

DT Scheme of Work

Y2 Build a car garage	
Links made with other subjects	English, Maths, History
The BIG Question	To build a car garage to store car toys in
The BIG Outcome	To build a stable structure that will fit a toy car.
DT objectives (link to NC)	<p>Design</p> <ul style="list-style-type: none"> Design purposeful, functional, appealing products for themselves and other users based on design criteria 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"> Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] 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"> Explore and evaluate a range of existing products Evaluate their ideas and products against design criteria <p>Technical knowledge</p> <ul style="list-style-type: none"> Build structures, exploring how they can be made stronger, stiffer and more stable Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.
Prior knowledge What prior knowledge is needed for children to be successful in this unit?	<ul style="list-style-type: none"> Used basic tools safely and appropriately Discussed ideas Worked with paper and card – cutting, shaping and joining. Joined framework structure – Castles – Year 1
Future learning Consider the conceptual knowledge within a subject that pupils need for future learning not just the recall of facts but the importance of concepts	<p>This unit gives prior knowledge to:</p> <p>Y3 – Design and make a greenhouse.</p> <p>Y4 – Design and make packaging.</p> <p>Y5 – Design and build a bridge.</p> <p>Y6 – Design and make a bird house.</p>
DT strands	<p>Design</p> <ul style="list-style-type: none"> Design purposeful, functional, appealing products for themselves and other users based on design criteria 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"> Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] 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"> Explore and evaluate a range of existing products

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	<ul style="list-style-type: none"> Evaluate their ideas and products against design criteria <p>Technical knowledge</p> <ul style="list-style-type: none"> Build structures, exploring how they can be made stronger, stiffer and more stable Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.
Vocabulary/ Glossary	Structure, stable, material, strength, section, ramp, area, park, purposeful, functional, stiff, strong, raised, heavy, weak.
Knowledge (see italics for knowledge to remember)	<p>The knowledge that children will learn and remember:</p> <ol style="list-style-type: none"> <i>Investigate and analyse a range of existing products.</i> <ul style="list-style-type: none"> Show the children the image of a car garage. What is it? What do you notice about it? Explain to the children they are going to design their own structures like this toy car garage. Children to look at a range of existing products to help them form their own design ideas. What do they notice? What do they think they are made from? What works well? What could be improved? Create a list with the children of the materials used and the features of each toy car garage. <i>Generate, develop, model and communicate their ideas through discussion and annotated sketches.</i> <ul style="list-style-type: none"> To design and plan a stable structure. What does stable mean? What do they think each section of the garage is used for? Why is there a ramp? How many levels are there? Is there somewhere for cars to park? Where? Explain what a plan is. Show the children an example of a plan and the end result. Do they look the same? Does the plan look like a photo? Explain to the children they will be designing their own structures using the displayed design as a basis. <i>Use a range of tools and equipment to perform practical tasks accurately.</i> <ul style="list-style-type: none"> Can children name materials. Show children some examples of plastic. What is this material? What are its features? What does it feel like? Repeat this with wood. If possible provide the children with examples of natural, treated and painted wood. Encourage them to think about the properties of the wood and how easy it would be to make a structure from it. Explain to the children they are going to make their own structures using cardboard, wood and paper and maybe a few other materials of their choice. Challenge the children to investigate these materials and decide which one they think will be the best material to make each part of their structure with.

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	<p>4. <i>Select and use tools suitable for the task, explaining their choices, to cut, shape and join paper and card.</i></p> <ul style="list-style-type: none"> Remind the children that design plans are instructions to follow when making a product. Which material did we decide to make our product from? Remind children to refer to the design plans and the step-by-step plan to make their structure. <p>5. Use simple finishing techniques suitable for the product they are creating.</p> <ul style="list-style-type: none"> Children to use a range of materials to help join their structures together – masking tape/glue – think back to year 1 when they built a castle. <p>6. <i>Know and explain how to create a stable structure</i> (children to think and talk through how their structure stands and what holds it together.)</p> <p>7. <i>Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets the design criteria.</i></p> <ul style="list-style-type: none"> What have we been making? What are they designed to do? How will we know if our product is successful? Write a list of things a stable structure, like a toy car garage, should be able to do. Then add any ideas. How will we know if our structure meets these requirements? Children to test their products to see if they function as toy stable structures and then they will evaluate them.
SEND expectations	<p>The knowledge that children will learn and remember:</p> <p>1. <i>Investigate and analyse a range of existing products.</i></p> <ul style="list-style-type: none"> Show the children the image of a car garage. What is it? What do you notice about it? Explain to the children they are going to design their own structures like this toy car garage. Children to look at a range of existing products to help them form their own design ideas. What do they notice? What do they think they are made from? What works well? What could be improved? Create a list with the children of the materials used and the features of each toy car garage. <p>2. <i>Generate, develop, model and communicate their ideas through discussion and annotated sketches.</i></p> <ul style="list-style-type: none"> To design and plan a stable structure. What does stable mean? What do they think each section of the garage is used for? Why is there a ramp? How many levels are there? Is there somewhere for cars to park? Where? Explain what a plan is. Show the children an example of a plan and the end result. Do they look the same? Does the plan look like a photo? Explain to the children they will be designing their own structures using the displayed design as a basis.

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	<p><i>4. Select and use tools suitable for the task, explaining their choices, to cut, shape and join paper and card.</i></p> <ul style="list-style-type: none"> • Remind the children that design plans are instructions to follow when making a product. • Which material did we decide to make our product from? Which tools will be needed to carefully and safely use these materials? • Remind children to refer to the design plans and the step-by-step plan to make their structure. <p><i>5. Use simple finishing techniques suitable for the product they are creating.</i></p> <ul style="list-style-type: none"> • Children to use a range of materials to help join their structures together – masking tape/glue – think back to year 1 when they built a castle. <p><i>6. Know and explain how to create a stable structure</i> (children to think and talk through how their structure stands and what holds it together.)</p> <p><i>7. Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets the design criteria.</i></p> <ul style="list-style-type: none"> • What have we been making? What are they designed to do? How will we know if our product is successful? • Write a list of things a stable structure, like a toy car garage, should be able to do. Then add any ideas. How will we know if our structure meets these requirements? • Children to test their products to see if they function as toy stable structures and then they will evaluate them.
Resources	<p>A range of car garages – toy garages/pictures</p> <p>Materials: paper, cardboard, fabric, wood, stone, plastic, scissors, glue, tape, wooden legs.</p>