

Humber Education Trust

Knowledge and Vocabulary Progression Intent

Design Technology

The intent of the Design Technology curriculum

To ensure that all pupils:

- use creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values.
- acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art.
- learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens.
- evaluate past and present design and technology in order to develop a critical understanding of its impact on daily life and the wider world.
- acquire the skills and knowledge to make a contribution to the creativity, culture, wealth and well-being of the nation as design technologists.

What are the key features of 'knowledge-rich' assessment for Design Technology?

At key stage 1 and 2, the sticky knowledge takes full account of the national curriculum's main characteristics of:

Designing

Making

Evaluating

Using technical knowledge

Food technology

There are relatively few assessment statements as these knowledge statements should be what pupils retain for ever. In other words, this knowledge is within their long-term memory and will be retained.

Investigate **Focused Practical Task** **Design** **Make** **Evaluate**

Design Technology: Key Stage 1			
		Year 1	Year 2
Designing	<p><i>Design - purposeful, functional, appealing products for themselves and other users based on design criteria</i></p> <p><i>Design - generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, ICT</i></p>	<ul style="list-style-type: none"> • use own ideas to design a product based on given criteria • draw and label a simple plan of their intended product before making it • explain to someone else how they intend to make their product 	<ul style="list-style-type: none"> • use own ideas to design a product based on given criteria using templates, mock-ups and IT, where appropriate • Draw a plan of the product and label the materials and components to be used • explain why they have chosen to use specific materials and components in their design
		<p>Design, plan, product, explain</p>	<p>Design criteria, materials, template, mock-up,</p>
Making	<p><i>select from and use a range of tools and equipment to perform practical tasks [e.g. cutting, shaping, joining and finishing]</i></p> <p><i>select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</i></p>	<ul style="list-style-type: none"> • choose appropriate resources and tools • join materials and components 	<ul style="list-style-type: none"> • choose tools and materials and explain why they have chosen them • join materials and components in different ways • measure materials to use in a model or structure
		<p>Cut, join, glue, sew, fix, tape, mix, stir</p>	<p>Choose, explain, measure, centimetres, grams</p>
Evaluating	<p><i>explore and evaluate a range of existing products</i></p> <p><i>evaluate their ideas and products against design criteria</i></p>	<ul style="list-style-type: none"> • explain what works well in existing products • explain what works well in the model they have made • explain what they would do differently next time 	<ul style="list-style-type: none"> • explain what works well and not so well in existing products • describe how an existing product works • explain what works well and not so well in the model they have made • suggest one improvement they could make to their finished product and give a reason why
		<p>evaluate</p>	<p>Improvement, reason</p>
Technical Knowledge	<p><i>build structures, exploring how they can be made stronger, stiffer and more stable</i></p> <p><i>explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</i></p>	<p>Construction</p> <ul style="list-style-type: none"> • Know how to make a sturdy product (<i>e.g. consider shape, material, joining method</i>) <p>Textiles</p> <ul style="list-style-type: none"> • Know how to join two pieces of material together using a running stitch 	<p>Construction</p> <ul style="list-style-type: none"> • Know how to use mechanisms in their products (<i>e.g. levers, sliders, wheels and axles</i>) <p>Textiles</p> <ul style="list-style-type: none"> • Know how to join two pieces of material together using an appropriate stitch (<i>e.g. running stitch, back tack</i>) • Know how to use a template
		<p>Strong, stable, stiff, sturdy, running stitch, needle, thread</p>	<p>Mechanism, rotate, lever, slider, axle, fixed, back tack, template, eye (of the needle), knot</p>
Food Technology	<p><i>use the basic principles of a healthy and varied diet to prepare dishes</i></p> <p><i>understand where food comes from</i></p>	<ul style="list-style-type: none"> • cut food safely • know how to wash hands before preparing food and to maintain cleanliness throughout the process • know that food originates from places other than the shop (<i>e.g. farm, factory, garden</i>) 	<ul style="list-style-type: none"> • weigh ingredients from a recipe, if appropriate • describe the ingredients used when making a food product (<i>e.g. sweet, savoury, crunchy, juicy</i>) • know how to prepare surfaces and keep them clean when preparing food • know the original sources of some common foods (<i>e.g. milk from a cow, egg from a chicken, chips from potatoes which come from the ground</i>).
		<p>Water, soap, clean, cut, chop, knife, blade, safely, ingredients</p>	<p>Weigh, measure, recipe, hygiene, texture, taste</p>

Investigate



Focused Practical Task



Design



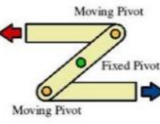
Make



Evaluate

(including research)

Design Technology: Key Stage 2					
		Year 3	Year 4	Year 5	Year 6
Designing	<ul style="list-style-type: none"> use research & 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 	<ul style="list-style-type: none"> use research to contribute to the development of shared design criteria use annotated sketches to design at least two possibilities for an appealing product which fulfils the design criteria label on the design how the materials and components will be attached choose materials and components for both their suitability and appeal use a simple IT program within the design (e.g. simple painting program) 	<ul style="list-style-type: none"> conduct research to contribute to the development of shared design criteria use annotated sketches to design at least two possibilities for an appealing product which fulfils the design criteria label on the design how the materials and components will be attached and include the intended measurements use prototypes to communicate their ideas persevere and adapt work when original ideas are unsuccessful and annotate the original design with changes made throughout the making process 	<ul style="list-style-type: none"> conduct research using different sources to develop own design criteria and explain how it will appeal to a specific user use cross-sectional diagrams to design at least two possibilities for an appealing product which fulfils the design criteria label on the design how the materials and components will be attached and include accurate measurements produce a detailed, step-by-step plan of the chosen design persevere and adapt work when original ideas are unsuccessful and annotate the step by step plan with changes made throughout the making process use a more complex IT program within the design process (e.g. Paintbox app) 	<ul style="list-style-type: none"> conduct market research to develop own design criteria which takes into account culture and society (e.g. No spaghetti Bolognese in a Viking feast, cost implications, dietary requirements) use exploded diagrams to design at least two possibilities for an appealing product which fulfils the design criteria label on the design how the materials and components will be attached and include accurate measurements produce a detailed, step-by-step plan of the chosen design persevere and adapt work when original ideas are unsuccessful and annotate the step by step plan with changes made throughout the making process
		Research, annotate, sketch, appealing, attach, suitability, function, purpose	prototype, adapt, measurements, centimetres, millimetres	User, sources, cross-sectional, step-by-step, process	Market research, culture, society, exploded diagram
Making	<ul style="list-style-type: none"> 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 wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities 	<ul style="list-style-type: none"> select the most appropriate materials, tools and techniques for a given task work accurately to measure, shape and join materials and components resulting in a quality finished product make a product which applies strengthening skills 	<ul style="list-style-type: none"> know which tools to use for a particular task and show knowledge of handling the tool know which material is likely to give the best outcome to result in a quality finished product make a prototype before making a final version if appropriate (e.g. an electrical circuit for a torch) measure accurately make a product which uses electrical components 	<ul style="list-style-type: none"> follow a step-by-step plan, choosing the right equipment and materials use a range of tools and equipment competently to result in a quality and aesthetically pleasing finished product measure accurately make a product which uses mechanical components 	<ul style="list-style-type: none"> know which tool to use for a specific practical task and explain why know how to use a range of tools correctly and safely to result in a quality and aesthetically pleasing finished product make a product which uses electrical components controlled by IT
		Appropriate, technique, accurately, quality, functional,	See Technical Knowledge	Competently, aesthetically pleasing,	See Technical Knowledge

Evaluating	<ul style="list-style-type: none"> investigate and analyse a range of existing products evaluate their ideas & 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 	<ul style="list-style-type: none"> investigate and analyse a range of existing products know why their product has or has not, been successful explain how to improve their finished product giving reasons why prove that the finished product meets the design criteria. 	<ul style="list-style-type: none"> investigate and analyse a range of existing products consider the views of others when evaluating their product for both its purpose, appearance and ability to meet the design criteria suggest and justify improvements to the finished product made during the making process 	<ul style="list-style-type: none"> compare and analyse a range of existing products consider the views of others when evaluating their product for both its functionality and ability to meet the design criteria suggest and justify improvements to the finished product outlining the positive features and draw backs made during the making process 	<ul style="list-style-type: none"> compare and analyse a range of existing products know how to test and evaluate their products taking into account the views of others evaluate their product against clear criteria, linked to the appearance, functionality and ability to meet users' needs. suggest and justify improvements to the finished product outlining the positive features and draw backs made during the making process
		Investigate, analyse, successful, criteria	Purpose, appearance, views, justify	Functionality, positive features, draw backs,	See previous year groups
Technical Knowledge	<ul style="list-style-type: none"> apply their understanding of how to strengthen, stiffen and reinforce more complex structures understand and use mechanical systems in their products [e.g. gears, pulleys, cams, levers and linkages] understand and use electrical systems in their products [e.g. series circuits incorporating switches, bulbs, buzzers, motors] apply their understanding of computing to program, monitor and control their products. 	<p>Construction</p> <ul style="list-style-type: none"> know how to strengthen a product by stiffening a given part or reinforce a part of the structure (e.g. folding, rolling, shaping, joining) <p>Textiles</p> <ul style="list-style-type: none"> Know how to join two pieces of material together using an appropriate stitch (e.g. running stitch, back tack, cross stitch, overstitch) 	<p>Construction</p> <ul style="list-style-type: none"> use scientific knowledge of electrical systems to enhance the quality of their product (e.g. lights, switches or buzzers) Use IT to program (e.g. Crumble, Micro:bit) and control their product in a simple manner (e.g. on/off, repeat loop) <p>Textiles</p> <ul style="list-style-type: none"> Know how to join two pieces of material together using an appropriate stitch (e.g. running stitch, back tack, cross stitch, back stitch) Know how to create their own pattern or template 	<p>Construction</p> <ul style="list-style-type: none"> use scientific knowledge of mechanical systems to enhance the quality of their product (e.g. gears, pulleys, cams, levers, pneumatics and linkages (make things move in opposite directions))  <p>Textiles</p> <ul style="list-style-type: none"> Know how to join two pieces of material together using an appropriate stitch (e.g. running stitch, back tack, cross stitch, back stitch, blanket stitch) Know how to make a product with a seam allowance 	<p>Construction</p> <ul style="list-style-type: none"> use electrical systems correctly and accurately to enhance their product know how to improve their product by strengthening, stiffening or reinforcing Use IT to program (e.g. Crumble, Micro:bit) and control their product in a more complex manner (e.g. if, when, on input A) <p>Textiles</p> <ul style="list-style-type: none"> Know how to join materials together using a combination of stitching techniques taking into consideration join, appearance and purpose.
		Reinforce, strengthen, technique, folding, rolling, shaping, joining, cross stitch, secure (the first/last stitch), overstitch	Circuit, buzzer, lamp, switch, battery, crocodile clip, wire, control, program, command, algorithm, back stitch, pattern	Gears, pulleys, cams, levers, linkages, pivot, blanket stitch, seam allowance,	(see previous years) + Electrical system,
Food Technology	<ul style="list-style-type: none"> understand and apply the principles of a healthy and varied diet prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed 	<ul style="list-style-type: none"> know how to be both hygienic and safe when using food follow a recipe to create a dish know the difference between a savoury and sweet dish 	<ul style="list-style-type: none"> know which foods/ingredients contribute to a healthy and varied diet and use this knowledge to make a suitable dish know the process involved in producing a variety of common ingredients (e.g. chicken, fruit and vegetables, fish, jam) 	<ul style="list-style-type: none"> know when food is ready to eat (e.g. ripe, cooked, frozen) know which season various foods are available for harvesting know how to prepare a dish by combining the foods/ingredients (e.g. spaghetti bolognese, soup, curry) 	<ul style="list-style-type: none"> know how food ingredients should be stored and give reasons know the difference between use by and best before dates work within a budget to create a dish
		Bacteria, germs, savoury, sweet	Varied, diet, protein, carbohydrates, dairy, fat, grown, reared, processed, caught	Ripe, chilled, harvest, seasonal, seasoned,	Refrigerated, frozen, rancid, stale, mouldy, expiration date, budget,