



Be a Designer!

Design and Technology Curriculum – Intent and Implementation

The aim of our Design and Technology curriculum is to give our pupils the opportunity to master key practical skills alongside equipping them with the knowledge and understanding of the design process (design, make and evaluate) through a range of inspiring opportunities. Children will be posed with a number of meaningful problems to solve through their designs. They will have the opportunity to research and evaluate existing designers and their products to inspire and equip them with the knowledge they need to successfully design their own product. They will create structures, mechanisms, textiles and food and, where appropriate, will create prototypes to ensure the greatest success of their final product. Children will be equipped with the skills to evaluate their own products considering important aspects such as the user, purpose and look of their products. Through these experiences, children will develop a critical understanding of the impact and importance of design and technology on daily life and the wider world. Much of the Design and Technology Curriculum is taught through cross-curricular topics which are reviewed on a yearly basis to ensure relevance for the current cohort, and to encourage reflective practise. There is no set formula for the Design and Technology curriculum, and there is flexibility in the long-term plan to reflect the needs and cultural capital of the pupils.

SEND

We believe that every child should be respected as an individual and has the right to learn and develop their talents and abilities (Article 29). We adapt the curriculum and supply resources to suit pupil's individual needs, including; social, emotional and mental health, physical, sensory and cognitive, so that every child can access the curriculum and further their learning. Children with complex needs including children with autism and social communication needs access the curriculum at their own level of personal development. This may not follow the continuum due to their individual learning profile, therefore they may not necessarily access all aspects of the progression map in order. For example, in reading, a child may be able to read complex texts, but not have the comprehension skills to match. Due to the possible sensory needs of children with autism and social communication difficulties, some children may find it challenging to participate in messy play and activities- this will be accounted for in the provision and teaching and learning.

Design - skills and knowledge (taught throughout each unit of design)

EYFS	Year 1	Year 2
<p>3 – 4 year olds Develop their own ideas and then decide which materials to use to express them.</p> <p>Reception I can construct with a purpose in mind</p> <p>I can verbally explain what I am making.</p> <p>I can select simple equipment, materials and techniques needed for my design eg. scissors, glue, paper etc.</p> <p>ELG Safely use and explore a variety of materials, experimenting with colour, design, texture, form and function.</p> <p>I know the names of a variety of materials.</p> <p>I know how to describe textures such as rough, smooth, soft etc.</p> <p>I know how to describe patterns such as <i>line, zig-zag, wavy</i></p>	<p>I can generate my own ideas to design a product for a purpose/to solve a real life problem.</p> <p>I can draw out my design.</p> <p>I can verbally explain how my product will work and who it is for.</p> <p>I can explore which construction materials will be the most appropriate for my design eg. card, cardboard, plastic, clay, etc.</p> <p>I can explore which joining material will be the most appropriate for my design</p> <p>I know that it is important to design a product before making to ensure that thought has gone into its purpose and outcome.</p> <p>I know the names of a range of construction and joining material</p>	<p>I can identify the purpose for my design.</p> <p>I can generate my own ideas and describe my design through drawing and labelling.</p> <p>I can create a prototype to test my design.</p> <p>I can verbally evaluate my prototypes and develop my product design.</p> <p>I can choose an appropriate construction material for my design eg. card, cardboard, plastic, clay, etc.</p> <p>I can choose an appropriate joining material for my design</p> <p>I know that designers design for a purpose.</p> <p>I know that it is important to develop my product designs through prototypes and evaluation to improve the outcome.</p> <p>I know which materials are the most appropriate to create my produce and explain why.</p> <p>I know which joining materials are the most appropriate for my design and explain why.</p>
<p>Material, colour, texture</p>	<p>Design, plan, product, purpose, join</p>	<p>Design, product, purpose, label, appropriate, prototype, develop</p>

Make - skills and knowledge (taught throughout each unit of design)

EYFS	Year 1	Year 2
<p><u>Reception</u> Explore, use and refine a variety of artistic effects to express their ideas and feelings.</p> <p>Create collaboratively, sharing ideas, resources and skills</p> <p>I can use scissors to cut straight and curved edges.</p> <p><u>ELG</u> Safely use and explore a variety of materials, experimenting with colour, design, texture, form and function.</p> <p>I can safely and effectively use a range of tools eg. scissors, hole punch, stapler, Sellotape dispenser woodworking tools and glue.</p> <p>Make use of props and materials when role playing characters in narratives and stories.</p> <p>I know that materials can be joined using Sellotape, stick glue, PVA glue, staples, masking tape and string.</p> <p>I know the names of a range of tools eg. scissors, hole punch, stapler, Sellotape dispenser, woodworking tools and glue.</p> <p>I know the names of a variety of materials.</p>	<p>I can measure, mark out, cut and shape a range of materials with support.</p> <p>I can assemble, join and combine materials using joining <u>materials</u> such as <i>Sellotape, stick glue, PVA glue, staples, masking tape and string.</i></p> <p>I can assemble, join and combine materials using joining <u>techniques</u> such as <i>flange, tie, tab, stick, slot, sew, brace, tape, fold and split pin.</i></p> <p>I can use <u>equipment</u> such as <i>scissors, a stapler, hole punch and Sellotape dispenser safely and effectively.</i></p> <p>I can use simple finishing techniques.</p> <p>I know what materials I need to create my product.</p> <p>I know when a cutting or joining tool has been successful.</p> <p>I know when a product is unfinished.</p> <p>I know which methods of joining are effective on different materials such as <i>glue on paper, masking tape on plastic.</i></p>	<p>I can measure, mark out, cut and score a range of materials accurately and independently.</p> <p>I can select the most appropriate material and technique to create my product.</p> <p>I can select and use the most appropriate joining material, technique and equipment to assemble my product. (see year 1 for more detail)</p> <p>I can use a range of equipment safely and effectively. (see year 1 for more detail)</p> <p>I know the names and basic properties of the materials I need to create my product.</p> <p>I know the names and processes of the techniques I need to create my product.</p> <p>I know the names and purposes of the equipment I need to create my product.</p> <p>I know the difference between a finished product and unfinished product.</p>
<p>Scissors, straight/curved, hole punch, stapler, Sellotape, card, paper, plastic, cut, tear, stick.</p>	<p>Mark out, cut, shape, material, join, technique, equipment, finished/unfinished product.</p>	<p>Measure, mark out, score, material, technique, equipment, finishing technique.</p>

Evaluate - skills and knowledge (taught throughout each unit of design before and after design/make)

EYFS	Year 1	Year 2
<p>3 – 4 year olds Explore different materials freely, in order to develop their ideas about how to use them and what to make.</p> <p>Reception Return to and build on their previous learning, refining ideas and developing their ability to represent them.</p> <p>I can use a range of equipment to create eg. scissors, hole punch, stapler, woodworking tools and glue.</p> <p>I can talk about how I have made something and what I like/dislike about my creations.</p> <p>ELG Share their creations, explaining the process they have used.</p> <p>I know what I have made and I know what the different parts are.</p> <p>I know how to make additions to my product</p> <p>I know the purpose of equipment eg. scissors, hole punch, stapler, woodworking tools and glue.</p> <p>I know how objects work by dismantling them.</p>	<p>I can explore a range of existing products explaining their purpose and how they work.</p> <p>I can talk about how well an existing product works based on its purpose.</p> <p>I can talk about a product I have made, saying what does/doesn't work well.</p> <p>I can talk about how well my product works based on its purpose.</p> <p>I can test my product and identify what I could change next time to improve it.</p> <p>I know the names of some existing successful products.</p> <p>I know why an existing product is successful.</p> <p>I know how successful my product is after testing it.</p>	<p>I can explore a range of existing products considering its purpose and intended user.</p> <p>I can identify the strengths and weaknesses of an existing product.</p> <p>I can evaluate my product whilst making it and make appropriate changes or alterations.</p> <p>I can talk about a product I have made, saying what does/doesn't work well considering the intended user/purpose.</p> <p>I can suggest ways to improve my design next time</p> <p>I know the names of some existing successful products and I know why they are successful.</p> <p>I know how to test my product to check that it is successful.</p> <p>I know how successful my product is after testing it and explain what changes I may need to make.</p>
<p>Made, like/don't like, because</p>	<p>Existing product, purpose, successful, works well/doesn't work well, test, improve.</p>	<p>Existing product, purpose, intended user, strengths/weaknesses, product, evaluate, improve, alter.</p>

Technical Aspect: Mechanisms and structures - skills and knowledge

EYFS	Year 1	Year 2
<p>Reception Create collaboratively, sharing ideas, resources and skills</p> <p>I can use construction materials such as LEGO, DUPLO and K'NEX to build structures.</p> <p>I know that I can choose from a range of construction materials.</p>	<p><u>Mechanisms – slider and lever</u> I can design a product that moves using a slider and lever mechanism.</p> <p>I can carry out simple fixing techniques eg. securing a lollystick slider with masking tape.</p> <p><u>Structures</u> I can build structures.</p> <p>I can use a wide range of construction materials, equipment and techniques to build structures.</p> <p>I can build structures, adapting them to make them stronger, stiffer and more stable</p> <p>I know the name of a slider and lever.</p> <p>I know how to operate a slider and lever.</p> <p>I know that different mechanisms create different movements.</p> <p>I know what construction material is appropriate for my product.</p> <p>I know what makes a freestanding structure stronger, stiffer and more stable.</p>	<p><u>Mechanisms – hinge and wheel and axle</u> I can create a product using a wheel and axle mechanism.</p> <p>I can use woodworking tools with support to create a wheel and axle.</p> <p>I can secure a wheel and axle mechanism to a product.</p> <p>I can create a product using a hinge mechanism.</p> <p>I can choose a mechanism for a specific task.</p> <p>I can follow health and safety procedures when using the woodworking equipment.</p> <p>I know the names of different mechanisms eg. slider, lever, hinge, wheel and axle</p> <p>I know what a wheel and axle is and how it works.</p> <p>I know that the axle has to move to enable to wheel to turn.</p> <p>I know the difference between a fixed and free-moving axle.</p> <p>I know what a hinge mechanism is and how it works.</p>
<p>Build, construction, LEGO, DUPLO, K'NEX, join, shape</p>	<p>Slider, lever, mechanism, fix, structure, construction, strong, stiff, stable, freestanding.</p>	<p>Hinge, wheel, axle, mechanism, chassis, body, cab, dowel, secure, move, turn, fixed/free moving axle, movement.</p>

Cooking and Nutrition- skills and knowledge

EYFS	Year 1	Year 2
<p>I can make healthy choices about food, drink activity and tooth brushing.</p> <p>I know and talk about the different factors that support my overall wellbeing.</p> <p>I know that I need to eat fruit to be healthy.</p> <p>I know that I need to brush my teeth at least twice a day.</p> <p>I know that I need to drink water.</p>	<p>I can use simple cutting tools to prepare soft fruit and vegetables.</p> <p>I can peel, slice and grate food with support and guidance.</p> <p>I can use the bridge grip to chop food.</p> <p>I can follow basic food safety practices such as <i>washing hands, tying back hair, no nail varnish and which tools are sharp.</i></p> <p>I know that I need to eat 5 portions of fruit and vegetables per day.</p> <p>I know that I must eat a variety of different foods.</p> <p>I know that fruit and vegetables need to be grown and meat comes from animals.</p> <p>I know what needs chopping, slicing, grating or peeling.</p>	<p>I can confidently and independently cut, peel, slice and grate food.</p> <p>I can chop food using the claw grip.</p> <p>I can follow basic food safety practices such as <i>wiping surfaces and equipment, washing hands, tying back hair, no nail varnish and which tools are sharp.</i></p> <p>I can classify food into the different food groups.</p> <p>I know the names of the different food groups – fruits and vegetables, carbohydrates, proteins, dairy, fat and oils</p> <p>I know that I should have a variety of different food groups in each meal to be healthy</p> <p>I know that some foods are sourced from different countries.</p> <p>I know what the fair-trade symbol means.</p>
<p>Fruit, vegetable, healthy, teeth, water, hygiene, health.</p>	<p>Tool, prepare, peel, slice, grate, bridge grip, chop, diet, variety, portions, grow and meat, food hygiene.</p>	<p>Claw grip, food hygiene, classify, healthy, carbohydrates, protein, fats, dairy, oils, fibre, farmed, grown, caught, sourced and fair trade</p>