




Brough Primary School – Progression in Design Technology KS2

| | Phase 3 Years 3 and 4 | Phase 4 Years 5 and 6 |
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| <p>Design</p>  | <ul style="list-style-type: none"> ● 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 <ul style="list-style-type: none"> ● begin to research others' needs (Y3) and use these for ideas (Y4) ● show design meets a range of requirements ● describe purpose of product (Y3) and that the design fits this purpose (Y4) ● follow a given design criteria (Y3) begin to create own design criteria (Y4) ● have at least one idea about how to create product (Y3) and suggest improvements to design (Y4) ● create a plan which shows order, equipment and tools ● describe design using an accurately labelled sketch and words ● make design decisions (Y3) and explain the decisions considering availability of resources (Y4) ● explain how product will work ● make a prototype ● begin to use computers to show design <p>Key Vocabulary <i>Design technology, product, intended user, annotated sketch, component, design criteria, computer -aided design.</i></p> | <ul style="list-style-type: none"> ● 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 <ul style="list-style-type: none"> ● use internet and questionnaires for research and design ideas (Y5) draw on market research to inform design (Y6) ● take a user's view into account when designing ● begin to consider needs/wants of individuals/groups when designing (Y5), identify features that will appeal to the user (Y6) and ensure product is fit for purpose ● create own design criteria ● have a range of ideas ● produce a logical, realistic plan and explain it to others ● use cross-sectional planning and annotated sketches (Y5) and exploded diagrams (Y6) ● make design decisions considering time and resources (Y5) and cost (Y6) ● clearly explain how parts of product will work (Y5) and how they are fit for purpose (Y6) ● model and refine design ideas by making prototypes and using pattern pieces ● use computer-aided designs <p>Key Vocabulary <i>Design technology, product, intended user, design criteria, cross - sectional diagram, exploded diagram, innovation.</i></p> |

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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
- select suitable tools/equipment, explain choices; begin to use them accurately
- select appropriate materials, fit for purpose (Y3) explain choices (Y4)
- work through plan in order
- consider how good product will be
- begin to measure, mark out, cut and shape materials/components with some accuracy
- begin to assemble, join and combine materials and components with some accuracy
- begin to apply a range of finishing techniques with some accuracy

Key Vocabulary

Net, scoring, tab, accuracy, packaging, product, graphic designer, shelf -appeal, battery circuit, switch, bulb, electrical engineer.


- 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
- use selected tools/equipment with good level of precision
- produce suitable lists of tools, equipment/materials needed (Y5) considering constraints (Y6)
- select appropriate materials, fit for purpose; explain choices, considering functionality (Y5) and aesthetics (Y6)
- create and follow detailed step by-step plan
- explain how product will appeal to an audience (Y5) make adjustments to improve quality (Y6)
- mainly accurately measure, mark out, cut and shape materials/components
- mainly accurately assemble, join and combine materials/components
- mainly accurately apply a range of finishing techniques
- use techniques that involve a small number of steps
- Create a polished and well-finished product.

Key Vocabulary

Frame, structure, triangulation, strengthen, reinforce, agricultural engineering, architect, mechanical system, pulley, driver, follower, load, transport, mechanical engineer.





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| <p>Evaluate</p>  | <ul style="list-style-type: none"> ● 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 <ul style="list-style-type: none"> ● look at design criteria while designing and making ● use design criteria to evaluate finished product ● say what I would change to make design better (Y3) and why it would improve it (Y4) ● begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose ● begin to understand by whom, when and where products were designed ● learn about some inventors/designers/ engineers/chefs/ manufacturers of groundbreaking products ● (Y4) consider whether products can be recycled or reused <p>Key Vocabulary innovative, user, design brief, evaluation, purpose, function, product, inventor, designer, engineer, manufacturer, recycle, reuse, materials, research</p> | <ul style="list-style-type: none"> ● 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 <ul style="list-style-type: none"> ● evaluate quality of design while designing and making ● evaluate ideas and finished product against specification, considering purpose and appearance ● test and evaluate final product (Y5) explain what would improve it (Y6) ● evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose ● begin to evaluate how much products cost to make and how innovative they are ● research how sustainable materials are ● talk about some key inventors/designers/ engineers/ chefs/manufacturers of groundbreaking products <p>Key Vocabulary innovative, user, design brief, evaluation, purpose, function, product, inventor, designer, engineer, manufacturer, recycle, reuse, materials, research</p> |
| <p>Technical Knowledge Cooking and nutrition</p> | <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"> ● 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. |

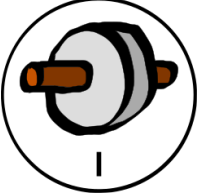
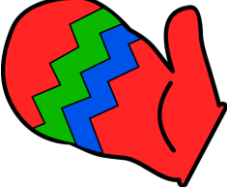
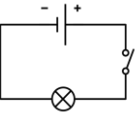


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|  | <ul style="list-style-type: none">● carefully select ingredients● use equipment safely (Y3) explain how to be safe and hygienic (Y4)● make product look attractive● think about how to grow plants to use in cooking (Y3) understand ingredients can be fresh, pre-cooked or processed (Y4)● begin to understand food comes from UK and wider world (Y3) and can be caught, reared or grown (Y4)● describe how healthy diet= variety/balance of food/drinks *explain how food and drink are needed for active/healthy bodies.● prepare and cook some dishes safely and hygienically● (Y4) explain how to be safe and hygienic.● grow in confidence using some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading <p>Key Vocabulary varied diet, balanced diet, ingredients, pre-cooked, processed, hygiene, healthy</p> | <ul style="list-style-type: none">● explain how to be safe / hygienic and follow own guidelines● present product well - interesting, attractive, fit for purpose● begin to understand seasonality of foods (Y5) and begin to explain this (Y6)● understand food can be grown, reared or caught in the UK and the wider world (Y5) and name some (Y6)● describe how recipes can be adapted to change appearance, taste, texture, aroma (Y5) by adding or substituting ingredients (Y6)● explain how there are different substances in food / drink needed for health● prepare and cook some dishes safely and hygienically including, where appropriate, use of heat source● use range of techniques such as peeling, chopping, slicing, grating, mixing, spreading and baking. <p>Key Vocabulary <i>Hygiene, cross contamination, local produce, seasonality, cooking technique.</i></p> |
| <p><u>Technical Knowledge Structures</u></p>  | <ul style="list-style-type: none">● apply their understanding of how to strengthen, stiffen and reinforce more complex structures● use appropriate materials● work accurately to make cuts and holes● join materials● begin to make strong (Y3) and stiff (Y4) structure● (Y4) measure carefully to avoid mistakes | <ul style="list-style-type: none">● apply their understanding of how to strengthen, stiffen and reinforce more complex structures● select materials carefully, considering intended use of product and appearance (Y5) and functionality (Y6)● explain how product meets design criteria● measure accurately enough to ensure precision● ensure product is strong and fit for purpose● begin to reinforce and strengthen a 3D frame |



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| <p><u>Technical Knowledge Mechanisms</u></p>  | <ul style="list-style-type: none">● understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]● select appropriate tools / techniques● alter product after checking, to make it better (Y5) and explain the changes (Y6)● begin to try new/different ideas● use simple lever and linkages to create movement● Use pneumatics to create movement | <ul style="list-style-type: none">● understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]● refine product after testing, considering function and purpose● grow in confidence about trying new / different ideas● begin to use cams, pulleys or gears to create movement |
| <p><u>Technical Knowledge Textiles</u></p>  | <ul style="list-style-type: none">● 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● join different textiles in different ways● choose textiles considering appearance and functionality● begin to understand that a simple fabric shape can be used to make a 3D textiles project● (Y4) think about how to make the product strong● (Y4) begin to design a template | <ul style="list-style-type: none">● 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● think about user and aesthetics when choosing textiles (Y5) and the user's needs and wants (Y6)● use own template● think about how to make product strong and look better● think of a range of ways to join things● begin to understand that a single 3D textiles project can be made from a combination of fabric shapes. |
| <p><u>Technical Knowledge Electrical Systems</u></p>  | <ul style="list-style-type: none">● 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.● use simple circuit in product | <ul style="list-style-type: none">● 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.● incorporate switch into product● confidently use number of components in circuit● begin to be able to program a computer to monitor changes in environment and control product● (Y6) use different types of circuit in the product |

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