

WBS - Working, Believing, Succeeding – A Wonderful Bridge to Success

Skills and Knowledge progression Design Technology

Mechanical Systems

		Year 1	Year 2	Year 4
Skills	Design	<p>Explaining how to adapt mechanisms, using bridges or guides to control the movement.</p> <p>Designing a moving story book for a given audience.</p>	<p>Creating a class design criteria for a moving monster.</p> <p>Designing a moving monster for a specific audience in accordance with a design criteria.</p>	<p>Designing a shape that reduces air resistance.</p> <p>Drawing a net to create a structure from.</p> <p>Choosing shapes that increase or decrease speed as a result of air resistance.</p> <p>Personalising a design.</p>
	Make	<p>Following a design to create moving models that use levers and sliders.</p>	<p>Making linkages using card for levers and split pins for pivots.</p> <p>Experimenting with linkages adjusting the widths, lengths and thicknesses of card used.</p> <p>Cutting and assembling components neatly.</p>	<p>Measuring, marking, cutting and assembling with increasing accuracy.</p> <p>Making a model based on a chosen design.</p>
	Evaluate	<p>Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed.</p> <p>Reviewing the success of a product by testing it with its intended audience.</p>	<p>Evaluating own designs against design criteria.</p> <p>Using peer feedback to modify a final design.</p>	<p>Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of workmanship on performance.</p>

WBS - Working, Believing, Succeeding – A Wonderful Bridge to Success

Knowledge	Technical	<p>To know that a mechanism is the parts of an object that move together.</p> <p>To know that a slider mechanism moves an object from side to side.</p> <p>To know that a slider mechanism has a slider, slots , guides and an object.</p> <p>To know that bridges and guides are bits of card that purposefully restrict the movement of the slider.</p>	<p>To know that mechanisms are a collection of moving parts that work together as a machine to produce movement.</p> <p>To know that there is always an input and output in a mechanism.</p> <p>To know that an input is the energy that is used to start something working.</p> <p>To know that an output is the movement that happens as a result of the input.</p> <p>To know that a lever is something that turns on a pivot.</p> <p>To know that a linkage mechanism is made up of a series of levers.</p>	<p>To understand that all moving things have kinetic energy.</p> <p>To understand that kinetic energy is the energy that something (object/person) has by being in motion.</p> <p>To know that air resistance is the level of drag on an object as it is forced through the air.</p> <p>To understand that the shape of a moving object will affect how it moves due to air resistance.</p>
	Additional	<p>To know that in Design and technology we call a plan a 'design'.</p>	<p>To know some real-life objects that contain mechanisms.</p>	<p>To understand that products change and evolve over time.</p> <p>To know that aesthetics means how an object or product looks in design and technology.</p> <p>To know that a template is a stencil you can use to help you draw the same shape accurately.</p> <p>To know that a birds-eye view means a view from a high angle (as if a bird in flight).</p> <p>To know that graphics are images which are designed to explain or advertise something.</p> <p>To know that it is important to assess and evaluate design ideas and models against a list of design criteria.</p>