

DT		Year 1	Autumn 2	Learning in this topic: TECHNICAL KNOWLEDGE: Develop the creative, technical and practical expertise needed to perform everyday tasks confidently			
Theme: Christmas Strand: Mechanisms		<p>Children will explore a range of picture books with moving parts (sliders/rotating wheels/push ups/flaps) They will discuss how they enhance the text and how they work.</p> <p>Children will have the opportunity to take apart a range of sliders (greetings cards/pre-prepared sliders) to investigate how they work and what the different components are. They can then attempt to reassemble the product.</p> <p>Children will explore how to make and then apply knowledge to make levers and sliders based around a fireworks theme (rocket-slider and Catherine wheel for lever).</p> <p>DESIGN AND MAKE: build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users</p> <p>Children to design a Moving Christmas Scene, incorporating both a lever and a slider.</p> <p>Children will consider what pictures would be appropriate for their Christmas Scene, and which parts they would like to move. As part of their scene, they will also need to include curled paper e.g. Christmas tree/Santa's beard.</p> <p>During the planning stage children will also need to consider which materials will be best suited to the task and which tools to use.</p> <p>Children will then make their Christmas Scene- following their plan.</p> <p>EVALUATE: critique, evaluate and test their ideas and products and the work of others (including in the real world)</p> <p>Children to share their completed moving pictures with children in Year 2. They will explain how they work, key features and how they made them. As part of this discussion, children should share what they are particularly proud of and what they would like to improve if they were to make them again.</p>					
NC objectives covered:	Design <input type="checkbox"/> design purposeful, functional, appealing products for themselves and other users based on design criteria <input type="checkbox"/> generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology Make <input type="checkbox"/> select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]						
Prior Knowledge needed:	Talk about and/or use construction materials, pictures and words to plan and design. Talk about what has been done/made in simple terms. Use simple tools and materials with support, Cut paper/card using scissors. Talk about familiar products and what they do. Talk about what has been made and the steps taken to achieve the outcome.						
Curriculum Concepts and Themes:	Celebrations Story Telling Speaking and listening		Curriculum Skills Progression:	<ul style="list-style-type: none"> • Use knowledge of existing products to support plans for a similar product. • Describe, explore and investigate products that have been disassembled. • Explore and evaluate a range of existing products. • Curl paper. • Use a hole punch and stapler. • Construct a simple slider independently. • Make a lever by joining card strips with paper fasteners. • Deconstruct a range of sliders and describe how they work. • Construct increasing complex sliders. • Join levers to make linkages to create moving parts. • Begin to evaluate the success of the product in terms of function and aesthetic criteria. 		Direct links to made other subjects:	History English
Inspirational Start: (hook to capture the imagination) Exploring a range of exciting pop up books/moving picture books.		Mid-way Milestone: Santa delivers a letter asking the children to design a moving picture that he can give to Mrs Claus as a Christmas gift.			Extraordinary End: (a recognised end point to work towards) Children to share their moving pictures with Year 2.		

DT		Year 1	Spring 1
<p align="center">Theme: The Enormous Turnip Strand: Axels, gears and pulleys</p>		<p>Learning in this topic: TECHNICAL KNOWLEDGE: Develop the creative, technical and practical expertise needed to perform everyday tasks confidently</p> <p>Children will listen to the story of 'The enormous turnip' and will be given the problem of 'how do we move such a big object?' They will investigate how people move large objects now, using cranes and large machinery, and also how this was done in the past (the pyramids, Stonehenge, etc.) using various tools and techniques.</p> <p>The children will then be given the 'Move it, Move it' challenge; to go out to the outdoor classroom/field area where each class/group will have a large, heavy object which needs moving to the other end of the field (e.g. a bag of sand). The children will be given different equipment to choose from and use; small logs/branches, buckets, tarp, cable reels, ropes...and will need to work as a team to get it across the field.</p> <p>Mind map 'ways we could transport the turnip'. Look at similarities – what do all modes of transport have? (wheels). Look at a range of wheeled vehicles/toys and find out what their main components are (chassis, axle and wheels) by taking one apart. Create a list of success criteria as a class. Children will work in groups to design their own wheeled vehicle to transport a turnip.</p> <p>DESIGN AND MAKE: build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users</p> <p>Children will deconstruct and reconstruct a box, turning it inside out to use for their chassis. They will accurately measure and cut, using a hacksaw and dowling, with supervision, the axle for their vehicle. They will add wheels, using elastic bands or piping to secure, adding extra elements and decorating how they wish.</p> <p>EVALUATE: critique, evaluate and test their ideas and products and the work of others (including in the real world)</p> <p>Children will test their vehicles by transporting a real turnip from one side of the playground to the other to see if it meets the success criteria they created. They will then complete an evaluation sheet to show what they found.</p>	
<p>NC objectives covered:</p>	<p>design purposeful, functional, appealing products for themselves and other users based on design criteria</p> <ul style="list-style-type: none"> <input type="checkbox"/> generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology <p>Make</p> <ul style="list-style-type: none"> <input type="checkbox"/> select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] <input type="checkbox"/> select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics <p>Evaluate</p> <ul style="list-style-type: none"> <input type="checkbox"/> explore and evaluate a range of existing products <input type="checkbox"/> evaluate their ideas and products against design criteria 		
<p>Prior Knowledge needed:</p>	<p>Use junk modelling materials to build boxes. Use simple construction materials to make a vehicle. Explore and use construction kits containing gears.</p>		
<p>Curriculum Concepts and Themes:</p>	<p>Link to English narrative writing</p>	<p>Curriculum Skills Progression:</p> <ul style="list-style-type: none"> • Talk about and describe the tools and materials needed in order to complete the key tasks within a plan. • Use construction kits, pictures, templates, mock ups and captions to plan and design. • Use a straight edge to mark lines for cutting. • Use pencils or tubes as rollers to move an object across the floor. • Construct a simple pulley using rope over a horizontal bar to raise an object off the ground. • Construct cubes of different sizes from a net. • Deconstruct and reconstruct boxes accurately. • Join edge to edge using glue. • Attach wheels to a chassis using an axle, e.g. cotton reels and dowel. • With support attach a fixed axle to a chassis and add wheels ensuring that they can move freely. • Select, from a range, a finish to improve the appearance of a product. • Begin to evaluate the success of the product in terms of function and aesthetic criteria. • Follow procedures for health and safety. 	<p>Direct links to made other subjects:</p> <p>Maths – weights and measures Science – plants, food groups English – rhyming words, descriptive language</p>
<p>Inspirational Start: (hook to capture the imagination) 'Move it, Move it' challenge in the outdoor classroom/field area.</p>		<p>Mid-way Milestone: Connect the Knex Challenge</p>	<p>Extraordinary End: (a recognised end point to work towards) Turnip travels – testing their vehicles.</p>

DT		Year 1	Summer 1
<p align="center">Theme: The Three Billy Goats Gruff Strand: Structures</p>			
<p>NC objectives covered:</p>	<ul style="list-style-type: none"> design purposeful, functional, appealing products for themselves and other users based on design criteria select from and use a range of tools and equipment to perform practical tasks explore and evaluate a range of existing products build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms (levers, sliders) 	<p>Learning in this topic: TECHNICAL KNOWLEDGE: Develop the creative, technical and practical expertise needed to perform everyday tasks confidently</p> <p>Children will discuss the problem – How the Billy Goats will cross the river – and will come up with possible solutions. They will decide on one – bridge? – and will come up with a list of success criteria for their model (size, strength, age suitable for, weight, etc, moving parts for interest, etc)</p> <p>Children will explore bridges from around the world, before focussing in on the Clifton Suspension bridge (Isambard Kingdom Brunel) and looking at three different types of bridge- beam, suspension and arch.</p> <p>Using this knowledge, children will use construction kits to complete a mini challenge- spanning the gap between 2 chairs using construction toys.</p> <p>Whilst discovering ways to strengthen a bridge (triangles/wide bases), children will explore and experiment with different ways materials can be joined together – split pins, sellotape, masking tape, string, staples, glue – they will then discuss the pros and cons of using these methods depending on the effect wanted.</p> <p>DESIGN AND MAKE: build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users</p>	
<p>Prior Knowledge needed:</p>	<ul style="list-style-type: none"> Explore and investigate a range of simple, large scale construction materials, e.g. cardboard boxes. Explore building, bridges and towers using large and small-scale construction materials, e.g. Duplo, cardboard boxes. Make simple 2D structures using straws. 	<p>Children will look at examples of bridges and particularly at their structure and what makes them strong – in particular they will look at how they have wide bases to stabilise them and often use triangles to help strengthen supports. They will then use this to inform their own bridge designs as a group, listing the materials they will need to make the structure as well as annotating how they will join pieces together and what/how parts of it will move.</p> <p>Children will work in groups of three/four to make their bridge using card, paper straws, lollipop sticks, glue, tape, string.....</p> <p>EVALUATE: critique, evaluate and test their ideas and products and the work of others (including in the real world)</p> <p>Children will retell the story of 'The 3 Billy Goats Gruff' to an audience (group of Nursery/Reception children.)</p> <p>Children will then evaluate their model against the list of success criteria they created.</p>	
<p>Curriculum Concepts and Themes:</p>	<p>Storytelling- link with English</p> <p>Small World play</p> <p>Problem solving</p>	<p>Curriculum Skills Progression:</p> <ul style="list-style-type: none"> Explore and talk about products made by famous inventors, designers, engineers and manufacturers. Talk about and describe key features of a range of products. Construct a range of simple structures using simple construction kits. Strengthen 2D frames by adding diagonal bracing struts. Make a structure more stable by widening the base. Talk about and describe the tools and materials needed in order to complete the key tasks within a plan. Explore and talk about the characteristics of an increasing range of materials. Use materials to make simple joints -glue, tape and paper clips. Make a simple card hinge. Select and use simple tools to cut and join a range of materials. Begin to evaluate the success of the product in terms of function and aesthetic criteria. 	<p>Direct links to made other subjects:</p> <p>English – Traditional Tales</p>
<p>Inspirational Start: (hook to capture the imagination)</p> <p>Watch a video clip of the story 'The 3 Billy Goats Gruff'</p>		<p>Mid-way Milestone:</p> <p>Troll comes to visit/sends an email to the children to tell them they must include him on their model.</p>	<p>Extraordinary End: (a recognised end point to work towards)</p> <p>Groups re-tell the story to Nursery/Reception children using their moving model bridge.</p>