Design & Technology

Autumn Term

Intent, Implementation, Impact

Contents

Year 1 Autumn 1 Design and Technology – <u>How do I make my rocket strong?</u>	
1. What is a rocket? What shapes do I need to make my rocket?	
Intent	To introduce the children to the shapes that are evident in rockets and space shuttles.
Implementation	Children to explore a range of photographs and short video clips to identify what a rocket is and identify the different shapes evident in their design.
2. What materials will I use to build it?	
Intent	To identify which materials will be most suitable to use to make a space rocket.
Implementation	Children to explore the different junk modelling materials. They will select the materials that they want to use in order to build their design.
3. How do I make my rocket look good?	
Intent	Identify the features the children need to consider when making their rocket aesthetically pleasing.
Implementation	Children look at a range of rocket designs and discuss what looks good. They will experiment by drawing a number of different ideas before selecting their chosen design.
4. How do I join materials together? What shapes will make my rocket strong?	
Intent	To identify different method of joining materials together. Identify what shapes will make their model strong.
Implementation	Prior to constructing their model, children will experiment with different joining techniques, gluing and using tape, in order to decide which method is most suitable for their model. They will look at a range of different rockets, buildings and structures to identity common shapes that give the strength
5. Was my rocket strong?	
Intent	To identify what aspects of their model they felt were successful and those, that given the opportunity, they would improve or discard.
Implementation	Children to have peer to peer discussions regarding their completed design before completing a design evaluation sheet.
Impact	<u>**How do I make my rocket strong?**</u> • Children will understand the shapes needed to make a rocket. • Design a rocket which is aesthetically pleasing. • Use appropriate joining techniques to aid strength. • They will use shapes that ensure their structure is strong. • Evaluate their product and those of their peers.

Year 5/6 Design and Technology – How do I make my own bread? Plan B	
1. What different types of bread are there?	
Intent	Children understand that different ingredients will change how a bread looks, tastes and feels.
Implementation	Show children a range of different breads types and some of the ingredients that are used to make them. They will then get an opportunity to touch and taste the different types of bread to discover their own preferences.
2. What ingredients can I use to make my bread?	
Intent	Children will know the main ingredients on a variety of common types of bread and begin to think about which of these they will need when designing their own bread.
Implementation	Look at a range of popular breads and possible variations before the children decide on their favourite ingredients and bread types.
3. What will I use in my own bread recipe?	
Intent	Children will create their final design for their own loaf of bread using their knowledge of different ingredients, tastes and textures.
Implementation	Using the knowledge of bread types and ingredients, the children will create their own bread and compile a list of ingredients that they will need in order to bake their bread.
4. Which recipe is the best to create my bread?	
Intent	Children to research different recipes that they could use to make their bread and decide upon the best method before using it to bake their own loaf of bread.
Implementation	Look at different recipes for the different types of bread that the class have chosen and each child needs to choose the recipe that best fits the type of bread that they have designed. They will then gather their ingredients and recipe before baking their own bread.
Impact	**To be able to follow a recipe to make their own loaf of bread according to the design that they have created.**

Year 4 Design and Technology – Alarms: How do I make an alarm?	
1.	
Intent	How do I design an alarm?
Implementation	Children look at examples of alarms to understand their purpose as well as how they work. They look at similar designs to help them plan and design their own alarms. and consider materials, tools and equipment that will be needed.
2.	
Intent	Which tools will I need to make an alarm?
Implementation	Children consider materials, tools and equipment that will be needed.
3.	
Intent	How does my knowledge of electricity help me to make an alarm?
Implementation	Children use their knowledge of circuits when planning and making their alarm.
4.	
Intent	If I made another alarm, how could I make it even better?
Implementation	Children consider what they would do similarly as well as differently if they were to make another alarm. They recognise their strengths when working with circuits as well as areas they may need to improve on.
5.	
Impact	Children can design, make and evaluate an alarm. They can create an electrical circuit. They can reflect on their product and consider what may need improving as well as what was successful.

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.

Design & Technology

Spring Term

Intent, Implementation, Impact

Year 2 - Design and Technology - <u>What is an axle?</u>	
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 3 Design and Technology – Construction: <u>What materials can be used to reinforce structures?</u>	
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.
Implementation	Children will create a variety of 3D shapes from nets and study their strength properties.
2. What materials do architects use to create buildings and why?	
Intent	To understand the materials used by architects to reinforce structures and why.
Implementation	Children will explore different materials used in construction and study how they are used to reinforce structures.
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.

Year 4 Design and Technology – Textiles: <u>What is a blanket stitch?</u>	
1.	
Intent	How do you design a Viking purse?
Implementation	Children look at examples of Viking purses to understand the shape and structure. They look at similar designs to help them plan and design their own purses and consider materials, tools and equipment that will be needed.
2.	
Intent	How do you measure material accurately?
Implementation	Children use a ruler to measure material and thread accurately.
3.	
Intent	How do you sew the purse so that it closes?
Implementation	Children use the running stitch to create drawstring closing.
4.	
Intent	What stitches could I use to decorate the purse?
Implementation	Children use the blanket stitch to decorate the top of the purse and also understand it will help to prevent the material from fraying.
5.	
Intent	How do you evaluate what you have made?
Implementation	Children consider what they would do similarly as well as differently if they were to make another purse. They recognise their strengths when working with textiles as well as areas they may need to improve on.
Impact	Children can design, make and evaluate a purse. They can thread a needle and use the running and blanket stiches. They can reflect on their product and consider what may need improving as well as what was successful.

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.**

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.

Design & Technology

Summer Term

Intent, Implementation, Impact

Year 1 Summer 1 Design and Technology – <u>What makes a good sandwich?</u>	
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	**<u>What makes a good sandwich?</u>** **<u>Children will know that:</u>** • 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 - <u>What is a running stitch?</u>	
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.

Year 3 Design and Technology – Cooking: <u>Where in the world does food come from?</u>	
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.