

### Balloon Buggies Workshop Years 5 and 6

#### Curriculum Links

<p><b>Please note:</b></p>	<p>Our workshops may not cover all of the links below in great depth as we are restricted by time, however you have the opportunity to cover them in the follow up activities you will be receiving from us.</p>	
<p><b>Aims and Activities taken from workshop booklet</b></p>	<p>Balloon Buggies is a fun, practical workshop in which the pupils have the opportunity to investigate factors affecting the movement of a balloon-powered buggy. Initial investigations are with Lego, then the children make their own buggy with wood and plastic and test it.</p> <p>The aims are to provide Year 5 and 6 pupils with an enjoyable and stimulating workshop; to investigate the design possibilities of a balloon powered buggy using Lego; to develop their ideas and explain them clearly, planning their own buggy within certain boundaries. They are encouraged to measure accurately and use tools properly to measure, mark out, cut using a junior hacksaw, assemble, join and combine components accurately. They will also learn how use the tools safely and properly, to test the buggy (which they keep) and then race others. Finally they reflect on the design, identifying ways it could be improved.</p>	
	<p><b>National Curriculum</b></p>	<p><b>Non-Statutory Opportunities</b></p>
<p><b>Science</b></p>	<p><b>Working Scientifically (UKS2)</b></p> <ul style="list-style-type: none"> <li>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>using test results to make predictions to set up further comparative and fair tests</li> <li>reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations</li> <li>identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul>	<p>Pupils will have the opportunity to:</p> <ul style="list-style-type: none"> <li>investigate and explore the suitability of plastic, wood and lego for building a moving buggy, building on their knowledge of materials and their properties and forces</li> <li>Explore and ask questions about factors that affect the movement of a balloon powered buggy, and carry out an enquiry to find out what works best and why</li> <li>take measurements and make systematic and careful observations about the effectiveness of the buggy, thinking about different ways to collect data</li> <li>Report their findings using scientific vocabulary linked to properties of materials and forces.</li> </ul>

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<b>DT</b>	<p>Design</p> <ul style="list-style-type: none"> <li>• use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups</li> <li>• generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> </ul> <p>Make</p> <ul style="list-style-type: none"> <li>• select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>• select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</li> </ul> <p>Evaluate</p> <ul style="list-style-type: none"> <li>• investigate and analyse a range of existing products</li> <li>• evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</li> <li>• understand how key events and individuals in design and technology have helped shape the world</li> </ul> <p>Technical knowledge</p> <ul style="list-style-type: none"> <li>• apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> </ul>	<p>Design and build a quality buggy that is driven by balloon power!</p> <ul style="list-style-type: none"> <li>- Design and construct a real-world product using knowledge of materials and forces</li> <li>- use tools to cut, shape and join accurately, including a hacksaw</li> <li>- Evaluate their finished buggy based on specific design criteria including how fast it travels and consider ways to improve it</li> </ul>
<b>Maths</b>	<p><b>Measurement:</b> measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) (Y3); estimate, compare and calculate different measures (Y4); convert between different units of metric measure (centimetre and millimetre (Y5); use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places (Y6)</p>	<p>Opportunity to develop measuring skills and apply them to solve real world problems</p>
<b>English</b>	<ul style="list-style-type: none"> <li>• ask relevant questions to extend their understanding and knowledge</li> <li>• articulate and justify answers, arguments and opinions</li> <li>• developing a broader, deeper and richer vocabulary</li> </ul>	