<p>To use their knowledge of speed and how forces are involved with speed. Feeds on from KS2 force and motion where students learnt about forces stopping movement. Feeds forward to year 11 forces where students learn how to resolve forces.</p>	<p>To describe how forces act.</p>	<p>Forces circus.</p>	<ul style="list-style-type: none"> I can name some forces. I can state the affects of these forces. I can represent the size of force arrows using a force arrow. I can describe forces as contact and non-contact. I can describe what work done means. <p>Vocabulary: Gravity, upthrust, magnetism, friction, air resistance, water resitance, push, pull, twist, bend, stretch, compress weight.</p>	<p>Answers to retrieval questions.</p> <p>Homework: Magnetism reading and comprehension task.</p>
<p>Physics Terms 1 & 2 lesson 5</p>	<p>To use their knowledge of forces to explain how mass and weight are difference.</p>	<p>To explain the difference between mass and weight.</p>	<p>Measuring weight</p>	<ul style="list-style-type: none"> I can describe the term mass and the units used to measure it. 	<p>Answers to retrieval questions.</p> <p>Exit Ticket 1</p>

	<p>Feeds on from KS2 force and motion where students learnt about forces stopping movement.</p> <p>Feeds forward to year 9 energy where students learn to use the force of gravity in calculations.</p>			<ul style="list-style-type: none"> I can describe the term weight and the units used to measure it. I can calculate weight using the formula $W=mg$ <p>Vocabulary: Mass, weight, kilograms, newtons, gravitational.</p>	
Physics Terms 1 & 2 lesson 6	<p>To link forces to the factors that affect speed.</p> <p>Feeds on from KS2 force and motion where students learnt about forces stopping movement.</p> <p>Feeds forward to year 8 energy where students learn about useful and wasted energy.</p>	To describe how friction occurs.	Surfaces exp.	<ul style="list-style-type: none"> I can describe the effect of friction. I can explain ways to increase and reduce friction. I can apply my knowledge of friction to everyday situations. <p>Vocabulary: Friction, surface area, contact, lubrication.</p>	<p>Answers to retrieval questions.</p> <p>Answers to homework questions.</p>
Physics Terms 1 & 2 lesson 7	<p>To link particles and mass to density.</p> <p>Feeds on from KS2 force and motion where students learnt about forces stopping movement.</p> <p>Feeds forward to year 10 particle model where students learn how to explain and calculate density.</p>	To calculate density	Blocks and cans.	<ul style="list-style-type: none"> I can compare different states of matter using their density. I can explain how floating and sinking is dependent on density. I can use density calculations to predict if a material will float or sink. <p>Vocabulary:</p>	<p>Answers to retrieval questions.</p> <p>6 mark question on density.</p>

				Density, float, sink.	
Physics Terms 1 & 2 lesson 8	To explain forces that affect stretching Feeds on from KS2 force and motion where students learnt about forces stopping movement. Feeds forward to year 9 energy where students learn to calculate elastic potential energy.	To describe Hookes law	Stretching springs	<ul style="list-style-type: none"> I can describe Hookes law. I can explain how work and energy lead to deformation. I can apply Hookes law to explain how forcemeters work. <p><u>Vocabulary:</u> Stretching, extension, directly proportional, deformation, elastic, inelastic.</p>	Answers to retrieval questions.
Physics Terms 1 & 2 lesson 9	To use the idea of forces to explain why objects move the way they do. Feeds on from KS2 forces and motion where students learnt about forces stopping movement. Feeds forward to year 11 forces where students learn how to resolve forces at right angles.	To calculate resultant forces		<ul style="list-style-type: none"> I can explain when forces are balanced and unbalanced. I can calculate resultant forces. I can describe how pairs of forces will affect motion. <p><u>Vocabulary:</u> Balanced, unbalanced, equal, accelerate, decelerate, motion, resultant.</p>	Answers to retrieval questions. Feedback on 6 mark question.
Physics Terms 1 & 2 lesson 10	To consolidate all of our learning in the unit.	To prepare for assessment		Purple pen corrections of revision mats and retrieval questions. Exit ticket 2	Answers to retrieval questions. Exit Ticket 2 <u>Homework:</u> Revision (Seneca, mats, bitesize)

Physics Terms 1 & 2 lesson 11	To check what we know.	To undertake assessment	Low stakes assessment and go through identifying misconceptions.		Low stakes end of topic assessment.
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