

# Kingsway Primary School

## Design Technology skills and knowledge progression 2020-2021

<b>EYFS</b>	<p><b>Expressive arts and design: Exploring and using media and materials.</b></p> <p><b>30-50months:</b>            Uses various construction materials.            Beginning to construct, stacking blocks vertically and horizontally, making enclosures and creating spaces.            Joins construction pieces together to build and balance.            Realises tools can be used for a purpose.</p> <p><b>40-60 months:</b>            Understands that different media can be combined to create new effects.            Manipulates materials to achieve a planned effect.            Constructs with a purpose in mind, using a variety of resources.            Uses simple tools and techniques competently and appropriately.            Selects appropriate resources and adapts work where necessary.            Selects tools and techniques needed to shape, assemble and join materials they are using.</p> <p><b>Expressive arts and design: Being imaginative</b></p> <p><b>30-50 months:</b>            Developing preferences for forms of expression.            Uses available resources to create props to support role-play.            Captures experiences and responses with a range of media, such as music, dance and paint and other materials or words.</p> <p><b>40-60 months:</b>            Create simple representations of events, people and objects.</p>	<p><b>Expressive arts and design: Exploring and using media and materials. ELG:</b>            Children sing songs, make music and dance, and experiment with ways of changing them. They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p><b>Expressive arts and design: Being imaginative.</b></p> <p><b>ELG:</b>            Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories.</p>
<b>Design - Developing, planning and communicating ideas</b>	<ul style="list-style-type: none"> <li>• Think about what it is they are going to make – constructing for a purpose.</li> <li>• Begin to use the language of designing (i.e. design, plan, draw, join, shape, build)</li> <li>• Create simple drawings of their design ideas and intentions before making.</li> <li>• Explain what they are making and features of their design.</li> <li>• Think about and select materials from a limited range that will meet a simple design criteria e.g. shiny.</li> <li>• Select and name the tools needed to work with materials e.g. scissors for paper.</li> <li>• Discuss their work as it progresses and consider how to adapt initial ideas to make them better.</li> </ul>	
<b>Working with tools, equipment, materials and components to make quality products</b>	<ul style="list-style-type: none"> <li>• Construct their product with a simple purpose in mind, using a variety of resources.</li> <li>• Manipulates materials to achieve a planned effect.</li> <li>• Use simple tools and techniques (e.g. scissors to cut, hole punchers to punch holes, adhesives to join material) to shape, assemble and join materials together competently and appropriately.</li> <li>• Explore using/holding basic tools such as a saw or hammer.</li> <li>• Selects appropriate resources and adapts work where necessary.</li> <li>• Uses appropriate technical vocabulary where appropriate e.g. axle, wheels, hinges</li> </ul>	

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<b>Evaluating processes and products</b>	<ul style="list-style-type: none"> <li>• Verbally explain what they like/dislike about their product and attempt to say why.</li> <li>• Begin to talk about changes made during the making process, e.g. making a decision to use a different joining method.</li> <li>• Suggest one thing that they might change when creating a similar product</li> <li>• Discuss how closely their finished product meets the design criteria.</li> </ul>
<b>Food and nutrition</b>	<ul style="list-style-type: none"> <li>• Begin to develop a food vocabulary using taste, smell, texture and feel.</li> <li>• Explore familiar food products e.g. fruit and vegetables, understanding which are healthy and unhealthy.</li> <li>• Start to think about the need for a variety of foods in a diet.</li> <li>• Know that some food is grown/gathered from places</li> <li>• Stir, spread, knead, mix and shape a range of food and ingredients.</li> <li>• Measure and weigh food items, non-statutory measures e.g. spoons, cups.</li> <li>• Begin to have basic hygiene awareness and know how to follow simple health and safety procedures.</li> </ul>
<b>Technical knowledge</b>	<ul style="list-style-type: none"> <li>• Uses simple tools competently and appropriately, e.g. scissors, hole punch, stapler, woodworking tools, rolling pins, pastry cutters.</li> <li>• Understands how everyday objects work by dismantling things.</li> <li>• Selects appropriate resources and adapts work where necessary.</li> <li>• Knows how to join two pieces of material using a joining technique e.g. glue, staple</li> <li>• Knows objects can be moved by pulling or pushing.</li> <li>• Knows how a wheel fits on an axle.</li> <li>• Knows how to make a freestanding structure from simple blocks/boxes.</li> <li>• Considers how to make a structure taller and /or more stable.</li> <li>• Knows how to mix ingredients together.</li> <li>• Can follow simple health and safety procedures.</li> </ul>
<b>Vocabulary</b>	Join, sew, stick, car, wheel, pull, push, cut, fold, join, taste, fruit, vegetable,

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Area of skill	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
- <b>Design - Developing, planning and communicating ideas</b>	<p><b>National Curriculum 2014</b> Pupils should be taught to:</p> <p><b>Design</b></p> <ul style="list-style-type: none"> <li>• design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>• generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</li> </ul>		<p><b>National Curriculum 2014</b> Pupils should be taught to:</p> <p><b>Design</b></p> <ul style="list-style-type: none"> <li>• 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</li> <li>• generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> </ul>			
	<ul style="list-style-type: none"> <li>- Understand what design is.</li> <li>- Design appealing products for a particular user based on simple design criteria.</li> <li>- Begin to draw on their own experience to help generate ideas.</li> <li>- Use knowledge of existing products (e.g. what they are, how they work and materials used) to help come up with ideas.</li> <li>- Identify a target group for what they intend to design and make based on a design criteria.</li> <li>- Suggest ideas and explain what they are going to do.</li> <li>- Plan by suggesting what to do next.</li> </ul>	<ul style="list-style-type: none"> <li>- Generate ideas by drawing on their own, and other people's experiences.</li> <li>- Identify a purpose for what they intend to design and make.</li> <li>- Identify simple design criteria and use this to help develop their ideas.</li> <li>- Begin to develop their design ideas through discussion, observation, drawing and modelling.</li> <li>- Plan by suggesting what to do next and consider resources to use.</li> <li>- Use pictures and labels to plan; explaining with increasing detail (e.g. more detail on type of</li> </ul>	<ul style="list-style-type: none"> <li>- Generate ideas for an item, considering its purpose and the user/s.</li> <li>- Gather information about what individuals want/need through research.</li> <li>- Identify a purpose and start to establish criteria for a successful product.</li> <li>- Start to plan the order of their work before starting.</li> <li>- Explore, develop and communicate design proposals by modelling ideas using prototypes.</li> <li>- Make drawings with</li> </ul>	<ul style="list-style-type: none"> <li>- Generate ideas, considering the purposes for which they are designing.</li> <li>- Gather information, through research, about what groups and individuals want/need.</li> <li>- Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail.</li> <li>- Make labelled drawings from different views,</li> </ul>	<ul style="list-style-type: none"> <li>- Generate innovative ideas through brainstorming and identify a purpose for their product.</li> <li>- Draw up a specification for their design.</li> <li>- Begin to carry out research, and surveys to identify the needs/wants/preferences of groups and individuals.</li> <li>- Use results of investigations, information sources and surveys to develop design ideas.</li> <li>- Develop a detailed step by step plan of what has to be done,</li> </ul>	<ul style="list-style-type: none"> <li>- Communicate their ideas through detailed labelled drawings.</li> <li>- Develop a design specification.</li> <li>- Carry out research, surveys, questionnaires and interviews to identify the needs/wants/preferences of groups and individuals.</li> <li>- Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways.</li> <li>- Plan the order of their work, choosing appropriate materials,</li> </ul>

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	<ul style="list-style-type: none"> <li>- Use talk and simple drawings/words their ideas for design.</li> <li>- Model ideas in card and paper (create mock ups) where appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>materials and joins).</li> <li>- Explore materials, make templates and mock-ups, starting to consider what will work and what might not.</li> <li>- Use information and technology, where appropriate to develop and communicate ideas.</li> </ul>	<ul style="list-style-type: none"> <li>labels when designing.</li> <li>-Start to use Computer-aided design to develop and communicate ideas.</li> </ul>	<ul style="list-style-type: none"> <li>including cross sections, showing specific features.</li> <li>- Evaluate products and identify criteria that can be used for their own designs.</li> </ul>	<ul style="list-style-type: none"> <li>planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail.</li> <li>- Continue to develop the use of cross-section drawings and diagrams of different views.</li> <li>- Develop the use of prototypes.</li> </ul>	<ul style="list-style-type: none"> <li>tools and techniques to create step by step plans.</li> <li>- Continue to develop the use of prototypes.</li> <li>- Develop the use of Computer-Aided Design.</li> </ul>
<b>Make – planning, working with tools, materials and components to make quality products</b>	<p><b><u>National Curriculum 2014</u></b> Pupils should be taught to:</p> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>• select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing];</li> <li>• select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.</li> </ul>		<p><b><u>National Curriculum 2014</u></b> Pupils should be taught to:</p> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>• select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>• 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</li> </ul>			
	<ul style="list-style-type: none"> <li>- Make their own design using appropriate techniques.</li> <li>- Use tools (scissors, hole punch) safely.</li> <li>- With help, can measure, mark out, cut and shape a range of materials.</li> <li>- Assemble, join and combine materials and components together using a variety of methods e.g. glue, masking tape.</li> <li>- Use simple finishing</li> </ul>	<ul style="list-style-type: none"> <li>- Begin to select from a range of materials and components according to their characteristic and explain why they have chosen them.</li> <li>- Begin to select tools and materials; using vocabulary to name and describe them.</li> <li>- Use hand tools safely and appropriately.</li> <li>- Assemble, join and combine materials in</li> </ul>	<ul style="list-style-type: none"> <li>- Select a wider range of tools and techniques for making their product.</li> <li>- Think about their ideas as they make progress and be willing change things if this helps them improve their work.</li> <li>- Measure, mark out, cut, score and assemble components with more accuracy (cm)</li> </ul>	<ul style="list-style-type: none"> <li>- Select appropriate tools and techniques for making their product.</li> <li>- Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques (cm).</li> <li>- Can join and combine materials and components accurately in</li> </ul>	<ul style="list-style-type: none"> <li>- Select appropriate materials, tools and techniques.</li> <li>- Measure and mark out accurately (cm and/or mm).</li> <li>- Use skills in using different tools and equipment safely and accurately to ensure a good-quality finish to the product..</li> <li>- Weigh and measure accurately (time, dry</li> </ul>	<ul style="list-style-type: none"> <li>- Select appropriate tools, materials, components and techniques.</li> <li>- Measure and mark out precisely and accurately.</li> <li>- Assemble components and make working models.</li> <li>- Make modifications as they go along.</li> <li>- Uses tools safely and accurately.</li> </ul>

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	<p>techniques to improve the appearance of their product.</p>	<p>order to make a product.</p> <ul style="list-style-type: none"> <li>- With support, measure, cut and score with some accuracy.</li> <li>- Demonstrate how to cut, shape and join fabric to make a simple product. Use basic sewing techniques.</li> <li>- Start to choose and use appropriate finishing techniques based on their own ideas.</li> </ul>	<ul style="list-style-type: none"> <li>- Work safely and accurately with a range of simple tools (e.g. scissors, hole punch, drills)</li> <li>- Measure, tape or pin, cut and join fabric with some accuracy.</li> <li>- Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT.</li> </ul>	<p>temporary and permanent ways.</p> <ul style="list-style-type: none"> <li>- Use simple graphical communication techniques.</li> <li>- Measure, tape or pin, cut and join fabric with some accuracy.</li> <li>- Sew using a range of different stitches, weave and knit.</li> </ul>	<p>ingredients, liquids).</p> <ul style="list-style-type: none"> <li>- Apply the rules for basic hygiene and other safe practices.</li> </ul>	<ul style="list-style-type: none"> <li>- Construct products using permanent joining techniques.</li> <li>- Pin, sew and stitch materials together to create a product using a combination of accurately made pieces.</li> <li>- Achieve a quality product matching specifications.</li> </ul>
<p><b>Evaluating processes and products</b></p>	<p><b>National Curriculum 2014</b> When designing and making, pupils should be taught to:</p> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>• explore and evaluate a range of existing products</li> <li>• evaluate their ideas and products against design criteria</li> </ul>		<p><b>National Curriculum 2014</b> When designing and making, pupils should be taught to:</p> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>• investigate and analyse a range of existing products</li> <li>• evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</li> <li>• understand how key events and individuals in design and technology have helped shape the world</li> </ul>			
	<ul style="list-style-type: none"> <li>- Explore how existing products work, explaining likes and dislikes.</li> <li>- Start to evaluate their product by discussing how well it works in relation to the purpose (design criteria).</li> <li>- Evaluate their product by answering questions about what they have made and how they have gone about it.</li> <li>- Begin to evaluate their</li> </ul>	<ul style="list-style-type: none"> <li>- Evaluate their work against their design criteria and purpose – what went well, if they did it again what could they improve?</li> <li>- Explain why they chose certain materials, techniques and tools.</li> <li>- Evaluate their products as they are developed, identifying strengths and possible changes they might make.</li> </ul>	<ul style="list-style-type: none"> <li>- Evaluate against their design criteria e.g. how well it meets its intended purpose.</li> <li>- Disassemble and evaluate familiar products.</li> <li>- Explore how well products work to achieve their purposes.</li> <li>- Learn about inventors, designers, engineers, chefs and</li> </ul>	<ul style="list-style-type: none"> <li>- Evaluate their work both during and at the end of the assignment.</li> <li>- Evaluate their products carrying out appropriate tests.</li> <li>- Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground breaking</li> </ul>	<ul style="list-style-type: none"> <li>- Evaluate a product against the original design specification.</li> <li>- Evaluate a product personally and seek evaluation from others.</li> <li>- Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground breaking</li> </ul>	<ul style="list-style-type: none"> <li>- Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests.</li> <li>- Record their evaluations using drawings with labels.</li> <li>- Evaluate against their original criteria and suggest ways that their product could be improved.</li> </ul>

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	products as they are developed, identifying strengths and possible changes they might make.	- Talk about their ideas, saying what they like and dislike.	manufacturers who have developed ground breaking products.	products.	products.	- Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products.
<b>Technical Knowledge (Making products work)</b>	<u>National Curriculum 2014</u> When designing and making, pupils should be taught to: <ul style="list-style-type: none"> <li>• build structures, exploring how they can be made stronger, stiffer and more stable</li> <li>• explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</li> </ul>		<u>National Curriculum 2014</u> When designing and making, pupils should be taught to: <ul style="list-style-type: none"> <li>• apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>• understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> <li>• understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li> <li>• apply their understanding of computing to program, monitor and control their products.</li> </ul>			
	<ul style="list-style-type: none"> <li>- Understand about the movement of simple mechanisms such as levers and sliders, wheels, and axles.</li> <li>- Uses some technical vocabulary correctly in projects they are undertaking.</li> <li>- Understand how freestanding structures can be made stronger, stiffer and more stable.</li> </ul>	<ul style="list-style-type: none"> <li>- Understand about the movement of simple mechanisms such as wheels, and axles.</li> <li>- Use technical vocabulary correctly in projects they are undertaking.</li> </ul>	<ul style="list-style-type: none"> <li>- Start to understand that mechanical and electrical systems have an input process and output process.</li> <li>- Understand that levers and linkages create movement and know how to use them.</li> <li>- Understand how to make strong, stiff shell structures.</li> </ul>	<ul style="list-style-type: none"> <li>- Understand that mechanical and electrical systems have an input process and output process.</li> <li>- Know how simple electrical circuits and components can be used to create functional products.</li> </ul>	<ul style="list-style-type: none"> <li>- Understand how to stiffen, strengthen and reinforce a range of 3D frameworks.</li> <li>- Understand that mechanical and electrical systems have an input process and output process.</li> <li>- Understand how mechanical systems such as cams or gears or pulleys create movement.</li> </ul>	<ul style="list-style-type: none"> <li>- Understand that mechanical and electrical systems have an input process and output process.</li> <li>- Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in environment and control products.</li> </ul>
	<u>National Curriculum 2014</u> When designing and making, pupils should be taught to: <ul style="list-style-type: none"> <li>• Use the basic principles of a healthy and varied diet to prepare dishes.</li> <li>• Understand where food comes from.</li> </ul>		<u>National Curriculum 2014</u> <ul style="list-style-type: none"> <li>• Understand and apply the principles of a healthy and varied diet.</li> <li>• Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.</li> <li>• Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</li> </ul>			
<b>Cooking and Nutrition</b>	- Uses basic food handling hygiene practices and personal hygiene.	- Follows safe procedures for food safety and hygiene.	- Start to demonstrate hygienic and food preparation and	- Know what to do and explain why steps need to be taken to	- Begin to apply the rules for basic food hygiene and other safe practices	- Apply the rules for basic food hygiene and other safe practices e.g.

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	<ul style="list-style-type: none"> <li>- Understand that all food comes from plants or animals.</li> <li>- Knows of some food that is farmed, caught or grown.</li> <li>- Know about the need for a variety of foods in a diet and know about the Eatwell plate.</li> <li>- Begin to name some fruits and vegetables they know to be healthy for five a day.</li> <li>- Begin to use techniques such as cutting, peeling and grating.</li> </ul>	<ul style="list-style-type: none"> <li>- Knows that food has to be farmed, caught or grown elsewhere.</li> <li>- Can name and sort foods into the five main groups of the Eatwell plate.</li> <li>- Knows how to prepare simple dishes safely without a heat source.</li> <li>- Can safely use techniques such as cutting, peeling and grating for a growing range of ingredients.</li> <li>- Know that everyone should eat at least five portions of fruit and vegetables every day.</li> </ul>	<p>storage.</p> <ul style="list-style-type: none"> <li>- Start to know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.</li> <li>- Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</li> <li>- Start to know a healthy diet is made up from a variety of different food and drink, as depicted in the Eatwell plate.</li> <li>- Follow instructions/recipes.</li> <li>- Develop the knowledge and skills to cook a variety of predominantly savoury dishes safely and hygienically, using a heat source where appropriate.</li> <li>- Measure and weigh</li> </ul>	<p>ensure food is prepared and stored hygienically.</p> <ul style="list-style-type: none"> <li>- Understand food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.</li> <li>- Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</li> <li>- Know a healthy diet is made up from a variety of different foods and start to make healthy eating choices using the Eatwell plate.</li> <li>- Understand how to cook a variety of predominantly savoury dishes safely and hygienically, using a heat source where appropriate.</li> <li>- Measure ingredients</li> </ul>	<p>e.g. hazards relating to the use of ovens.</p> <ul style="list-style-type: none"> <li>- Describe what they do to be both hygienic and safe.</li> <li>- Can name some food that is grown, reared and caught in the UK and Europe.</li> <li>- Knows that seasons may affect the food available, limiting them.</li> <li>- Develop the knowledge of how some food is processed into ingredients that can be eaten or used in cooking.</li> <li>- Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</li> <li>- Knows recipes can be adapted to change the appearance, taste, texture and aroma.</li> </ul>	<p>hazards relating to the use of ovens.</p> <ul style="list-style-type: none"> <li>- Explain how their product should be stored with reasons.</li> <li>- Knows food is grown, reared and caught in the UK, Europe and the wider world.</li> <li>- Knows how food is processed into ingredients that can be eaten or used in cooking.</li> <li>- Can accurately prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</li> <li>- Know recipes can be adapted by adding or substituting one or more ingredients.</li> </ul>
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