



Subject: DT	Unit Title: Egyptians	Year Group: 3	Half-Term: 5/6
<p><b>National Curriculum Links:</b>            (Link to TT statements)</p> <p><b>1:</b> Understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages).  <b>2:</b> Understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages).  <b>3:</b> 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.  <b>4:</b> Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</p>			
<p><b>Precise Knowledge:</b>            (What is the child language knowledge that you want the children to know? Link to KARM cards/ classroom displays)</p> <p><b>Simple machines</b> are devices that make physical tasks easier. They work by changing the strength or direction of a force. Six types: Wheel and axle, Lever, Inclined plane, Pulley, Screw &amp; Wedge.</p> <p><b>Compound machines</b> use a combination of simple machines. A wheelbarrow is a compound machine because it combines a lever with a wheel and axle.</p> <p>There are three different classes of <b>lever</b> depending on where the load and the effort are located</p> <p>Cardboard models can be improved by using folding, joining and strengthening techniques.</p> <ul style="list-style-type: none"> <li>• Using a ruler and an empty ballpoint pen to score cardboard makes it easier to fold.</li> <li>• Cardboard can be joined using folded cardboard, sticky tape or a glued tab.</li> </ul>		<p><b>Precise Skills:</b>            (What is the child language skills that you want the children to be able to show?)</p> <p>Be able to understand, use, build and evaluate simple machines using recycled materials.</p>	

<ul style="list-style-type: none"> <li>• Cardboard can be strengthened by gluing layers of card together, gluing or taping lollipop sticks or straws to the back, or gluing card triangles into the corners of folded card.</li> </ul>			
<p><b>Possible Misconceptions:</b>  <i>(Combat misconceptions early, plan ahead for potential errors in the classroom and analyse what misunderstandings may occur that could potentially prevent learners from fully grasping a concept)</i></p>			
<p><b>Key Vocabulary</b>  <i>(Think about the link to KARM cards and classroom display)</i></p>	<p style="text-align: center;"><b>Tier 1</b>  <i>(everyday, commonly used)</i></p>	<p style="text-align: center;"><b>Tier 2</b>  <i>(academic, across topics and content)</i></p>	<p style="text-align: center;"><b>Tier 3</b>  <i>(subject specific)</i></p>
	<p><b>Mineral</b>  <b>Nutrient</b>  <b>Nutrients</b>  <b>Vitamin</b>  <b>Force</b></p>	<p><b>Friction</b>  <b>Screw</b>  <b>Lever</b>  <b>Pulley</b>  <b>Wedge</b></p>	<p><b>Follower</b>  <b>Mechanism</b>  <b>Automata</b>  <b>Cam mechanism</b>  <b>Inclined plane</b></p>
<p><b>Prior Learning:</b>  <i>(What has gone before that links to this unit learning that needs reactivating prior to building to the new learning? KARM cards)</i></p> <p><b>Making things move</b> – mechanisms, levers, axles and wheels.  <b>Healthy Bodies</b> – Eat well guide, nutrients and minerals – linked to Science: Human and animal bodies.</p>			
<p><b>Future Learning:</b>  <i>(Where is this learning building to? Identify the next learning intentions so appropriate references can be made whilst teaching the unit.)</i></p> <p><i>Use, plan and create simple machines using recycled materials such as plastic etc.</i></p>			
<p><b>Linked Texts:</b>  <i>(Steps to Read, Guided Reading, Reading Spine)</i></p>	<p><b>LOTC Opportunities:</b></p>	<p><b>Potential Visits/Visitors</b></p>	<p><b>Education for a Connected World:</b>  <i>(Online safety etc)</i></p>

Lesson Objective /Outcome Know/Show	Metacognition and Self-Regulated Learning		Questioning	Personal Development Connections
	Retrieval Practice	Instruction		
<p><b>Lesson 1</b></p> <p><b>Know</b> Mechanisms can be used to add functionality to a model. For example, sliders or levers can be used in moving pictures, storybooks or simple puppets; linkages in moving vehicles or puppets; gears in motorised vehicles or spinning toys; pulleys in cable cars or transport systems and cams in 3-D moving toys or pictures.</p> <p><b>Show</b> Explore and use a range of mechanisms (levers, axles, cams, gears and pulleys) in models or products.</p>	<p>Simple machines make physical jobs easier by changing the strength or direction of a force. There are six simple machines: pulley; lever; wheel and axle; wedge; inclined plane; and screw. Simple machines can be combined to make complex, compound machines.</p>	<p>Share the Simple machines presentation. Talk about the information in each slide and how simple machines make jobs easier by changing the direction and magnitude of a force. Ask the children to look at the Simple machines picture cards and decide which simple machines are used in each one. Discuss the children's answers at the end of the session and identify how the simple machines are sometimes used in combination to make a compound machine. For example the wheelbarrow is a compound machine, with a lever, and a wheel and axle.</p>		<p>Display opportunities/working wall SMSC (IN. CIA) BV EDI</p>
<p><b>Lesson 2</b></p> <p><b>Know</b> Mechanisms can be used to add functionality to a model. For example, sliders or levers can be used in moving pictures, storybooks or simple puppets; linkages in moving vehicles or puppets; gears in motorised vehicles or spinning toys; pulleys in cable cars or transport systems and cams in 3-D moving toys or pictures.</p>	<p>Simple machines make physical jobs easier by changing the strength or direction of a force.</p>	<p>Read the Exploring simple machines teacher information before setting up a range of activities for the children to explore levers, pulleys, inclined planes and wheels and axles. Encourage them to try to imagine how difficult each task would be without using the machine, then under close supervision, ask them to use the simple machines to complete each task. Encourage them to draw a labelled diagram of each machine they use, explaining the effect of using the machine for the task and how the strength or the direction of the force changes when a simple machine is used.</p>		<p>Display opportunities/working wall SMSC (IN. CIA) BV EDI</p>

<p><b>Show</b> Explore and use a range of mechanisms (levers, axles, cams, gears and pulleys) in models or products.</p>		<p>Practical resources</p> <ul style="list-style-type: none"> <li>• Large tray</li> <li>• Box with wheels</li> <li>• Seesaw</li> <li>• Slide or gym bench</li> <li>• Bucket of sand</li> <li>• Broom handle</li> <li>• Rope</li> </ul>		
<p><b>Lesson 3</b></p> <p><b>Know</b> Different materials and components have a range of properties, making them suitable for different tasks. It is important to select the correct material or component for the specific purpose, depending on the design criteria. Recipe ingredients have different tastes and appearances. They look and taste better and are cheaper when in season.</p> <p><b>Show</b> Choose from a range of materials, showing an understanding of their different characteristics.</p>	<p>Characteristics of materials, such as rigidity, strength and smoothness will affect the success of a working model.</p>	<p>Provide the Simple machines instructions and a range of junk modelling materials, including cotton reels, dowel rod and cardboard boxes, for the children to create simple machines. Talk about the characteristics of the materials used, including the strength, rigidity and smoothness. Support the children as they join their materials. At the end of the session, ask the children to draw annotated sketches of their simple machines and explain any difficult aspects of the task.</p> <p>Practical resources</p> <ul style="list-style-type: none"> <li>• Plastic bottles</li> <li>• Dowel rod</li> <li>• Plastic bottle caps</li> <li>• Sticky tack</li> <li>• Small cardboard boxes</li> <li>• Clothes pegs</li> <li>• Wheels</li> <li>• Rubber bands</li> <li>• Glue</li> <li>• Cardboard</li> <li>• Sticky tape</li> <li>• Lollipop sticks</li> </ul>		<p>Display opportunities/working wall SMSC (IN. CIA) BV EDI</p>

		<ul style="list-style-type: none"> <li>• Plastic spoons</li> <li>• Wire coat hangers</li> <li>• Wire cutters</li> <li>• Cottons reels</li> <li>• Pliers</li> <li>• Broom handle</li> <li>• String</li> </ul>		
<p><b>Lesson 4</b></p> <p><b>Know</b> Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.</p> <p><b>Show</b> Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements.</p>		<p>Ask the children to share their designs with others, demonstrating how their machines work and explaining how they would help the pyramid builders of ancient Egypt. Encourage the children to evaluate the success of each other's designs, describing which aspects worked well and identifying areas for improvement. At the end of the session, ask the children to fill in the Machine prototype evaluation sheet to reflect on their work.</p>		<p>Display opportunities/working wall SMSC (IN. CIA) BV EDI</p>
<b>End of Unit Assessment</b>				
<b>Essay</b>	<i>(Provide the Assessment that will be used for the end of unit assessment – it may be a mix of the examples down the left-hand side – consider the age-range of the children)</i>			

<b>Double-Page Spread</b>	
<b>End Outcome</b>	
<b>Clozed Passage</b>	