

KNOWLEDGE PROGRESSION IN DESIGN TECHNOLOGY AT THE FOUNDATION STAGE

	Personal, Social and Emotional Development	Physical Development	Understanding the World	Expressive Arts and Design
THREE AND FOUR YEAR OLDS	<ul style="list-style-type: none"> • Know how to select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them. 	<ul style="list-style-type: none"> • Know how to use large muscle movements to wave flags and streamers, paint and make marks. • Know which resources to choose to carry out their own plan. • Know how to use one handed tools and equipment, for example, making snips in paper with scissors 	<ul style="list-style-type: none"> • Know how to explore different items and know how some things work. 	<ul style="list-style-type: none"> • Know how to make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. • Know that they can explore different materials freely, in order to develop their ideas about how to use them and what to make. • Develop their own ideas and then decide which materials to use to express them. • Know how to create closed shapes with continuous lines, and begin to use these shapes to represent objects.

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	Physical Development	Expressive Arts and Design
RECEPTION	<ul style="list-style-type: none"> • Progress towards a more fluent style of moving, with developing control and grace. • Develop their small motor skills and know how to use a range of tools competently, safely and confidently. • Know how to use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor. 	<ul style="list-style-type: none"> • Know how to explore, use and refine a variety of artistic effects to express their ideas and feelings. • Know that they can return to and build on their previous learning, refining ideas and developing their ability to represent them. • Know how to create collaboratively, sharing ideas, resources and skills.

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	Physical Development	Expressive Arts and Design
EARLY LEARNING GOALS	<u>Fine Motor Skills</u> <ul style="list-style-type: none"> • Know how to use a range of small tools, including scissors, paintbrushes and cutlery. 	<u>Creating with Materials</u> <ul style="list-style-type: none"> • Know how to safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. • Know that they can share their creations, explaining the process they have used.

KNOWLEDGE PROGRESSION IN DESIGN TECHNOLOGY AT KEY STAGE ONE.

NATIONAL CURRICULUM	<ul style="list-style-type: none"> • design purposeful, functional, appealing products for themselves and other users based on design criteria • generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology • select from and use a range of tools and equipment to perform practical tasks • select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria • build structures, exploring how they can be made stronger, stiffer and more stable • explore and use mechanisms • use the basic principles of a healthy and varied diet to prepare dishes • understand where food comes from
YEAR ONE	<u>Marvellous Mechanisms (mechanisms)</u> <ul style="list-style-type: none"> • Know how to operate moving books. • Know about mechanisms such as sliders and levers, including how to make and operate them. • Know how to push and pull and how to move right, left, up, down, forwards, backwards, in and out. • Know how a mechanism can be used to create a movement. • Know that scissors are used to cut and that a split pin can be used as a pivot - to fix things together whilst still allowing them to move. <u>How can we improve a toy from the past? (mechanisms)</u>

- Know how wheels allow an object to move.
- Know why wheels are round and designed the way they are.
- Know some different techniques for attaching wheels and axles.
- Know that the appearance of a product can be enhanced with finishing techniques such as painting.

Fabulous Food (cooking and nutrition)

- Know what healthy food is.
- Know what fruit and vegetables are and know the names and tastes of a range of different ones.
- Know how to safely and hygienically handle and prepare fruits and vegetables.
- Know a variety of methods for preparing food e.g. cutting, grating, slicing, peeling.
- Know how to assemble and present food for others to eat.

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YEAR TWO	<p><u>Where Would an Animal Like to Live? (use of materials & construction)</u></p> <ul style="list-style-type: none"> • Know how zoos contribute to the conservation of endangered species. • Know what zoo enclosures look like and how they are designed to suit the animal that lives there. • Know the names of a range of different materials and their properties. • Know how to cut and shape materials, joining them together to create strong, stiff and stable constructions. <p><u>Super Salads (cooking and nutrition)</u></p> <ul style="list-style-type: none"> • Know the names of a wider range of vegetables and some words that can be used to describe them. • Know how to collect and represent basic data. • Know a range of techniques for cutting vegetables and be able to select the most appropriate one. • Know how to prepare food safely and hygienically. • Know about some foods that complement each other. • Know where vegetables and carbohydrates like potatoes and pasta come from. <p><u>Can We Put On a Puppet Show? (textiles)</u></p> <ul style="list-style-type: none"> • Know some techniques used for creating a variety of different puppets. • Know techniques for joining fabrics including stitching, stapling, pinning and gluing. • Know how to use research to influence design decisions.

KNOWLEDGE PROGRESSION IN DESIGN TECHNOLOGY AT LOWER KEY STAGE TWO.

NATIONAL CURRICULUM	<ul style="list-style-type: none"> • 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 • generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design • select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately • select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities • investigate and analyse a range of existing products • evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • understand how key events and individuals in design and technology have helped shape the world • apply their understanding of how to strengthen, stiffen and reinforce more complex structures • understand and use mechanical systems in their products • understand and use electrical systems in their products • apply their understanding of computing to program, monitor and control their products. • 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
YEAR THREE	<p><u>How Can a Poster be Interactive? (mechanisms)</u></p> <ul style="list-style-type: none"> • Know how levers and linkages can be used to create different movements. • Know how to measure, mark out, cut and join card and paper to create mechanisms of a certain size. <p><u>Sandwich Snacks (cooking and nutrition)</u></p> <ul style="list-style-type: none"> • Know where and how a variety of ingredients are grown and harvested. • Know the names of a range of different breads and know some words that can be used to describe them. • Know how to work safely and hygienically in the kitchen. • Know how to hold ingredients securely whilst cutting them. Know how to combine ingredients based on texture, appearance and taste. • Know how to make a sandwich that they will enjoy. <p><u>How Do People Keep Their Money Safe? (textiles)</u></p> <ul style="list-style-type: none"> • Know more techniques for joining and fastening fabrics including zips and Velcro. • Know what changes have been made within textile production and products, comparing old with new. • Know to develop sewing skills by using a wider range of stitching techniques.

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| | <ul style="list-style-type: none">• Know how to incorporate research into creating an annotated design.• Know about the importance of creating a plan to achieve a desired outcome. |
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YEAR FOUR	<p><u>How Can We Help People in Need? (materials)</u></p> <ul style="list-style-type: none"> • Know what a shell structure is. • Know how shell structures can be made including the materials they are made from, how they are stiffened and strengthened and how they are made appealing to certain users. • Know how to construct nets in a range of different shapes, including techniques like scoring and cutting. • Know how to design based on an audience. • Know how computer-aided design (CAD) can be used effectively, and when it should not be used. • Know how to use CAD to improve our work. <p><u>Light It Up (materials and electrical components)</u></p> <ul style="list-style-type: none"> • Know how battery-powered products work, including examples with a range of different switches. • Know how reading lights are made fit for purpose, including their intended audience. • Know how lights and lamps have changed and developed over time. • Know how to make manually controlled, simple series circuits with batteries and different types of switches, bulbs and buzzers and to apply this learning to include a circuit within a product.

- Know how to make sure that electrical products are safe for use.

Riverside Picnics (cooking and nutrition)

- Know the names of the different food groups and give examples of foods in each group.
- Know and understand the basic principles of a healthy and varied diet.
- Know how to plan a meal that forms part of a healthy and varied diet, incorporating the different food groups.

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YEAR FIVE	<p><u>Birdhouse Builders (materials)</u></p> <ul style="list-style-type: none"> • Know what a frame structure is. • Know how frame structures, both permanent and portable, are used and when we might see them in everyday life. • Know how frame structures can be strengthened, stiffened and reinforced. • Know about key events and individuals related to their study of frame structure, e.g. Stephen Sauvestre (Eiffel Tower), Thomas Farnolls Pritchard (Iron Bridge). • Know how to use triangulation to reinforce square frameworks. • Know how to safely and accurately use junior hacksaws, bench hooks, square section wood, card triangles and hand drills to construct wooden frames. • Know how to identify potential problems by creating a prototype. <p><u>Food from Other Cultures (cooking and nutrition)</u></p> <ul style="list-style-type: none"> • Know the names of some traditional Islamic dishes and be able to describe their taste and appearance. • Know and understand that all foods have nutritional values. • Know about nutritional value and why it is important to know before eating a food.

- Know the names of the essential nutrients and why we need them in our bodies.
- Know the name of a famous chef in this area and be able to relay some key facts about her.
- Know the names of the ingredients used to create bread and those that can be added to enhance flavour.

Talking Textiles (textiles and materials)

- Know how fabric shapes can be combined.
- Know how designers have impacted fabrics used today and different products.
- Know whether products are functional or decorative.
- Know about a range of cushion products including what their purpose is and how they have been constructed.
- Know how to use iron-transfer paper.
- Know about a range of different stitching techniques.

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<p>YEAR SIX</p>	<p><u>Programming Propaganda (electrical components)</u></p> <ul style="list-style-type: none"> • Know the names of some products that operate through changes in the environment. • Be able to talk about the advantages of computer control programs to operate products. • Know some facts about a key individual within this area of DT. • Know how to create more complex circuits including series circuits where two output devices are controlled by one switch and parallel circuits. • Know how to use a computer to control their circuit. <p><u>Spanish Tapas (cooking and nutrition)</u></p> <ul style="list-style-type: none"> • Know the names of some traditional Spanish dishes and what they look like. • Know and understand that all foods have nutritional values. • Know about nutritional value and why it is important to know before eating a food. • Know the names of the essential nutrients and why we need them in our bodies. • Know about seasonality. • Know about how key chefs have contributed to Spanish cuisine. • Know some key facts about a Spanish chef. • Know how to enhance the flavour of a dish with herbs and spices, etc. and know the names of some of these ingredients. • Know how to cook safely using a range of kitchen utensils and hot appliances.

	Terrific Toys (mechanical components and materials)
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| | <ul style="list-style-type: none">• Know what different types of movement look like: rotary, oscillating and reciprocating.• Know the different components of a moving mechanism: the cam and the follower.• Know how to change the movement of a follower.• Know how to use market research to design a product.• Know how to accurately cut, shape and join wood |
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