

DT Scheme of Work

Y3 Build a greenhouse	
Links made with other subjects	English, science, maths
The BIG Question	How does a greenhouse help plants to grow?
The BIG Outcome	To create a greenhouse to grow plants and fruit.
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 – Build a car garage – year 2
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>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>

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Vocabulary/ Glossary	Glass, stable, structure, clear, design criteria,
Knowledge (see italics for knowledge to remember)	<p>The knowledge that children will learn and remember:</p> <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"> What is a greenhouse? What is it used for? How does a greenhouse help plants to grow? Briefly discuss the history of greenhouses. How important do you think the invention of the greenhouse has been for the world, and why? What impact do you think the invention of the greenhouses has had on the world? What might the world be like if greenhouses had never been invented? Look at garden greenhouses and bigger greenhouses (Botanic gardens.) <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. Do you know what a stable structure is? Look at some pictures of objects and ask the children if they think they are stable. What would make them more stable? Why? Look at some everyday objects and discuss which are the most and least stable and why, then apply this knowledge to greenhouses. Show the children diagrams of the sides of two different greenhouse designs. Which will be the most stable and why? Which will let in the most sunlight and why? Children to investigate how to successfully include both shape and size in a design. Are mini greenhouses as effective as a full-size greenhouse. Do you agree or disagree with this statement? List the advantages and disadvantages of mini greenhouses. To make a mini greenhouse, which materials could you use for the frame and the sections within the frame? Which do you think is the best combination? Children to explore a range of different materials and assess how suitable they would be for making a mini greenhouse. <i>Use a range of tools and equipment to perform practical tasks accurately.</i> <i>Select and use tools suitable for the task, explaining their choices, to cut, shape and join paper and card.</i> <ul style="list-style-type: none"> Gather all of the equipment and materials that they will need. Encourage children to refer to their plan regularly, and think carefully about each step in the process. Explain to the children that if they need to change part of their design during the making process, they can.

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	<ul style="list-style-type: none"> Discuss any safety tips or issues with the children when using the various tools and materials today. <p>5. Use simple finishing techniques suitable for the product they are creating.</p> <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"> Evaluate your design. What does this mean? Why is it important that we do this? Think, pair, then share your ideas. How successful was your greenhouse? Was it stable? Will it/does it do the job intended? What would you change? What would you keep the same?
SEND expectations	<p>1. <i>Investigate and analyse a range of existing products.</i></p> <ul style="list-style-type: none"> What is a greenhouse? What is it used for? How does a greenhouse help plants to grow? Look at garden greenhouses and bigger greenhouses (Botanic gardens.) <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. Do you know what a stable structure is? Look at some pictures of objects and ask the children if they think they are stable. What would make them more stable? Why? Look at some everyday objects and discuss which are the most and least stable and why, then apply this knowledge to greenhouses? Children to explore a range of different materials and assess how suitable they would be for making a mini greenhouse. <p>3. <i>Use a range of tools and equipment to perform practical tasks accurately.</i></p> <p>4. Select and use tools suitable for the task, explaining their choices, to cut, shape and join paper and card.</p> <ul style="list-style-type: none"> Gather all of the equipment and materials that they will need. Encourage children to refer to their plan regularly, and think carefully about each step in the process. Explain to the children that if they need to change part of their design during the making process, they can. Discuss any safety tips or issues with the children when using the various tools and materials today. <p>5. Use simple finishing techniques suitable for the product they are creating.</p> <p>6. <i>E 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 would you change? What would you keep the same?
Resources	<p>Research: iPads/pictures</p> <p>Materials: extra card, dowelling, straws, tape, glue, staplers</p> <p>Variety of materials for possible frames/coverings such as lolly sticks, dowelling, plastic wallets, clingfilm, straws, pipe cleaners, old hula hoops, plastic bottles, CD cases, wooden picture frames with glass removed.</p>

