

## DESIGN TECHNOLOGY: CURRICULUM CONTENT AND PROGRESSION FRAMEWORK

### Aims and Rationale

Design and technology gives young people the skills and abilities to engage positively with the designed and made world and to harness the benefits of technology. They learn how products and systems are designed and manufactured, how to be innovative and to make creative use of a variety of resources including digital technologies, to improve the world around them. DT Association

#### Intent

Our design and technology curriculum allows children to exercise their creativity through designing and making. We encourage children to use their 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. They are taught to combine these skills with knowledge and understanding in order to design and make a product. Skills are taught progressively to ensure that all children are able to learn and practice as they move through school. Evaluation is an integral part of the design process and allows children to adapt and improve their product, this is also a key skill which they need throughout their life.

D&T allows children to apply the knowledge and skills learned in other subjects, particularly Maths, Science and Art. Children's interests are captured through topics, ensuring that links are made in a cross curricular way, giving children motivation and meaning for their learning. Children will learn basic cooking skills, as well as applying the principles of nutrition and healthy eating.

#### Implementation

What do we teach? What does this look like?

Our whole curriculum is shaped by our school values:

- We value success and achievement, in the basic skills and the wider curriculum, so that everyone here is ready for lifelong learning.
- We value resilience, and ensure everyone is supported to become independent and wise.
- We value enjoyment, so we make learning fun

We teach the National Curriculum, through these values, supported by clear skills and knowledge progression. All teaching of DT should follow the design, make and evaluate cycle. Each stage should be rooted in technical knowledge. The design process should be rooted in real life, with

relevant contexts to give meaning to learning. While making, children should be given choice and a range of tools to choose freely from. To evaluate, children should be able to evaluate their own products against a design criteria. Each of these steps should be rooted in technical knowledge and vocabulary.

DT should be taught to a high standard, where each of the stages should be given equal weight.

The key skills we teach the children are:

- sewing and textiles
- cooking and nutrition
- electrical and mechanical components
- using materials

### Impact

By the time children leave our school they will have:

- An excellent attitude to learning and independent working.
- The ability to use time efficiently, and work constructively and productively with others.
- The ability to carry out thorough research, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs.
- The ability to act as responsible designers and makers, working ethically, using finite materials carefully and working safely.
- A thorough knowledge of which tools, equipment and materials to use to make their products.
- The ability to apply mathematical knowledge and skills accurately.
- The ability to manage risks exceptionally well to manufacture products safely and hygienically.
- A passion for the subject.

| Topics/Themes/Texts: (To be decided by individual schools)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | The key things we want children to know/be able to do                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| <p><b><u>Design</u></b></p> <ul style="list-style-type: none"> <li>Communicate a design</li> <li>Discuss and explain ideas to execute design</li> </ul> <p><b><u>Make</u></b></p> <ul style="list-style-type: none"> <li>Use a variety of tools to experiment purpose</li> <li>Explore ways of joining materials together</li> </ul> <p><b><u>Evaluate</u></b></p> <ul style="list-style-type: none"> <li>N/A</li> </ul> <p><b><u>Technical Knowledge</u></b></p> <ul style="list-style-type: none"> <li>N/A</li> </ul> <p><b>Cooking and Nutrition</b></p> <ul style="list-style-type: none"> <li>N/A</li> </ul> | <p><b><u>Design</u></b></p> <ul style="list-style-type: none"> <li>Select appropriate resources and materials to use.</li> <li>Construct with a purpose in mind.</li> <li>Represent their own ideas, thoughts and feelings.</li> </ul> <p><b><u>Make</u></b></p> <ul style="list-style-type: none"> <li>Use a variety of natural and man-made resources.</li> <li>Master reasonable scissor control effectively and safely to cut and use techniques (paper in one hand, scissors in the other).</li> <li>Use a range of resources and methods to make joins.</li> <li>Use malleable materials (e.g. play dough) and construction (e.g. Lego and blocks) safely with increasing control.</li> </ul> <p><b><u>Evaluate</u></b></p> <ul style="list-style-type: none"> <li>N/A</li> </ul> <p><b><u>Technical knowledge</u></b></p> <ul style="list-style-type: none"> <li>N/A</li> </ul> <p><b><u>Cooking and nutrition</u></b></p> <ul style="list-style-type: none"> <li>N/A</li> </ul> |
| YEAR 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Topics/Themes/Texts: (To be decided by individual schools)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | The key things we want children to know/be able to do                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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| <p><b>Design:</b><br/>Use a template to communicate a design.<br/>Discuss and explain simple design ideas and decisions</p> <p><b>2. Make:</b><br/>Use different tools to cut, join, shape and finish.</p> <p><b>3. Evaluate:</b><br/>Explore the features of 3 different products designed to do the same job, and discuss their relative suitability for the given purpose.</p> <p><b>4. Technical Knowledge:</b></p> <ul style="list-style-type: none"> <li>- Use and store equipment such as needles safely.</li> <li>- Follow a set of instructions in order to learn a new skill such as sewing.</li> <li>- Children will learn stitch names.</li> </ul> <p><b>Activities</b><br/>Year B - Design and make a moving space picture with levers.<br/>(Destination Space)<br/>Design and make a felt animal puppet (Go Wild)</p> <p><b>5. Cooking and Nutrition:</b><br/>Know that all food comes from plants or animals.</p> <p>Know how to prepare simple dishes safely and hygienically, without using a heat source.</p> <p><b>Activities</b> - Year A - Sledging biscuits (link to Explorers)<br/>Year B - make bread (link to Great Fire of London)<br/>prepare and taste a range of fruit grown in other</p> | <p><b>Area of learning: Textiles</b></p> <p><b><u>Design</u></b></p> <ul style="list-style-type: none"> <li>- Explore a range of existing products.</li> <li>- Discuss ideas.</li> <li>- Design purposeful, functional appealing products <u>for themselves</u>.</li> <li>- Draw and label simple designs.</li> <li>- Follow and refine plans as necessary.</li> </ul> <p><b><u>Make</u></b><br/>Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing.</p> <ul style="list-style-type: none"> <li>- Use a needle and thread safely and effectively.</li> </ul> <p><b><u>Evaluate</u></b></p> <ul style="list-style-type: none"> <li>- Evaluate and compare against existing textile products.</li> <li>- Test and evaluate final product - is it fit for purpose?</li> <li>- Reflect back on design criteria.</li> <li>- Suggest improvements.</li> <li>- Use peer assessment to improve their work.</li> </ul> <p><b><u>Technical knowledge</u></b></p> <ul style="list-style-type: none"> <li>- Use and store equipment such as needles safely.</li> <li>- Follow a set of instructions in order to learn a new skill such as sewing.</li> <li>- Children will learn stitch names.</li> </ul> <p><b><u>Key vocabulary</u></b><br/>User<br/>Textile</p> |
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| countries (link to Go Wild)                                                                                                                                                                                                                                                                                                 | <p>Product<br/>Stitch</p> <p><b><u>Cooking and nutrition</u></b></p> <ul style="list-style-type: none"> <li>- Use the principles of a healthy and varied diet to prepare dishes.</li> <li>- Understand where food comes from.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>YEAR 2</b>                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Topics/Themes/Texts:</b> (To be decided by individual schools)                                                                                                                                                                                                                                                           | <b>The key things we want children to know/be able to do</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p>1. Design:</p> <p>Design a product to fit a purpose, based on a real-world design criterion. Experiment with ideas using 'mock ups'.</p> <p>2. Make:</p> <p>Select appropriate materials to make a product. Discuss and evaluate why certain materials are more suitable for different purposes.</p> <p>3. Evaluate:</p> | <p><b>Area of learning: Mechanisms</b></p> <p><b><u>Design</u></b></p> <ul style="list-style-type: none"> <li>- Explore a range of existing products.</li> <li>- Discuss ideas.</li> <li>- Design purposeful, functional appealing products for <u>other users</u>.</li> <li>- Draw and label simple designs.</li> <li>- Follow and refine plans as necessary.</li> <li>- Create group or individual mock-ups.</li> </ul> <p><b><u>Make</u></b></p> <ul style="list-style-type: none"> <li>- Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing.</li> </ul> |

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| <p>Evaluate the effectiveness of a design criterion for a specific task and present orally.</p> <p>4. Technical Knowledge:</p> <p>Describe how structures can be made stronger through bracing and alternative material choices.<br/>Make a lever and a pulley and explore the effectiveness of different materials.<br/>Design a new mechanism by combining levers, sliders, pulleys and wheels.</p> <p><b>Activities</b><br/>Year B - Design and make a moving space picture/rocket with levers.<br/>(Destination Space)</p> <p>5. Cooking and Nutrition:</p> <p>Name and sort foods into the five groups in The Eatwell plate.<br/>Know how to use techniques such as cutting, peeling and grating.</p> <p><b>Activities</b> - Year B- Prepare and taste a range of fruit grown in other countries (link to Go Wild).</p> | <ul style="list-style-type: none"> <li>- Use levers, sliders, wheels and axles to make a product that moves. Can be covered over two projects.</li> <li>- Say why they have chosen moving parts.</li> </ul> <p><b><u>Evaluate</u></b></p> <ul style="list-style-type: none"> <li>- Evaluate and compare against existing products.</li> <li>- Test and evaluate final product - is it fit for purpose?</li> <li>- Reflect back on design criteria.</li> <li>- Suggest improvements.</li> <li>- Use peer assessment to improve their work.</li> </ul> <p><b><u>Technical knowledge</u></b></p> <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 as above.<br/>Input – What do you do to make it work? Push?<br/>Process – How does your product work? The wheel turns on the axel.<br/>Output – what happens? The car moves.</li> </ul> <p><b><u>Key vocabulary</u></b></p> <p>User</p> <p>Function</p> <p>Features</p> <p>Aesthetics</p> <p>Components</p> <p>Resilience</p> <p>Input</p> <p>Process</p> <p>Output</p> <p>Mechanism</p> |
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| <b>YEAR 3</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Topics/Themes/Texts:</b> (To be decided by individual schools)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>The key things we want children to know/be able to do</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <p><b>Design:</b><br/>Research in detail the needs and wants of users for a pre-specified product, present them to others and create a design criterion.<br/>Use prototypes to generate, model, and communicate suggestions for a design solution.</p> <p><b>Make:</b><br/>Create specifications of equipment needed to make a product.<br/>Measure, mark out, cut, shape and join a range of materials.</p> <p><b>Evaluate:</b><br/>Analyse and conceptually de-construct selected products, commenting with opinions.</p> <p><b>Technical Knowledge:</b></p> | <p><b>Area of learning: Textiles</b></p> <p><b>Design</b></p> <ul style="list-style-type: none"> <li>- Consider function, aesthetics, user needs.</li> <li>- Create <u>multiple</u> designs.</li> <li>- Research key events and individuals.</li> <li>- Use market research to inform plans.</li> <li>- Follow a brief for a target audience.</li> <li>- Follow and refine plans as necessary.</li> <li>- Describe their design using an accurately labelled sketch.</li> <li>- Consider culture and society in designs.</li> <li>- Choose textiles both for their appearance and properties.</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>- Select appropriate equipment e.g. needles, knitting needles, crochet hooks and materials for the task.</li> <li>- Change the way they are working if needed.</li> <li>- Join textiles of different types in different ways.</li> </ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>- Test and evaluate final product - is it fit for purpose?</li> <li>- Reflect back on design criteria.</li> <li>- Suggest improvements.</li> </ul> |

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| <p>Predict and test how to strengthen structures using different methods.</p> <p><b>Cooking and Nutrition:</b><br/>Chop and mix safely.<br/>Produce a list of utensils and ingredients for a specific cooking task.</p> | <ul style="list-style-type: none"> <li>- Use peer assessment to improve their work.</li> </ul> <p><b><u>Technical knowledge</u></b></p> <ul style="list-style-type: none"> <li>- Apply the understanding of how to strengthen and reinforce.</li> <li>- Use and store equipment such as needles safely.</li> <li>- Follow a set of instructions in order to learn a new skill such as crochet.</li> </ul> <p><b><u>Key vocabulary</u></b></p> <p>Target market<br/>User<br/>Client<br/>Function<br/>Features<br/>Aesthetics<br/>Components<br/>Resilience<br/>Stitch<br/>Textile<br/>Material</p> |
| <p>YEAR 4</p>                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p><b>Topics/Themes/Texts:</b> (To be decided by individual schools)</p>                                                                                                                                                | <p><b>The key things we want children to know/be able to do</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                                                                                                                                                                                         | <p><b>Area of learning: Cooking and nutrition</b><br/><b><u>Design</u></b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

1. **Design:** Communicate ideas in simple 3D diagrams, viewed from different angles, giving consideration to target audience/event and research undertaken

## 2. Make:

Apply a range of more-advanced finishing techniques to increase the function and appeal of a product e.g. vary ingredients used to change texture, flavour, shape, presentation etc.



Follow complex procedures for safety and hygiene.

## 3. Evaluate:

Create an annotated diagram of key features of the finished product and its design.

Evaluate product and suggest improvements using own and peer assessment.

## 4. Technical Knowledge:

Apply and use principles of healthy, varied diet to design

- Follow brief for predominantly savoury dishes for a specific event, individual or group.
- Consider culture and society e.g. fair trade
- Use market research to inform dishes.
- Follow and refine plans as necessary.
- Justify and explain plans through discussion and annotations.

## Make

- Select appropriate ingredients.
- Select and use basic hand-held and other kitchen equipment safely.
- Consider a range of cooking techniques e.g. weighing and measuring, stirring and kneading.
- Understand and follow food hygiene rules when preparing food e.g. how to store, prepare and cook.

## Evaluate

- Test and evaluate final product - is it fit for purpose?
- Suggest improvements.
- Use peer assessment to improve their product.

## Technical knowledge

- Be familiar with the principles of a healthy and varied diet e.g. The Eatwell Guide.
- Show some understanding of seasonality, knowing where and how a variety of ingredients are grown, reared, caught and processed.
- Be aware of dietary needs of others e.g. allergies, intolerance or religious beliefs.

| <p>Apply understanding of ingredients available, seasonality and if ethically sourced. s which are seasonal, ethically sourced etc to product.</p> <p>Apply understanding of varied dietary needs and reasons for this.</p> <p><b>Understand and use simple mechanical systems in products.</b></p> <p><b>Design and construct simple electrical systems in products.</b></p> <p><b>5. Cooking and Nutrition:</b></p> <p>Understand and apply the basic principles of a healthy and varied diet.</p> <p>Prepare and cook a range of simple dishes safely and hygienically.</p> | <p><b><u>Key vocabulary</u></b></p> <p>Target market</p> <p>Nutrition</p> <p>Hygiene</p> <p>Allergy</p> <p>Intolerance</p> <p>Diet</p>                                                                                                                                                                                                                                                                                                                              |
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| <p><b>YEAR 5</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p><b>Topics/Themes/Texts:</b> (To be decided by individual schools)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p><b>The key things we want children to know/be able to do</b></p>                                                                                                                                                                                                                                                                                                                                                                                                 |
| <p><b>1. Design:</b></p> <p>Use annotated sketches, 2D cross-sectional drawings and exploded diagrams to generate, develop, model and communicate ideas to others.</p> <p>Create a time-line of actions and manufacturing requirements based on a pre-set time-scale for the creation of a product.</p>                                                                                                                                                                                                                                                                        | <p><b>Area of learning: Mechanisms</b></p> <p><b><u>Design</u></b></p> <ul style="list-style-type: none"> <li>- Consider function, aesthetics, user needs.</li> <li>- Create <u>multiple</u> designs.</li> <li>- Research key events and individuals.</li> <li>- Use market research to inform plans.</li> <li>- Follow a brief for a target audience.</li> <li>- Draw own designs, neatly with colour.</li> <li>- Follow and refine plans as necessary.</li> </ul> |

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| <p><b>2. Make:</b></p> <p>Use, with increasing accuracy, skills and techniques to create, form, mould, cut and shape materials and components.</p> <p>Justify choices of materials and components based on physical properties, and stylistic and aesthetic properties.</p> <p><b>3. Evaluate:</b></p> <p>Evaluate in increasing detail design ideas and final products comparing them with the original design specification.</p> <p><b>4. Technical Knowledge:</b></p> <p>Understand, create and use a wide range of mechanical systems in more complex products.</p> <p><b>5. Cooking and Nutrition:</b></p> <p>Chop, slice, grate, peel, mix, spread, knead and bake safely.</p> <p>Understand and apply the basic principles of a healthy and varied diet.</p> | <ul style="list-style-type: none"> <li>- Justify and explain plans through discussion and annotations.</li> <li>- Consider culture and society in designs.</li> </ul> <p><b><u>Make</u></b></p> <ul style="list-style-type: none"> <li>- Make and develop one idea to fit the brief.</li> <li>- Use a ruler to measure in cm and mm.</li> <li>- Use junior saws and hand drills.</li> <li>- Use a file and sandpaper to finish.</li> <li>- Select appropriate materials.</li> <li>- Change the way they are working if needed.</li> </ul> <p><b><u>Evaluate</u></b></p> <ul style="list-style-type: none"> <li>- Test and evaluate final product - is it fit for purpose?</li> <li>- Reflect back on design criteria.</li> <li>- Suggest improvements.</li> <li>- Use peer assessment to improve their work.</li> <li>- Consider how your work compares to key events and individuals researched.</li> </ul> <p><b><u>Technical knowledge</u></b></p> <ul style="list-style-type: none"> <li>- Understand how to strengthen, stiffen and reinforce structures.</li> <li>- Understand and use mechanical systems in their products for example, gears, pulleys, cams, levers and linkages.                     <ul style="list-style-type: none"> <li>Input – What do you do to make it work? Push, pull?</li> <li>Process – The mechanism that makes the output happen such as a handle which makes a cog turn.</li> <li>Output – what happens? Do wheels spin?</li> </ul> </li> </ul> |
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|                                                                                                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>- Consider categories and properties of materials used e.g. wood – what type? Pine? Oak? Manmade?</li> </ul> <p><b><u>Key vocabulary</u></b></p> <p>Target market<br/>User<br/>Client<br/>Function<br/>Features<br/>Aesthetics<br/>Components<br/>Resilience<br/>Input<br/>Process<br/>Output</p>                                                                                         |
| <b>YEAR 6</b>                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Topics/Themes/Texts:</b> (To be decided by individual schools)                                                                                                                                                                                                                                      | <b>The key things we want children to know/be able to do</b>                                                                                                                                                                                                                                                                                                                                                                     |
| <p><b>1. Design:</b></p> <p>Use computer aided-design (CAD) to generate, develop and model a design based on specific scaling and size requirements.</p> <p><b>2. Make:</b></p> <p>Use, with increasing accuracy, skills and techniques to join materials and components with different adhesives.</p> | <p><b>Area of learning: Electrical systems as part of a product.</b></p> <p><b><u>Design</u></b></p> <ul style="list-style-type: none"> <li>- Consider function, aesthetics, user needs.</li> <li>- Create <u>multiple</u> designs.</li> <li>- Research key events and individuals.</li> <li>- Use market research to inform plans.</li> <li>- Follow a brief for a target audience.</li> <li>- Sketch circuit plans.</li> </ul> |

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| <p>Create and record safety procedures for the use of specific equipment.</p> <p><b>3. Evaluate:</b></p> <p>Learn and understand how key events in design and technology have shaped the world.</p> <p><b>4. Technical Knowledge:</b></p> <p>Understand, create and use a wide range of electrical systems in more complex products.</p> <p>Apply an understanding of computing to program, monitor and control accurately a range of products.</p> | <ul style="list-style-type: none"><li>- Follow and refine plans as necessary.</li><li>- Justify and explain plans through discussion and annotations.</li><li>- Consider culture and society in designs.</li></ul> <p><b><u>Make</u></b></p> <ul style="list-style-type: none"><li>- Select appropriate equipment and materials for the task.</li><li>- Change the way they are working if needed.</li><li>- Incorporate an electrical element to the product.</li></ul> <p><b><u>Evaluate</u></b></p> <ul style="list-style-type: none"><li>- Test and evaluate final product - is it fit for purpose?</li><li>- Reflect back on design criteria.</li><li>- Suggest improvements.</li><li>- Use peer assessment to improve their work.</li><li>- Consider how your work compares to key events and individuals researched.</li></ul> <p><b><u>Technical knowledge</u></b></p> <ul style="list-style-type: none"><li>- Understand and use electrical systems in their products for example, switches, bulbs, buzzers and motors.<ul style="list-style-type: none"><li>Input – What do you do to make it work? Flick a switch?</li><li>Process – How does your circuit connect to make the product work?</li><li>Output – what happens? Does a light come on?</li></ul></li></ul> |
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|                                                                          | <ul style="list-style-type: none"> <li>- Apply their understanding of computing to program, monitor and control their products.</li> </ul> <p><b><u>Key vocabulary</u></b><br/>                     Target market<br/>                     User<br/>                     Client<br/>                     Function<br/>                     Features<br/>                     Aesthetics<br/>                     Components<br/>                     Resilience<br/>                     Input<br/>                     Process<br/>                     Output<br/>                     See science curriculum for electrical vocabulary.</p> |
| <p><b>YEAR 7</b></p>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p><b>Topics/Themes/Texts:</b> (To be decided by individual schools)</p> | <p><b>The key things we want children to know/be able to do</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## **Design and Technology**

### **Design**

- Understand given context and brief
- Research existing products ( work of others) ,target market/user and technical knowledge
- Produce a specification considering the following areas: function ,aesthetics and client/user needs
- Create a range of design ideas using presentation skills, drawing ,use of colour /modelling
- Annotate designs which explain their thought process ,whether the product meets the brief and how could it be developed (improved)

### **Make**

- Develop an idea
- Can select appropriate tools and equipment.
- Can demonstrate some accuracy when completing a practical task
- Can select appropriate materials
- Can combine material and components
- Change the way they are working if needed.

### **Evaluate**

- Evaluate the success of the outcome
- Can evaluate their outcome against the specification
- Can suggest improvements to the outcome

### **Technical Knowledge**

- Understanding of how to strengthen, stiffen and reinforce structures
- Understand and use mechanical systems

- Input
- Process
- Output
- Understand and use electrical systems in their products  
Apply their understanding of computing to program, monitor and control their products

### **Design and Technology**

#### **Key Vocabulary**

Context

Brief

Work of others

Annotate

Specification

Modelling

Research

Design

Evaluate

Movement/Motion

Linear

Rotary

Reciprocating

Oscillating

System

Mechanical

Electronics

Materials

Health and Safety

### **Cooking and nutrition**

#### **Make**

- Select appropriate ingredients.

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | <ul style="list-style-type: none"> <li>- Select and use basic hand-held and other kitchen equipment safely.</li> <li>- Demonstrate some accuracy when completing food practical tasks – preparing and cooking predominantly savoury dishes safely and hygienically.</li> <li>- Understand a range of cooking techniques e.g. weighing and measuring, stirring and kneading.</li> <li>- Understand and follow food hygiene rules when preparing food e.g. how to store, prepare and cook.</li> <li>- Season dishes and understand why and how much.</li> </ul> <p><b><u>Evaluate</u></b></p> <ul style="list-style-type: none"> <li>- Test and evaluate final product - is it fit for purpose?</li> <li>- Suggest improvements.</li> <li>- Use peer assessment to improve their product.</li> </ul> <p><b><u>Technical knowledge</u></b></p> <ul style="list-style-type: none"> <li>- Understand and explain the principles of a healthy and varied diet e.g. The Eatwell Guide.</li> <li>- Design a healthy plate based on the Eatwell plate</li> <li>- Be familiar with food from other cultures and countries</li> <li>- knowing where and how a variety of ingredients are grown, reared, caught and processed.</li> <li>- Take into account of dietary needs of others e.g. allergies, intolerance or religious beliefs.</li> </ul> <p><b><u>Cooking and Nutrition</u></b></p> <p><b><u>Key Vocabulary</u></b></p> <p>Eatwell Plate .<br/>Allergies<br/>Intolerance</p> |
| YEAR 8 & YEAR 9 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Topics/Themes/Texts: (To be decided by individual schools) | The key things we want children to know/be able to do                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                            | <p><b><u>Design and Technology</u></b></p> <p><b><u>Design</u></b></p> <ul style="list-style-type: none"> <li>- Understand context and write own personal brief</li> <li>- Research and select appropriate information regarding existing products and work of others ,target market/user/client wants/ problems and technical knowledge</li> <li>- Produce a specification which is justified (links to research)considering the following function, aesthetics ,client/user needs ,environment ,materials and size (Ergonomics)</li> <li>- Produce a range of design ideas that avoid fixation. Using presentation skills ,isometric drawing , rendering and modelling</li> <li>- Annotate designs which explain their thought process, whether the product meets the brief and how could it be developed (improved)</li> </ul> <p><b><u>Make</u></b></p> <ul style="list-style-type: none"> <li>- Develop ideas</li> <li>- Use of CAD</li> <li>- Can select appropriate tools and equipment (including CAM)</li> <li>- Can demonstrate accuracy when completing a practical task</li> <li>- Can select appropriate materials</li> <li>- Can combine material and components</li> </ul> <p><b><u>Evaluate</u></b></p> <ul style="list-style-type: none"> <li>- Evaluate the success of the outcome</li> <li>- Can evaluate their outcome against the specification</li> <li>- Can suggest improvements to the outcome</li> </ul> |

- Consider how your work compares to existing products / work of others researched.
- Can consider the views of others

### **Technical Knowledge**

- Understand the environmental impact of products, and the responsibilities of designers
- Understand and use systems
  - o Input
  - o Process
  - o Output
- Understand how systems can be used in their product
- Apply their understanding of computing to program, monitor and control a product
- Categories and properties of materials
- New and emerging technologies

### **Design and Technology**

#### **Key Vocabulary**

Ergonomics  
New and Emerging Technologies  
Isometric Drawing  
Computer Aided Design  
Computer Aided Manufacture  
Mechanical System  
Electronic System

### **Cooking and Nutrition**

#### **Make**

- Select and use appropriate tools and equipment for a food practical task.
- Demonstrate accuracy when completing food practical tasks – preparing and cooking predominantly savoury dishes safely and hygienically.
- Demonstrate a range of food skills (weighing and measuring, kneading).
- Demonstrate and understand good food safety practices to store, prepare and cook food.

#### **Evaluate**

- Test and evaluate final product - is it fit for purpose?
- Suggest improvements.
- Use peer assessment to improve their product.

#### **Technical knowledge**

- Develop their understanding of heat transfer – Conduction , convection and radiation
- Be familiar with food from other cultures and countries
- Can identify a range of different ingredients and where they originate (grown, reared, caught and processed) eg. flour, milk,
- Take into account of dietary needs of others e.g. allergies, intolerance or religious beliefs.
- Make food choices based on the current healthy eating advice.
- Understand the basic of food science – gluten formation , gelatinisation , shortening and coagulation

#### **Cooking and Nutrition**

#### **Key Vocabulary**

Gluten formation  
Gelatinisation,  
Shortening  
Coagulation

## GLOSSARY

Design and Technology

Cooking and Nutrition

- **Target market** - a particular group of consumers at which a product or service is aimed
- **User** – A person who will interact or ‘use’ the product
- **Client** - A company or organisation who has asked you to produce a product.
- **Function** – The job of the product (Entertainment , Educational etc)
- **Features** -
- **Aesthetics** – How the product looks. Consider colour, shape and texture.
- **Components** – parts that when combined create a product
- **Input** - a device through which, energy or information enters a system
- **Process** – components or mechanism that produce change
- **Output** – a place where power or information leaves a system.
- **Context** – the setting or background information for the brief
- **Brief** – initial outline of what is required
- **Work of others** - teamwork
- **Annotate** – notes
- **Specification** – a set of rules for the product, a list of musts
- **Modelling** – a trial version
- **CAD** – Computer Aided Design
- **CAM** – Computer Aided Manufacture
- **Ergonomics** – making products that humans can operate efficiently

- **Nutrition**
- **Hygiene**
- **Allergy**
- **Intolerance**
- **Diet**
- **Gluten formation**
- **Gelatinisation,**
- **Shortening**
- **Coagulation**