






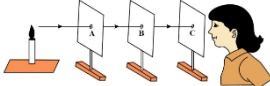




Inventions Spring term	Engages with debate	Vocabulary	Objectives	Objectives	Scientific Enquiry	Scientific Enquiry
<b>KS1</b> <b>EVERYDAY</b> <b>MATERIALS</b>  +  <b>SEASONAL</b> <b>CHANGES</b>	 <b>Do risk takers become inventors?</b>	Material Properties Suitability Smooth, Bendy Waterproof Absorbent Transparent, Opaque Squashing, Bending, Twisting, Stretching Weather <b>Seasons</b> Spring Summer Autumn Winter Weather Daylight	Children know: EM2 The names of a variety of materials that are used to make everyday items, including fabrics, elastic, plastic, metal, wood, paper, cardboard. EM1 Objects are made from different materials. EM4 Some materials can be changed by squashing, bending, twisting, stretching.	Children know: EM3 Materials can be grouped based on their properties. EM6 Why certain materials have been chosen to make items.  Children know: SC1 The changes that take place throughout the seasons. SC2 That the weather changes depending on the season. SC3 The length of the day varies throughout the year  	<b>Your umbrella is made of glass- is that a good idea?</b>  SE5 Ask simple questions and recognising they can be answered in different ways. Children ask questions about the strength and function of a chosen item to help them think about what qualities their material needs to have.  Technological change Legacy British Culture	SE3 Perform simple tests Test materials using different criteria to find the most suitable one for the job. SE6 Gathering and recording data to help in answering questions Record how each material coped with each criteria to help them come to a conclusion.  Sustainability  

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<b>LKS2 1<sup>st</sup> HT</b>  ELECTRICITY	<b>Which is the most important: an insulator or a conductor?</b>  	Electricity Generate Renewable Non-renewable Appliances Battery Circuit Series Circuit Cell Wire Bulb Switches Buzzers Conductor Insulator	Children know: E1 Common appliances that run on electricity. E2 How to construct a simple series electrical circuit and can identify and name the basic parts including cells, wires, bulbs, switches and buzzers. .	Children know: E3 Whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. E4 That a switch opens and closes a circuit and links this with whether or not a lamp lights in a simple series circuit. E5 Some common conductors and insulators and know that metals are good conductors	<b>Do all materials conduct electricity?</b> SE2 Set up a comparative test. Children test different items in a circuit to see if they are conductors or insulators and use this to help them answer the question.  Sustainability 	SE4 Test different materials in a circuit to see if they are conductors or insulators. SE5 Use a table and then a Venn diagram to show results. SE8 What similarities were there between all the conductors? SE7 Use their findings to help answer the BIG question  Technological change Legacy British Culture
<b>LKS2 2<sup>nd</sup> HT</b>  SOUND	<b>How do whales hear over long distance?</b>	Vibration Soundwave Volume Amplitude Pitch Ear Particles Distance Soundproof Absorb Vacuum Eardrum  	Children know: LS6 How sounds are made and that some of them come from vibrations. LS7 That vibrations from sounds travel through a medium to the ear. LS8 That there are patterns between the pitch of a sound and features of the object that produced it.	Children know: LS9 That there are patterns between the volume of a sound and the strength of the vibrations. LS10 That sounds get fainter as the distance increases.  	<b>Can we change the pitch and volume of sounds?</b>  SE2 Set up a test to explore pitch. Put different amounts of water in bottles and blow across the top to hear the pitch. SE6 Children put the bottles in order of pitch and try to explain what they notice.	SE8 Can they identify any patterns? SE9 Children use what they have learnt about sound to explain their findings.

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<b>UKS2 1<sup>st</sup> HT</b>  LIGHT	<b>Does light only travel in straight lines?</b>	Light source Reflection Incident ray Reflected ray The law of reflection, Refraction Visible Spectrum Prism Shadow Transparent Translucent opaque	Children know: L1 that light appears to travel in straight lines L2 how to apply the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. 	Children know: L3 that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. L4 How to apply the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	<b>Can you make light bend?</b>  SE1 Set up an investigation to explore how mirrors allow light to travel round corners (plain, convex, concave) 	SE3 Attempt to make light move through a simple maze  SE5 Explain reasons for the placements of mirrors and use conclusions to help answer the big question,  Technological change Sustainability
<b>UKS2 2<sup>nd</sup> HT</b>  ELECTRICITY	<b>If electricity is so dangerous should we still use it?</b> 	Circuit Symbol Cell/battery Current Amps Voltage Resistance Electrons	Link to (RSHE) how to be safe around electricity  Children know:  E1 how to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.	E2 Know how to compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.  E3 Use recognised symbols when representing a simple circuit in a diagram	<b>Can you build a useful circuit?</b>  SE1 Children decide on the circuit they would like to make and make a plan.  SE3 They draw their circuit using the correct symbols.  Technological change Legacy Sustainability	SE5 Make an advertisement to promote their electrical product  British Culture 