

Design Technology Curriculum: Progression Ladder

Nursery

Reception

Early Years Foundation Stage

Design Technology

<p>Skills:</p> <ul style="list-style-type: none"> To handle, manipulate and enjoy using materials by stretching, pulling, twisting, squeezing. To explore different materials freely, in order to develop ideas about how to use them and what to make. To make simple representations of animals and people. 	<p>Media:</p> <ul style="list-style-type: none"> play-dough construction sand clay <p>Knowledge:</p> <ul style="list-style-type: none"> To know what materials can be used or twisted for a particular purpose. 	<p>Skills:</p> <ul style="list-style-type: none"> To safely handle, manipulate and enjoy using a variety of materials, tools and techniques. To make representations of animals or people using a 3D structure. To adapt and refine ideas. To use different techniques for joining. To use a variety of tools, including different size / shape of brushes and tools e.g. sponges, fingers, twigs. 	<p>Media:</p> <ul style="list-style-type: none"> play-dough clay construction junk modelling natural materials <p>Knowledge:</p> <ul style="list-style-type: none"> To know that materials can be manipulated to create new affects. To know which materials to use when joining (e.g glue, cellotape, masking tape, split pins) To know how to look at and talk about what they have produced, describing simple techniques and media used.
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Year 1

Year 2

Year 3

Year 4

Year 5

Year 6

Designing and Making

Designing

<ul style="list-style-type: none"> Begin to design functional and purposeful products based on a simple design brief. Generate, develop and communicate their ideas through talking and drawing. Begin to consider the audience and purpose for their product. 	<ul style="list-style-type: none"> Design functional, purposeful and appealing products based on a simple design brief. Generate, develop, model and communicate their ideas through talking, drawing and making templates and mock ups. Use IT to plan products that they are designing. Consider the audience and purpose of their product in their design. 	<ul style="list-style-type: none"> Identify the purpose and audience for their product. Begin to develop an understanding of design briefs and their purpose. Generate, develop, model and communicate their product using increasingly more formal sketches and annotations. Consider the order of construction and make simple plans for this. Begin to make suggestions on how we might begin the design process. Begin to use existing products to help inform the intended design. Begin to research and rehearse design techniques outlined in the technical progression 	<ul style="list-style-type: none"> Identify the purpose and audience for their product. Begin to develop an understanding of design briefs and their purpose. Generate, develop, model and communicate multiple design ideas using increasingly more formal sketches and annotations, diagrams, exploded diagrams and prototypes. Identify from a range of planned ideas, which one will be taken forward. Plan the order of construction record simple step by step plans for this. Make suggestions on how we might begin the design process. Begin to use existing products to help inform the intended design. Research and rehearse design techniques outlined in the technical progression Begin to seek the views and opinions of the intended audience. Begin to identify where problems might arise and how we could overcome them. 	<ul style="list-style-type: none"> Work collaboratively to plan and enhance their plans through discussion. Use design briefs to ensure that their plans meet a specified criteria. Generate, develop, model and communicate multiple design ideas using increasingly more formal sketches and annotations, diagrams, exploded diagrams, computer aided design and prototypes. Begin to draw up specifications for their design using increasingly more accurate specifications (e.g. millimetres, millilitres) Identify from a range of planned ideas, which one will be taken forward. Make further improvements, following discussion, to their final product – produce final designs. Plan the order of construction record simple step by step plans for this. Make suggestions on how we might begin the design process. Use existing products to help inform the intended design. Research and rehearse design techniques outlined in the technical progression Seek the views and opinions of the intended audience and reflect this in their product designs. Identify where problems in production will arise and plan for ways to overcome these. Consider how to ensure that their product is appealing and finished. 	<ul style="list-style-type: none"> Work collaboratively to plan and enhance their plans through discussion. Use design briefs to ensure that their plans meet a specified criteria. Generate, develop, model and communicate multiple design ideas using increasingly more formal sketches and annotations, diagrams, exploded diagrams, computer aided design and prototypes. Produce specifications for their design using increasingly more accurate specifications/ measurements (e.g. millimetres, millilitres) Identify from a range of planned ideas, which one will be taken forward. Make further improvements, following discussion, to their final product – produce final designs. Plan the order of construction in detail, including identifying where challenges may arise. Make suggestions on how to begin the design process. Use existing products to inform the intended design. Research and rehearse design techniques outlined in the technical progression. Use technical skills proficiently. Seek the views and opinions of the intended audience and reflect this in their product designs. Identify where problems in production will arise and plan for ways to overcome these. Plan how to ensure that their product is appealing and finished well.
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Making: including using tools, joining techniques

<ul style="list-style-type: none"> Attach wheels and axles using simple joining techniques. Select appropriate materials to use including construction materials and ingredients. Select appropriate simple tools to use perform simple tasks. Use simple techniques for cutting, shaping and joining the materials for their product. Explore a variety of techniques to cut, join and shape materials. 	<ul style="list-style-type: none"> Attach wheels and axles using simple joining techniques. Use sewing needles to create a running stitch. Join two pieces of material together. Select appropriate materials to use including construction materials (cardboard, paper) and textiles. Select appropriate simple tools to use perform simple tasks. Use simple techniques for cutting, shaping, finishing and joining the materials for their product. Explore a variety of techniques to cut, join, finish and shape materials. Use cutting and joining techniques with a wider variety of materials. 	<ul style="list-style-type: none"> Begin to use planned specifications, using standard measurements. Begin to discuss a variety of joining technics beyond simple glues e.g. fasteners. Begin to follow intended plans in sequence. Follow intended plans in sequence and begin to discuss guidance from adults on how challenges may be overcome. Begin to consider finishing techniques that might improve the overall aesthetic of their product, e.g. selecting paints, decorative items, layout on top a pizza. Use a growing range of techniques to shape materials e.g. slicing, chopping, cutting. Use a growing range of tools and utensils for shaping materials, including, pizza slices, simple knives, scissors. Begin to consider how much of each material/ ingredient will be needed. 	<ul style="list-style-type: none"> Use sewing needles to create a cross stitch. Create patterns and designs using coloured thread. Use planned specifications, using standard measurements. Follow intended plans in sequence. Discuss with adults how challenges and problems could be overcome. Begin to make minor changes to plans to enhance the final product. Begin to make things stronger, more stable and varying the stiffness by using, thickness, reinforcement, joins and measurements. Use known electrical items (based on the science curriculum) to enhance their product and achieve the design brief. Begin to consider finishing techniques that might improve the overall aesthetic of their product, e.g. selecting paints, decorative items, layout on a plate or the ingredients on top a pizza. Use a growing range of techniques to shape materials e.g. slicing, chopping, cutting. Use a growing range of tools and utensils for shaping materials, including, pizza slices, simple knives, scissors. Begin to consider how much of each material/ ingredient will be needed. 	<ul style="list-style-type: none"> Begin to use planned specifications, using more detailed standard measurements. Follow detailed plans in sequence and begin to overcome hurdles as they arise independently by suggesting other solutions. Use more advanced tools for constructing with stronger materials, including drills, saws, clamps. Discuss how to strength, reinforce more complex structures, using a wider variety of materials (including , wood, plastic, textiles) Make appropriate changes to plans to enhance the final product. Make things stronger, more stable and varying the stiffness by using, thickness, reinforcement, joins and measurements. Apply finishes techniques, such as sanding, painting, glazing, garnishing to improve the overall aesthetic of a product. Use a wide range of techniques to shape materials e.g. slicing, chopping, cutting, sawing, grating, sprinkling, scoring. Use a wide range of tools and utensils to shape materials, including, saws, Stanlee knives, bread knives, hand held drills. Organise and collect adequate amounts of appropriate materials for their product. 	<ul style="list-style-type: none"> Use sewing needles to create a zig zag stitch and ladder stitch. Join two pieces of fabric together using an 'invisible stitch'. Enhance textile products using 'filling' e.g. foam, cotton wool. Use planned specifications accurately, using more detailed standard measurements. Follow detailed plans in sequence and overcome hurdles as they arise independently, by finding other solutions. Use more advanced tools for constructing with stronger materials, including drills, saws, clamps. Create algorithms to program, monitor and control physical devices that children have created. Discuss how to strength, reinforce more complex structures, using a wider variety of materials (including , wood, plastic, textiles) Make appropriate changes to plans to enhance the final product. Use a wider variety of electrical items to enhance their product and achieve the design brief – robotics. Apply finishes techniques, such as sanding, painting, glazing, garnishing to improve the overall aesthetic of a product. Use a wide range of techniques to shape materials e.g. slicing, chopping, cutting, sawing, grating, sprinkling, scoring. Use a wide range of tools and utensils to shape materials, including, saws, Stanlee knives, bread knives, hand held drills. Organise and collect adequate amounts of appropriate materials for their product.
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Design Technology Curriculum: Progression Ladder (continued)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Evaluation	<ul style="list-style-type: none"> Begin to explore a range of existing products, sharing their likes and dislikes. Say what they like and don't like about their products. Suggest ways that they could have made their product better. 	<ul style="list-style-type: none"> Explore a range of existing products and evaluate these against their intended use and audience. Evaluate their products success against a simple design brief. Begin to evaluate their work taking into consideration the intended audience. Suggest ways that they could improve their product, relating this to the design brief and key technical knowledge. 	<ul style="list-style-type: none"> Investigate and analyse existing products and begin to evaluate them against the intended audience and purpose Begin to suggest improvements, that relate specifically to the design brief, to their products. Listen to the feedback of others. Begin to discuss how products they are studying have impacted on everyday lives. Begin to identify similarities and differences between their products and those of others. Make suggestions on how other's work could be improved. Identify the strengths in others work. 	<ul style="list-style-type: none"> Investigate and analyse existing products and evaluate them against the intended audience and purpose Suggest improvements, that relate specifically to the design brief, to their products. Listen to the feedback of others. Begin to discuss how products they are studying have impacted on everyday lives. Begin to identify similarities and differences between their products and those of others. Make suggestions on how other's work could be improved, beginning to link this to the design criteria. Identify the strengths in others work, beginning to link this to the design criteria. 	<ul style="list-style-type: none"> Investigate and analyse existing products, paying particular attention to design elements such as joining techniques, materials and technical knowledge. Draw on existing products to make decisions about their own products. Identify strengths and area for development in their product, suggesting ways it could be improved, taking into account the intended audience's feedback. Identify precise next steps that relate directly to the design criteria. Discuss in detail how some products and designers have impacted on people's lives, including industry. Compare and contrast their product with others, in relation to the design brief. Provide detailed and accurate feedback, that relates to the design criteria to others. 	<ul style="list-style-type: none"> Investigate and analyse existing products, paying particular attention to design elements such as joining techniques, materials and technical knowledge. Draw on existing products to make decisions about their own products. Identify strengths and area for development in their product, suggesting ways it could be improved, taking into account the intended audience's feedback. Identify precise next steps that relate directly to the design criteria. Discuss in detail how some products and designers have impacted on people's lives, including industry. Compare and contrast their product with others, in relation to the design brief. Provide detailed and accurate feedback, that relates to the design criteria to others.
Technical knowledge	<ul style="list-style-type: none"> Understand how a wheel and axle work. Know and recall where wheels and axles are used in everyday life. Simple joining techniques using cellotape, masking tap, Prit Stick, PVA, sewing. Understand how a product can be made stronger. 	<ul style="list-style-type: none"> Understand how a wheel and axle work. Know and recall where wheels and axles are used in everyday life. Simple joining techniques using cellotape, masking tap, Prit Stick, PVA, sewing. Understand how a product can be made stronger, stiffer and more stable. Explore and use levers, sliders and dials. Use running stitch to attach two pieces of material together. 	<ul style="list-style-type: none"> Understand how more complex levers and pulleys can make objects move. Explore how to include levers and pulleys in their designs. Identify ways to strengthen and reinforce more complex structures that include levers and pulleys. Understand how to use a wider range of linkage devices to construct more complex structures. Understand how to knead a dough. 	<ul style="list-style-type: none"> Use cross stitch to create a product for a clear audience and purpose. Identify how to strengthen, stiffen and stabilise a product that has multiple tiers. Explore a widening variety of joining techniques, including: hinge, slot, flange and gusset. Use electrical items, including, buzzers, wires, cells and bulbs to create their product. 	<ul style="list-style-type: none"> Understand how to gears can be used to create every day products that we use in our homes and lives. Identify how to strengthen, stiffen and stabilise more complex products, produced from a broadening range of materials (wood, Plastics) Prepare and cook hot products that require cooking via, roasting, boiling and baking. 	<ul style="list-style-type: none"> Use zig zag and ladder stitch to create a product where the stitching is 'invisible'. Use more complex electrical items, including motors, wires, control panels and cells to produce a physical product. Use algorithms and computer programs to program, control and monitor an electrical, physical device. Use materials to enhance products for a purpose, for example: warmth, comfort.
Nutrition	<ul style="list-style-type: none"> Understand and discuss where common food comes from, including: milk, vegetables, milk, fish, fruit, yoghurt, butter, bread. Understand the term healthy. Identify and sort common foods into simple food groups. Begin to use simple food preparation techniques, such as chopping, mixing, combining, measuring. Understand the term seasonality. 	<ul style="list-style-type: none"> Begin to apply to the principles of a healthy and balanced diet to planned savoury dishes. Prepare and cook a savoury dish. Chop, grate, slice, shape, mix, combine, knead ingredients. Prepare bread dough and understand the role of kneading and resting in the process. Understand seasonality and how some ingredients are grown and reared in the UK. Begin to explore a widening range of ingredients, including (allergy appropriate): vegetables (peppers, onions, sweetcorn), meats and cheeses. Begin to understand the process for some foods and where they come from e.g. cheese originating from milk, or bread from wheat - to flour- to bread. 	<ul style="list-style-type: none"> Chop, grate, slice, blend, mix, combine, knead, measure accurately ingredients. Understand the terms: blend, boil, mix, dissolve, grate, steam, bake, combine. Trial tasting and using a wider range of ingredients e.g. lentils. Understand the principles of a balanced diet. Develop quantities of ingredients to ensure balance of a meal. Understand the role of kneading in preparation of bread and how bread provides carbohydrates . Prepare and cook a savoury dish requiring a wider range of skills (soup) Use a widening range of standardised measure for capacity and mass. Understand seasonality of a wider range of ingredients and begin to understand the origin of some foods that are not in season in the UK. Understand that some ingredients are reared and grown both in the UK and abroad and this is how we have a year round supply of most foods. Begin to understand the term cross contamination and the need for separate food preparation techniques for different food groups. 			
Safety	<ul style="list-style-type: none"> Use simple strategies to prepare cold foods safely, including: washing fruit and vegetables, washing hands and cleaning surfaces. Use simple tools safely, including, scissors and age-appropriate knives. Articulate how to keep themselves and others safe when working. Begin to identify potential dangers as they arise. 	<ul style="list-style-type: none"> Understand the importance of preparing a food preparation area. Identify ways to maintain personal hygiene before preparing and cooking food. Begin to identify, with adult support, how to operate an oven and handle hot equipment. Identify potential dangers before beginning a process and recognise dangers as they arise. Begin to use a wider range of cooking utensils, including: sharper knives, grates, spoons, mixing bowls, Begin to use a wider range of age-appropriate tools including knives. Identify ways that they can improve their own safety and that of others for a broadening range of situations in DT. Begin to prepare and use needles and sewing tools safely, with adult support. 	<ul style="list-style-type: none"> Articulate, plan and use effective strategies to prepare an area for food preparation. Understand the importance of different chopping boards for different types of food to avoid cross contamination. Understand in depth the importance of personal hygiene when preparing food (hands, hair etc) Use a widening range of food preparation tools safely and independently (knives, graters, blenders, oven gloves). Identify potential dangers before beginning a process and recognise dangers as they arise, taking appropriate steps to maintain safety. Use heating appliances, with growing independence, safely. Use increasingly range of wood work tools safely, including saws, clamps, hand drills and sand paper. Formally plan safety procedures to ensure the safety of themselves and that of others when working with DT tools - put these into place independently. Begin to prepare and use needles and sewing tools safely, with adult support. 			