

**BLESSED TRINITY LEARNING PROGRAMME**

**SUBJECT: Science**

**YEAR: 7Y**

**Half Term: 1**

<b>Title</b>	<b>Learning Objectives</b>	<b>Classroom Activity</b>	<b>Recommended Homework</b>	<b>Marking &amp; Assessment</b>
<p><b>Cells: Building blocks of life</b></p> <p><b>Life Processes</b></p>	<p>Identify the different parts of animal and plant cells.</p> <p>Know the 7 life processes.</p>	<p>Look at Animal Cells. Structure and Function of Animal cells, including cell wall, cell membrane, cytoplasm, nucleus, vacuole and mitochondria</p> <p>Observe amoebae.</p>	<p>Making model plant and animal cells. – Levelled learning activity.</p> <p>Make and Acronym for MRS GREN.</p>	<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.</p>
<p><b>Specialised cells</b></p>	<p>Recognise that there are different types of cells for different functions. Know how nerve cells carry signals around the body.</p>	<p>Bio viewers. ‘what am I?’ card sort. Model reflex arc- ‘squeeze’ around a circle. Label nerve cell diagrams.</p> <p>Group work – Circus activity to collect information on different specialised cells in the body.</p>	<p>Homework questions on specialised Cells – Levelled Questions.</p>	
<p><b>Using microscopes</b></p>	<p>Develop competence in practical techniques. Describe how scientific ideas were changed by microscopes.</p>	<p>Learn how to use a microscope and the sections.</p> <p>Prepare and observe animal cells using microscopes.</p>	<p>Draw a Microscope and Label the key parts. Explain what each part of the Microscope is used for.</p>	
<p><b>Using Microscopes 2</b></p>	<p>Develop competence in practical techniques. Describe how scientific ideas were changed by microscopes.</p>	<p>Look at specialised cells under the microscope.</p>	<p>Write a conclusion for Practical work.</p>	
<p><b>Tissues and organs</b></p>	<p>Recognise organs are made up of groups of different tissues.</p>	<p>Dissections-chicken wings,.</p>	<p>Research the Human Body, pick one organ and explain which tissues and cells it is made from.</p>	

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<b>Body Systems</b>	Identify 7 Body systems.  Recognise key organs involved in different body systems.	Draw poster to demonstrate the different body systems.	Explain how different body systems react within the body.	
<b>Respiratory System</b>	Label the structure of the Lungs  Describe how the structure of the lungs affects its function.	Lung Dissection Structure of the Lung Model Demo—Lungs in a Bell Jar	Worksheet Label the structure and functions of the Lungs.	
<b>Breathing and Gas Exchange</b>	Define the term Breathing and explain the mechanics of breathing to move air in and out of the lungs  Describe the structure and functions of gas exchange system in humans.	Measuring Lung Capacity Peak Flow meters Measuring breathing rates.	Produce a leaflet to explain how Gas is exchanged in the lungs.  Writing a story about a molecule of oxygen moving from the air to the blood.	
<b>Circulatory System</b>	Label the structure of the Heart  Describe the structure of the Heart and its role within the circulatory system.	Heart Dissection	Produce an A3 poster to demonstrate an understanding of the Heart.	
<b>Role of the Veins, Arteries and Capillaries.</b>	How blood delivers supplies around the body.	Locate different parts of heart to show where blood goes. Thinner muscle pumps blood to lungs, Thicker muscle pumps blood around the body. Introduce double circulatory system.	Literacy Activity – Define key words from the topic.	

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<b>Digestive System</b>	Describe the organs of the digestive system and their role in digestion.	<p>Simulate what happens in each part of the gut with the aid of student volunteers, demos and simulations.</p> <p>Activity to choose the right model for each part of the gut, for example slide /gullet, mixer/stomach.</p>	Create a leaflet for a pupils your age who has just been diagnosed with Crohns Disease.	
<b>Enzymes in Digestion</b>	Explain how the digestive system breaks down large molecules into small ones, which the body can use for energy and growth.	<p>Food Testing—Enzymes in breakdown of food substances</p> <p>Look at Carbohydrase, Lipase and Proteases.</p>	<p>Literacy activity – Write a diary entry of an amino acid in a Big Mac.</p> <p>Describe it’s journey through the digestive system, and then it’s ultimate use by the body.</p>	
<b>Glucose from Foods</b>	<p>Describe the importance of Glucose from food for the body.</p> <p>Describe how Glucoses diffuses into the Blood after digestion..</p>	<p>Demo Diffusion</p> <p>Research the structure of the Gut in terms of villi and micro-villi.</p>	Research the importance of Glucose levels for different careers individuals have e.g. Footballers, Officer Worker, Driver, Builder etc.	
<b>Respiration</b>	Describe the process of respiration.	Complete literacy task (Extended writing task) on explaining the difference between Breathing and Respiration.	Define Respiration and Breathing.	

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<b>Nervous System</b>	Describe the structure of the Nervous system.	Label the PNS and CNS (Peripheral and Central).  Look at nerve cells under a microscope.  Look at how the body responds to stimuli.	Extended writing piece— Describe how the body using the Nervous system to respond to a situation in its environment.	
<b>Skeletal System</b>	Label and name the bones of the Skeletal system.  Explain the structure and function of the Human skeleton to include support and protection.	Skeleton Learning the bones of the Skeleton.	Label a skeleton with the key bones.	
<b>Skeleton and Muscles</b>	Identify the interaction between skeletons and muscles.  The function of muscles and examples of antagonistic muscles.	Models of the muscles and joints.		
<b>Reproductive System</b>	Explain what fertilisation is, female sex organs and egg and sperm cells. Male sex organs.	Label sperm and egg cells, watch animation of journey of a sperm and label female sex organs.  Labelling the male reproductive organs, discussions, pictures of sexual intercourse.	The female and male reproductive organs – label and describe the function of the organs.	
<b>Puberty</b>	Explain the process of puberty and key development stages.	Give them a letter to read by 'Chris' then ask them to decide if it is a boy or a girl and why? Give them cards and ask them to stick them on the board in the correct column. Then discuss answers.	Write a letter in response to a boy/girl experiencing the first stages of puberty.  Explain to them what they should expect to happen.	

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<b>Menstrual Cycle</b>	Describe the Menstrual Cycle . Explain how females menstrual cycle begins during puberty.	Flow chart on the board which shows the cycle of a period. Discuss why girls have periods. Write a reply to an agony aunt letter explaining periods and puberty.	<p>Answer the following questions; List all the changes sex hormones cause in boys and girls.</p> <p>In Kyle’s Year 9 class there is a wide range of different heights and the girls are mostly taller than the boys. Why</p> <p>What are hormones?</p> <p>Reproduction – Produce a poster, leaflet or booklet to demonstrate how different Animals reproduce. Include at least 3 Animals.</p>	
<b>Baby Development</b>	Development in the womb and what could harm the foetus.	Display models of foetuses at different stages, students then complete a diagram and a literacy task.	<p>Activity 4 Extension sheet – label diagram of the womb and list how a mother would keep her foetus healthy.</p> <p>Revise for End of Topic Tests.</p>	

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**Half Term: 2**

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
<b>Particles Solids, Liquids and Gases</b>	i) To use the particle model to explain the physical characteristics of solids, liquids and gases.  ii) To use a model or analogy to explain a phenomenon.  iii) To recognise that scientific evidence can be used to support or disprove scientific theories.	Group work, practical work (circus of samples), interactive presentation.	<a href="http://lgfl.skool.co.uk/keystage3.aspx?id=64">http://lgfl.skool.co.uk/keystage3.aspx?id=64</a>  Make a poster to show how particles are arranged in solids, liquids and gases.	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.
<b>Diffusion</b>	i) Use the particle model to explain how particles diffuse.  ii) To use a model or analogy to explain a phenomenon.  iii) To recognise that scientific evidence can be used to support or disprove scientific theories.	Demonstration of diffusion, pupil modelling.	<a href="http://www.bbc.co.uk/schools/gcsebitesize/science/add_aqa_pre_2011/cells/cells3.shtml">http://www.bbc.co.uk/schools/gcsebitesize/science/add_aqa_pre_2011/cells/cells3.shtml</a>  Describe 2 everyday examples of diffusion.	
<b>Changing shape and compression</b>	i) Describe shape and compression of the different states of matter using the particle model.  ii) Describe and record observations systematically.  iii) Describe patterns in results.  iv) Use key scientific vocabulary.	Practical investigation - fill syringes with different materials and compress them to see how solids, liquids and gases are affected when they are compressed, writing a conclusion.	<a href="http://www.docbrown.info/ks3chemistry/7Gnotes.htm">http://www.docbrown.info/ks3chemistry/7Gnotes.htm</a>  List 3 ways in which particles change shape in solids, liquids and gases.	
<b>Changing State</b>	i) Recognise the link between heating and cooling and changes of state.  ii) Describe and record observations systematically.	Teacher demonstration, graph drawing and analysing information activity.	What happens when a Candle is alight? Assessed levelled learning activity.	

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**Half Term: 2**

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
<b>Dissolving</b>	i) Describe dissolving using the particle model.  ii) Use a model or analogy to explain a phenomenon.  iii) Discuss the strengths and weaknesses of different models.  iv) Describe and record observations systematically.	Introduction to key words, conservation of mass demonstration, animation and pupils will draw a storyboard.	Revision <a href="http://www.bbc.bitesize.co.uk">www.bbc.bitesize.co.uk</a>	
<b>How temperature affects solubility</b>	i) Describe how temperature affects a substance's solubility.  ii) Describe a saturated solution using the particle model.  iii) Describe an appropriate approach to answer a scientific question making relevant observations.  iv) Use key scientific vocabulary.	Pupils plan, carry out and write up their practical of how temperature affects solubility. This may take one lesson, or longer if time can be taken over interpreting and evaluating results.	How is this information helpful to Chefs? Pupils use this information to explain how this could have an impact on Cooking in restaurants.	
<b>Air pressure</b>	i) Describe air pressure and density using the particle model.  ii) Describe and record observations systematically.  iii) Describe patterns in results.	Teacher demonstrations to include; Egg in a bottle, collapsing can experiment, pupils create storyboard to explain what is happening to the particles in each demonstration.	Revision <a href="http://www.bbc.bitesize.co.uk">www.bbc.bitesize.co.uk</a>	

<b>Title</b>	<b>Learning Objectives</b>	<b>Classroom Activity</b>	<b>Recommended Homework</b>	<b>Marking &amp; Assessment</b>
<b>Solids, Liquids and Gases</b>	Use a particle model to describe the difference between solids, liquids and gases.	Define the properties of solids liquids and gases.  Draw or make a particle model to show the structural differences between solids, liquids and gases	<a href="http://lgfl.skool.co.uk/keystage3.aspx?id=64">http://lgfl.skool.co.uk/keystage3.aspx?id=64</a>  Make a poster to show how particles are arranged in solids, liquids and gases	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.
<b>Changing state</b>	Describe the difference between physical changes and chemical changes  Use a particle model to describe what happens when substances change shape (ie from liquid to gas).	Melt ice and explain why this is not a chemical reaction.  Draw diagrams or make a model to show the change in arrangement of particles as substances change state.	Draw diagrams to show what happens to wax when the candle is lit.	
<b>Density</b>	Why do some things weigh more than others?  Use particle models to explain high and low density.	Use displacement of water to measure the volume of objects. Record the mass of objects using top pan balance.  Calculate the density of objects using the measurements taken.  Use particle diagrams to represent high density and low density objects.	Explain why aeroplanes are made from aluminium.	
<b>Compressing substances</b>	Use a particle model to explain why liquids can not be compressed but gases can.	Use syringes to measure volume changes when air, water and sand are compressed.  Explain why it is dangerous to throw an aerosol can onto a fire.	Use a particle diagram to show the arrangement of oxygen particles in a scuba diving tank.	
<b>Expansion and Contraction</b>	Use a particle diagram to explain what happens when substances expand and contract.  Describe the anomaly of the ice-water transition.	Demo an expansion ring to show the phenomena of expansion.  Explain why heating the lid of a tightly fitting jar can be loosened by placing in hot water.  Set up an experiment to show that water expands as it freezes.	Explain why rail ways are built with a deliberate gap between the metal rails.	



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**Half Term: 2**

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<b>Diffusion</b>	Use a particle model to explain how substances travel by diffusion.	<p>Use an aerosol to show diffusion of particles in a gas.</p> <p>Drop a piece of sodium hydroxide onto an agar plate seeded with phenolphthalein indicator to show diffusion in thick liquids.</p> <p>Place potassium permanganate crystals into water and observe diffusion</p>	Use a particle model to explain why you can smell someone cooking in another room in your house.	
<b>Dissolving</b>	Use a particle model to explain why substances dissolve.	<p>Measure changes in mass and volume when sugar is dissolved in water to establish that the mass increases but the volume remains constant.</p> <p>Represent dissolving using a diagram or model to show the arrangement of particles.</p>		
<b>Pressure in liquids</b>	Describe how pressure in liquids is used in hydraulic processes.	Use syringes to show that pressure in liquids can be transferred as the liquid can not be compressed. Investigate the area of the syringe and the force required to push the syringe.	Explain how a small force can be used to lift a car in a garage.	
<b>Brownian Motion</b>	<p>Use a particle diagram to show Brownian Motion.</p> <p>Explain the significance of Brownian motion.</p>	<p>Demo chalk dust falling over a projector beam to show Brownian motion.</p> <p>Class practical looking at the movement of pollen grains in a beaker of water.</p>		

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**Half Term: 3**

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
<b>Structure of a Plant Plant Cells</b>	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.
<b>Specialised Plant Cells and Functions</b>	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.		
<b>Tissues and Organ Systems</b>	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	
<b>Structure of a Leaf</b>	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	
<b>Microscopes</b>	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	

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**Half Term: 3**

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
<b>Photosynthesis</b>	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		
<b>Limiting Factors (I)</b>	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	
<b>Limiting Factors (II)</b>	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	
<b>Nutrients and Fertilisers</b>	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	
<b>End of Topic Test</b>		Revision and test		

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Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
<b>The periodic table : Elements</b>	describe what elements are and how we represent them by symbols recognise the names and symbols of key elements	Students describe the properties of the element and note its symbol and name.	Write the name and chemical symbol of 15 elements.	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.
<b>More about elements</b>	recognise the properties of metals and non-metals	Students explore the key properties of metals and non-metals through a circus of activities.	<b>Activity Sheet</b> Elements in your body – make a bar chart showing amounts of elements in the body and work out amounts in your own body from percentages given.  <b>Extension Sheet</b> Elements in your body – work out percentages of elements in a body and make a pie chart of them, then calculate amounts in your own body.	
<b>Compounds</b>	recognize the difference between elements and compounds	Students model particle diagrams of elements and compounds. Students test the properties of iron and sulfur before reacting them and test the properties of the iron sulfide they produce after the reaction.	<b>Core Activity sheet</b> Match elements to make compounds – match the activity in which elements make up given ‘-ide’ compounds.  <b>Extension sheet</b> – explain the difference in properties between water and sodium chloride and their constituent elements.  The iron and sulphur reaction. Assessed levelled activity.	

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Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
<b>Mixtures</b>	<p>recognise the differences between mixtures and compounds</p> <p>recognise that many everyday substances are mixtures</p>	Students plan and carry out an investigation to separate sand, salt and water.	<p>Identify a number of mixtures in the home.</p> <p>Elements and Compounds Homework sheet.</p>	
<b>Organising Elements</b>	Describe patterns in a range of chemical reactions and characteristics of elements.	Students sort their elements into groups that have similar properties, and give a brief presentation about one of their groups of elements.	<p><a href="http://www.bbc.co.uk/bitesize/ks3/science/chemical_material_behavior/atoms_elements/revision/1/">http://www.bbc.co.uk/bitesize/ks3/science/chemical_material_behavior/atoms_elements/revision/1/</a></p> <p>Complete all sections and test bite.</p>	
<b>The Noble Gases</b>	Apply and use the particle model to describe a range of physical observations and separation techniques.	Students use ideas about particles to provide answers to three or four FAQs for the website of a company that supplies helium gas for party balloon suppliers and airships.	<p><a href="http://www.bbc.co.uk/schools/gcsebitesize/science/aqa_pre_2011/oils/changesrev6.shtml">http://www.bbc.co.uk/schools/gcsebitesize/science/aqa_pre_2011/oils/changesrev6.shtml</a></p> <p>Use to review properties.</p>	
<b>The halogens</b>	<p>To be able to identify the group 7 elements as halogens.</p> <p>To identify some of the properties of halogens and their pattern of reactivity</p> <p>To be able to describe compounds of the halogens</p>	<p>Students look at the properties of halogens and their pattern of reactivity as they go down the periodic table</p> <p>Practical activity: to separate chlorine from rock salt</p>	Students can research on the halogens and some properties and how these are useful	
<b>The periodic table - history</b>	To be able to describe how evidence is used to organise elements	Students work as a group to create a 3 minute tv report on the creation of the periodic table	Find out how many times the periodic table has been changed	

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**Half Term: 4**

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
<b>What is energy—Heat energy</b>	To recognise that there are different forms of energy	Pupil will investigate the different forms of energy and recognise how energy can be measured using temperature scale	<a href="http://funphysics.jpl.nasa.gov/adventures/temperature-game.html">http://funphysics.jpl.nasa.gov/adventures/temperature-game.html</a> Complete the temperature quiz.	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.
<b>How do things get hotter or colder?</b>	<p>To recognise heat as energy.</p> <p>To use a model which associates energy flow with temperature change.</p> <p>To make predictions and compare these with observations.</p> <p>That heat flows as a result of temperature differences.</p>	<p>Remind pupils of Year 7 work on the heating effect of burning fuels, where energy was released to cause temperature rise. Discuss the energy flow associated with the cooling of boiling water and the warming of ice in the classroom.</p> <p>Elicit pupils' ideas about how heat and temperature are linked and establish that they are not the same thing.</p> <p>Ask pupils to predict and observe how the temperatures change when they, eg mix volumes of hot and cold water, boil different quantities of water with the same heater.</p> <p>Through questioning, help pupils explain why their predictions matched or did not match the observations they made?</p>	Produce a poster to demonstrate what Temperature is, how it is measured in Science? and compare to Heat energy.	

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**Half Term: 4**

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
<b>Conduction</b>	<p>That heat energy will flow more easily through good thermal conductors and less well through poor conductors.</p> <p>That most metals are good thermal conductors.</p> <p>That poor thermal conductors are called insulators.</p>	<p>Conduction through Metals Practical – Vaseline and Drawing Pins. Ask pupils to work in pairs to suggest why certain materials are used in cooking utensils, e.g. a wooden spoon (or saucepan handle) and a metal saucepan base.</p> <p>Demonstrate the difference in rate of conduction of heat, e.g. using temperature probes to determine temperature of the tip of a rod and monitor the rate of temperature rise; temperature probes along length of rod. Use the demonstration to classify materials as good or poor thermal conductors.</p>	<p>Write a Conclusion and Evaluation for the practical investigation carried out on Conduction.</p> <p>Heat in the Kitchen Levelled Learning Task.</p>	
<b>Convection</b>	<p>That hot fluids rise due to expansion and cooler ones sink to take their place.</p> <p>That expansion of fluids causes a change in density.</p> <p>To apply the particle model to explain convection in fluids.</p>	<p>Demo – Convection tubing (Potassium Permanganate)</p> <p>Class Practical – Beaker, Potassium Permanganate Bunsen.</p> <p>Theory – Mining (how air circulates in a mine).</p>	<p>Draw scientific diagrams to demonstrate Convection currents to create Sea Breezes.</p> <p>Design a Mug for an Office worker considering Heat energy transfers.</p>	
<b>Radiation</b>	<ul style="list-style-type: none"> <li>That radiation energy (infrared) can travel through a vacuum.</li> </ul>	<p>Class Practical: Black and Silver boiling tubes – measuring temperature loss with different covered materials.</p>	<p>Questions on Radiation. Make a display to describe and explain the three ways heat energy is transferred Conduction, Convection and Radiation.</p>	
<b>Conserving energy</b>	<ul style="list-style-type: none"> <li>That insulation can reduce unwanted energy transfer.</li> </ul>	<p>Use models to explain how these methods work, e.g. <i>double glazing, draught excluders.</i></p> <p>Worksheet on Vacuum Flask.</p>		

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**Half Term: 4**

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
<b>Other forms of energy</b>	<p>To state four other forms of energy</p> <p>To describe how energy can be stored and used .</p>	<p>Practical investigation—The energy stored in food. Pupils will investigate how the amount of energy in food varies (burning crisp and food labels)</p> <p>To note the energy changes that takes place as the body metabolises food.</p>	<p>Write a Conclusion and Evaluation for the practical investigation carried out on chemical energy</p>	
<b>Changing energy</b>	<p>That energy can be change from one form to another and to describe how this happens</p>	<p>Pupils investigate how Gravitational Potential energy is changed to Kinetic energy.</p> <p>Practical activity - parachutes</p>		
<b>Conservation of energy</b>	<p>That energy cannot be create or destroyed</p>	<p>Energy transfer diagram s and Sankey diagrams to show where the energy of a light bulb goes.</p>	<p>Levelled activity task</p>	
<b>Conservation of energy 2</b>	<p>To describe the energy changes that take place during a roller coaster ride</p>	<p>Practical activity - energy to move a ball through a loop</p>	<p>Revision of main topics for end of topic assessment.</p>	



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**Half Term: 5**

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
<b>Introduction to Electricity</b>	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.
<b>Electric Current</b>	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	
<b>Voltage in a circuit</b>	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	
<b>Measuring voltage and current in a series circuit</b>	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.	

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**Half Term: 5**

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

**BLESSED TRINITY LEARNING PROGRAMME**

**SUBJECT: Science**

**YEAR: 7Y**

**Half Term: 5**

<b>Title</b>	<b>Learning Objectives</b>	<b>Classroom Activity</b>	<b>Recommended Homework</b>	<b>Marking &amp; Assessment</b>
<b>Recap Body Systems</b>	The role of the heart and lungs in keeping fit.	Labelling human body systems.	Write a diet plan for a week—What have you eaten each day?	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.
<b>Diet</b>	Explain how using scientific ideas about nutrition can help in deciding on a healthy and beneficial diet.	Do you know what you're eating?  Explain that companies are jumping on the healthy foods bandwagon and trying to make their foods look attractive to health-conscious consumers.  Each group takes a product that sells on the grounds of boosting health and investigates its claims.  30 second presentation about this.	Design a diet for an Individual wishing to lose weight.	
<b>Exercise</b>	Understand the importance of exercise for a healthy body.	Practical activity—Measure heart rate before and after different exercises.	Write an exercise plan for different athletes.  Produce a leaflet to discuss the importance of Diet and Exercise on the Body.	
<b>Drugs</b>	Understand the effect of drugs on the body.  Explain the effect of cannabis, ecstasy, and cocaine on the brain.	Documentary of Drug use and abuse.	Produce a leaflet to describe the effect of drugs on the body.	

**BLESSED TRINITY LEARNING PROGRAMME**

**SUBJECT: Science**

**YEAR: 7Y**

**Half Term: 5**

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
<b>Alcohol</b>	Describe the effect of alcohol on the body.	Calculating units of alcohol.  Reading articles of the effect alcohol has on the body and socially.  Define binge drinking.	Write a letter to the Prime Minister to highlight the issues with binge drinking.	
<b>Smoking</b>	Describe the effect of smoking on the body and the lungs.  Explain the link between smoking and lung cancer.	Analyse data  Smoking Machine—limewater cloudy, indicator paper acidic.  Smoking Child video/poster.	Design a poster/billboard for a Campaign against smoking.	

**BLESSED TRINITY LEARNING PROGRAMME**

**SUBJECT: Science**

**YEAR: 7Y**

**Half Term: 6**

<b>Title</b>	<b>Learning Objectives</b>	<b>Classroom Activity</b>	<b>Recommended Homework</b>	<b>Marking &amp; Assessment</b>
<b>Space Early days</b>	Why we experience day and night on Earth.  Why we experience gravity on Earth.	Use models of solar system to show relative movements of Sun and Earth.  Observe a plum bomb to draw conclusions about gravity.	Produce a poster to demonstrate how the Earth travels around the Sun.	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.
<b>Four Seasons</b>	Why we experience four seasons on Earth.	Use a model of solar system to show relative movements of Sun and Earth. Highlight that it is the Earth's tilt on its axis that allows for the different seasons	Complete diagrams to show why some countries experience 24 hour darkness.	
<b>Solar system</b>	Know the components of our solar system.  Describe planets of the solar system.	Top trumps of each planet to familiarise students with the planets.  Make a model of the solar system.  Draw scale diagram of the solar system.	Look at the data for each planet, write a report choosing a planet which we could potentially live on, justifying your decision.	
<b>The moon and weight</b>	Why we get different phases of the moon.  What is weight and how is it different from mass	Use jaffa cakes to model the different phases of the moon. Use models to show the relative positions of the Sun, Moon and Earth.  Show a clip of astronauts walking on the moon, discuss how it is different from walking on the earth.  Explain how weight is affected by gravity.	Moon Diary. Draw the phases of the moon you see over a week. Describe the phases of the Moon you can identify.	

**BLESSED TRINITY LEARNING PROGRAMME**

**SUBJECT: Science**

**YEAR: 7Y**

**Half Term: 6**

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
<b>Satellites</b>	<p>How satellites stay in orbit.</p> <p>Why we send satellites into space.</p> <p>How the moon was formed</p>	<p>Research examples of satellites and match these to their uses.</p> <p>Use bungs on string to model sat-ellite motion around the Earth.</p> <p>Discuss the advantages and disadvantages of satellites.</p>	<p>Research what kind of satellites are currently in earths orbit. Who put them there and what do they do.</p>	
<b>The Universe</b>	<p>Know the relative sizes of Universe, galaxies, stars, planets and our solar system.</p> <p>Understand the huge distances in space.</p>	<p>Discuss the size of a light-year.</p> <p>Consider the chances of meeting extra terrestrial life given the distances between stars.</p> <p>Study examples of how scientists observe the universe.</p>	<p>The Earth and Beyond. Read the statements and complete the Worksheet to demonstrate an understanding of the Universe.</p>	
<b>Mission to Mars</b>	<p>Why life on Mars might be difficult to maintain.</p> <p>Describe evidence for life on Mars.</p>	<p>Study examples of evidence suggesting that water may have been present on Mars.</p> <p>Students produce presentations to the class on the difficulties of a Martian colony.</p>	<p>Solar System Levelled Homework Questions.</p>	

**BLESSED TRINITY LEARNING PROGRAMME**

**SUBJECT: Science**

**YEAR: 7Y**

**Half Term: 6**

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
<b>Distances in Space</b>	Light years and astronomical distances.	Working with scales. Scales in the solar system.	Look at the Layout of the Solar system. Produce a poster to show the organisation of key planets and astronomical objects.	
<b>Looking beyond the solar system</b>	Using telescopes to view other features in space.	Show some pictures from different telescopes and explain why we need different types of telescopes to observe space  Practical work—Making a telescope.	Research the instruments humans have used to look into and find out about space and how this has changed over time	
<b>Life in space</b>	How life is sustained on the ISS.  Is it possible to live on the moon?  Consider if it is possible to live on Mars?	Video of the ISS and the life of an astronaut.  Get pupils to think about what we would need to do live on the moon or Mars/  In groups plan how a colony could be established on the moon or Mars	Imagine you are a Astronaut. Write a letter to describe how you can live in space.	