

BLESSED TRINITY LEARNING PROGRAMME

SUBJECT: Science

YEAR: 8b

Half Term: 1

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
<p>Waves</p> <p>What is a wave?</p>	<p>Know that waves carry energy. Describe the characteristics of waves.</p>	<p>Use ripple tank to demo water waves. (in particular reflection and interference). Explain that energy is being transferred through a medium. Explain that waves are different from particles carrying energy. Draw diagrams to show constructive and destructive interference patterns.</p>	<p>Find examples of different waves and describe how they carry energy.</p>	<p>Pupil progress in this topic will be assessed by marking of student work, student responses to questions in class, a mid topic APP style assessment and an end of topic assessment.</p>
<p>Two types of waves</p>	<p>Describe the differences between Transverse waves and Longitudinal waves. Be able to calculate the speed of a wave.</p>	<p>Use a slinky to demonstrate the two types of wave. Stress that all waves carry energy. Draw diagrams to show wavelengths and frequencies in two types of waves. Introduce $c=f\lambda$ Perform calculations using wave equation.</p>	<p>Practice wave speed calculations.</p>	
<p>Light waves</p>	<p>Calculate the speed of light in a vacuum. Explain how we know that light is a wave.</p>	<p>Show the Youngs double slit experiment which demonstrates interference patterns of light. Use sand to show what happens when particles pass through two slits. Use this information to explain why light is not a particle but a wave. Carry out calculations based on the speed of light. (introduce the term light year for the more able students).</p>		

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Reflection	Describe what happens when light reflects off a smooth surface (specular reflection).	Use light equipment to demonstrate the relationship between angle of incidence and angle of reflection. Draw ray diagrams to show normal line, angle of incidence and angle of reflection. Draw ray diagrams to show uses of mirrors (in supermarkets to see down isles).	Draw ray diagrams to show how cars can see each other at a tight road junction (effectively see round corners).	
Refraction	Describe what happens when light refracts as it changes medium Explain why light refracts as it changes medium.	Use light equipment to demonstrate a ray of light refracting as it enters a glass block. Draw ray diagrams to show refraction (label angle of incidence and angle of refraction as well as the normal). Explain why refraction occurs based on changes in speed to		

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Using refraction	Describe how the lens in the eye works by refracting light rays. Explain why some people need glasses.	Use light equipment to shine rays of light through convex lenses. Draw ray diagrams to show converging light beams. Discuss the role of the lens in focussing rays of light on the retina. Use ray diagrams to explain how lenses work in glasses of people who are short or long sighted.	Find someone in their family who wears glasses and explain to that person (using ray diagrams) why they need to wear glasses and how the glasses correct their vision.	
Light scattering and separation.	Describe what happens when light is dispersed. Explain why white light can be dispersed into its constituent colours.	Use glass prisms and ray boxes to show the phenomena of dispersion. Use Newton's wheel to show that colours can merge into white. Discuss how wavelength affects the amount of refraction of each wavelength.	Explain why we see a rainbow (what is the prism).	

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Why is a red bus red?	Describe why we see particular colours (reflection and absorption of particular wavelengths).	Use filters to shine different coloured light beams onto different coloured surfaces. Alternatively, IT technical staff have been happy to use the lighting equipment in the theatre and shining beams of light onto pure colours. Explain colours in terms of absorption and reflection of light at different wavelengths. Use ray diagrams to explain why an apple appears red under white light.	Explain why an object appears white (use ray diagrams to show the absorption and reflection of colours).	
More than light	Describe the family of radiations in the electromagnetic spectrum. Use the photon model of radiation to show transfer of energy as a wave.	Show examples of EM radiations. Discuss uses of each type of radiation. Use an electric heater and a beaker of water at distance to show that temperature increases. Use diagrams to show the photon model of radiation.		

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Sound waves (producing sound)	<p>Know that sounds are produced when objects vibrate.</p> <p>Describe how sound is transmitted through a medium.</p>	<p>Investigate a range of objects that produce sound. Students note down how the sound is produced and perhaps how to modify the sound.</p> <p>Investigate whether sound can travel better in solids or air.</p> <p>Demo alarm clock in bell jar.</p> <p>Discuss that particles are required in order to pass on the vibrations.</p>	<p>Explain why “in space, no one can hear your scream”.</p>	
Properties of sound	<p>Describe how the frequency of sound affects the pitch.</p> <p>Describe how amplitude of a sound wave affects volume.</p> <p>Calculate the speed of sound using mach values.</p>	<p>Use oscilloscope to show how frequency and amplitude affect the sounds produced.</p> <p>Use guitar to reinforce the idea about frequency and pitch.</p> <p>Use distances and times to calculate the speed of sound.</p> <p>Discuss the use of Mach values as units for the speed of sound.</p>	<p>Calculate how far a plane would travel at Mach 1 for 3 minutes.</p>	

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Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
What did you say?	Describe the structure of the ear and how it detects sound. Explain why humans can not hear a dog whistle.	Use model of ear to discuss the role of tympanic membrane, anvil, stirrup and cochlea. Use CRO and sig gen to work out upper limit of human hearing in terms of frequency. Explain how devices such as the mosquito work.		
Who is the coolest person in the hospital? The ultrasound guy.	Describe what is meant by ultrasound. Describe some uses of ultrasound technology.	Use computers to investigate how ultrasound can be used to scan pregnant women, remove kidney stones and in echolocation in bats.	Find out about how sonar is used on submarines.	

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Half Term: 2

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Classification	<p>Define the 5 different kingdoms.</p> <p>Be able to describe each kingdom and give examples of the organisms within.</p> <p>Explain how the organism is classified into each kingdom</p>	<p>Card sort to decide which animals are the same species based on fertile offspring.</p> <p>Marketplace activity to differentiate organisms</p>	<p>Design a new creature and put it into 1 of the kingdoms.</p> <p>State how your creature fits into that kingdom</p>	
Grouping Animals	<p>Classification—Invertebrates</p>	<p>Classify arthropods into arachnids, insects and crustaceans by counting their legs.</p> <p>Carry out a virtual pond dip and classify pond invertebrates. Find out whether animals in the group are herbivores or carnivores.</p>	<p>Classify the contents of your kitchen cupboard.</p> <p>Design a suitable classification key to separate the contents.</p> <p>Spookels and Bloots worksheet.</p>	
Vertebrates	<p>Use classification to identify unknown vertebrates</p>	<p>Card sort to split students into groups of similar vertebrates.</p> <p>Students must identify the correct features of vertebrates to match their group.</p> <p>Students look at hard-to-classify vertebrates and decide which group they should go in.</p>	<p>Design a vertebrate for a specific lifestyle and state how it should be classified</p> <p>The rock pool food web Assessed Levelled task.</p>	

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Half Term: 2

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Evolution	To know how a species has evolved over time. Introduce survival of the fittest. Discuss differences between the ideas of Lamarck and Darwin.	Card Sort— how a species has evolved over time. Focus on the giraffe, discuss survival advantages of having a long neck. Discuss the ideas of how the giraffe got a long neck with regards to Lamarck and Darwin.	Research horses hoofs. How has the horses hoof evolved over time	
Speciation	How a species is different within a group. Look at lions and tigers, although both cats are distinctly different.	Looking at information cards, list the differences between animals in the same group. State how they became different		
Extinction	How a species becomes extinct. Be able to name some animals that have become extinct and conditions that led to extinction	Look at species that have gone extinct. Woolly Mammoth, Dodo. Discover how explorers helped in the extinction of some species. Use the card sort to identify why flightless birds became extinct	Suggest a way of ensuring no other species of animal goes extinct	
Microbe Kingdom	To appreciate that microbes are the largest kingdom. Know the different organisms within the kingdom	Card sort to identify the different sub-species within microbial. Complete and construct a table to differentiate these species.	Revise for end of topic test.	

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Magnetism What is a magnet	To state what the terms attract, repel, polarity and magnetic field mean To describe how the field lines around a magnet can be revealed To explain how magnets respond to the different poles and explain the reasons why	Using magnets to investigate magnetic force. Practical activity revealing the magnetic field lines and investigating the poles of a magnet.	Worksheet attract or repel	Pupil progress in this topic will be assessed by marking of student work, student responses to questions in class, a mid topic APP style assessment and an end of topic assessment.
Plotting the magnetic field	To describe how compasses work To explain how the earth's magnetic field can be used to navigate	Practical activity—plotting the magnetic field around a bar magnet		
Electric motors	To describe the relationship between electricity and magnetism To explain how this relationship can produce movement	Demonstration of jumping wire Practical activity—motor kits Pupils investigate the relationship between electricity and magnetism to produce rotational movement	Homework sheet—uses of motors in industry and home.	
Electromagnets	To describe the relationship between electricity and magnetism To practically demonstrate how electromagnets work To suggest uses for electromagnets	Practical activity—investigating the strength of an electromagnet How changing the voltage affects the strength of an electromagnet How changing the structure of the electromagnet affects the strength of an electromagnet	Write a conclusion and evaluation for the class practical	

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Half Term: 3

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Chemical Reactions What are chemical reactions?	To recognise the characteristics of chemical reactions Describe and record observations systematically Describe patterns in results	Students carry out six chemical reactions and carefully record their observations. Students write word equations for reactions.	Choose one sign of a chemical reaction and design a poster to illustrate it.	Pupil progress in this topic will be assessed by marking of student work, student responses to questions in class, a mid topic APP style assessment and an end of topic assessment.
Chemical reactions and reversible changes	recognise the difference between chemical reactions and reversible changes Describe patterns and trends in results and link these to conclusions	Students carry out two or three short tasks from a list of 10. They decide whether each of their changes is a chemical reaction or a reversible change.	From some given reactions, decide which changes are chemical reactions and which are reversible changes. Give evidence to support your decision. What happens when a Candle is alight? Assessed levelled activity.	
Distillation	Recognise how distillation is used to separate mixtures Recognise describe some everyday applications of distillation	Students set up simplified distillation apparatus and get drinking water from inky water.	Design a beach noticeboard to explain to others, in words and pictures, how to use beach equipment to get drinking water from seawater.	
Chromatography	recognize how chromatography is used to identify substances in a solution	Students set up apparatus to obtain chromatograms from three felt-tipped pens. Students discuss how plants can be identified using this technique	Solve the 'Using chromatography' puzzle.	

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Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Burning	Describe burning as a chemical reaction Recognise the reactants and products of burning reactions	Students burn small samples of magnesium ribbon, charcoal and iron wool. They record detailed observations of the chemicals at the end of the reaction.	Questions on Chinese fireworks and matches. Extra questions on word equations for extension students. Explaining what happens when we burn magnesium metal. Assessed by levelled activity.	
Acid Reactions Acids– Harmful or useful?	Describe acids and their properties Explain how to control risk and work safely in the laboratory Recognise that scientists of all nationalities develop explanations	Students sort cards into 2 piles, 'Useful' or 'Harmful'. Students view a range of household and laboratory acids (and alkalis) with hazard warning labels. From these they need to write their own definitions for each hazard symbol. Students discuss definitions of hazard symbols.	Design an information poster based on a chosen hazard symbol to be displayed in the laboratory http://www.bbc.co.uk/bitesize/ks3/science/chemical_material_behaviour/acids_bases_metals/revision/1/	
Identifying Acids and Alkalis	Describe alkalis and their properties. Classify acids and alkalis using indicators. Describe and record observations systematically Describe patterns in results. Explain how risk is controlled in the investigation.	Students make red cabbage indicator (as demonstrated) and plan how to standardise it. They then test their plan and write a key to show how to test an unlabelled solution. They finally test the unknown solution.	Research different types of indicators. Choose one indicator and explain how it tells scientists whether a substance is an acid, an alkali or neutral. http://www.bbc.co.uk/bitesize/ks3/science/chemical_material_behaviour/acids_bases_metals/revision/1/	

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<p>How Strong are Acids and Alkalis</p>	<p>Describe the strength of acids and alkalis using the pH scale. Describe the effect of dilution on acids and alkalis.</p> <p>Describe how to make a neutral solution by adding an acid to an alkali.</p> <p>Communicate scientific ideas in an appropriate way for a specific audience.</p>	<p>Students rank cards about handling acids and alkalis from 'most important' to 'least important'. Students are set a challenge to find out the pH of different solutions using UI solution, making observations of colour changes.</p> <p>Demonstration of neutralisation in a burette. Students test six house-hold substances to find the best one to use as an antidote to bee and wasp stings. Students produce an information leaflet to put into a first aid box to advise people on what to do if stung by a wasp or a bee.</p>	<p>Where does the term pH come from? Produce a leaflet that will explain to Year 6 students what pH means.</p> <p>http://www.bbc.co.uk/bitesize/ks3/science/chemical_material_behaviour/acids_bases_metals/revision/1/</p> <p>Complete leaflet for homework, taking into account suggestions from peers. http://www.bbc.co.uk/bitesize/ks3/science/chemical_material_behaviour/acids_bases_metals/revision/1/</p>	
<p>Uses of Neutralisation</p>	<p>Describe some applications of neutralization.</p> <p>Explain how salts are formed from acids reacting with alkalis.</p> <p>Use word equations.</p>	<p>Class practical to prove that a neutral salt is made. Students react 10 cm³ hydrochloric acid with 10 cm³ sodium hydroxide. They then evaporate the water to leave sodium chloride crystals.</p> <p>Students comment on how they will carry out the practical safely and to think about what is made, introducing the idea of word equations: acid + alkali salt + water.</p>	<p>Write a glossary to explain the key words for the unit so far.</p> <p>http://www.bbc.co.uk/bitesize/ks3/science/chemical_material_behaviour/acids_bases_metals/revision/1/</p>	

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Half Term: 3

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
<p>Acids and Carbonates</p>	<p>Describe the chemical re-action between acids and carbonates to produce a salt.</p>	<p>Class practical to prove that a neutral salt is made. Students react 10 cm³ hydrochloric acid with 10 cm³ sodium hydroxide.</p> <p>They then evaporate the water to leave sodium chloride crystals. Students comment on how they will carry out the practical safely and to think about what is made, introducing the idea of word equations: acid + alkali salt + water.</p>	<p>Which acid removes lime scale most quickly?</p> <p>Design an investigation to find out which acid removes lime scale most quickly. Include these acids: vinegar, lemon juice, cola, hydrochloric acid, sulphuric acid.</p> <p>Use lumps of calcium carbonate instead of lime scale. Decide which variables to change and which to keep the same so that the test is fair.</p> <p>http://www.bbc.co.uk/bitesize/ks3/science/chemical_material_behaviour/acids_bases_metals/revision/1/</p>	

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Metals and water	To describe patterns in the chemical reactions of metals with water.	Card sorting activity, which metals would be suitable for a pace-maker? Students add different metals to water and record observations.	Make a leaflet explaining how different metals react with water and how this is useful for us.	
Metals and acid	To describe patterns in the chemical reactions of metals with acid.	Metal reactions quiz. Plan and conduct experiment on 4 metals reacting with hydrochloric acid. Write word equations for reactions.	Make revision cards to help remember word equations on the reactions of metals and acids. Metal Carbonates and Acids Homework sheet.	
More on the reactivity series	To describe patterns in the chemical reactions of metals with oxygen.	Burning iron practical. Students predict the equation. Use the reactivity series to make predictions about metal burning reactions. Test predictions in practical.	Write a leaflet explaining the reactivity series of metals to a Year 6 student.	

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Half Term: 4

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Earth - Rocks Volcano!	To begin to describe the processes involved in the formation of igneous rocks	Presentation., demonstration, model making	Produce a model of a Volcano to demonstrate the formation of Igneous Rocks.	Pupil progress in this topic will be assessed by marking of student work, student responses to questions in class, mid-topic APP style assessment and an End of Topic assessment.
Igneous Rocks	To describe the processes involved in the formation of igneous rocks and use the characteristics of rocks to explain how they formed	Circus of activities examining sedimentary rocks, using evidence to suggest how rocks are formed.	Produce a fact card on Igneous Rocks.	
Finding Fossils	To describe the processes involved in the formation of sedimentary rocks	Presentation, practical, video clip, linking evidence to conclusions	Produce a Diagram with labels to show how Fossils are formed and where they are found.	
Sedimentary Rocks	To describe the processes involved in the formation of sedimentary rocks, and use the characteristics of rocks to explain how they formed	Circus of activities examining sedimentary rocks, using evidence to suggest how rocks are formed.	Produce a fact card on Sedimentary Rocks.	
Metamorphic Rocks	To describe the processes involved in the formation of metamorphic rocks, and use the characteristics	Practical, rock sort, class discussion	Being a Rock Detective worksheet	
The Rock Cycle	To use the rock cycle as a model to explain the cyclical nature of rock-forming processes and the time-scales over which they operate	Groups create activities or displays to communicate the rock cycle, Interpret quotes, demonstration, class discussion.	The Rock Cycle Assesses Levelled activity	
Earths Structure	Describe the structure of the Earth	Produce a model of the Earth. Identify different parts e.g. Mantle, Core, Crust.		

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Half Term: 4

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Earth and the Atmosphere Inside our atmosphere	The gases in the atmosphere, how the atmosphere changes.	Interpret information about atmospheric changes and produce either a representation or a presentation of it to the class.	Produce a poster to show the percentages of gases in our atmosphere.	Peer assessment of the presentations/ model.
More on Molecules	Numbers of atoms in molecules.	Molecular models build, card sorts on changes in Ozone	Draw models of the gas molecules in our atmosphere.	Correct card sort, questioning.
Using Hydrocarbons	Recognise some uses of hydrocarbons Describe the products of burning hydrocarbons	Students burn a variety of hydrocarbon fuels and determine the products of the reactions. Students research the products of burning hydrocarbons.	Create a leaflet or presentation slides on learning from the lesson.	A quiz on the research questions.
Polymers	Polymer properties, uses and structure.	Look at a variety of polymers and observe and record their properties and their uses. Make a model of a polymer.	List 5 compounds which are made of polymers.	Check observations. Peer assess models
Reduce, reuse and recycle	Recycling plastic bags and biodegradable bags.	Group work: use information to plan their contribution to a 'public meeting' on plastic bags	Produce poster on how we recycle in our lives	Their debate contributions are assessed
Global Warming	Describe how human processes have changed the atmosphere over time Explain some of the consequences of changes in the environment	Students carry out a case study to look at the available evidence for global warming. Students make judgments on the quality of the information.	Answer questions 11–15 on p. 100 of the textbook. Tell students to focus particularly on question 15 – what action will <i>you</i> take?	Students brainstorm action they can take to minimise the effects of global warming.

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Electricity Introduction to Electricity	To describe how electricity is the flow of electrons and explain this using static electricity as an example.	Static electricity practical— pupils investigate how static charge moves and observe the effect	Students make a safety poster to highlight dangers of working with Static electricity.	Pupil progress in this topic will be assessed by marking of student work, student responses to questions in class, a mid topic APP style assessment and an end of topic assessment.
Electric Current	State what is meant by the term current Describe how to measure the current in a circuit	Practical activity—Measuring current in circuit	Students to find out how many Amperes of current are flowing in electrical equipment in their home. They can research this using books, the internet or by gaining parents' help to look at the labels on devices	
Voltage in a circuit	State what is meant by the term voltage Describe how to measure the voltage in a circuit	Practical activity—Measuring voltage in a circuit	Students to find out how many Volts are flowing in electrical equipment in their home. They can research this using books, the internet or by gaining parents' help to look at the labels on devices	
Measuring voltage and current in a series circuit	State how voltage and current flow through a series circuit To explain the way current and voltage differ in a series circuit	To practically investigate how current and voltage flow in a series circuit	Students write an evaluation for their experiment, stating what they found easy or difficult and one thing they would change to make it better.	
Measuring voltage and current in a parallel circuit	State how voltage and current flow through a parallel circuit To explain the way current and voltage differ in a parallel	To practically investigate how current and voltage flow in a parallel circuit	Students write an evaluation for their experiment, stating what they found easy or difficult and one thing they would change to make it better.	

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Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Resistance	<p>To state what the term resistance means</p> <p>Describe how resistance changes in a circuit using Ohms law</p>	<p>Practical activity - measuring resistance in a filament bulb</p>		
Generating electricity	<p>To describe how electricity is produced at a power station</p> <p>Explain how electricity can be distributed nationally</p>	<p>The stages of electricity production cut and stick</p> <p>Extracting information from National Grid information leaflet</p>	<p>Poster to explain the national grid to year 5/6</p>	
Renewable energy	<p>To state what is meant by the term renewable energy</p> <p>To describe how two types of renewable energy generate electricity</p> <p>Explain why renewable energy is necessary to reach the electricity demand in the UK</p>	<p>Research activity on renewable energy sources</p>	<p>Levelled homework activity</p>	

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Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Plants Structure of a Plant Plant Cells	Identify and label the key structures of a plant Identify and label a plant cell	Pupils will draw and label a plant, identifying key features Pupils will draw and label a typical plant cell, including the organelles. The difference between plant and animal cells (previous topic) will be emphasised.	Make a model plant cell—this can be 2D or 3D	Pupil progress in this topic will be assessed by marking of student work, students' responses to questions in class, mid-topic APP style assessment and an End of Topic Assessment.
Specialised Plant Cells and Functions	Identify the different specialised cells and their functions in a plant	Pupils will be taught a variety of specialised plants cells and have to link adaptations of the specialised cell to its function.		
Tissues and Organ Systems	Identify different tissues and organ systems within a plant.	Link specialised cells with the tissue and organs they form in a plant Review Life Processes from previous topics Identify plant organ systems and how they carry out life processes for plants	Complete a worksheet consolidating learning from lesson; Linking organism structure and function	
Structure of a Leaf	Recognise that the leaf is an organ and identify different structures within a leaf	Draw and label the internal structure of a leaf—link with functions.	Spellings of keywords Recalling the structure of a leaf	
Microscopes	Using a microscope to look at plant cells and structure	Practical lesson (s) to use a microscope to; Prepare slide of plant cells (onion cells) Identify different structures of a leaf (stoma)	Label sections of the microscope and describe how to use one safely and effectively	
Photosynthesis	Understand what photosynthesis is and how a plant is adapted to carry out this process	Pupils will now link the adaptation of the leaf and photosynthesis Word equation of photosynthesis Diffusion and gas exchange		

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Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Limiting Factors (I)	Identify the four factors which impact the rate of photosynthesis	Discuss the 4 factors that can affect photosynthesis and describe why this can happen. Use graphs to show different rates of photosynthesis	Worksheet containing different scenarios and pupils will have to describe what affect the limiting factor(s) would have Practice exam questions Graph Skills	
Limiting Factors (II)	Carry out a practical to demonstrate the affect of a limiting factor on photosynthesis	Pupils will carry out a practical based on 1 or more limiting factors and record their results.	Draw a graph and write a conclusion using class results	
Nutrients and Fertilisers	Identify the main nutrients a plant requires and link with the use of fertilisers	Discussion of the main nutrients that plants need. Describe how the nutrients are absorbed by the roots (by a process called active transport) Describe the impact that fertilisers have on a plant and why they are used.	Revise for the end of Topic Test	
End of Topic Test		Revision and test		

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Half Term: 6

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
People and The Environment Food Chains	Describe how organisms pass on energy	Draw and label a food chain in a habitat Learn the keywords associated to food chains (predator, prey, consumer and producer) Energy and Trophic Levels—describe what the arrows in a food chain show and how much energy is passed on.	Worksheet to identify which organism is a producer and consumer Equations showing energy efficiency in a food chain	Pupil progress in this topic will be assessed by marking of student work, student responses to questions in class, mid-topic APP style assessment and an End of Topic assessment.
Food Webs	Interdependence of a habitat and food chains	Pupils will look at how food chains interlink to make food webs in a habitat. Pupils will describe the impact of predator/prey conditions in a food web (interdependence)	Questions to describe predict what will happen in an ecosystem	
Pyramids	Pyramids of Numbers Pyramids of Biomass	Understand how to draw and use a pyramid of numbers. This can be done to scale by drawing a bar chart and then cut and stick it into the books. Understand the difference between pyramids of numbers and biomass—describe how an organism gains mass. Draw and use example of both pyramids..	Create your own ecosystem and include; food webs, pyramids of numbers and pyramids of biomass. This can be as creative as the pupil wants.	
Ecosystems and Extinction	To understand what an ecosystem is and factors that affect different organisms	Case studies of hedgerows—what factors affect this habitat. Predict what will happen to different organisms. Discuss what animals and plants compete for for survival and how this can lead to extinction.	Research an extinct animal or plant and present this information as a poster.	

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Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Sustainability	Understand the importance of being sustainable and how this can impact out future	Class circuit to demonstrate the impact humans have had on the planet. This should include ; crop farming and yield , farming (meat and dairy) Expansion of the human population and built up areas This can then be input into a table with cause, affect and prevention	Make suggestions on how to make our daily lives more sustainable. This can be based on; Town Local area School	
DDT and Poisons	Understand the impact of the introduction of pesticides has had on a food chain	Card sort activity showing the affects of DDT and how this can build up in a food chain Class activity of how poisons build up in a food chain Advantages and disadvantages of using DDT	Research a different type of poison that humans have introduced and the impact this has had on the environment.	
Water Pollution	Understand how humans have polluted water systems	Literacy task based on newspaper documents and comprehension questions to show the affect of fertilisers or poisons in the water system. Draw a diagram to help explain how pollution is leached into the water table.	Revise for the end of topic test	