

<b>Our Lady and St Edward's Knowledge Organiser</b>	<b>Year 3 - Design and technology</b>	<b>Summer</b>	
<p><b>Outcome:</b> Pupils will explore wind powered toys used at the beach. They will identify the attributes of wind powered toys such as windmills and sailboats. They will explore how the toys are designed to move in the wind. The children will then test and evaluate their project to assess what they could do to improve their models.</p>			
<b>Key Knowledge</b>		<b>Key Vocabulary</b>	
<ul style="list-style-type: none"> <li>To understand how wind powered toys move and what they need in order to utilise wind power.</li> <li>To design a wind powered toy.</li> <li>To evaluate their designs and improve their designs based on their evaluation.</li> <li>To choose appropriate materials for wind powered toys.</li> <li>To use equipment safely.</li> <li>To predict materials that will respond better to their designs.</li> <li>To build a product and choose how to join materials together.</li> <li>To test the validity of materials chosen.</li> </ul> <div data-bbox="289 711 1094 906"> </div>		<p>Sail: A piece of material extended on a mast to catch the wind and propel a boat or ship.</p> <p>Propeller: A device used to make an aeroplane or ship move forwards.</p> <p>Wind Power: Wind power is energy, such as electricity, that is generated directly from the wind.</p> <p>Rotate: Move or cause to move in a circle round an axis or centre.</p> <p>Axis: An imaginary line around which an object rotates.</p> <p>Mechanism: Something that creates movement.</p> <p>Operate: To control the functioning of a machine, process or system.</p> <p>Design: A plan or drawing to show the look of a building or other object before it is made.</p> <p>Evaluate: To decide if your design or structure meets its purpose.</p> <p>Windmill: A mill or machine operated by the wind, with sails that rotate.</p> <p>Rotor blades: Four long flat pieces of metal that move around a central point.</p> <p>Materials: A matter from which things can be made.</p> <p>Create: To make something from your imagination.</p> <p>Predict: To use prior knowledge to decide an outcome.</p>	
<b>Key Information about windmills and wind turbines</b>		<b>Health and Safety</b>	
<p>A windmill or wind turbine has a rotor with blades that is connected to a shaft. As wind energy hits the blades, the rotor turns, which causes the shaft to turn as well. As the shaft turns, it is able to do work and produce either mechanical or electrical energy. The more wind that hits the blades, the more the rotor can turn and the more energy the wind turbine can produce.</p>		<p>All children should be supervised when using equipment.</p> <p>Equipment: Scissors and different adhesive products whilst creating their summer toys.</p> <p>The children will need to be supervised during any experiments including water.</p>	
<b>What I should already know:</b>		<b>By the end of this unit, I will know:</b>	
<ul style="list-style-type: none"> <li>Design purposeful, functional, appealing products for themselves and other users based on design criteria.</li> <li>Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</li> <li>Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</li> <li>Explore and evaluate a range of existing products</li> </ul>		<ul style="list-style-type: none"> <li>Generate, develop, model and communicate their ideas through.</li> <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> <li>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</li> </ul>	

