

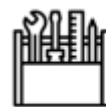


# Langshott Design and Technology Progression of Knowledge and Skills

2022-2023



Design



Make



Evaluate

## Early Learning Goals

Children at the expected level of development will:

Personal, Social and Emotional Development - ELG: Managing Self

- understand the importance of healthy food choices

Physical Development - ELG: Fine Motor Skills

- Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases
- Use a range of small tools, including scissors, paint brushes and cutlery
- Begin to show accuracy and care when drawing.

Expressive Arts and Design - ELG: Creating with Materials

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function
- Share their creations, explaining the process they have used

## Key Stage 1

When designing and making, pupils should be taught to:

Design

- 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

Make

- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles] in their products

## Key Stage 2

When designing and making, pupils should be taught to:

Design

- 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

Make















- 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






Evaluate


















- 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

Technical knowledge






























- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products

Progression of Knowledge and Skills Breakdown							
	Reception	1	2	3	4	5	6
<div>Knowledge of Culture, Great Sculptures, Architects, Fashion Designers and Chefs</div> <div></div>		<div>Puppet Designer Jim Henson (Kermit the Frog)</div> <div><ul style="list-style-type: none"><li>To discuss and explore the puppet designer Jim Henson</li><li>To understand how Jim Henson helped shape the toy industry by creating Kermit the Frog</li></ul></div>	<div>Architect Norman Foster (The Gherkin)</div> <div><ul style="list-style-type: none"><li>To discuss and explore the architect Norman Foster</li><li>To understand how Norman Foster helped develop and shape modern day architecture by designing The Gherkin</li></ul></div>	<div>Jeweller Harry Winston</div> <div><ul style="list-style-type: none"><li>To discuss and explore the jeweller Harry Winston</li><li>To understand how Harry Winston helped develop and shape innovative jewellery within the fashion industry</li></ul></div>	<div>Animator Walt Disney</div> <div><ul style="list-style-type: none"><li>To discuss and explore the animator Walt Disney</li><li>To understand how Walt Disney helped develop and shape animation within the visual entertainment industry</li></ul></div>	<div>Costume Designer Julie Taymor (The Lion King)</div> <div><ul style="list-style-type: none"><li>To discuss and explore the costume designer Julie Taymor</li><li>To understand how Julie Taymor helped develop and shape innovative set design and costumes within theatrical productions</li></ul></div>	<div>Engineer Isambard Brunel (Clifton Suspension Bridge)</div> <div><ul style="list-style-type: none"><li>To discuss and explore the engineer Isambard Brunel</li><li>To understand how Isambard Brunel helped develop and shape engineering and construction by designing the Clifton Suspension Bridge</li></ul></div>
	<div>Chef Mary Berry (Great British Bake Off)</div> <div><ul style="list-style-type: none"><li>To discuss and explore the chef Mary Berry</li><li>To understand how Mary Berry helped shape baking, cooking and healthy eating</li></ul></div>	<div>Chef Tilly Ramsey (Matilda &amp; the Ramsey Bunch)</div> <div><ul style="list-style-type: none"><li>To discuss and explore the chef Tilly Ramsey</li><li>To understand how Tilly Ramsey helped shape baking, cooking and healthy eating</li></ul></div>	<div>Chef Nadiya Hussain (Great British Bake Off)</div> <div><ul style="list-style-type: none"><li>To discuss and explore the chef Nadiya Hussain</li><li>To understand how Nadiya Hussain helped develop and shape baking, cooking and healthy eating</li></ul></div>	<div>Chef Hemsley Sisters (Hemsley + Hemsley)</div> <div><ul style="list-style-type: none"><li>To discuss and explore the chefs Hemsley + Hemsley</li><li>To understand how the Hemsley Sisters helped develop and shape cooking and healthy eating</li></ul></div>	<div>Chef Jamie Oliver (Jamie's School Dinners)</div> <div><ul style="list-style-type: none"><li>To discuss and explore the chef Jamie Oliver</li><li>To understand how Jamie Oliver helped develop and shape cooking and healthy eating</li></ul></div>	<div>Chef Gino D'Acampo (Gino's Italian Escape)</div> <div><ul style="list-style-type: none"><li>To discuss and explore the chef Gino D'Acampo</li><li>To understand how Gino D'Acampo helped develop and shape cooking and healthy eating</li></ul></div>	<div>Chef Joe Wicks (Lean in 15)</div> <div><ul style="list-style-type: none"><li>To discuss and explore the chef Joe Wicks</li><li>To understand how Joe Wicks helped develop and shape cooking and healthy eating</li></ul></div>
<div>Textiles</div> <div></div>		<div><ul style="list-style-type: none"><li>To plan and sketch simple ideas for a puppet</li><li>To design a functional puppet and communicate ideas through talking and simple drawings</li><li>To experiment using a running stitch</li></ul></div> <div><ul style="list-style-type: none"><li>To select and use a range of tools and equipment to cut, shape and sew a puppet</li><li>To select and use a range of materials to make a functional puppet</li></ul></div> <div><ul style="list-style-type: none"><li>To explore and evaluate the design and make process through discussions</li><li>To make suggestions for future improvements</li></ul></div>		<div><ul style="list-style-type: none"><li>To plan and sketch realistic ideas for a purposeful piece of jewellery</li><li>To design and develop an appealing and functional stone age piece of jewellery with annotated drawings</li></ul></div> <div><ul style="list-style-type: none"><li>To successfully make salt dough</li><li>To accurately shape and mould the various parts of the jewellery piece</li><li>To make a functional stone age piece of jewellery with aesthetic qualities</li></ul></div> <div><ul style="list-style-type: none"><li>To evaluate the positive stages of the design and make process</li><li>To evaluate the challenges of the design and make process</li><li>To make suggestions for future improvements</li></ul></div>		<div><ul style="list-style-type: none"><li>To plan and sketch innovative ideas for a protective pouch</li><li>To design and develop a purposeful and functional protective pouch with explanations and annotated diagrams</li><li>To experiment using a running and blanket stitch</li></ul></div> <div><ul style="list-style-type: none"><li>To accurately design and cut out a template pattern piece</li><li>To sew with accuracy and control</li><li>To make a functional protective pouch with aesthetic qualities</li></ul></div> <div><ul style="list-style-type: none"><li>To consider the views of others to make improvements</li><li>To evaluate the positive stages of the design and make process</li><li>To evaluate the challenges of the design and make process</li><li>To make suggestions for future improvements</li></ul></div>	<div><ul style="list-style-type: none"><li>To create a design brief for the costumes required for the summer production, through peer discussions and research</li><li>To plan, design and sketch innovative ideas for a variety of functional upcycled costumes, for the summer production, with annotated and pictorial representations</li><li>To experiment using a running, blanket and overcast stitch</li></ul></div> <div><ul style="list-style-type: none"><li>To select the appropriate textiles and clothing to upcycle</li><li>To sew with accuracy and control</li><li>To make a functional upcycled costume with aesthetic qualities</li></ul></div> <div><ul style="list-style-type: none"><li>To continually evaluate and modify the product to match the initial design</li><li>To evaluate the positive stages of the design and make process</li><li>To evaluate the challenges of the design and make process</li><li>To make suggestions for future improvements</li></ul></div>

Vocabulary		 <p>Design Make Evaluate Fabric Functional Needle Eye Thread Knot Running stitch Textiles Puppeteer</p>		 <p>Design Make Evaluate Functional Purposeful Chain Clasp Embellishment Textiles Aesthetic Jeweller</p>		 <p>Design Make Evaluate Functional Purposeful Innovative Textiles Needle Eye Thread Knot Fabric Pattern pieces Blanket stitch Running stitch Aesthetic</p>	 <p>Design Make Evaluate Functional Purposeful Innovative Textiles Needle Eye Thread Upcycle Modify Blanket stitch Running stitch Overcast stitch Sustainability Aesthetic</p>
<p>Structures</p>  <p>Electrical Systems</p> 			 <ul style="list-style-type: none"> <li>To plan and sketch simple ideas for a three-dimensional Tudor House</li> <li>To select a range of appropriate materials to represent a Tudor House</li> <li>To design a purposeful house and communicate ideas through talking and simple drawings</li> <li>To discuss and use mathematical knowledge of nets of cubes and cuboids</li> </ul>  <ul style="list-style-type: none"> <li>To select and use a range of tools and equipment to cut, shape and join a structure</li> <li>To select and use a range of materials to make a purposeful house</li> <li>To know how to make a freestanding three-dimensional structure stronger, stiffer and more stable</li> </ul>  <ul style="list-style-type: none"> <li>To explore and evaluate the design and make process through discussions</li> <li>To make suggestions for future improvements</li> </ul>	 <ul style="list-style-type: none"> <li>To plan and sketch realistic ideas for a functional, exploding three-dimensional volcano</li> <li>To design and develop a lifelike volcano with annotated drawings and diagrams</li> <li>To discuss and use mathematical knowledge of nets of pyramids</li> <li>To discuss the scientific chemical reaction and the forces used to make the explosion</li> </ul>  <ul style="list-style-type: none"> <li>To successfully use paper-mache to build a three-dimensional structure</li> <li>To accurately shape and mould the volcano to construct a strong, stable structure</li> <li>To make a functional three-dimensional volcano with aesthetic qualities</li> </ul>  <ul style="list-style-type: none"> <li>To test the exploding chemical reaction</li> <li>To evaluate the positive stages of the design and make process</li> <li>To evaluate the challenges of the design and make process</li> <li>To make suggestions for future improvements</li> </ul>	 <ul style="list-style-type: none"> <li>To plan and sketch realistic ideas for a three-dimensional Iron Man</li> <li>To design and develop a purposeful and functional Iron Man with explanations and annotated drawings</li> <li>To discuss and use mathematical knowledge of nets of cubes and cuboids</li> <li>To understand and explain electrical systems linked to science</li> </ul>  <ul style="list-style-type: none"> <li>To successfully build a three-dimensional structure</li> <li>To accurately cut, shape and join the Iron Man to construct a strong, stable structure</li> <li>To use an electrical system to create light-up eyes</li> <li>To make a functional three-dimensional Iron Man with aesthetic qualities</li> </ul>  <ul style="list-style-type: none"> <li>To test the electrical system</li> <li>To evaluate the positive stages of the design and make process</li> <li>To evaluate the challenges of the design and make process</li> <li>To make suggestions for future improvements</li> </ul>		 <ul style="list-style-type: none"> <li>To create a design brief for the construction of a three-dimensional bridge, through peer discussions and research</li> <li>To plan, design and sketch innovative ideas for a purposeful bridge with annotated and pictorial representations</li> <li>To develop and apply mathematical knowledge of nets</li> </ul>  <ul style="list-style-type: none"> <li>To select the appropriate shapes, materials and components to build a three-dimensional structure</li> <li>To accurately cut, shape and join the bridge to construct a strong, stable structure</li> <li>To make a purposeful three-dimensional bridge with aesthetic qualities</li> </ul>  <ul style="list-style-type: none"> <li>To continually evaluate and modify the product to match the initial design</li> <li>To evaluate the positive stages of the design and make process</li> <li>To evaluate the challenges of the design and make process</li> <li>To make suggestions for future improvements</li> </ul>
Vocabulary			 <p>Design Make Evaluate Purposeful Three-dimensional Structure Freestanding Cut Join Shape Nets Cube Cuboid Architect</p>	 <p>Design Make Evaluate Functional Purposeful Construct Nets Pyramid Shape Mould Structure Three-dimensional Chemical reaction Aesthetic</p>	 <p>Design Make Evaluate Functional Structure Purposeful Nets Cube Cuboid Cut Shape Join Three-dimensional Electrical system Construct Aesthetic</p>		 <p>Design Make Evaluate Functional Structure Purposeful Nets Cut Shape Join Construct Innovative Three-dimensional Components Modify Aesthetic Civil engineer</p>

<p>Mechanisms</p> 		 <ul style="list-style-type: none"> <li>To plan and sketch simple ideas for a moving Easter card</li> <li>To design a functional Easter card and communicate ideas through talking and simple drawings</li> <li>To experiment using sliders and levers</li> </ul>  <ul style="list-style-type: none"> <li>To select and use a range of tools and equipment to cut, shape and make a mechanism</li> <li>To select and use a range of materials to make a mechanism</li> </ul>  <ul style="list-style-type: none"> <li>To test the moving mechanism</li> <li>To explore and evaluate the design and make process through discussions</li> <li>To make suggestions for future improvements</li> </ul>	 <ul style="list-style-type: none"> <li>To plan and sketch simple ideas for a moving rainforest animal</li> <li>To design a functional rainforest animal and communicate ideas through talking and drawings</li> <li>To experiment using levers and pivots</li> </ul>  <ul style="list-style-type: none"> <li>To select and use a range of tools and equipment to cut, shape and make a purposeful mechanism</li> <li>To select and use a range of materials to make a functional mechanism</li> </ul>  <ul style="list-style-type: none"> <li>To test the moving mechanism</li> <li>To explore and evaluate the design and make process through discussions</li> <li>To make suggestions for future improvements</li> </ul>		 <ul style="list-style-type: none"> <li>To plan and sketch realistic ideas for a moving river scene</li> <li>To design and develop a purposeful and functional river scene with explanations and annotated drawings</li> <li>To discuss and explore the use of wheels, cams, axles and axle holders</li> </ul>  <ul style="list-style-type: none"> <li>To successfully build a moving river scene using a cam mechanism</li> <li>To accurately cut, shape and join a moving river scene</li> <li>To make a functional moving river scene with aesthetic qualities</li> </ul>  <ul style="list-style-type: none"> <li>To test the moving mechanism</li> <li>To evaluate the positive stages of the design and make process</li> <li>To evaluate the challenges of the design and make process</li> <li>To make suggestions for future improvements</li> </ul>	 <ul style="list-style-type: none"> <li>To plan and sketch innovative ideas for a moving dragon head</li> <li>To design and develop a purposeful and appealing dragon head with explanations and annotated diagrams</li> <li>To experiment using a pneumatic mechanism</li> <li>To explore and distinguish between fixed and loose pivots</li> <li>To develop and apply mathematical knowledge of nets</li> </ul>  <ul style="list-style-type: none"> <li>To select the appropriate shapes, materials and components to build a pneumatic moving dragon head</li> <li>To accurately cut, shape and join the dragon head</li> <li>To make a functional pneumatic moving mechanism with aesthetic qualities</li> </ul>  <ul style="list-style-type: none"> <li>To test the moving mechanism</li> <li>To consider the views of others to make improvements</li> <li>To evaluate the positive stages of the design and make process</li> <li>To evaluate the challenges of the design and make process</li> <li>To make suggestions for future improvements</li> </ul>	
<p>Vocabulary</p>		 <p>Design Make Evaluate Functional Mechanism Slider Lever Cut Shape</p>	 <p>Design Make Evaluate Functional Purposeful Mechanism Lever Pivot Cut Shape</p>		 <p>Design Make Evaluate Functional Purposeful Mechanism Cam Slide guide Pivot point Follower Cut Shape Join Dowelling Aesthetic Animator</p>	 <p>Design Make Evaluate Functional Purposeful Pneumatic Mechanism Net Components Fixed pivot Loose pivot Cut Shape Join Aesthetic Costume designer</p>	



<div>Cooking and Nutrition</div> <div></div>	<div></div> <div><ul style="list-style-type: none"><li>To grow vegetables from seed</li><li>To understand where food comes from</li><li>To develop an understanding of healthy and unhealthy food</li><li>To discuss the appropriate ingredients to make a healthy beetroot oaty bar</li></ul></div> <div></div> <div><ul style="list-style-type: none"><li>To follow a simple recipe</li><li>To make a beetroot oaty bar</li><li>To be clean and safe when cooking</li></ul></div> <div></div> <div><ul style="list-style-type: none"><li>To try the food</li><li>To describe what the food tastes like</li><li>To explore and evaluate the food through discussions</li></ul></div>	<div></div> <div><ul style="list-style-type: none"><li>To grow vegetables from seed</li><li>To understand where a variety of food comes from</li><li>To have a basic understanding of a healthy and varied diet</li><li>To discuss the appropriate ingredients to make a healthy pea hummus</li></ul></div> <div></div> <div><ul style="list-style-type: none"><li>To follow a simple recipe</li><li>To make pea hummus</li><li>To be clean and safe when cooking</li></ul></div> <div></div> <div><ul style="list-style-type: none"><li>To try the food</li><li>To describe what the food tastes like</li><li>To explore and evaluate the food through discussions</li><li>To make suggestions for future improvements</li></ul></div>	<div></div> <div><ul style="list-style-type: none"><li>To grow vegetables from seed</li><li>To understand where a variety of food comes from</li><li>To understand the basic principles of a healthy and varied diet, including how fruit and vegetables are part of <i>The Eatwell Plate</i></li><li>To select and consider the appropriate ingredients to make a healthy veggie slaw</li></ul></div> <div></div> <div><ul style="list-style-type: none"><li>To follow a recipe</li><li>To make a veggie slaw</li><li>To be clean and safe when cooking</li></ul></div> <div></div> <div><ul style="list-style-type: none"><li>To try the food</li><li>To describe what the food tastes like</li><li>To explore and evaluate the food through discussions</li><li>To make suggestions for future improvements</li></ul></div>	<div></div> <div><ul style="list-style-type: none"><li>To grow vegetables from seed</li><li>To know where a range of fresh and processed ingredients, appropriate to the recipe, come from</li><li>To understand the principles of a healthy and varied diet, including how fruit and vegetables are part of <i>The Eatwell Plate</i></li><li>To select and consider the appropriate ingredients to make healthy muffin frittatas</li></ul></div> <div></div> <div><ul style="list-style-type: none"><li>To follow a recipe using the appropriate utensils</li><li>To make muffin frittatas</li><li>To be hygienic and safe when cooking</li></ul></div> <div></div> <div><ul style="list-style-type: none"><li>To try the food</li><li>To evaluate the positives of the cooking and tasting process</li><li>To evaluate the challenges of the cooking process</li><li>To make suggestions for future improvements</li></ul></div>	<div></div> <div><ul style="list-style-type: none"><li>To grow fruit and vegetables from seed</li><li>To know where a range of fresh and processed ingredients, appropriate to the recipe, come from</li><li>To begin to understand the positive and negative impact of different food groups</li><li>To select and consider the appropriate ingredients to make healthy veggie nachos</li></ul></div> <div></div> <div><ul style="list-style-type: none"><li>To follow a recipe using the appropriate utensils and cooking techniques</li><li>To make veggie nachos</li><li>To be hygienic and safe when cooking</li></ul></div> <div></div> <div><ul style="list-style-type: none"><li>To try the food</li><li>To evaluate the positives of the cooking and tasting process</li><li>To evaluate the challenges of the cooking process</li><li>To make suggestions for future improvements</li></ul></div>	<div></div> <div><ul style="list-style-type: none"><li>To grow fruit and vegetables from seed</li><li>To know where food is sourced and the impact it has on the environment</li><li>To understand seasonality in relation to food products</li><li>To select and consider the appropriate ingredients to make a healthy pizza</li></ul></div> <div></div> <div><ul style="list-style-type: none"><li>To follow a recipe using the appropriate utensils and cooking techniques</li><li>To make a healthy pizza</li><li>To be hygienic and safe when cooking</li></ul></div> <div></div> <div><ul style="list-style-type: none"><li>To try the food</li><li>To evaluate the positives of the cooking and tasting process</li><li>To evaluate the challenges of the cooking process</li><li>To consider the views of others to make improvements</li><li>To make suggestions for future improvements</li></ul></div>	<div></div> <div><ul style="list-style-type: none"><li>To grow vegetables from seed</li><li>To understand the importance and nutritional value of different food groups</li><li>To understand the impact different foods can have on the human body</li><li>To select and consider the appropriate ingredients to make healthy courgette fritters</li></ul></div> <div></div> <div><ul style="list-style-type: none"><li>To follow a recipe using the appropriate utensils and cooking techniques</li><li>To make courgette fritters</li><li>To be hygienic and safe when cooking</li></ul></div> <div></div> <div><ul style="list-style-type: none"><li>To try the food</li><li>To evaluate the positives of the cooking and tasting process</li><li>To evaluate the challenges of the cooking process</li><li>To consider the views of others to make improvements</li><li>To make suggestions for future improvements</li></ul></div>
Vocabulary	<div></div> <div>Make Bake Evaluate Healthy Varied Ingredients Equipment Recipe Growing Choosing Mixing Sensory vocabulary eg. soft sticky sweet Clean</div>	<div></div> <div>Prepare Make Evaluate Healthy Varied Ingredients Equipment Recipe Growing Choosing Blending Cutting Sensory vocabulary eg. soft smooth crunchy Clean</div>	<div></div> <div>Prepare Make Evaluate Healthy diet Varied diet Ingredients Produce Equipment Recipe Harvesting Produce Growing Harvesting Grating Chopping Sensory vocabulary eg. crunchy crisp zesty Clean</div>	<div></div> <div>Prepare Make Evaluate Healthy diet Varied diet Ingredients Recipe Utensils Texture Harvesting Produce Appearance Smell Taste Fresh Raw Savoury Sweet Processed Hygiene</div>	<div></div> <div>Prepare Make Evaluate Healthy diet Varied diet Ingredients Recipe Utensils Techniques Texture Harvesting Produce Wholemeal Fresh Processed Raw Savoury Sweet Greasy Edible Nutrition Fats Carbohydrates Proteins Vitamins Dairy Hygiene</div>	<div></div> <div>Prepare Make Evaluate Healthy diet Varied diet Ingredients Recipe Utensils Yeast Dough Spices Seasonality Sourced Climate Nutrition Grown Reared Free-range Processed Air-miles Battery Combine Knead Whisk Beat Hygiene</div>	<div></div> <div>Prepare Make Evaluate Healthy diet Varied diet Ingredients Recipe Utensils Nutrition Fats Carbohydrates Proteins Vitamins Nutrients Fibre Dairy Gluten Allergy Intolerance Seasonality Source Combine Knead Whisk Beat Crumble Fold Hygiene</div>