

Design and Technology

Intent

Our Design and Technology curriculum intent is to take the children on a journey from Nursery to Year 6. It is an inspirational curriculum that has been developed with the children's starting points in mind and adapted from the National Curriculum to ensure it is broad, balanced and challenging. It will develop in all children; the skills, knowledge and behaviours in the areas of construction, textiles and food technology. It will develop creativity and their ability to learn and apply lifelong technical and practical expertise in a variety of contexts to help them thrive in Key Stage 3 and beyond. Children will leave the school with knowledge of how to participate successfully in an increasingly technological world and will be equipped with the skills to do so.

Rationale

To ensure all children have a clear understanding of the process of Construction/ Textile DT lessons all will follow a very distinct approach: Our approach is based on the National Curriculum criteria which are highlighted in red.

The EYFS curriculum: The children will be given opportunities to explore a range of DT based skills (build, join, cut etc) through purposeful continuous provision which is based on play. This will be the foundation blocks for the curriculum.

Process		Key questions to adapt
Technical Knowledge	Technical skills- Practice the key skills which will be used	What skill/s will I need to learn or develop? What technological (mechanism) concept am I using? (construction)
Design	Investigation- Look at the product and see where it's come from/ use and how it works/ is made	What is it and how does it work/ how is it made?
	Decide which design idea to develop	Who for and why am I making this product? What will I need to include in my design to fit this brief?
	Develop more than one design or adaptation of an initial design	Which one of my ideas/ designs is best? Why?
Make	Prototype	What will I take from this build/ prototype? What needs to be developed further?
	Make (make sure children have ownership and creativity in end product)	How will I make this?
Evaluate	Evaluation	What was good about my product? What would I improve?
	Discuss how well the finished product meets the design criteria and how well it meets the needs of the user/ the person the product was designed for	Did I meet the brief?

Rationale for Food technology

The pupils should 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. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

DT Curriculum

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Knowledge	Skills	Vocabulary
<p>I know how to select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc.</p> <p>I know I can combine shapes to make new ones e.g. an arch, a bigger triangle etc.</p> <p>I know to choose the right resources to carry out my own plan.</p> <p>I know how to describe a sequence of events, real or fictional, using words such as 'first', 'then' etc.</p>	<p>I can explore different materials, using all my senses to investigate them.</p> <p>I can manipulate and play with different materials.</p> <p>I can use my imagination when deciding what I can do with different materials.</p> <p>I can make simple models which express my ideas.</p> <p>I can make imaginative and complex small worlds with blocks and construction kits, such as a city with different buildings and a park</p> <p>I can explore different materials freely, in order to develop my ideas about how to use them and what to make.</p> <p>I can join different materials using various materials such as: glue, masking tape, paper clips, fasteners.</p> <p>I can talk about the differences between materials and notice changes (e.g. melting chocolate/ baking) I can explore different textures.</p> <p>I can use one-handed tools such as: <i>scissors</i>, paintbrushes and glue sticks.</p> <p>I can use simple finishing techniques to improve the appearance of my product.</p>	<p>Stacking, joining, space, build, balance, movement, equipment and tools.</p> <p>Positional language: up, down, over, under, through and between.</p>

Reception	Knowledge	Skills	Vocabulary
	<p>I know how to use a range of materials to construct.</p> <p>I know how to use different techniques to join materials.</p> <p>I know how to use scissors and other tools safely</p>	<p>I can safely use and explore a variety of materials</p> <p>I can safely use a range of tools and techniques.</p> <p>I can experiment with colour, design, texture, form and function.</p> <p>I can share my creations, explaining the process I have used.</p> <p>I can develop small motor skills so that I can use a range of tools competently and confidently (including scissors and knives).</p> <p>I can assemble, join and combine materials and components together using a variety method e.g. glue, paper clips, fasteners or masking tape</p> <p>I can return to and build on previous learning, refining my ideas and developing my ability to represent them.</p> <p>I can create collaboratively, sharing ideas, resources and skills.</p> <p>I can verbally evaluate my products as they are developed.</p> <p>I can discuss how well my products work in relation to the purpose.</p> <p>I can identify strengths and possible changes I might make to my product.</p>	<p>Build, height, problem, rotate, manipulate</p> <p>How do I fix it?</p>

Previous learning: Building on prior learning from EYFS: children develop their ability to plan and describe what they are going to make, moving on from a verbal description to a written/drawn version. They will be able to select the appropriate tools and materials and explore prototypes.

Construction: Mechanism - Hinges

Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
I know what a hinge is and where to find hinges I know that a hinge is a moveable joint that connects two solid objects	I can join appropriately for different materials and situations (e.g. glue, tape) I can understand that a hinge allows things to open and close I can fold, cut and tear paper/card in straight lines I can use scissors efficiently I can create hinges.	Hinge, movement, join, construct, prototype, glue, cut, evaluate, product

Food technology: Fruit salad/ Vegetable stew .

Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
I know the basic principles of a healthy and varied diet to prepare dishes I know where food comes from	I can develop a food vocabulary using taste, smell, and texture and use this to choose ingredients I can group familiar food products and say where they come from (e.g fruit and vegetables) I can chop and mix ingredients safely and hygienically	healthy, varied, diet knife, chopping board fruit vegetable chop mix

Textiles: Bookmark

Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
I know how to attach fabric.	I can attach fabrics together. I can attach buttons/ sequins on using glue. I can choose appropriate resources and tools.	Join, textile, evaluate and product

Previous learning - Children are able to record a plan and include some annotations. Children will be using 'because' to justify their choices and linking their ideas to the real world.

Construction – Mechanism – Axles, Wheels and Chassis – How does a vehicle move?

Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
I know what a chassis is (a base frame) I know that an axle is a rod that passes through the centre of a wheel or group of wheels.	I can attach wheels to a chassis using an axle I can measure the length of an axle and observe an adult using a saw to cut to appropriate size. I can investigate joinings: temporary, fixed & moving. I can use a range of materials to make models with wheels & axles (e.g. cotton reels, tubes).	Axle, wheel, chassis, join, movement, fixed, moving, reinforce, prototype

Food technology pasta / egg/ potatoes salad (boiling eggs/ pasta/ potatoes)

Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
I know the basic principles of a healthy and varied diet to prepare dishes I know where food comes from I know that boiling water bubbles when it is hot	I can slice, peel, grate and chop a range of ingredients. I can use a timer	Peel, grate, boil, slice Diet Pan, hob, Seasonable non- seasonable Local produce

Textiles: Puppet (Hand puppet)

Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
I know how to join two pieces of fabric together and use the correct tools. I know how to use a basic sewing technique.	I can draw then cut round a template. I can stitch to join two fabrics together.	Stitch, join, cut and sew.

Year 3

Construction: Levers - Milk Trolley STEM challenge: The caretaker wants to bring the milk down to the classrooms - they want a light trolley that can hold as much milk as possible, as well as take up minimal space in their store cupboard. It needs to be waterproof, and strong too.

Previous learning: Building on skills from Year 2 - Children will be able to use their knowledge of making things the appropriate size for their product in year 2 to help plan the year 3 product.

Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
I know that that levers can be used for lifting, weighing and moving objects I know I can make structures more stable by giving them a wide base	I can use a cold glue gun I can use materials to make levers I can use a saw closely supervised	Nets, stable, levers, movement, prototype, load, pivot, effort, fulcrum

Food technology:- Flap jacks

Previous learning: work on healthy eating and using of basic kitchen equipment

Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
I know the principles of a healthy and varied diet I know how to prepare and cook a variety of dishes using a range of cooking techniques I know about seasonality, and know where and how a variety of ingredients are grown	I can work on a hob/ with an oven safely and effectively I can use a knife safely and cut to a given size I can measure & weigh ingredients appropriately (using statutory units via scales, measuring jugs)	Oven jug scales Sweet savoury Seasonality Melt

Textiles: bags

Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
I know some different fastenings and can identify them I know about why we use a pattern	I can join fabrics using an over stitch I can recreate a simple fastening I can create a simple pattern	Over stitch, patterns

Previous learning: levers, axels,		
Construction: Mechanism - Pulleys		
Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
I know that a pulley makes it easier to lift heavy objects	I can create shell or frame structures, strengthen frames with diagonal struts I can incorporate pulleys into a model I can use a sawing more independently I can use a glue gun with 1:1 supervision (cool) I can create a net	Pulley, load, effort, reinforce, prototype
Food technology: cakes (Savoury)		
Previous knowledge- builds on chopping, mixing and grating from KS1, using knives and mixing builds on Y3 introduction to use of an oven to bake and measuring ingredients		
Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
I know the principles of a healthy and varied diet I know a range of cooking techniques I know about seasonality, and know where and how a variety of ingredients are grown and processed.	I can control the temperature of an oven I can prepare and cook a variety of predominantly savoury dishes I can analyse the taste, texture smell & appearance of a range of foods	Bake Raw cooked Processed Temperature Weigh
Textiles: Pencil case with a zip		
Previous knowledge- builds on Y3 bags unit		
Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
I know what a zip is and what it is used for	I can join fabrics using a back stitch I can explore fastenings I can use appropriate decoration techniques e.g applique (glued or simple stitches)	Stitch, fasten, zip, attach,

Previous learning: Building on skills from year 4 - Work on more detailed sketches and sketching specific parts which need a good understanding of how things are made from year 4.

Construction: Mechanism – Cam

Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
<p>I know that a cam can change the movement of an object.</p> <p>I know that the shape of the cam can change the type of movement.</p> <p>I know that the position of the cam can change the direction of movement.</p>	<p>I can create shell or frame structures, strengthen frames with diagonal struts.</p> <p>I can make a prototype frame and shell structure</p> <p>I can incorporate cams into a model</p> <p>I can develop sawing skills</p> <p>I can use a glue gun with 1:1 supervision (cool)</p>	<p>Cam</p> <p>Follower</p> <p>Frame</p> <p>Axle</p> <p>Slider</p> <p>Handle</p> <p>Motion</p> <p>Shell structure</p> <p>Prototype</p>

Food technology: Baking (bread flat or yeasted)

Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
<p>I know and apply the principles of a healthy and varied diet</p> <p>I know how to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</p> <p>I know where and how a variety of ingredients are grown and processed.</p>	<p>I can join & combine food ingredients appropriately (e.g kneading and mixing)</p> <p>I can use an oven to bake a product</p> <p>I can taste a range of ingredients & food items to develop a sensory food vocabulary for use when designing (spice and peel)</p>	<p>Bitter, sweet, salty, bland, spicy, bread, dough, rise, baking, mixing, kneading, ingredients, weighing, planning, recipe, yeast, oven, proving, evaluation, nutmeg, cinnamon, spice, peels, grill, sifting, recipe</p>

Textiles: Cushion cover

Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
<p>I know that a range of materials can be used to create a product.</p> <p>I know that some materials are better suited to different types of product depending on need e.g. flexibility, waterproof</p>	<p>I can create 3D products using pattern pieces and seam allowance</p> <p>I can decorate textiles appropriately, often before joining components</p> <p>I can join materials using appropriate methods</p> <p>I can pin and tack fabric pieces together</p> <p>I can join fabrics using over sewing, back stitch and/or blanket stitch</p>	<p>Seam allowance, Tack, Textiles, Over sewing, Back stitch, Blanket stitch</p>

Previous learning: Building on skills from year 5 - refine questions that they ask a target audience in the research stage to get useful information before the first design.

Construction: Mechanism – Gears

Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
<p>I know that gears can change the direction and speed of an object.</p> <p>I know that gears are toothed wheels that lock together and turn one another.</p> <p>I know that wheels are usually different sizes so that one gear speeds up to slow down the next gear</p> <p>I know that a motor is an electrical machine that converts electricity into energy.</p>	<p>I can use ICT within a build.</p> <p>I can program my build.</p> <p>I can adjust the speed and direction through programming and designing.</p> <p>I can control a model using a computing control programme</p> <p>I can use a craft knife, cutting mat and safety ruler with close supervision</p>	<p>Program, gear, toothed, convert, energy, rotate direction</p>

Food technology: Frying (fajitas, stir fry) -

Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
<p>I know and apply the principles of a healthy and varied diet</p> <p>I know how to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</p> <p>I know how a variety of ingredients are grown, reared, caught and processed. (explore reared and caught when researching flavours of fajitas)</p>	<p>I can join & combine food ingredients appropriately</p> <p>I can use an oven to bake/ fry a product</p> <p>I can taste a range of ingredients & food items to develop a sensory food vocabulary for use when designing</p>	<p>Recipe, fry, brown, sweet, salty, ingredients, wok</p>

Textiles: Upcycling and repurpose material (old t-shirt into phone cover)

Knowledge learnt by the end of the unit	Skills learnt by the end of the unit	Vocabulary
<p>I know that a range of materials can be used to create a product.</p> <p>I know that some materials are better suited to different types of product depending on need e.g. flexibility, waterproof</p>	<p>I can create 3D products using pattern pieces and seam allowance</p> <p>I can decorate textiles appropriately, often before joining components</p> <p>I can join materials using appropriate methods</p> <p>I can pin and tack fabric pieces together</p> <p>I can use a bradawl to mark hole positions</p> <p>I can join fabrics using over sewing, back stitch and/or blanket stitch</p> <p>I can join fabrics using machine stitching (on a 1:1 basis with an adult)</p>	<p>Bradawl, Seam allowance, Tack, Textiles, Over sewing, Back stitch, Blanket stitch</p>