

KS2 progression of DT skills for expected level.

National curriculum statement	Year 3	Year 4	Year 5	Year 6
<p>Design</p> <p>♣ 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</p>	<p>I can disassemble and investigate everyday products to see how they are fit for purpose (e.g. Stone Age tools vs modern tools)</p> <p>Design with purpose: Use design criteria from the teacher to inform design.</p> <p>Make products, refining the design as work progresses</p>	<p>Design with purpose: plans will take account of knowledge of a range of existing products.</p> <p>Children will come up with design criteria as a class first e.g. it must...</p> <p>Make products, refining the design as work progresses.</p>	<p>Design products with a clear user and purpose in mind – ensure you know what makes a product unique.</p> <p>Set own design criteria based on the above.</p> <p>Designs will show alternatives and discuss why one is better than the other based on the intended purpose.</p> <p>Simple prototypes may be used to test ideas.</p>	<p>Plans will take account of multiple sources including IT sources and knowledge of how the parts function.</p> <p>Set own design criteria based on the above.</p> <p>Designs will show alternatives and discuss why one is better than the other based on the intended purpose and user in mind.</p> <p>Simple prototypes may be used to test ideas- designs will then need to be revisited and modified effectively.</p>
<p>♣ generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>	<p>Generate, develop, model and communicate their ideas through discussion and annotated sketches</p>	<p>Generate, develop, model and communicate their ideas through discussion, annotated sketches and cross-sectional diagrams.</p>	<p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes or pattern pieces.</p>	<p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p> <p>Designs will be detailed e.g. they will include measurements/ how bright something should be etc.</p>

KS2 progression of DT skills for expected level.

<p>Make: Practical skills</p> <p>♣ select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</p>	<p>Children will be able to perform practical tasks with greater accuracy e.g. measuring out different parts/creating a template to use for consistency etc.</p> <p>Select appropriate joining techniques.</p>	<ul style="list-style-type: none"> • Cut materials with precision • Select appropriate joining techniques. They will be able to join materials both in permanent and temporary ways. 	<p>Develop a range of practical skills to create products: Children will create more complex templates to help them.</p> <p>Show an understanding of the qualities of materials to choose appropriate tools to cut and shape.</p>	<p>Develop a range of practical skills to create products: Children will create more complex templates to help them.</p> <p>Show an understanding of the qualities of materials to choose appropriate tools to cut and shape.</p>
<p>♣ 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</p>	<p>Children will choose appropriate materials for their functional properties and aesthetic qualities.</p>	<p>Building on skills in year 3, Children will also focus on producing a product that is well-finished and fit for the function it is designed for.</p> <p>Refine the finish with appropriate tools.</p>	<p>Children will be able to identify and apply an appropriate finishing technique to ensure it is high-quality, using art skills where appropriate e.g. choosing to add paint/collage/embellishments and will be able to evaluate their successes.</p> <p>Textiles focus.</p>	<p>Children will be able to identify and apply an appropriate finishing technique to ensure it is high-quality, using art skills where appropriate e.g. choosing to add paint/collage/embellishments and will be able to evaluate their successes.</p>
<p>Evaluate</p> <p>♣ investigate and analyse a range of existing products</p>	<p>Self-assessment based on existing products- how their design meets the design criteria.</p>	<p>Suggest an alternative way that they could have created their design based on their knowledge of existing products and give a detailed response of which would be better and why.</p>	<p>Children will have a greater understanding of the parts and their function to a range of products related to what they're learning.</p>	<p>Children will have a greater understanding of the parts and their function to a range of products related to what they're learning.</p>
<p>♣ evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p>	<p>Peer assess one area of improvement and go back to it to improve.</p>	<p>Identify what's gone well, what could be improved and how any evaluations</p>	<p>Children will be able to check their work as they develop it and modify as they go (e.g. after testing a prototype).</p>	<p>Children will be able to check their work as they develop it and modify as they go (e.g. after testing a prototype).</p>

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		during planning stages changed their design.	They'll then be able to discuss this in detail, reflecting on any improvements that could be made, both on the appearance and functional ability of the product based on the original criteria.	They'll then be able to discuss this in detail, reflecting on any improvements that could be made, both on the appearance and functional ability of the product based on the original criteria.
<p>Design throughout history</p> <p>♣ understand how key events and individuals in design and technology have helped shape the world</p>	<ul style="list-style-type: none"> Identify some of the great designers in all of the areas of study. Improve upon existing designs, giving reasons for choices. 	<ul style="list-style-type: none"> Identify some of the great designers in all of the areas of study. Improve upon existing designs, giving reasons for choices. 	<ul style="list-style-type: none"> Combine elements of design from a range of inspirational designers throughout history, giving reasons for their choices. 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. 	<ul style="list-style-type: none"> Combine elements of design from a range of inspirational designers throughout history, giving reasons for their choices. 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.
<p>Technical knowledge</p> <p>♣ apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p>	Ensure children are doing this as standard after building a more complex structure.	Ensure children are doing this as standard after building a more complex structure.	Ensure children are doing this as standard after building a more complex structure.	Ensure children are doing this as standard after building a more complex structure.
<p>♣ understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</p>	Children will have a basic understanding of each mechanical system mentioned (gears/pulleys/cams/leavers/linkages) Have resources that children can choose to use to get used to the systems in addition to planned activities.	Children will be able to use different mechanical systems in their products.	Based on Y5 Science curriculum objectives: recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. Explore the effects and evaluate.	recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. Explore the effects and evaluate.
<p>♣ understand and use electrical systems in their products [for</p>	Create a product that incorporates a bulb. (Links to the Science topic of light studied in Year 3)	understand and use electrical systems in their products [for example, series	understand and use electrical systems in their products [for example, series circuits	More detailed designing of their products that goes into details encapsulating the Y6 Science requirements:

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<p>example, series circuits incorporating switches, bulbs, buzzers and motors]</p> <p>Strong links to statements from the Science curriculum- expanded on in each year group.</p>		<p>circuits incorporating switches, bulbs, buzzers and motors]</p> <p>Based on Y4 Science curriculum objectives: Within their products, design and use a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p>	<p>incorporating switches, bulbs, buzzers and motors]</p>	<p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <ul style="list-style-type: none"> ♣ compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches ♣ use recognised symbols when representing a simple circuit in a diagram. [correct symbols used in plan for design].
<p>♣ apply their understanding of computing to program, monitor and control their products.</p>	<p>Children are able to use a tablet linked to product to control (e.g. Lego technology)</p>	<p>Children are able to use a tablet linked to product to control. (e.g. Lego technology)</p>	<p>Children are able to use a tablet linked to product to control. (e.g. Lego technology)</p>	<p>Children are able to use a tablet linked to product to control. (e.g. Lego technology)</p>
<p>Cooking and nutrition: Practical skills</p>	<ul style="list-style-type: none"> • Prepare ingredients hygienically. • Follow a recipe. • Assemble or cook ingredients. • Cut materials with precision 	<ul style="list-style-type: none"> • Prepare ingredients hygienically using appropriate utensils. • Follow a recipe. • Assemble or cook ingredients. 	<ul style="list-style-type: none"> • Demonstrate a range of baking and cooking techniques. 	<ul style="list-style-type: none"> • Demonstrate a range of baking and cooking techniques.