

Design & Technology



Intent,
Implementation,
Impact

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DT - Structures: what is a model house?

1. What features are in different homes?

Intent	Children will understand that there are similarities and differences between houses.
Implementation	Children to discuss through modelled examples and questions (Wonder Wall) what features are in their own homes as well as comparing them with other homes that are different.

2. How are materials joined together?

Intent	Children will be able to explore practically how materials are joined together to make a standing structure from card.
Implementation	Children to practically explore and work through modelled examples to make their own standing structure with materials joined together.

3. How can structures be made stronger?

Intent	Children will understand that structures can be adapted and improved to make them stronger.
Implementation	Children to start to evaluate their own work and to make improvements with support. Explore different techniques and modelled examples to improve their own work and make them stronger.

4. What design is the best and why?

Intent	Children to understand how to evaluate projects and discuss what worked well and why.
Implementation	Children to be supported in evaluating their own and other people's projects to discuss what worked well and what could be done to improve their own work.

5. How could the model be improved?

Intent	Children to self-evaluate their own work and suggest ways to improve their homes. Children to be able to explain the reasoning why they have made these evaluations.
Implementation	Children to be able to discuss and evaluate their own work and then suggest ways to improve it and why.

Impact	<p>Children will be able to discuss the main features of homes and compare and contrast similarities and differences between their own and others.</p> <p>Children to plan, design and make their own home structure by joining materials.</p> <p>Children to explore how they can make their projects stronger using different techniques.</p> <p>Children to start to evaluate their own work and the work of others and discuss what worked well and why.</p> <p>Children to self-evaluate their projects and discuss ways in which it could be improved.</p>
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Year 1 Summer 1 Design and Technology - What makes a good sandwich?

1. What is a sandwich? What does it look like?

Intent	Children will have an understanding of what a sandwich is and how to make one
Implementation	Discuss the contribution of sandwiches to a healthy diet. Introduce the 'balanced plate' model of food groups. Ask the children to identify different foods in the groups. Encourage them to look at their own diets. Children will consider health and safety; how should ingredients be stored, how equipment should be handled safely and how food preparation areas should be kept clean and safe.

2. How do I spread butter? How do I make a sandwich?

Intent	To be able to use a knife safely to spread butter evenly on bread and add an ingredient to make a sandwich.
Implementation	Children will practice making a jam sandwich. They will write instructions on how to make a sandwich.

3. What ingredients would you use in your sandwich?

Intent	To evaluate a range of sandwiches and record their opinions on a table commenting on taste, appearance, smell and texture
Implementation	The children will evaluate a range of bought sandwiches, recording opinions on appearance, smell, taste and texture. The information will be recorded on a simple database to find the most popular choice. The children will try a selection of breads that can be used for sandwiches eg rye bread - Danish open sandwiches; pitta bread - filled kebab; flat bread - filled naan; bread rolls; French stick; sliced and unsliced loaves. They will identify each one and explain what it can be used for.

4. Is my sandwich fit for a Queen?

Intent	To use the skills learnt to prepare their own sandwich
Implementation	The children will design their own sandwich to be served to the queen at a party. They will need to consider the health value of their sandwich, as well as taste. They will select the bread and fillings that they will use and then make their sandwich. The sandwiches will be judged by a special guest. The children will evaluate their sandwich.
Impact	<p><u>What makes a good sandwich?</u> <u>Children will know that:</u></p> <ul style="list-style-type: none"> • there are a variety of sandwiches (structure and content). • people have different preferences. • food can be divided into different groups. • sandwiches can form part of a healthy diet . • different combinations of ingredients can affect the taste and texture of the product.

Year 2 - Design and Technology - What is an axle?

1. Can I produce a design for my Ferris Wheel?

Intent	To design a purposeful, functional, appealing product using the knowledge of how axles help wheels to move.
Implementation	Examine and explore wheel mechanisms. To generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.

2. Can I make my design?

Intent	Using their knowledge of structures, identify and demonstrate the skills, equipment and materials needed to follow their design plan.
Implementation	Build a stable structure through testing elements of their design, adapting as necessary and demonstrating a knowledge of how to make the wheel rotate.

3. Can I evaluate the challenges and successes of my idea?

Intent	To identify what worked well, what challenges were faced and how they were dealt with and what they would change next time.
Implementation	Evaluate their ideas and products against design criteria.
Impact	Demonstrating their knowledge of what an axle is, the children will produce a purposeful, functional, appealing product based on design criteria. They will select and use appropriate tools, equipment and materials according to their characteristics to perform practical tasks. They will evaluate their ideas and products against their design criteria.

Year 2 - Design and Technology - What is a running stitch?

1. Can I produce a design for my apron?

Intent	To design a purposeful, functional, appealing product for themselves.
Implementation	To generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.

2. Can I make my design?

Intent	To identify and demonstrate the skills, equipment and materials needed to follow their design plan.
Implementation	Use running, back and straight stitch on material to create their design. Sew to add embellishments.

3. Can I evaluate the challenges and successes of my idea?

Intent	To identify what worked well, what challenges were faced and how they were dealt with and what they would change next time.
Implementation	Evaluate their ideas and products against design criteria.
Impact	Demonstrating a running stitch the children will produce a purposeful, functional, appealing product for themselves based on design criteria. They will select and use appropriate tools, equipment and materials according to their characteristics to perform practical tasks. They will evaluate their ideas and products against their design criteria.

<p align="center"><u>Year 3/4 PLAN A Autumn 1</u></p> <p align="center"><u>Construction: How can a Viking longboat be made suitable for a King?</u></p>	
What are the features of a Viking longboat?	
Intent	Children will know what Viking longboat look and how the features may differ from boat to boat.
Implementation	Children will explore and evaluate a range of boats that already exist. They will create a collage of images and be able to discuss their likes and dislikes of the features on different boats. A second collage will be created looking at how royalty travel nowadays- looking at the comforts and aesthetics.
How can I ensure my boat is suitable for a Viking King?	
Intent	Children will have designed a boat suitable for the user and purpose. User- Viking King Purpose- to travel on board.
Implementation	Children will refer the collages from last lesson and incorporate the parts they like into their own design. Their design needs to have the materials labelled as well as any aesthetic features too.
How do you follow your design?	
Intent	Children will practise a range of joining methods to ensure designs can be made accurately.
Implementation	Practise using string to join, glue (including hot glue gun), and tapes. Model to children how to make the join tidy. Children will then make their design.
Was my longboat suitable for a King?	
Intent	Children will evaluate their final product.
Implementation	Children will have the opportunity to evaluate their design compared to their original design. They need to assess whether what they have produced is suitable for the user (King) and fit for purpose (to travel on board with other Vikings)
Impact	Children will have made a structure of a longboat for a Viking King. They will have considered existing products and they have influenced their own design. They will make their product following their design. They will use words such as stronger, stiffer and stable when evaluating their final product.

Year 3/4 Plan A - DT - Electrical: How do we make a greetings card light up?

1. How do electrical circuits work in greetings cards?

Intent	Children will have knowledge of greetings cards that contain electrical circuits.
Implementation	Children will investigate and analyse a range of existing greetings cards that contain electrical circuits.

2. Where can I add a light bulb into a greetings card?

Intent	To design a greetings card with an electrical component included in the design.
Implementation	Children will create a design for a greetings card that includes a bulb, as an appropriate part of the design.

3. How do I create an electrical circuit inside a greetings card?

Intent	Children will create an electrical circuit, lighting a bulb inside their greetings card.
Implementation	Children will use copper tape to create an electrical circuit, to light a bulb, within a greetings card.
Impact	Children will have an understanding of a practical use of their electrical circuits knowledge. Children will be able to use an electrical system in their product, including a bulb.

Year 3/4 Design and Technology - Construction: What materials can be used to reinforce structures?

1. What 3D shapes do architects use to create buildings and why?

Intent	To understand the properties of 3D shapes and the natural strength they offer for construction.
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Implementation	Children will create a variety of 3D shapes from nets and study their strength properties.
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2. What materials do architects use to create buildings and why?

Intent	To understand the materials used by architects to reinforce structures and why.
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Implementation	Children will explore different materials used in construction and study how they are used to reinforce structures.
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Impact	Children will understand that 3D shapes have varying properties useful in creating buildings and that architects use these natural properties to reinforce structures. Children will have an understanding of materials used in construction and their reinforcing qualities.
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Year 3/4 Design and Technology - Cooking: Where in the world does food come from?

1. What food can be farmed in the United Kingdom?

Intent	Children will know what food can be farmed in the United Kingdom.
Implementation	Children will explore a map of the UK and the food that is farmed within it.

2. What are the national dishes of the United Kingdom?

Intent	To understand what foods are culturally British.
Implementation	Children will explore different foods and dishes that are traditionally connected to British culture.

3. What cuisines have influenced British food?

Intent	Children will have an understanding that British food is influenced by other food and dishes from other cultures.
Implementation	Children will experience foods commonly eaten in Britain that originate in other cultures.
Impact	Children will have an understanding of where food comes from, including what food is grown and farmed in the UK. Children will have the opportunity to explore and experience a variety of foods from British and alternative cultures.

Year 5/6 Plan A - What is - "Make do and Mend"?

1. How were clothes revived and recycled during WW2?

Intent	Children will know how clothes were adapted and given new life with limited coupons during ww2.
Implementation	Research how clothes can be adapted, reused and recycled.

2. Which techniques would be the most appropriate to join materials for my product?

Intent	Children will design a soft toy using appropriate stitches to join materials.
Implementation	Children will practise different stitches finding the most appropriate to join materials and the best to decorate.

3. Can I make a stuffed toy using recycled material?

Intent	Children will use their design to create a soft toy.
Implementation	Make a soft toy applying cutting and joining techniques.

4. How does my finished product compare to my design brief?

Intent	Children will evaluate their finished toy against their design brief.
Implementation	Children will evaluate their own product by making suggestions for how they can improve their own design. They will also be able to listen to their peers to evaluate and improve their design.
Impact	Children will be able to explain how clothes were reused and made into other useful products during WW2. Children will be able to identify different stitches and select the most appropriate stitches for their design. Children will evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.

Year 5/6 Plan A - DT - Structure: Who can make the strongest bridge?

1. How do different shapes affect a structures strength?

Intent	Children will be able to identify a beam, arch and a truss bridge and can find ways to reinforce the bridges to make them stronger.
Implementation	To research and investigate how the bridges can be made stronger by changing and redesigning the shape of the beam. To design their own bridge.

2. How will I join components together to make them secure and strong?

Intent	Children will make their bridge, selecting appropriate tools and equipment.
Implementation	Through selecting a range of tools and equipment, the children will create a bridge to withhold a weight.

3. Which bridge could withstand the greatest weight?

Intent	Children will evaluate their bridge and suggest, if needed, areas to improve upon with regards meeting the purpose.
Implementation	Children will evaluate their ideas and products against the design criteria, testing to see which bridge could hold the greatest mass
Impact	Children will develop their understanding of secure structures and they develop their skills through measuring, sawing and joining wood accurately. Through exploring different types of bridges, they will know how the strength of structures can be affected by the shapes used. Children will create their own wooden bridge and test its durability.

Year 5/6 Design and Technology - How do pneumatic systems work? Plan B

1. What is pneumatics?

Intent	Children will be able to understand how pneumatic systems work and the components involved in creating such a system.
Implementation	Introduce children to the simple pneumatic system that they will be creating and then look at real-life examples of different pneumatic systems. Children then experiment with their own pneumatic system and how it works.

2. What designs do I want on my sarcophagus?

Intent	Children will collate ideas on a mood board to adapt and use to shape their own individual design for their sarcophagus.
Implementation	Research, using books and the internet, the typical designs that were used on ancient Egyptian sarcophagus and to draw inspiration for their own design. Collect a selection of images to add to their mood board and come up with their final design.

3. How do I use tools safely?

Intent	Children will understand the safest way to use a variety of tools, including a sharp wheel knife, understand the potential dangers involved and use them successfully.
Implementation	Safety demonstration of how to use the tools together to ensure that they are successful in using them safely to cut out their sarcophagus template.

4. How do I construct the sarcophagus using a variety of techniques?

Intent	Children will be able to choose and use different techniques and materials to attach different parts of the sarcophagus depending on the types of joins/materials.
Implementation	Look at the range of joins and materials that will require joining together and show a range of methods to join different materials. Children will then evaluate these methods and decide upon the best way to construct their sarcophagus.

5. How do I attach and implement the pneumatic system?

Intent	Children will attach the pneumatic system to their completed sarcophagus and be able to demonstrate how it works.
Implementation	Recap how the pneumatic system works and then demonstrate where and how to join to the sarcophagus.
Impact	To be able to use a variety of tools safely in order to construct their own pneumatic opening sarcophagus and be able to explain how the pneumatic system works.

<p align="center"><u>How do I make bread?</u></p> <p align="center"><u>Y5-6 Plan B</u></p> <p align="center"><u>DT</u></p>	
1. What did people used to eat in ancient Greece?	
Intent	Children will know a range of different types of foods eaten in ancient Greece and a brief overview of a range of bread types and terminology involved in the bread making process.
Implementation	Children will complete a pre-quiz, including a picture round. Children, where possible, will annotate the Knowledge Organiser with prior knowledge. Discuss a variety of different bread types and ones that the children are already familiar with/have tasted before.
2. What different types of bread are there?	
Intent	Children to taste a range of different types of bread and understand their origins and some of the main ingredients involved in creating a basic bread. Children will evaluate the different breads (taste, texture, smell etc) that they have tasted and use this to inform their decision as to which type of bread that they may wish to make.
Implementation	Children will taste 9 different breads (including several gluten free) and use a table to score and record their thoughts on each different bread type.
3. What ingredients do we use to make bread?	
Intent	Children will use the chromebooks to research different bread types and find a suitable recipe that they wish to use to create their bread using the following parameters: must include yeast & have a proving time of less than 90 minutes.
Implementation	Children will use the chromebooks to research different types of bread based on their preferences following on from their bread tasting. Children to choose some pictures to print of the different breads that they are interested in making to create a mood board. Children will then find their chosen recipe and print it out ready to take home.
4. How do I make bread?	
Intent	Children will follow their chosen recipe to make their chosen bread type.
Implementation	Children will be sorted into groups depending on the different types of breads that they are making so that adequate support can be given. Children to weigh & measure ingredients (if not pre-weighed at home). Children to follow recipe to make their own bread loaf/rolls.
Impact	Children will know a range of different Greek foods. Children will be able to name different types of bread and some of their origins. Children will be able to name and explain the key processes and terminology involved in bread making. Children will be able to find and follow a bread recipe of their choosing to create their own bread. Children will be able to evaluate and discuss any changes or improvements that could be made to their recipe/process next time.