

## **Nateby Primary School**



## **Design Technology**

### **HOW PUPILS AT NATEBY WILL LEARN THROUGH AND ABOUT DESIGN TECHNOLOGY**

#### **RECEPTION AND DESIGN TECHNOLOGY**

During the Early Years Foundation Stage, the essential building blocks of children's design and technology capability are established. There are many opportunities for carrying out D&T-related activities in all areas of learning in the EYFS. Specifically, 'Designing and Making' is identified as a strand within Knowledge and Understanding of the World. By the end of the EYFS, most children should be able to:

Construct with a purpose in mind, using a variety of resources

Use simple tools and techniques competently and appropriately

Build and construct with a wide range of objects, selecting appropriate resources and adapting their work when necessary

Select the tools and techniques they need to shape, assemble and join materials they are using

D&T-related activities in the EYFS should be appropriate to the developmental stage of the children. Activities should look quite different from those carried out in KS1. Effective practice in the EYFS has the following characteristics:

Designing does not necessarily entail drawing

Designing can mean using hand gestures, arranging and re-arranging materials and components, talking and listening

Designing is usually intuitive

The designing and making process is fluid

Sometimes practical skills are taught directly

Children have frequent opportunities to develop practical skills with a range of materials

Children have frequent opportunities to explore construction kits

Children have frequent opportunities to explore existing products

Activities are appropriate to children's prior experience

Context is sometimes set by teacher, sometimes by the children.

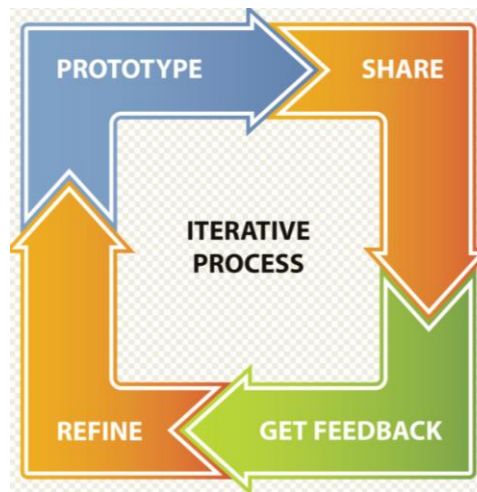
Reception (EYFS) children at Nateby will have the opportunity to use construction within continuous provision. This will sometimes be within a context set by the teacher and sometimes led by the children themselves. A variety of resources and equipment will be available for children to use and select from. For example they may use split-pins for a clock face, they may create their own designs from Lego and other construction kits; they may make different vehicles from resources available to them or create their own products and artefacts through junk modelling.

## **THE NATIONAL CURRICULUM**

### **Aims:**

The national curriculum for Design & Technology aims to ensure all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- 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
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.



*The iterative process*

### **How will DT be taught?**

Through a variety of creative and practical activities, pupils will be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They will work in a range of relevant contexts

Over each year and each project, pupils will cover the following areas:

Design, Make, Evaluate, Technical Knowledge

**Progression in Design Technology**

Design	Make	Evaluate	Technical Knowledge
<b>KS1</b>			
<p>Use pictures and words to illustrate their design ideas.</p> <p>Work through a variety of ideas</p> <p>Use kits and / junk modelling to trial their ideas and practise skills</p> <p>Explaining their ideas with procedural language such as: First... Next... Last....</p> <p>Explore ideas by using a range of materials.</p> <p>Use drawings to record ideas as they are developed.</p> <p>Add notes to drawings to describe their ideas.</p>	<p>Discuss their work as it progresses.</p> <p>Select appropriate materials from a teacher selected range to meet their requirements</p> <p>Select and name the correct tools needed</p> <p>Explain what they are making</p> <p>Explain which materials they are using and why</p> <p>Describe what they need to do next.</p>	<p>Investigate how existing products have been made and how they meet the needs of the intended user</p> <p>Decide how existing products do/do not achieve their purpose</p> <p>Talk about their design as they develop and identify good and bad points</p> <p>Note changes made during the making process as annotations to plans/drawings</p> <p>Say what they like and do not like about items they have made and attempt to say why</p> <p>Discuss how closely their finished product meets their design criteria and how well it meets the needs of the user</p>	<p>Build structures, exploring how they can be made stronger, stiffer and more stable</p> <p>Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</p>
<b>LOWER KS2</b>			
<p>Develop and adapt designs as their work progresses</p> <p>Plan a sequence of actions to make a product.</p> <p>Record the plan by drawing using</p>	<p>Prepare and use templates for their design</p> <p>Cut slots</p> <p>Cut internal shapes</p>	<p>Investigate similar products to give starting points for a design, investigate quality and finishing techniques</p> <p>Draw/sketch products to help</p>	<p>(The following to be studied over the course of KS2)</p> <p>Apply their understanding of how to strengthen, stiffen and reinforce</p>

<p>annotated sketches.</p> <p>Begin to use cross-sectional and exploded diagrams.</p> <p>Use prototypes to develop and share ideas.</p> <p>Think ahead about the order of their work and decide upon tools and materials.</p> <p>Propose realistic suggestions as to how they can achieve their design ideas.</p> <p>Consider aesthetic qualities of materials chosen.</p> <p>Use computing to record and adapt designs where appropriate.</p>	<p>Select from a range of tools for cutting shaping joining and finishing.</p> <p>Use tools with accuracy</p> <p>Select appropriate techniques for different parts of the process</p> <p>Select from materials according to their functional properties</p> <p>Plan the stages of the making process</p> <p>Use appropriate finishing techniques.</p>	<p>analyse and understand how products are made</p> <p>Research needs of user</p> <p>Identify the strengths and weaknesses of their design ideas in relation to purpose/user</p> <p>Decide which design idea to develop</p> <p>Consider and explain how the finished product could be improved</p> <p>Discuss how well the finished product meets the design criteria of the user</p> <p>Investigate key events and individuals in Design and Technology</p>	<p>more complex structures</p> <p>Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</p> <p>Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</p> <p>Apply their understanding of computing to program, monitor and control their products.</p>
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**UPPER KS2**

<p>List tools needed before starting the activity.</p> <p>Plan the sequence of work e.g. using a storyboard.</p> <p>Record ideas using annotated diagrams.</p> <p>Use models, kits and drawings to help formulate design ideas.</p> <p>Combine modelling and drawing to refine ideas.</p> <p>Devise step by step plans which can be read / followed by someone else.</p> <p>Use exploded diagrams and cross-sectional diagrams to communicate</p>	<p>Make prototypes.</p> <p>Develop one idea in depth.</p> <p>Use researched information to inform decisions.</p> <p>Produce detailed lists of ingredients / components / materials and tools.</p> <p>Use a computer to model ideas.</p> <p>Select from and use a wide range of tools.</p> <p>Cut accurately and safely to a marked line.</p> <p>Select from and use a wide range of materials.</p> <p>Use appropriate finishing techniques</p>	<p>Research and evaluate existing products (including book and web based research).</p> <p>Consider user and purpose.</p> <p>Identify the strengths and weaknesses of their design ideas.</p> <p>Give a report using correct technical vocabulary.</p> <p>Consider and explain how the finished product could be improved related to design criteria.</p> <p>Discuss how well the finished product meets the design criteria of the user.</p> <p>Test on the user!</p>	<p>(The following to be studied over the course of KS2)</p> <p>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p> <p>Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</p> <p>Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</p> <p>Apply their understanding of</p>
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ideas. Sketch and model alternative ideas. Decide which design idea to develop.	for the project. Refine their product – review and rework/improve.	Understand how key people have influenced design.	computing to program, monitor and control their products.
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## Cooking & nutrition

As part of their work with food, pupils will be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Pupils will learn basic cooking skills which with further study, will enable them to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

### **Key stage 1**

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

### **Key stage 2**

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

## Progression Cooking & nutrition


<b>KS1</b>	<b>LOWER KS2</b>	<b>UPPER KS2</b>
Develop a food vocabulary using taste, smell, texture and feel. Group familiar food products e.g. fruit and vegetables. Explain where food comes from. Cut, peel, grate, chop a range of ingredients Work safely and hygienically. Understand the need for a variety of foods in a diet.	Develop sensory vocabulary/knowledge using, smell, taste, texture and feel. Analyse the taste, texture, smell and appearance of a range of foods (predominantly savoury). Follow instructions/recipes. Make healthy eating choices – use the <i>Eatwell plate</i> . Join and combine a range of ingredients. Explore seasonality of vegetables and fruit.	Prepare food products taking into account the properties of ingredients and sensory characteristics. Weigh and measure using scales. Select and prepare foods for a particular purpose. Work safely and hygienically. Show awareness of a healthy diet (using the Eatwell plate). Use a range of cooking techniques.

Measure and weigh food items, non-statutory measures e.g. spoons, cups.	Find out which fruit and vegetables are grown in countries/continents studied in Geography. Develop understanding of how meat/fish are reared/caught.	Know where and how ingredients are grown and processed. Consider influence of chefs e.g. Jamie Oliver and school meals, Hugh Fearnley-Whittingstall and sustainable fishing etc.
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**Please note:**

Nateby staff use many resources and plans from CLEAPSS, Lancashire Education Authority's LPDS materials and other commercial plans where these inform and enhance practice. Some of the content above is adapted from these sources along with the National Curriculum requirements.

**Curriculum Map 2025/2026**


 <b>Autumn Term</b>	<b>Spring Term</b>	<b>Summer Term</b>
<b>CLASS 1 EYFS &amp; YEAR 1</b> <b>Theme: Marvellous Me!!</b> <i>Opportunities to make junk models throughout the year</i> <b>Eat More Fruit &amp; Vegetables (Planbee Unit)</b> Find out what the most popular fruit & vegetables are Try some and use senses to describe them Learn how to prepare different fruit & vegetables Plan a vegetable salad or a smoothie Eat & evaluate it!  <b>Delightful Decorations!</b> Investigate, design & make own baubles	<b>Theme: Fire! Fire!</b> <i>Opportunities to make junk models throughout the year</i> <b>Vehicles – Fire Engines (Planbee Unit)</b> Look at different vehicles and identify features Explore wheels, axels & chassis Design & make a vehicle Celebrate what went well & evaluate their own work	<b>Theme: Excellent Explorers</b> <i>Opportunities to make junk models throughout the year</i> <b>Moving Pictures (Planbee Unit)</b> Explore the different way levers can move pictures Use a wheel mechanism to move a picture Create a moving picture Use sliders to make objects disappear  <b>Windmills</b> Study how windmills differ across the world Design and make a windmill
<b>CLASS 2 YEAR 2 &amp; YEAR 3</b> <b>Theme: Passport to Europe</b> <b>Structures - Trebuchets</b> <b>Watch STEM Buddies video on how to make a</b>	<b>Theme: Egyptian Adventure</b>  <b>Textiles – Design &amp; Make an Egyptian Collar</b>	<b>Theme: Vikings &amp; Dragons</b>  <b>Structures – A Viking Longship</b>

	<p><b>trebuchet</b></p> <p><a href="https://www.youtube.com/watch?v=ksG87OUZOkA">https://www.youtube.com/watch?v=ksG87OUZOkA</a></p> <p>AND</p> <p><a href="https://www.youtube.com/watch?v=S4Ly7D5h_8E">https://www.youtube.com/watch?v=S4Ly7D5h_8E</a></p> <p>Investigate which trebuchet is the best design.</p> <p>Investigate a range of materials to make the structure</p> <p>How can each design be changed/modified to throw objects farther? (Size/shape/density of objects. Length of trebuchet arm)</p> <p><b>Seasonal Stockings-</b> Investigate, design &amp; make decorations</p>	<p><b>(Kapow Unit)</b></p> <p>Demonstrate their ability to use cross-stitch as a decorative feature or to join two pieces of fabric together.</p> <p>Develop appliqué designs based on design criteria.</p> <p>Design, cut and shape their template for an usekh or wesekh collar with increasing accuracy.</p> <p>Decorate their Egyptian collar using a variety of techniques, such as appliqué, cross-stitch, beads, buttons and pinking.</p> <p>Measure and attach a ribbon with a running stitch.</p> <p>Recognise different types and qualities of fabrics.</p> <p>Explain the aesthetic and functional properties of some of their material choices.</p>	<p>Design</p> <p>Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups</p> <p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, crosssectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <p>Make</p> <p>Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</p> <p>Select from and use a wider range of materials and components, including construction materials according to their functional properties and aesthetic qualities</p> <p>Evaluate</p> <p>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>Understand how key events and individuals in design and technology have helped shape the world</p> <p>Technical knowledge</p> <p>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p>
<p><b>CLASS 3</b> <b>YEAR 4</b></p>	<p><b>Theme: Stone Age to Iron Age</b></p> <p><b>Design and make a Stone Age shelter</b></p> <p>Look at different examples of shell structures,</p>	<p><b>Theme: Kingdom of Benin</b></p> <p><b>Benin Bronzes</b></p> <p>Design and make a Benin Bronze.</p>	<p><b>Theme: Changes of State</b></p> <p><b>Food – Chocolate Packaging (Planbee)</b></p>

	<p>including the design of homes in the past.</p> <p>Disassemble different types of packaging to construct nets.</p> <p>Practise making nets out of card. The children will practise their skills of scoring, cutting out and assembling using pre-drawn nets to create a simple box.</p> <p>Explore different ways of strengthening and stiffening structures e.g. corrugating, ribbing, laminating.</p> <p>Design a shell structure for a given purpose. Sketch plans and decide what materials they will need and the steps they will take.</p> <p>Make their structure using the practised skills</p>	<p>Use BBC Teach to introduce <a href="https://www.youtube.com/watch?v=nxZgnpro5Og">https://www.youtube.com/watch?v=nxZgnpro5Og</a></p> <p>Research how the bronzes were created.</p> <p>What could we use to make the sculptures? (Playdough/salt-dough/papier-mache)</p> <p>Design a Benin Bronze</p> <p>What tools are needed?</p>	<p>Analyse existing products</p> <p>Develop initial design ideas</p> <p>Conduct some consumer research</p> <p>Create a final packaging design</p> <p>Evaluate it against the success criteria.</p> <p>End of topic activity – make some chocolate crispy cakes</p>
<p><b>CLASS 4</b> <b>YEAR 5 &amp; YEAR 6</b></p>	<p><b>Theme: Law Breakers</b></p> <p><b>Programming Pioneers (Planbee Unit)</b></p> <p>Look at some everyday products which contain electronic components and investigate how they work</p> <p>What do hardware &amp; software engineers do? How do computers control a crossing?</p> <p>Look at the work pioneering computer scientists and what they achieved from 1940s</p> <p>Wire up a door bell or automatic light and programme them to work</p> <p><b>Seasonal Stockings</b></p> <p>Where did traditional stockings come from?</p> <p>Explore stitches, making designs appealing, creating a product and evaluating the result</p>	<p><b>Theme: The Great Study of China</b></p> <p><b>Chinese Inventions (Planbee)</b></p> <p>Explore the innovative culture of ancient China and discover the inventions that have helped shape the world.</p> <p>Discover how the ancient Chinese used kites for many different purposes and made them from different materials.</p> <p>Discuss the properties of these materials before testing different materials using prototypes. Which materials are most suitable for building a kite?</p> <p>Use knowledge and understanding of materials and their properties to design a kite.</p> <p>Explore the different parts of a kite and how each part helps a kite fly.</p> <p>Design a kite to a chosen design brief, influencing the choices they will make.</p>	<p><b>Theme: Our Great Britain</b></p> <p><b>Great British Dishes (Planbee)</b></p> <p>Explore savoury dishes &amp; investigate how healthy they are</p> <p>Look at RDA for sugar; plan a desert.</p> <p>Look at the growing of oats; plan &amp; make savoury toppings for oatcakes</p> <p>Look at the national dishes of Wales- make Welsh Rarebit muffins</p> <p>Look at how English food has been influenced by cuisine from around the world</p> <p>Plan a meal</p>

		<p>Make and evaluate your kite. Does the kite meet the design criteria?</p> <p>Problem solve when they meet a challenge and use peer-evaluation to aid their self-evaluation.</p>	
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## Curriculum Map 2026/2027

	Autumn Term	Spring Term	Summer Term
<p><b>CLASS 1</b> <b>EYFS &amp; YEAR 1</b></p>	<p><b>Theme: Home, Sweet Home</b></p> <p><i>Opportunities to make junk models throughout the year</i></p> <p><b>Homes (Planbee Unit)</b></p> <p>Look at different types of homes. Investigate basic joining techniques &amp; how to make a basic hinge</p> <p>Design and make a home for a character from a traditional story</p> <p><b>Seasonal Stockings-</b> Investigate, design &amp; make decorations</p>	<p><b>Theme: Amazing Animals</b></p> <p><i>Opportunities to make junk models throughout the year</i></p> <p><b>Moving Jungle Animals (Planbee Unit)</b></p> <p>Investigate three different mechanisms – sliders, levers&amp; pivots and wheels.</p> <p>Design and make a jungle themed moving picture.</p> <p>Create a background for their design.</p> <p>Design and make a moving jungle animal using at least one of the three mechanisms.</p>	<p><b>Theme: Pirates</b></p> <p><i>Opportunities to make junk models throughout the year</i></p> <p><b>Seaside Snacks (Planbee Unit)</b></p> <p>Find out where food comes from</p> <p>Taste &amp; explore different types of food.</p> <p>‘Eat well’ Plate -balanced picnic selection</p> <p>Make biscuits</p> <p>Savoury &amp; sweet choices</p>
<p><b>CLASS TWO</b> <b>YEAR 2 &amp; YEAR 3</b></p>	<p><b>Theme: War &amp; Remembrance</b></p> <p><b>World War Two Recipes - Seasonal Ingredients</b></p> <p>Learn basic cooking skills</p> <p>Study where food comes from and when it grows naturally</p> <p>Find out how ingredients can be sourced throughout the year</p>	<p><b>Theme: Paddington</b></p> <p><b>Light-Up Signs (Planbee)</b></p> <p><b>Design and create a London skyline</b></p> <p>Explore signs that light up</p> <p>Look at LEDs &amp; resistors- how to ‘hide’ the wiring</p> <p>Design a sign from wood &amp; install the electrics; evaluate</p> <p>Use programming to control lights</p>	<p><b>Theme: Castles</b></p> <p><b>Structures (Kapow Unit)</b></p> <p>Draw and label a simple castle that includes the most common features.</p> <p>Recognise that a castle is made up of multiple 3D shapes.</p> <p>Design a castle with key features which satisfy a</p>

	<p><b>Delightful Decorations!</b></p> <p>Investigate, design &amp; make own baubles</p>		<p>given purpose.</p> <p>Score or cut along lines on the net of a 2D shape.</p> <p>Use glue to securely assemble geometric shapes.</p> <p>Utilise skills to build a complex structure from simple geometric shapes.</p> <p>Evaluate their work by answering simple questions.</p>
<p><b>CLASS 3</b> <b>YEAR 4</b></p>	<p><b>Theme: Stone Age to Iron Age</b></p> <p><b>Design and make a Stone Age shelter</b></p> <p>Look at different examples of shell structures, including the design of homes in the past.</p> <p>Disassemble different types of packaging to construct nets.</p> <p>Practise making nets out of card. The children will practise their skills of scoring, cutting out and assembling using pre-drawn nets to create a simple box.</p> <p>Explore different ways of strengthening and stiffening structures e.g. corrugating, ribbing, laminating.</p> <p>Design a shell structure for a given purpose. Sketch plans and decide what materials they will need and the steps they will take.</p> <p>Make their structure using the practised skills</p>	<p><b>Theme: Kingdom of Benin</b></p> <p><b>Benin Bronzes</b></p> <p>Design and make a Benin Bronze.</p> <p>Use BBC Teach to introduce <a href="https://www.youtube.com/watch?v=nxZgnpro5Og">https://www.youtube.com/watch?v=nxZgnpro5Og</a></p> <p>Research how the bronzes were created.</p> <p>What could we use to make the sculptures? (Playdough/salt-dough/papier-mache)</p> <p>Design a Benin Bronze</p> <p>What tools are needed?</p>	<p><b>Theme: Changes of State</b></p> <p><b>Food – Chocolate Packaging (Planbee)</b></p> <p>Analyse existing products</p> <p>Develop initial design ideas</p> <p>Conduct some consumer research</p> <p>Create a final packaging design</p> <p>Evaluate it against the success criteria.</p> <p>End of topic activity – make some chocolate crispy cakes</p>
<p><b>CLASS 4</b> <b>YEAR 5 &amp;</b> <b>YEAR 6</b></p>	<p><b>Theme: USA Road Trip</b></p> <p><b>Patolli Board Game</b></p> <p>Investigate the Ancient Aztec game of Patolli.</p>	<p><b>Theme: Groovy Greeks</b></p> <p><b>Structures – The Parthenon (Planbee)</b></p> <p>Investigate different methods and materials to make the columns – can you create 4 columns that</p>	<p><b>Theme: Booming Business</b></p> <p><b>Food – Fairtrade</b></p>

	<p>Design and make the game board Design and make the 'pawns' for each player Design and make the 'offerings'</p> <p><b>Delightful Decorations!</b> Investigate, design &amp; make own baubles</p>	<p>will hold the weight of a small book? Do you fold or roll the chosen material? Design a net to make a triangular prism. Investigate a range of materials for each part of the structure.</p>	<p>Describe the process of the chocolate production. Research a traditional recipe and make changes to it. Add nutritional value to a recipe by selecting ingredients. Prepare and cook a recipe which contains fairtrade chocolate.</p>
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