

Design & Technology Whole School Unit Overview and Key Skills Checklist

Essential Learning Objectives (Chris Quigley):

Year 3

- To take inspiration from design throughout history
- To design, make, evaluate and improve
- To master practical skills

National Curriculum Unit	Key Skills (to be covered during the year) (from CQ Milestones)
<p style="text-align: center;">Puppets Textiles</p>	<ul style="list-style-type: none"> • <u>To design, make, evaluate and improve</u> S1 Design with purpose by identifying opportunities to design. S2 Make products by working efficiently (such as by carefully selecting materials). S3 Refine work and techniques as work progresses, continually evaluating the product design. S4 Use software to design and represent product designs. • <u>To take inspiration from design throughout history</u> S5 Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. S6 Improve upon existing designs, giving reasons for choices. S7 Disassemble products to understand how they work. • <u>To master practical skills</u>
<p style="text-align: center;">Egyptian Food Food</p>	<p><u>Food</u> S8 Prepare ingredients hygienically using appropriate utensils. S9 Measure ingredients to the nearest gram accurately. S10 Follow a recipe.</p>

	<p>S11 Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking).</p>
<p>Fairground Rides</p> <p>Programming</p>	<p>Materials</p> <p>S12 Cut materials accurately and safely by selecting appropriate tools.</p> <p>S13 Measure and mark out to the nearest millimetre.</p> <p>S14 Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs).</p> <p>S15 Select appropriate joining techniques.</p> <p>Textiles</p> <p>S16 Understand the need for a seam allowance.</p> <p>S17 Join textiles with appropriate stitching.</p> <p>S18 Select the most appropriate techniques to decorate textiles.</p> <p>Electrical & electronics</p> <p>S19 Create series and parallel circuits</p> <p>Computing</p> <p>S20 Control and monitor models using software designed for this purpose.</p> <p>Construction</p> <p>S21 Choose suitable techniques to construct products or to repair items.</p> <p>S22 Strengthen materials using suitable techniques.</p> <p>Mechanics</p> <p>S23 Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).</p> <p>S24 Design with purpose by identifying opportunities to design.</p> <p>S25 Make products by working efficiently (such as by carefully selecting materials).</p> <p>S26 Refine work and techniques as work progresses, continually evaluating the product design.</p> <p>S27 Use software to design and represent product designs.</p> <p>S28 Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs.</p> <p>S29 Improve upon existing designs, giving reasons for choices.</p> <p>S30 Disassemble products to understand how they work.</p>

Design and Technology Whole School Unit Overview and Key Skills Checklist

Essential Learning Objectives (Chris Quigley):

Year 4

- To take inspiration from design throughout history
- To design, make, evaluate and improve
- To master practical skills

National Curriculum Unit	Key Skills (to be covered during the year) (from CQ Milestones)
<p style="text-align: center;">Biscuits</p> <p style="text-align: center;">Food</p>	<ul style="list-style-type: none"> • <u>To design, make, evaluate and improve</u> S1 Design with purpose by identifying opportunities to design. S2 Make products by working efficiently (such as by carefully selecting materials). S3 Refine work and techniques as work progresses, continually evaluating the product design. S4 Use software to design and represent product designs. • <u>To take inspiration from design throughout history</u> S5 Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. S6 Improve upon existing designs, giving reasons for choices. S7 Disassemble products to understand how they work.
<p style="text-align: center;">Pop-up Cards</p> <p style="text-align: center;">Materials</p>	<ul style="list-style-type: none"> • <u>To master practical skills</u> Food S8 Prepare ingredients hygienically using appropriate utensils. S9 Measure ingredients to the nearest gram accurately. S10 Follow a recipe. S11 Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking). Materials

Electrical Buzzer Game

Electrical & Electronics

S12 Cut materials accurately and safely by selecting appropriate tools.

S13 Measure and mark out to the nearest millimetre.

S14 Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs).

S15 Select appropriate joining techniques.

Textiles

S16 Understand the need for a seam allowance.

S17 Join textiles with appropriate stitching.

S18 Select the most appropriate techniques to decorate textiles.

Electrical & electronics

S19 Create series and parallel circuits

Computing

S20 Control and monitor models using software designed for this purpose.

Construction

S21 Choose suitable techniques to construct products or to repair items.

S22 Strengthen materials using suitable techniques.

Mechanics

S23 Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).

S24 Design with purpose by identifying opportunities to design.

S25 Make products by working efficiently (such as by carefully selecting materials).

S26 Refine work and techniques as work progresses, continually evaluating the product design.

S27 Use software to design and represent product designs.

S28 Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs.

S29 Improve upon existing designs, giving reasons for choices.

S30 Disassemble products to understand how they work.

Design & Technology Whole School Unit Overview and Key Skills Checklist

Essential Learning Objectives (Chris Quigley):

Year 5

- To take inspiration from design throughout history
- To design, make, evaluate and improve
- To master practical skills

National Curriculum Unit	Key Skills (to be covered during the year) (from CQ Milestones)
<p style="text-align: center;">Bread</p> <p style="text-align: center;">Food</p>	<ul style="list-style-type: none"> • <u>To take inspiration from design throughout history</u> S1 Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. S2 Create innovative designs that improve upon existing products. S3 Evaluate the design of products so as to suggest improvements to the user experience. • <u>To design, make, evaluate and improve</u> S4 Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). S5 Make products through stages of prototypes, making continual refinements. S6 Ensure products have a high quality finish, using art skills where appropriate. S7 Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.
<p style="text-align: center;">Moving Vehicles</p> <p style="text-align: center;">Mechanics</p>	<ul style="list-style-type: none"> • <u>To master practical skills</u> <u>Food</u> S8 Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). S9 Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. S10 Demonstrate a range of baking and cooking techniques.

Legoland Workshop

Mechanics

S11 Create and refine recipes, including ingredients, methods, cooking times and temperatures.

Materials

S12 Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape).

S13 Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).

Textiles

S14 Create objects (such as a cushion) that employ a seam allowance.

S15 Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration).

S16 Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion).

Electricals and electronics

S17 Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips).

Computing

S18 Write code to control and monitor models or products.

Construction

S19 Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding).

Mechanics

S20 Convert rotary motion to linear using cams.

S21 Use innovative combinations of electronics (or computing) and mechanics in product designs.

Design & Technology Whole School Unit Overview and Key Skills Checklist

Essential Learning Objectives (Chris Quigley):

Year 6

- To take inspiration from design throughout history
- To design, make, evaluate and improve
- To master practical skills

National Curriculum Unit	Key Skills (to be covered during the year) (from CQ Milestones)
<p style="text-align: center;">Structures</p> <p style="text-align: center;">Materials</p>	<ul style="list-style-type: none"> • <u>To take inspiration from design throughout history</u> S1 Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. S2 Create innovative designs that improve upon existing products. S3 Evaluate the design of products so as to suggest improvements to the user experience. • <u>To design, make, evaluate and improve</u> S4 Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). S5 Make products through stages of prototypes, making continual refinements. S6 Ensure products have a high quality finish, using art skills where appropriate. S7 Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.
<p style="text-align: center;">Greek Theatre</p> <p style="text-align: center;">Masks</p> <p style="text-align: center;">Materials</p>	<ul style="list-style-type: none"> • <u>To master practical skills</u> <u>Food</u> S8 Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). S9 Measure accurately and calculate ratios of ingredients to scale up or down from a recipe.

	<p>S10 Demonstrate a range of baking and cooking techniques.</p> <p>S11 Create and refine recipes, including ingredients, methods, cooking times and temperatures.</p> <p><u>Materials</u></p> <p>S12 Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape).</p> <p>S13 Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).</p>
<p>Grab and Go Snack</p> <p>Food</p>	<p><u>Textiles</u></p> <p>S14 Create objects (such as a cushion) that employ a seam allowance.</p> <p>S15 Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration).</p> <p>S16 Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion).</p> <p><u>Electricals and electronics</u></p> <p>S17 Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips).</p> <p><u>Computing</u></p> <p>S18 Write code to control and monitor models or products.</p> <p><u>Construction</u></p> <p>S19 Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding).</p> <p><u>Mechanics</u></p> <p>S20 Convert rotary motion to linear using cams.</p> <p>S21 Use innovative combinations of electronics (or computing) and mechanics in product designs.</p>