

BLESSED TRINITY LEARNING PROGRAMME

SUBJECT: Science

YEAR: 8B

Half Term: 1

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

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

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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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Burning	<p>Describe burning as a chemical reaction</p> <p>Recognise the reactants and products of burning reactions</p>	<p>Students burn small samples of magnesium ribbon, charcoal and iron wool.</p> <p>They record detailed observations of the chemicals at the end of the reaction.</p>	<p>Questions on Chinese fireworks and matches. Extra questions on word equations for extension students.</p> <p>Explaining what happens when we burn magnesium metal. Assessed by levelled activity.</p>	
<p>Acid Reactions</p> <p>Acids– Harmful or useful?</p>	<p>Describe acids and their proper-ties</p> <p>Explain how to control risk and work safely in the laboratory</p> <p>Recognise that scientists of all nationalities develop explanations</p>	<p>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.</p>	<p>Design an information poster based on a chosen hazard symbol to be displayed in the laboratory</p> <p>http://www.bbc.co.uk/bitesize/ks3/science/chemical_material_behaviour/acids_bases_metals/revision/1/</p>	
Identifying Acids and Alkalis	<p>Describe alkalis and their proper-ties. Classify acids and alkalis using indicators.</p> <p>Describe and record observations systematically</p> <p>Describe patterns in results.</p> <p>Explain how risk is controlled in the investigation.</p>	<p>Students make red cabbage indicator (as demonstrated) and plan how to standardise it.</p> <p>They then test their plan and write a key to show how to test an unlabelled solution.</p> <p>They finally test the unknown solution.</p>	<p>Research different types of indicators. Choose one indicator and explain how it tells scientists whether a substance is an acid, an alkali or neutral.</p> <p>http://www.bbc.co.uk/bitesize/ks3/science/chemical_material_behaviour/acids_bases_metals/revision/1/</p>	

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
How Strong are Acids and Alkalis	<p>Describe the strength of acids and alkalis using the pH scale.</p> <p>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.</p> <p>http://www.bbc.co.uk/bitesize/ks3/science/chemical_material_behaviour/acids_bases_metals/revision/1/</p>	
Uses of Neutralisation	<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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<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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Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
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: 2

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
What is a force	Identify forces as push and pull	Use ideas about force affecting objects to identify different types of forces, e.g gravity between earth and moon	Identify the forces acting on objects in a range of scenarios e.g. car, sky diving etc.	Pupil progress in this topic will be assessed by marking of student work, student responses to question in class, mid-topic app style assessment and end of topic assessment
Balanced and unbalanced forces	Use ideas about forces acting in different directions to work out resultant forces.	Experiments with rockets to highlight the size of opposing forces. Use Newton meters to measure the size of forces. Complete calculations on resultant forces.	Balanced Forces Worksheet.	
Friction	Why friction produces heat and how lubricants reduce friction.	Practical activity to investigate which liquid is the best lubricator. Students identify everyday situations where friction is useful and where friction is a hindrance.	Identify 5 everyday occurrences where friction plays an important part and draw a diagram to show the force of friction on the object.	
swinging	Understand that the time period of a swing of a pendulum is related to its length . Measure the period of a swing	Carry out experiment timing the swing of the pendulum for different lengths of string, and different masses attached. Establish the relationship how mass, and length of pendulum affect the time period of its swing		

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Half Term: 2

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Hooks Law	Understand the effect of a force on the extension of a spring .	Carry out experiment measuring the extension of a spring, with different masses and test for a range of springs.		
Doing Work	Understand that work is done when energy is transferred .	Calculate the work done experimenting using newton meters. e.g. work done opening the door, moving rucksack 3 m etc.	Calculations sheet using equation $W = FD$	
Pressure	Understand that a force acting on an object puts pressure on it	Calculate the pressure using $P = F/A$. Look at application of pressure in scenarios such, car tyres, acupuncture. Calculate which would result on a bigger pressure; being stood on by a woman wearing stiletto's or by an elephants.		
Speed	Be able to calculate the speed of objects.	Carry out experiment with different size parachutes measuring the time taken for them to fall to the ground. Calculate the speed of parachute and work out which is the most effective parachute	Worksheet, calculating speed distance and time.	
Motion graphs	Be able interpret the motions from a distance time graph	Look at a series of motion graphs and work in groups to model them. Relate them to previous lesson on speed distance and time	Worksheet on motion graphs	

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Half Term: 3

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Food Chains	Describe how organisms pass on energy	<p>Draw and label a food chain in a habitat</p> <p>Learn the keywords associated to food chains (predator, prey, consumer and producer)</p> <p>Energy and Trophic Levels—describe what the arrows in a food chain show and how much energy is passed on.</p>	<p>Worksheet to identify which organism is a producer and consumer</p> <p>Equations showing energy efficiency in a food chain</p>	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	<p>Pupils will look at how food chains interlink to make food webs in a habitat.</p> <p>Pupils will describe the impact of predator/prey conditions in a food web (interdependence)</p>	Questions to describe predict what will happen in an ecosystem	
Pyramids	Pyramids of Numbers Pyramids of Biomass	<p>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.</p> <p>Understand the difference between pyramids of numbers and biomass—describe how an organism gains mass.</p> <p>Draw and use example of both pyramids.</p>	<p>Create your own ecosystem and include; food webs, pyramids of numbers and pyramids of biomass.</p> <p>This can be as creative as the pupil wants.</p>	

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Half Term: 3

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
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 survival and how this can lead to extinction.	Research an extinct animal or plant and present this information as a poster.	
Sustainability	Understand the importance of being sustainable and how this can impact our 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	

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Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
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
What is a wave?	<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>
Two types of waves	<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>	
Light waves	<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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Half Term: 4

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

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Half Term: 4

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Using refraction	<p>Describe how the lens in the eye works by refracting light rays.</p> <p>Explain why some people need glasses.</p>	<p>Use light equipment to shine rays of light through convex lenses.</p> <p>Draw ray diagrams to show converging light beams.</p> <p>Discuss the role of the lens in focussing rays of light on the retina.</p> <p>Use ray diagrams to explain how lenses work in glasses of people who are short or long sighted.</p>	<p>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.</p>	
Light scattering and separation.	<p>Describe what happens when light is dispersed.</p> <p>Explain why white light can be dispersed into its constituent colours.</p>	<p>Use glass prisms and ray boxes to show the phenomena of dispersion.</p> <p>Use Newton's wheel to show that colours can merge into white.</p> <p>Discuss how wavelength affects the amount of refraction of each wavelength.</p>	<p>Explain why we see a rainbow (what is the prism).</p>	

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

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

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Half Term: 5

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
What are Microbes?	Distinguish between 3 different microbes. Understand structural differences between Bacteria, virus and fungus	Marketplace activity. Students use their knowledge of microbes to identify different types of microorganism. Card sort on Bacteria, Fungi and Viruses.	List some common symptoms caused by Bacterial Infections.	Pupil progress in this topic will be assessed by marking of student work, students responses to questions in class, mid topic APP style assessments and an end of topic test.
Bacteria, Viruses and Fungi	Identify disease caused by bacteria, fungus and virus each.	Research different Diseases and identify which are caused by bacteria, fungus or virus.	Describe: Chicken Pox Athletes Foot Food Poisoning In terms of Bacteria, Fungi and Viruses. Link the correct disease with the correct Microbe and describe how it causes the disease.	
Natural Defences	Describe the different ways the body defends itself against Microbes.	Draw around a body and identify ways in which Microbes can get into the body. List ways the body protects itself from Microbes. In class activities	Produce a Comic Strip/Storyboard to show how the body protects itself against Microbes.	

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Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Antibiotics	To know how antibiotics are developed To explain how antibiotics work and the organisms they are effective on.	Research Alexander Fleming and the discovery of penicillin. Look at how antibiotics destroy the cell wall of bacteria and not effective on viruses	Describe how the structural differences between bacteria and viruses affects the efficacy of antibiotics	
Vaccinations Lesson 1 + 2	Explain how vaccines work. Describe the work of Koch, Lister, Semmelweiss and Pasteur. Identify the importance of their discoveries.	Carousel activities – research each famous Microbiologist and describe how they had an impact on Health. Cut and Stick the processes of Vaccinations and describe how the body is reacting at each stage.	MMR Vaccine – What’s your opinion? Look at the information on the MMR vaccine, why did so many people stop their children having it?	
Epidemics and Pandemics	To describe a disease that has infected a population. To explain how a disease has spread and how science is controlling to spread of the disease. Disease options: Chickenpox, Smallpox, Tuberculosis, Plague, HIV and MRSA	Marketplace activity to collate information about different types of disease. Research a chosen disease using books, journals and internet	Research how doctors can identify a disease by symptoms	

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Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Useful uses of Microbes	To recognise that not all microbes are dangerous. To describe with examples how we use microbes in food production and in healthcare	Look at the role of bacteria in food production Make yoghurt using bacteria.	Name some household brands that contain "live cultures".	
Useful Microbes 2	To demonstrate the uses microbes in everyday foods	Students participate in the Bush Tucker trials. Students make bread, focussing on the role of the yeast in the process.	How is yeast important for the Bakery and Brewery industries. What is the role of yeast in each	
Keeping clean	To understand the need for a sterile environment when growing cultures. To prepare a sterile medium for cultures to grow.	Students discover how to work in a sterile environment using a Bunsen burner. Make agar and pour into petri dishes without introducing bacteria.	Using a diagram of a Bunsen burner, label the areas where the flame makes the air sterile	
Growing Bacteria	To know how to collect a sample using a swab. To aseptically inoculate agar plates	Learn how to take a swab. Using agar plates from previous lesson. Swab around the room and aseptically transfer the swab to petri dishes.	Using knowledge of microbes. Describe different household cleaners and where in the home you would use them.	
Effect of disinfectants and antibiotics	To know the difference between a disinfectant and an antibiotic. Test the effects by measuring zones of inhibition.	Using agar plates with bacterial lawn. Introduce disinfectant discs and antibiotic discs and observe zones of inhibition. Research the differences between disinfectants and antibiotics	Revise topic for end of topic test.	

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Half Term: 6

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
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.

BLESSED TRINITY LEARNING PROGRAMME

SUBJECT: Science

YEAR: 8B

Half Term: 6

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
What is a magnet	<p>To state what the terms attract, repel, polarity and magnetic field mean</p> <p>To describe how the field lines around a magnet can be revealed</p> <p>To explain how magnets respond to the different poles and explain the reasons why</p>	<p>Using magnets to investigate magnetic force.</p> <p>Practical activity revealing the magnetic field lines and investigating the poles of a magnet.</p>	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	<p>To describe how compasses work</p> <p>To explain how the earth's magnetic field can be used to navigate</p>	Practical activity—plotting the magnetic field around a bar magnet		
Electric motors	<p>To describe the relationship between electricity and magnetism</p> <p>To explain how this relationship can produce movement</p>	<p>Demonstration of jumping wire</p> <p>Practical activity—motor kits</p> <p>Pupils investigate the relationship between electricity and magnetism to produce rotational movement</p>	Homework sheet—uses of motors in industry and home.	
Electromagnets	<p>To describe the relationship between electricity and magnetism</p> <p>To practically demonstrate how electromagnets work</p> <p>To suggest uses for electromagnets</p>	<p>Practical activity—investigating the strength of an electromagnet</p> <p>How changing the voltage affects the strength of an electromagnet</p> <p>How changing the structure of the electromagnet affects the strength of an electromagnet</p>	Write a conclusion and evaluation for the class practical	