



The Human Body - Advent 1					
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
1. The Heart: Circulation of the Blood	2. Blood Vessels and Transport	3. Components of Human Blood	4. Blood Pressure and Heart Rate	5. Heart Rate- an Investigation	6. Knowledge Organiser Assessments
Learning Objectives					
<p>To understand that the heart pumps blood around the body.</p> <p><u>Knowledge Goals</u> Our heart pumps blood around our body. The left atrium and left ventricle carry oxygenated blood which is pumped around the body. The right atrium and right ventricle carry deoxygenated blood which is pumped out to the lungs.</p>	<p>To understand that blood vessels transport blood around the body</p> <p><u>Knowledge Goals</u> All the cells in our body need oxygen. It is delivered to them by the blood. Arteries carry blood that has been oxygenated in the lungs away from the heart to the cells. Veins carry deoxygenated blood from the cells back to the heart to be pumped to the lungs for more oxygen.</p>	<p>To understand how the heart rate can speed up or slow down, depending on what the body is doing</p> <p><u>Knowledge Goals</u> Your heart rate indicates how often your heart squeezes to pump blood through your body. When you exercise your cells use more oxygen than usual. That is why exercise makes you breathe harder and makes your heart pump faster. Drugs and poor health can affect how well our heart works.</p>	<p>There are many things that can be varied and changed in an experiment, we call the things we can change variables</p> <p><u>Knowledge Goals</u> Independent variables can be controlled or manipulated. Dependent variables will affect the independent variable. Control variables must be held constant.</p>	<p>To know a healthy diet keeps our bodies healthy.</p> <p><u>Knowledge Goals</u> Independent variables can be controlled or manipulated. Dependent variables will affect the independent variable. Control variables must be held constant.</p>	<p>Post Knowledge Assessments</p>



Classification of Plants and Animals - Advent 2					
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
1. Classifying organisms	2. Cells: Plant and Animal cells	3. Taxonomy	4. Vertebrates	5. Invertebrates	6. Knowledge Organiser Assessments
Learning Objectives					
<p>To know there are five kingdoms of organisms.</p> <p>Knowledge Goals Living things or organisms are classified into five main kingdoms The members of each kingdom share features that are unique to that group. The five kingdoms are: plants, animals, fungus, protist and monera.</p>	<p>To know that plant an animal cells are different.</p> <p>Knowledge Goals Cells are the tiny building blocks that make up all living things. There are two main types of cells: animal and plant cells Animal and plant cells are structured differently.</p>	<p>To know that taxonomy is used to show how organisms are related to each other</p> <p>Knowledge Goals Taxonomy is a way of grouping organisms All organisms are placed in one group and then are divided into smaller and smaller groups Organisms are divided into kingdoms, phylum, class, order, family, genus, species All organisms have a</p>	<p>To know that vertebrates are classified into five groups: fish, amphibians, reptiles, birds and mammals.</p> <p>Knowledge Goals There are five groups of vertebrates Fish are cold-blooded, have gills, live in water and lay eggs Amphibians are coldblooded, have gills and lungs, live in water and on land and lay eggs Reptiles are cold-blooded, have scales and lay eggs Birds</p>	<p>To understand that scientists divide invertebrates into groups including insects, arachnids and molluscs.</p> <p>Knowledge Goals Invertebrates have no backbone. Some groups of invertebrates include molluscs, insects and arachnids. Cnidarian include coral, jellyfish and anemones.</p>	<p>Post Knowledge Assessments</p>



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		scientific name made of the genus and species	are warm-blooded, have feathers, wings and lay eggs Mammals are warmblooded, have hair and feed their young milk		
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Electricity - Lent 1					
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
1. Simple Series Circuits	2. Parallel Circuits	3. Switches	4. Planning an Investigation	5. Investigation	6. Knowledge Organiser Assessments
Learning Objectives					
<p>Electricity flows in a circuit.</p> <p>Knowledge Goals Electricity can flow from one place to another, this is called electrical current. We can control electricity by causing it to flow in a circuit. Circuits can contain components that turn electrical energy into different energy forms, for example a light bulb.</p>	<p>The brightness of a lamp or the volume of a buzzer depends on the number and voltage of cells used in a circuit.</p> <p>Knowledge Goals Voltage is the pressure from a battery that pushes electricity around a circuit. Buzzers and lamps need electricity to make them work. The voltage of a battery, or the number of batteries can change the brightness/volume of lamps and buzzers.</p>	<p>Switches control the flow of electricity in a circuit.</p> <p>Knowledge Goals A switch creates a gap in a circuit Making a gap in a circuit prevents electricity from flowing Electricity costs money, so switching off a circuit saves money</p>	<p>To know that circuits can be used to make electrical toys.</p> <p>Knowledge Goals When we design something, we think about what we will need and how it will work. When we are making something, we may face problems that need to be solved. To know which components to use for a particular purpose, and how to connect them.</p>	<p>Independently design and make a circuit for a purpose</p> <p>Knowledge Goals Electricity can flow from one place to another, this is called electrical current. We can control electricity by causing it to flow in a circuit. Making a gap in a circuit prevents electricity from flowing</p>	<p>Post Knowledge Assessments</p>



Light - Lent 2					
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
1. How Light Travels	2. How We See	3. Shadows and Their Shapes	4. The Colour of Light	5. Making a Periscope	6. Knowledge Organiser Assessments
Learning Objectives					
<p>To know that light is a source of illumination that allows us to see.</p> <p><u>Knowledge Goals</u> Light illuminates allowing us to see. Some light sources are natural and some are artificial. Light travels in straight lines.</p>	<p>To know that light enters our eyes, allowing us to see..</p> <p><u>Knowledge Goals</u> The cornea is a transparent covering on the outside of your eye. The iris is the coloured part of the eye which helps the pupil to 'open and close'. Inside the retina, the light rays become electrical signals which travel along the optic nerve to the brain</p>	<p>To test the hypothesis that shadows are always the same shape as the object that made them.</p> <p><u>Knowledge Goals</u> Light travels in straight lines. Shadows are always the same shape as the object that made them. The size of shadows can change, but the outline shape is always the same as the original object.</p>	<p>To understand what light is made of and how a prism works.</p> <p><u>Knowledge Goals</u> Scientists call the light that comes from the sun 'white light' The light from the sun is made up of all the colours of the rainbow When light travels through a prism, the glass slows it down, and changes its course. Different colours are slowed down different amounts.</p>	<p>A periscope uses mirrors to reflect an image of something out of sight</p> <p><u>Knowledge Goals</u> A periscope helps you to see something that is out of sight A periscope reflects an image using light and mirrors Submarines use periscopes to see above the surface of the water whilst still submerged</p>	<p>Post Knowledge Assessments</p>



Reproduction - Pentecost 1					
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
1. Asexual reproduction	2. Sexual reproduction in non-flowering plants	3. Sexual reproduction in flowering plants	4. Reproduction in animals	5. Growth stages	6. Knowledge Organiser Assessments
Learning Objectives					
<p>To know that asexual reproduction does not require male and female cells.</p> <p><u>Knowledge Goals</u> That Asexual reproduction does not require male and female and doesn't alter genetic information. Asexual reproduction is when an organism simply copies itself. Some plants and some simple animals reproduce asexually.</p>	<p>To understand sexual reproduction in flowering plants.</p> <p><u>Knowledge Goals</u> Most flowering plants reproduce by combining a male and female gamete (pollen and ovule) to make a fertilised egg that grows into an embryo. The embryo or baby plant is protected inside a seed.</p>	<p>To know that many plants clothe their seeds with fruit.</p> <p><u>Knowledge Goals</u> Fruits are seed coverings. Fruit protect and keep seeds moist. Fruits help with seed dispersal.</p>	<p>To understand sexual reproduction in animals. Animals can have</p> <p><u>Knowledge Goals</u> male cells; sperm produced in testes, or female cells; eggs produced by ovaries. When an egg is fertilised by sperm it is called a zygote. The zygote develops into an embryo and then a</p>	<p>To know that different animals have different growth stages.</p> <p><u>Knowledge Goals</u> Gestation is the period of time that a living thing develops before it is born. Different animals have different gestation periods. Different species of animal have different ways of looking after their</p>	<p>Post Knowledge Assessments</p>



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	Most flowering plants clothe their seeds with fruit.		foetus. When a foetus can live outside the mother, it is born.	young.	
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Evolution - Pentecost 2					
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
1. Fossils and Mary Anning	2. Inheritance	3. Adaptation	4. Charles Darwin	5. Alfred Wallace	6. Knowledge Organiser Assessments
Learning Objectives					
<p>To know fossils are physical evidence of life from long ago</p> <p>Knowledge Goals Fossils are the remains of organisms A small percentage of life on earth is preserved as a fossil, most organisms decompose Fossils provide evidence for evolution</p>	<p>To know offspring are usually similar to, but not identical to their parents</p> <p>Knowledge Goals Inheritance is passing on characteristics from a parent to their offspring There are various combinations of characteristics, resulting in variation Evolution is the change in inherited traits</p>	<p>To know living things can adapt to suit their environment</p> <p>Knowledge Goals Animals and plants that adapt well to an environment have more chance of surviving Adaptation plays an important part in evolution as species change over time</p>	<p>To know who Charles Darwin was and what natural selection is</p> <p>Knowledge Goals Charles Darwin spent years observing, comparing and analysing many specimens of plants and animals Animals and plants that adapt well to an environment have more chance of surviving, this is called natural selection</p>	<p>Alfred Wallace explored the Amazon, collecting species of beetles, butterflies and birds</p> <p>Knowledge Goals He explored Malay Archipelago and noticed how certain areas had certain animals He created an imaginary line, known as the Wallace Line</p>	<p>Post Knowledge Assessments</p>