*Unlocking potential, inspiring success, celebrating diversity*

**Intent**

Our curriculum aims to inspire children through a broad range of practical experiences to create innovative designs which solve real and relevant problems within a variety of different contexts. The iterative design process is fundamental throughout our curriculum and is a central thread from EYFS up to Year 6. This iterative process encourages children to identify real and relevant problems, critically evaluate existing products and then take risks and innovate when designing and creating solutions to the problems. As part of the iterative process, time is built in to reflect, evaluate and improve on prototypes using design criteria throughout to support this process. The Design Technology curriculum aims to shape tomorrow’s engineers and designers through developing inventing, creating and evaluating skills.

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| **Threads** | | |
| https://elmridge.bright-futures.co.uk/wp-content/uploads/2022/11/International-Learners.png**International Learners**   * Diversity & Mutual Respect * Sustainability and Ecology * Community and collaboration | **Aspirational Leaders**   * Responsibility and respect * Creativity, innovation and https://elmridge.bright-futures.co.uk/wp-content/uploads/2022/11/Aspirational-Leaders.pngcuriosity * Confidence and resilience | https://elmridge.bright-futures.co.uk/wp-content/uploads/2022/11/Literacy-Champions.png**Literacy Champions**   * Love of reading and language * Confident, articulate speakers * Creative and adaptive authors |

**Design and Technology Unit Overview**

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| Year Group | Autumn | Spring | Summer |
| EYFS | https://lh6.googleusercontent.com/1MM00VzETSSvQn0x-ii8783H_Svx1BjtTWlSErO_ep3l5hMCc83r9oJcHsVqQAeDRRgCaHY9KesMMh0T4hrTtuWrCazwXz0-Py_4NpDvTUVrcR2jYZnfpF-XneAJB1FB5X5U-l_4ykMlxGlaLzdZl8E**Cooking and Nutrition**  **Soup** | https://lh6.googleusercontent.com/x__0YXPzgkEW02xdu30hjkfLZzRT8ERg7WdZtem0RAflSmlPZS7KW2qaMVJ8zaHKsutU1GdDLn7AnfMneOevIg2vzX_RE_v0xEHksKUyyYS8IDYXh19omrhoQvEb-_KCp-3fNMsGHULbLnFa1IqyA9M**Textiles**  **Bookmarks** | https://lh5.googleusercontent.com/JiuaVS84JMkeFGEPDrKBHsHkR9KXjfI9fMYjdZzdO551nMoT6LyHwj9PbozA2n1eCABiU9-63I8cvb3Ws3mw61mqck2u3IUi1mdr2IApdKz5TtIBXMGZcW6NL8WwoZiTz4D6nCNeCO9UB7ckb5TYJUY**Structures**  **Junk Modelling** |
| Year 1 | https://lh5.googleusercontent.com/JiuaVS84JMkeFGEPDrKBHsHkR9KXjfI9fMYjdZzdO551nMoT6LyHwj9PbozA2n1eCABiU9-63I8cvb3Ws3mw61mqck2u3IUi1mdr2IApdKz5TtIBXMGZcW6NL8WwoZiTz4D6nCNeCO9UB7ckb5TYJUY**Structures**  **Can you construct a windmill?** | https://lh3.googleusercontent.com/CK-g39gitdW5_UboGktNsEkXf1M4oz01ZSjnboB46fo9FECSJsEhTEwM1T1TQ2erkCFCSDtoI9JCQ7IGA3M6Cb_w6Z33PG4LFNIwLSs7EH55dYFr20T3-HNc99o1Jnar65n0-sd5i8j875Yk4VQDgRk**Mechanisms**  **Can you make a moving story book?** | https://lh6.googleusercontent.com/1MM00VzETSSvQn0x-ii8783H_Svx1BjtTWlSErO_ep3l5hMCc83r9oJcHsVqQAeDRRgCaHY9KesMMh0T4hrTtuWrCazwXz0-Py_4NpDvTUVrcR2jYZnfpF-XneAJB1FB5X5U-l_4ykMlxGlaLzdZl8E**Cooking and Nutrition**  **Can you make a smoothie?** |
| Year 2 | https://lh3.googleusercontent.com/CK-g39gitdW5_UboGktNsEkXf1M4oz01ZSjnboB46fo9FECSJsEhTEwM1T1TQ2erkCFCSDtoI9JCQ7IGA3M6Cb_w6Z33PG4LFNIwLSs7EH55dYFr20T3-HNc99o1Jnar65n0-sd5i8j875Yk4VQDgRk**Mechanisms**  **Can you construct a fairground wheel?** | https://lh6.googleusercontent.com/1MM00VzETSSvQn0x-ii8783H_Svx1BjtTWlSErO_ep3l5hMCc83r9oJcHsVqQAeDRRgCaHY9KesMMh0T4hrTtuWrCazwXz0-Py_4NpDvTUVrcR2jYZnfpF-XneAJB1FB5X5U-l_4ykMlxGlaLzdZl8E**Cooking and Nutrition**  **Can you create a healthy wrap?** | https://lh6.googleusercontent.com/x__0YXPzgkEW02xdu30hjkfLZzRT8ERg7WdZtem0RAflSmlPZS7KW2qaMVJ8zaHKsutU1GdDLn7AnfMneOevIg2vzX_RE_v0xEHksKUyyYS8IDYXh19omrhoQvEb-_KCp-3fNMsGHULbLnFa1IqyA9M**Textiles**  **Can you design and make a pouch?** |
| Year 3 | https://lh3.googleusercontent.com/CK-g39gitdW5_UboGktNsEkXf1M4oz01ZSjnboB46fo9FECSJsEhTEwM1T1TQ2erkCFCSDtoI9JCQ7IGA3M6Cb_w6Z33PG4LFNIwLSs7EH55dYFr20T3-HNc99o1Jnar65n0-sd5i8j875Yk4VQDgRk**Mechanisms**  **Can you design and make a pneumatic toy?** | https://lh5.googleusercontent.com/JiuaVS84JMkeFGEPDrKBHsHkR9KXjfI9fMYjdZzdO551nMoT6LyHwj9PbozA2n1eCABiU9-63I8cvb3Ws3mw61mqck2u3IUi1mdr2IApdKz5TtIBXMGZcW6NL8WwoZiTz4D6nCNeCO9UB7ckb5TYJUY**Structures**  **Can you construct a castle?** | https://lh6.googleusercontent.com/1MM00VzETSSvQn0x-ii8783H_Svx1BjtTWlSErO_ep3l5hMCc83r9oJcHsVqQAeDRRgCaHY9KesMMh0T4hrTtuWrCazwXz0-Py_4NpDvTUVrcR2jYZnfpF-XneAJB1FB5X5U-l_4ykMlxGlaLzdZl8E**Cooking and Nutrition**  **Do you understand the concept of eating seasonally?** |
| Year 4 | **Textiles**  https://lh6.googleusercontent.com/x__0YXPzgkEW02xdu30hjkfLZzRT8ERg7WdZtem0RAflSmlPZS7KW2qaMVJ8zaHKsutU1GdDLn7AnfMneOevIg2vzX_RE_v0xEHksKUyyYS8IDYXh19omrhoQvEb-_KCp-3fNMsGHULbLnFa1IqyA9M**Do you understand that a**  **fastening is something that**  **holds two pieces of material together?** | **Computing**  https://lh6.googleusercontent.com/JwpiNoITdBFqLd0wywS0VUEn7_YPhFKe2Y04-IX1Wc_DO3S3CGIHC9VyQL8tlXYUweGQFYhduHaVODBNsMuT6-QxDWkHG8u-I8r4xwvDRLnCiQIgpuatmTOXNbxOtRkoNQRWmELpHxDt2zGutHMx41c**Can you create a mindful moments**  **timer?** | **Electrical Systems**  https://lh4.googleusercontent.com/Nob18cAx5ihNjO1NbSbAfdIS6C1QzNm7q8eBER-nd2A49Ftt9fE9obi8X_tERQGMDw8rxGi4DqeJKX3_HEWcNOoLiFXlVnaezaczZi-XDvB4XnN0w1jh60Y4y9gdiFFSSQUzNaMHNTJscgTY2xRSWhs**Can you create a torch?** |
| Year 5 | https://lh3.googleusercontent.com/CK-g39gitdW5_UboGktNsEkXf1M4oz01ZSjnboB46fo9FECSJsEhTEwM1T1TQ2erkCFCSDtoI9JCQ7IGA3M6Cb_w6Z33PG4LFNIwLSs7EH55dYFr20T3-HNc99o1Jnar65n0-sd5i8j875Yk4VQDgRk**Mechanical Systems**  **Can you make a pop-up book?** | https://lh5.googleusercontent.com/JiuaVS84JMkeFGEPDrKBHsHkR9KXjfI9fMYjdZzdO551nMoT6LyHwj9PbozA2n1eCABiU9-63I8cvb3Ws3mw61mqck2u3IUi1mdr2IApdKz5TtIBXMGZcW6NL8WwoZiTz4D6nCNeCO9UB7ckb5TYJUY**Structures**  **Can you design and build a bridge?** | https://lh6.googleusercontent.com/1MM00VzETSSvQn0x-ii8783H_Svx1BjtTWlSErO_ep3l5hMCc83r9oJcHsVqQAeDRRgCaHY9KesMMh0T4hrTtuWrCazwXz0-Py_4NpDvTUVrcR2jYZnfpF-XneAJB1FB5X5U-l_4ykMlxGlaLzdZl8E**Cooking and Nutrition**  **What could be healthy?** |
| Year 6 | **Textiles**  https://lh6.googleusercontent.com/x__0YXPzgkEW02xdu30hjkfLZzRT8ERg7WdZtem0RAflSmlPZS7KW2qaMVJ8zaHKsutU1GdDLn7AnfMneOevIg2vzX_RE_v0xEHksKUyyYS8IDYXh19omrhoQvEb-_KCp-3fNMsGHULbLnFa1IqyA9M**Can you design and make a waistcoat?** | **Cooking and Nutrition**  https://lh6.googleusercontent.com/1MM00VzETSSvQn0x-ii8783H_Svx1BjtTWlSErO_ep3l5hMCc83r9oJcHsVqQAeDRRgCaHY9KesMMh0T4hrTtuWrCazwXz0-Py_4NpDvTUVrcR2jYZnfpF-XneAJB1FB5X5U-l_4ykMlxGlaLzdZl8E**Come Dine with Me** | **Structures**  https://lh5.googleusercontent.com/JiuaVS84JMkeFGEPDrKBHsHkR9KXjfI9fMYjdZzdO551nMoT6LyHwj9PbozA2n1eCABiU9-63I8cvb3Ws3mw61mqck2u3IUi1mdr2IApdKz5TtIBXMGZcW6NL8WwoZiTz4D6nCNeCO9UB7ckb5TYJUY**Can you create a model of a new playground featuring five**  **apparatus,**  **made from three**  **different structures?** |

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| **EYFS** | | |
| Autumn | Cooking and Nutrition: Soup | • Learn new vocabulary.  • Use new vocabulary throughout the day.  • Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.  • Know and talk about the different factors that support their overall health and wellbeing: healthy eating.  • Manage their own basic hygiene and personal needs, including understanding the importance of healthy food choices.  • Explore the natural world around them.  • Explore the natural world around them, making observations and drawing pictures of animals and plants.  • Develop small motor skills so that they can use a range of tools competently, safely and confidently. |
| Spring | Textiles: Bookmarks | • Develop small motor skills so that they can use a range of tools competently, safely and confidently.  • Use a range of small tools, including scissors, paint brushes and cutlery.  • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.  • Explore, use and refine a variety of artistic effects to express ideas and feelings.  • Return to and build on their previous learning, refining ideas and developing their ability to represent them. |
| Summer | Structures: Junk Modelling | • Develop small motor skills so that they can use a range of tools competently, safely and confidently.  • Use a range of small tools, including scissors, paint brushes and cutlery.  • Explore, use and refine a variety of artistic effects to express ideas and feelings.  • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.  • Create collaboratively, sharing ideas, resources and skills.  • Return to and build on their previous learning, refining ideas and developing their ability to represent them. |

**Design and Technology Objectives by Year Group (Development Matters / National Curriculum 2014)**

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| **Year 1** | | | |
| Autumn | Structures | Can you construct a windmill? | **Design**  • Design purposeful, functional, appealing products for themselves and other users based on design criteria.  • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock- ups and, where appropriate, information and communication technology.  **Make**  • Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].  • Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.  • Build structures, exploring how they can be made stronger, stiffer and more stable.  **Evaluate**  • Explore and evaluate a range of existing products.  • Evaluate their ideas and products against design criteria.  **Technical Knowledge**  • Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. |
| Spring | Mechanisms | Can you make a moving story book? | **Design**  • Design purposeful, functional, appealing products for themselves and other users based on design criteria.  • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock- ups and, where appropriate, information and communication technology.  **Make**  • Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].  • Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.  **Evaluate**  • Explore and evaluate a range of existing products.  • Evaluate their ideas and products against design criteria.  **Technical Knowledge**  • Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. |
| Summer | Cooking and Nutrition | Can you make a smoothie? | **Design**  • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock- ups and, where appropriate, information and communication technology.  **Make**  • Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].  • Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.  **Evaluate**  • Explore and evaluate a range of existing products.  • Evaluate their ideas and products against design criteria.  **Technical Knowledge**  • Understand where food comes from. |

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| **Year 2** | | | |
| Autumn | Mechanisms | Can you construct a fairground wheel? | **Design**  • Design purposeful, functional, appealing products for themselves and other users based on design criteria.  • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock- ups and, where appropriate, information and communication technology.  **Make**  • Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].  • Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.  • Build structures, exploring how they can be made stronger, stiffer and more stable.  **Evaluate**  • Explore and evaluate a range of existing products.  • Evaluate their ideas and products against design criteria.  **Technical Knowledge**  • Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. |
| Spring | Cooking and Nutrition | Can you create a healthy wrap? | **Design**  • Design purposeful, functional, appealing products for themselves and other users based on design criteria.  **Make**  • Use basic principles of a healthy and varied diet to prepare dishes.  **Evaluate**  • Explore and evaluate a range of existing products.  • Evaluate their ideas and products against design criteria.  **Technical Knowledge**  • Understand where food comes from. |
| Summer | Textiles | Can you design and make a pouch? | **Design**  • Design purposeful, functional, appealing products for themselves and other users based on design criteria.  • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock- ups and, where appropriate, information and communication technology.  **Make**  • Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].  • Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.  **Evaluate**  • Explore and evaluate a range of existing products.  • Evaluate their ideas and products against design criteria.  **Technical Knowledge**  • Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. |

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| **Year 3** | | | |
| Autumn | Mechanisms | Can you design and make a pneumatic toy? | **Design**  • 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.  **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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.  **Evaluate**  • 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.  **Technical Knowledge**  • Understand how key events and individuals in design and technology have helped shape the world.  • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. |
| Spring | Structures | Can you construct a castle? | **Design**  • 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.  **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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.  **Evaluate**  • 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.  **Technical Knowledge**  • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. |
| Summer | Cooking and Nutrition | Do you understand the concept of eating seasonally? | **Design**  • Understand and apply principles of a healthy and varied diet.  **Make**  • Prepare and cook variety of predominantly savoury dishes using a range of cooking techniques.  **Evaluate**  • Evaluate their ideas and products against design criteria.  **Technical Knowledge**  • Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. |

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| **Year 4** | | | |
| Autumn | Textiles | Do you understand that a fastening is something that holds two pieces of material together? | **Design**  • 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.  **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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.  **Evaluate**  • 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. |
| Spring | Computing | Can you create a mindful moments timer? | **Design**  • 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.  **Make**  • Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.  **Evaluate**  • 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.  **Technical Knowledge**  • Apply their understanding of computing to program, monitor and control their products. |
| Sumer | Electrical | Can you create a torch? | **Design**  • 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.  **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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.  **Evaluate**  • 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.  **Technical Knowledge**  • Understand how key events and individuals in design and technology have helped shape the world.  • Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. |

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| **Year 5** | | | |
| Autumn | Mechanical Systems | Can you make a pop-up book? | **Design**  • 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.  **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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.  **Evaluate**  • 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.  **Technical Knowledge**  • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. |
| Spring | Structures | Can I design and build a bridge? | **Design**  • 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.  **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.  **Evaluate**  • 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.  **Technical Knowledge**  • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. |
| Summer | Cooking and Nutrition | What could be healthy? | **Design**  • 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.  **Make**  • Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.  **Evaluate**  • 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.  **Technical Knowledge**  • Understand and apply 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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| **Year 6** | | | |
| Autumn | Textiles | Can you design and make a waistcoat? | **Design**  • 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.  **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.  **Evaluate**  • 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. |
| Spring | Cooking and Nutrition | Come Dine with Me | **Design**  • 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.  **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.  **Evaluate**  • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.  **Technical Knowledge**  • Understand and apply 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 |
| Summer | Structures | Can you create a model of a new playground? | **Design**  • 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.  **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.  **Evaluate**  • 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.  **Technical Knowledge**  • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. |

**Design and Technology Skill Progression by Year Group**

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| Structures  https://lh5.googleusercontent.com/JiuaVS84JMkeFGEPDrKBHsHkR9KXjfI9fMYjdZzdO551nMoT6LyHwj9PbozA2n1eCABiU9-63I8cvb3Ws3mw61mqck2u3IUi1mdr2IApdKz5TtIBXMGZcW6NL8WwoZiTz4D6nCNeCO9UB7ckb5TYJUY | EYFS | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Design | • Making verbal plans and material choices.  • Developing a junk model. | • Learning the importance of a clear design criteria.  • Including individual preferences and requirements in a design. |  | • Designing a castle with key features to appeal to a specific person/purpose.  • Drawing and labelling a castle design using 2D shapes, labelling: -the 3D  shapes that will create the features - materials needed and colours.  • Designing and/or decorating a castle tower on CAD software |  | • Designing a stable structure that is able to support weight.  • Creating a frame structure with a focus on triangulation. | • Designing a playground featuring a variety of different structures, giving careful  consideration to how the structures will be used, considering effective and  ineffective designs. |
| Make | • Improving fine motor/scissor skills with a variety of materials.  • Joining materials in a variety of ways (temporary and permanent).  • Joining different materials together.  • Describing their junk model, and how they intend to put it together. | • Making stable structures from card, tape and glue .  • Learning how to turn 2D nets into 3D structures.  • Following instructions to cut and assemble the supporting structure of a  windmill.  • Making functioning turbines and axles which are assembled into a main  supporting structure. |  | • Constructing a range of 3D geometric shapes using nets.  • Creating special features for individual designs.  • Making facades from a range of recycled materials. |  | • Making a range of different shaped beam bridges.  • Using triangles to create truss bridges that span a given distance and  support a load.  • Building a wooden bridge structure.  • Independently measuring and marking wood accurately.  • Selecting appropriate tools and equipment for particular tasks.  • Using the correct techniques to saws safely.  • Identifying where a structure needs reinforcement and using card corners  for support.  • Explaining why selecting appropriating materials is an important part of the  design process.  • Understanding basic wood functional properties | • Building a range of play apparatus structures drawing upon new and prior  knowledge of structures.  • Measuring, marking and cutting wood to create a range of structures.  • Using a range of materials to reinforce and add decoration to structures. |
| Evaluate | • Giving a verbal evaluation of their own and others’ junk models with adult  support.  • Checking to see if their model matches their plan.  • Considering what they would do differently if they were to do it again.  • Describing their favourite and least favourite part of their model. | • Evaluating a windmill according to the design criteria, testing whether the  structure is strong and stable and altering it if it isn’t.  • Suggest points for improvements. |  | • Evaluating own work and the work of others based on the aesthetic of the  finished product and in comparison to the original design.  • Suggesting points for modification of the individual designs. |  | • Adapting and improving own bridge structure by identifying points of  weakness and reinforcing them as necessary.  • Suggesting points for improvements for own bridges and those designed by  others. | • Improving a design plan based on peer evaluation.  • Testing and adapting a design to improve it as it is developed.  • Identifying what makes a successful structure. |

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| Cooking and Nutrition  https://lh6.googleusercontent.com/1MM00VzETSSvQn0x-ii8783H_Svx1BjtTWlSErO_ep3l5hMCc83r9oJcHsVqQAeDRRgCaHY9KesMMh0T4hrTtuWrCazwXz0-Py_4NpDvTUVrcR2jYZnfpF-XneAJB1FB5X5U-l_4ykMlxGlaLzdZl8E | EYFS | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Design | • Designing a soup recipe as a class.  • Designing soup packaging. | • Designing smoothie carton packaging by-hand or on  ICT software. | • Designing a healthy wrap based on a food combination  which work well together. | • Creating a healthy and nutritious recipe for a savoury tart using seasonal  ingredients, considering the taste, texture, smell and appearance of the dish. |  | • Adapting a traditional recipe, understanding that the nutritional value of a  recipe alters if you remove, substitute or add additional ingredients.  • Writing an amended method for a recipe to incorporate the relevant  changes to ingredients.  • Designing appealing packaging to reflect a recipe. | • Writing a recipe, explaining the key steps, method and ingredients.  • Including facts and drawings from research undertaken. |
| Make | • Chopping plasticine safely.  • Chopping vegetables with support.. | • Chopping fruit and vegetables safely to make a  smoothie. | • Slicing food safely using the bridge or claw grip.  • Constructing a wrap that meets a design brief. | • Knowing how to prepare themselves and a work space to cook safely in,  learning the basic rules to avoid food contamination.  • Following the instructions within a recipe. |  | • Cutting and preparing vegetables safely.  • Using equipment safely, including knives, hot pans and hobs.  • Knowing how to avoid cross-contamination.  • Following a step by step method carefully to make a recipe. | • Following a recipe, including using the correct quantities of each ingredient.  • Adapting a recipe based on research.  • Working to a given timescale.  • Working safely and hygienically with independence |
| Evaluate | • Tasting the soup and giving opinions.  • Describing some of the following when tasting  food: look, feel, smell and taste.  • Choosing their favourite packaging design and  explaining why | • Tasting and evaluating different food combinations.  • Describing appearance, smell and taste.  • Suggesting information to be included on packaging. | • Describing the taste, texture and smell of fruit and  vegetables.  • Taste testing food combinations and final products.  • Describing the information that should be included on a  label.  • Evaluating which grip was most effective | • Establishing and using design criteria to help test and review dishes.  • Describing the benefits of seasonal fruits and vegetables and the impact on  the environment.  • Suggesting points for improvement when making a seasonal tart. |  | • Identifying the nutritional differences between different products and  recipes.  • Identifying and describing healthy benefits of food groups. | • Evaluating a recipe, considering: taste, smell, texture and origin of the food group.  • Taste testing and scoring final products.  • Suggesting and writing up points of improvements when scoring others’ dishes,  and when evaluating their own throughout the planning, preparation and cooking  process.  • Evaluating health and safety in production to minimise cross contamination. |

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| Textiles  https://lh6.googleusercontent.com/x__0YXPzgkEW02xdu30hjkfLZzRT8ERg7WdZtem0RAflSmlPZS7KW2qaMVJ8zaHKsutU1GdDLn7AnfMneOevIg2vzX_RE_v0xEHksKUyyYS8IDYXh19omrhoQvEb-_KCp-3fNMsGHULbLnFa1IqyA9M | EYFS | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Design | • Discussing what a good design needs.  • Designing a simple pattern with paper.  • Designing a bookmark.  • Choosing from available materials. |  | • Designing a pouch by exploring different examples of textiles. |  | • Writing design criteria for a product, articulating decisions made.  • Designing a personalised book sleeve. |  | • Designing a waistcoat in accordance to a specification linked to set of design  criteria.  • Annotating designs, to explain their decisions. |
| Make | • Developing fine motor/cutting skills with scissors.  • Exploring fine motor/threading and weaving (under,  over technique) with a variety of materials.  • Using a prepared needle and wool to practise  threading. |  | • Selecting and cutting fabrics for sewing.  • Decorating a pouch using fabric glue or running  stitch.  • Threading a needle.  • Sewing running stitch, with evenly spaced, neat,  even stitches to join fabric.  • Neatly pinning and cutting fabric using a  template. |  | • Making and testing a paper template with accuracy and in keeping with the design  criteria.  • Measuring, marking and cutting fabric using a paper template.  • Selecting a stitch style to join fabric.  • Working neatly by sewing small, straight stitches.  • Incorporating a fastening to a design. |  | • Using a template when cutting fabric to ensure they achieve the correct shape.  • Using pins effectively to secure a template to fabric without creases or bulges.  • Marking and cutting fabric accurately, in accordance with their design.  • Sewing a strong running stitch, making small, neat stitches and following the edge.  • Tying strong knots.  • Decorating a waistcoat, attaching features (such as appliqué) using thread.  • Finishing the waistcoat with a secure fastening (such as buttons).  • Learning different decorative stitches.  • Sewing accurately with evenly spaced, neat stitches |
| Evaluate | • Reflecting on a finished product and comparing to  their design. |  | •Troubleshooting scenarios posed by teacher.  • Evaluating the quality of the stitching on others’  work.  • Discussing as a class, the success of their stitching  against the success criteria.  • Identifying aspects of their peers’ work that they  particularly like and why. |  | • Testing and evaluating an end product against the original design criteria.  • Deciding how many of the criteria should be met for the product to be considered  successful.  • Suggesting modifications for improvement.  • Articulating the advantages and disadvantages of different fastening types |  | • Reflecting on their work continually throughout the design, make and evaluate  process. |

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| Mechanisms/  Mechanical Structures  https://lh3.googleusercontent.com/CK-g39gitdW5_UboGktNsEkXf1M4oz01ZSjnboB46fo9FECSJsEhTEwM1T1TQ2erkCFCSDtoI9JCQ7IGA3M6Cb_w6Z33PG4LFNIwLSs7EH55dYFr20T3-HNc99o1Jnar65n0-sd5i8j875Yk4VQDgRk | EYFS | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Design |  | • Explaining how to adapt mechanisms,  using bridges or guides to control the  movement.  • Designing a moving story book for a  given audience. | • Selecting a suitable linkage system to  produce the desired motion.  • Designing a wheel. | • Designing a toy which uses a pneumatic system.  • Developing design criteria from a design brief.  • Generating ideas using thumbnail sketches and exploded diagrams.  • Learning that different types of drawings are used in design to explain ideas  clearly. |  | • Designing a pop-up book which uses a mixture of structures and  mechanisms.  • Naming each mechanism, input and output accurately.  • Storyboarding ideas for a book. |  |
| Make |  | • Following a design to create moving  models that use levers and sliders. | • Selecting materials according to their  characteristics.  • Following a design brief. | • Creating a pneumatic system to create a desired motion.  • Building secure housing for a pneumatic system.  • Using syringes and balloons to create different types of pneumatic systems  to make a functional and appealing pneumatic toy.  • Selecting materials due to their functional and aesthetic characteristics.  • Manipulating materials to create different effects by cutting, creasing,  folding and weaving. |  | • Following a design brief to make a pop up book, neatly and with focus on  accuracy.  • Making mechanisms and/or structures using sliders, pivots and folds to  produce movement.  • Using layers and spacers to hide the workings of mechanical parts for an  aesthetically pleasing result. |  |
| Evaluate |  | • Testing a finished product, seeing  whether it moves as planned and if not,  explaining why and how it can be fixed.  • Reviewing the success of a product by  testing it with its intended audience. | • Evaluating different designs.  • Testing and adapting a design. | • Using the views of others to improve designs.  • Testing and modifying the outcome, suggesting improvements.  • Understanding the purpose of exploded-diagrams through the eyes of a  designer and their client. |  | • Evaluating the work of others and receiving feedback on own work.  • Suggesting points for improvement. |  |

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| Electrical Systems  https://lh4.googleusercontent.com/Nob18cAx5ihNjO1NbSbAfdIS6C1QzNm7q8eBER-nd2A49Ftt9fE9obi8X_tERQGMDw8rxGi4DqeJKX3_HEWcNOoLiFXlVnaezaczZi-XDvB4XnN0w1jh60Y4y9gdiFFSSQUzNaMHNTJscgTY2xRSWhs | EYFS | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Design |  |  |  |  | • Designing a torch, giving consideration to the target audience and creating both  design and success criteria focusing on features of individual design ideas. |  |  |
| Make |  |  |  |  | • Making a torch with a working electrical circuit and switch.  • Using appropriate equipment to cut and attach materials.  • Assembling a torch according to the design and success criteria. |  |  |
| Evaluate |  |  |  |  | • Evaluating electrical products.  • Testing and evaluating the success of a final product. |  |  |

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| Computing  https://lh6.googleusercontent.com/JwpiNoITdBFqLd0wywS0VUEn7_YPhFKe2Y04-IX1Wc_DO3S3CGIHC9VyQL8tlXYUweGQFYhduHaVODBNsMuT6-QxDWkHG8u-I8r4xwvDRLnCiQIgpuatmTOXNbxOtRkoNQRWmELpHxDt2zGutHMx41c | EYFS | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Design |  |  |  |  | • Writing design criteria for a programmed timer (Micro:bit).  • Exploring different mindfulness strategies.  • Applying the results of my research to further inform my design criteria.  • Developing a prototype case for my mindful moment timer.  • Using and manipulating shapes and clipart by using computer-aided design (CAD),  to produce a logo.  • Following a list of design requirements. |  |  |
| Make |  |  |  |  | • Developing a prototype case for my mindful moment timer.  • Creating a 3D structure using a net.  • Programming a micro:bit in the Microsoft micro:bit editor, to time a set number of  seconds/minutes upon button press. |  |  |
| Evaluate |  |  |  |  | • Investigating and analysing a range of timers by identifying and comparing their  advantages and disadvantages.  • Evaluating my Micro:bit program against points on my design criteria and  amending them to include any changes I made.  • Documenting and evaluating my project.  • Understanding what a logo is and why they are important in the world of design  and business.  • Testing my program for bugs (errors in the code).  • Finding and fixing the bugs (debug) in my code. |  |  |

**Design and Technology Knowledge Progression “Sticky Knowledge” by Year Group**

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| **EYFS** | | |
| Autumn | Cooking and Nutrition: Soup | • there are differences between fruits and vegetables.  • ingredients can be mixed together into a smooth liquid.  • fruits and vegetables grow in different places |
| Spring | Textiles: Bookmarks | • a design is a way of planning our idea before we start.  • threading is putting one material through an object |
| Summer | Structures: Junk Modelling | • there are a range to different materials that can be used to make a model and that they are all slightly different.  • how to make simple suggestions to fix their junk model. |

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| **Year 1** | | |
| Autumn | Structures: Can you construct a windmill? | A structure is something that has been made and put together. A windmill is a structure that harnesses the power of wind for a purpose like grinding grain, pumping water or generating electricity. Windmill turbines use wind to turn and make the machines inside work. The three main parts of a windmill are the turbine, axle and structure.  The shape of materials can be changed to improve the strength and stiffness of structures. Cylinders are a strong type of structure (e.g. the main shape used for windmills and lighthouses).  Axles are used in structures and mechanisms to make parts turn in a circle.  A client is the person being designing for. The design criteria is a list of points to ensure the product meets the client’s needs and wants. |
| Spring | Mechanisms: Can you make a moving story book? | A mechanism is the parts of an object that move together. A slider mechanism moves an object from side to side.  In Design and Technology we call a plan a ‘design’. A slider mechanism has a slider, slots, guides and an object.  Bridges and guides are bits of card that purposefully restrict the movement of the slider.  Making small adjustments to a design is an important part of the design process as it makes the end product better and easier to make. |
| Summer | Cooking and Nutrition: Can you make a smoothie? | A fruit has seeds, and a vegetable does not. Some foods typically known as vegetables are actually fruits (e.g. cucumber).  Fruits grow on trees or vines. Vegetables can grow either above or below ground. Vegetables can come from different parts of the plant (e.g. roots: potatoes, leaves: lettuce, fruit: cucumber).  A smoothie is a blended drink which contains fruits and sometimes vegetables.  A blender is a machine which mixes ingredients together into a smooth liquid. |

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| **Year 2** | | |
| Autumn | Mechanisms: Can you construct a fairground wheel? | Wheels move at the same time and speed because each pair of wheels is attached to a pole called an axle. The features of a Ferris wheel include the wheel, frame, pods, a base an axle and an axle holder.  Different materials have different properties and are therefore suitable for different uses.  The key features of a stable free-standing feature are: low height, wide base and flat base.  Pods on a Ferris wheel need to rotate so that they stay upright. |
| Spring | Cooking and Nutrition: Can you create a healthy wrap? | We should only have a maximum of five teaspoons of sugar a day to stay healthy. Many food and drinks we do not expect to contain sugar do; we call these ‘hidden sugars’.  ‘Diet’ means the food and drink that a person or animal usually eats. The five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar. We should eat a range of different foods from each food group.  ‘Ingredients’ means the items in a mixture or recipe.  To safely slice food we can use a bridge or a claw grip. |
| Summer | Textiles: Can you design and make a pouch? | Sewing is a method of joining fabric. A thimble can be used to protect my fingers when sewing  A template is used to create a design to simplify marking out a product.  Different stitches can be used when sewing. It is important to tie a knot after sewing the final stitch.  Glue or decorative stitching can be used to decorate textiles. |

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| **Year 3** | | |
| Autumn | Mechanisms: Can you design and make a pneumatic toy? | A pneumatic system forces air over a distance to create movement. They operate by drawing in, releasing and compressing air. Pneumatic systems are used in a range of everyday objects. Pneumatic systems can be used as a part of a mechanism.  Thumbnail sketches are small drawings which get ideas down on paper quickly. Exploded diagrams show us all of the parts of a product, including the internal and external parts.  Pneumatic systems can be used with linkage system to create motion. Pivots (for example, using split pins) can also be used to create motion.  Materials are selected due to their functional and aesthetic characteristics. |
| Spring | Structures: Can you construct a castle? | The features of a castle are: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse. A castle needed to be strong and stable to withstand enemy attack.  A design specification is a list of success criteria for a product. A paper net is a flat 2D shape that can become a 3D shape once assembled.  Structures must be strong and stiff. Wide and flat based objects are more stable.  A façade is the front of a structure. |
| Summer | Cooking and Nutrition: Do you understand the concept of eating seasonally? | Not all fruits and vegetables can be grown in the UK. Climate affects food growth. Vegetables and fruit grow in certain seasons.  Imported food is food which has been brought into the country and exported food is food which has been sent to another country. Imported foods travel from far away and this can negatively impact the environment.  Cooking instructions are known as a ‘recipe’. Each fruit and vegetable gives us nutritional benefits because they contain vitamins, minerals and fibre. Similar coloured fruits and vegetables often have similar nutritional benefits. Vitamins, minerals and fibre are important for energy, growth and maintaining health.  Safety rules for using knives include: always ask an adult before using a knife, always pick up a knife by the handle, always cut away from yourself when you use a knife and never put a knife in soapy water. |

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| **Year 4** | | |
| Autumn | Textiles: Do you understand that a fastening is something that holds two pieces of material together? | Different fastening types are useful for different purposes. The main types of fastenings are: buttons, toggles, buckles, press studs, Velcro and zippers.  A book sleeve is a protective covering that is designed to shield books from damage. It is typically made of soft, durable material and is designed to fit snugly around the book, providing an extra layer of protection.  Creating a mock up (prototype) of their design is useful for checking ideas and proportions.  The hole in the needle is called the ‘eye’, and when we push cotton through the eye, we call this ‘threading the needle’. |
| Spring | Computing: Can you create a mindful moments timer? | Ergonomic means how comfortable a product is to use and aesthetics means our opinion of an object based on what we can see.  In programming, variables are a way of storing information in a computer program. An algorithm is a set of instructions to be followed by the computer. It is important to check code for errors (bugs). A simulator can be used as a way of checking code works before installing it onto an electronic device.  A prototype is a 3D model made out of cheap materials, which allows us to test design ideas and make better decisions about size, shape and materials.  An exhibition is a way for companies to showcase products, meet potential new customers and gather feedback from users. |
| Summer | Electrical: Can you create a torch? | An electrical circuit must be complete for electricity to flow. A switch can be used to complete and break an electrical circuit.  The features of a torch are: case, contacts, batteries, switch, reflector, lamp and lens.  Designers explore a few ideas and when they come to make their product, it can still be changed, but they will need to record what and why they have amended the design on their design sheet.  The order in which a torch is created is: housing, switch, reflector, securing the bulb, position the circuitry and design the outside. |

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| **Year 5** | | |
| Autumn | Mechanical Systems: Can you make a pop-up book? | Mechanisms control movement and can be used to change one kind of motion into another.  A design brief is a description of what you will design and make.  Designers often want to hide mechanisms to make a product more aesthetically pleasing. Sliders, pivots and folds can be used to create paper-based mechanisms.  The preferences and needs of the intended user must be considered when thinking about illustrations, colours and captions. Good quality making should be neat, accurate and securely assembled. |
| Spring | Structures: Can I design and build a bridge? | Reinforcing corners can strengthen a structure  Triangles can be used to reinforce bridges.  A bridge must withstand the weather conditions and temperature changes outdoors without leading to weakness. Properties are words that describe the form and function of materials. There are two main types of wood: hardwood and softwood. Every tree is different, but deciduous trees (leaf shedding) can be considered hardwood and coniferous trees (needles, evergreen) softwood. Safety rules for using a saw include: fix the wood in a vice, hold the saw with one hand, place the other hand on the table away from the saw, gently pull the saw back before sewing and keep the saw straight.  Designers can experiment with applying a small amount of pressure to their bridge and identifying areas which look particularly weak. They can then reinforce any joints. |
| Summer | Cooking and Nutrition: What could be healthy? | Beef is from cattle and how is reared and processed, this can lead to welfare issues.  A healthy meal should include at least three portions of vegetables, be made from whole ingredients and have as little added fat, added salt or chemicals as possible.  We can adapt a recipe to make it healthier by substituting ingredients. We can use a nutritional calculator to see how healthy a food option is.  ‘Cross-contamination’ means bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects. |

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| **Year 6** | | |
| Autumn | Textiles: Can you design and make a waistcoat? | When clothing is designed, it is important to do so with the client or target customer in mind.  Using a template (or clothing pattern) helps to accurately mark out a design on fabric. Dashes are drawn in chalk across the parts of the fabric that will be sewn.  When sewing fabric together, it is important that the stitches are consistently sized and a knot is used when finished.  When attaching beads and buttons, the thread must be looped through at least three times to ensure they stay in place. |
| Spring | Cooking and Nutrition: Come Dine with Me | ‘Flavour’ is how a food or drink tastes.  Many countries have ‘national dishes’ which are recipes associated with that country.  ‘Processed food’ means food that has been put through multiple changes in a factory. Farm to fork refers to the food you pick up in-store has come directly from the farm in which it was produced.  It is important to wash fruit and vegetables before eating to remove any dirt and insecticides.  *NB these are taught on rotation throughout the unit.* |
| Summer | Structures: Can you create a model of a new playground? | A footprint plan provides the outline of buildings or items drawn along the exterior, with a description of the exact size, shape and location. The design of something can impact users in positive and negative ways  Structures can be strengthened by manipulating materials and shape, such as using extra pieces of wood to brace the structure and card triangles to strengthen corners.  Cladding can be applied to structures for different effects.  Landscape features can positively or negatively impact the people who use the space. Natural materials can create different landscape features, such as trees, mounds, grass, streams and tunnels. |

**Design and Technology Lesson Sequence**

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| **Autumn** | | | | | | |
| **EYFS** | **YEAR 1** | **YEAR 2** | **YEAR 3** | **YEAR 4** | **YEAR 5** | **YEAR 6** |
| 1. Can I explore fruits and vegetables and the differences between them? 2. Can I explore a pumpkin and describe it using the five senses? 3. Can I design a fruit and vegetable soup recipe? 4. Can I learn how to use a knife safely? 5. Can I observe and safely use tools to prepare ingredients? 6. Can I design food packaging? | 1. Can I include individual preferences and requirements in my design? 2. Can I make a stable structure? 3. Can I assemble the components of my structure? 4. Can I evaluate my project and adapt my design? 5. End of Unit Assessment | 1. Can I explore wheel mechanisms and design a Ferris Wheel? 2. Can I select appropriate materials? 3. Can I build and test a moving wheel? 4. Can I make and evaluate a structure with a rotating wheel? 5. End of Unit Assessment | 1. Can I explain how pneumatic systems work? 2. Can I design a toy that uses a pneumatic system? 3. Can I create a pneumatic system? 4. Can I test and finalise ideas against design criteria? 5. End of Unit Assessment | 1. Can I identify and evaluate different types of fastenings? 2. Can I design a product to meet design criteria? 3. Can I make and test a paper template? 4. Can I assemble a book jacket? 5. End of Unit Assessment | 1. Can I design a pop-up book? 2. Can I follow a design brief to make a pop-up book? 3. Can I use layers and spacers to cover the working of mechanisms? 4. Can I create a high-quality product suitable for a target user? 5. End of Unit Assessment | 1. Can I design a waistcoat? 2. Can I mark and cut fabric according to a design? 3. Can I assemble a waistcoat? 4. Can I decorate a waistcoat? 5. End of Unit Assessment |
| **Spring** | | | | | | |
| **EYFS** | **YEAR 1** | **YEAR 2** | **YEAR 3** | **YEAR 4** | **YEAR 5** | **YEAR 6** |
| 1. Can I develop threading and weaving skills? 2. Can I practise and apply weaving skills to a specific material (e.g. paper)? 3. Can I practise and apply threading skills with specific materials (e.g. hessian and wool)? 4. Can I use threading or sewing to design a product (bookmark)? 5. Can I create a textiles product (bookmark) following a design? 6. Can we reflect on whether we have achieved our aims? | 1. Can I explore making mechanisms? 2. Can I design a moving story book? 3. Can I construct a moving picture? 4. Can I evaluate my finished product? 5. End of Unit Assessment | 1. Can I explain what makes a balanced diet? 2. Can I taste test food combinations? 3. Can I design a healthy wrap? 4. Can I make a healthy wrap? 5. End of Unit Assessment | 1. Can I recognise how multiple shapes (2D and 3D) are combined to form a strong and stable structure? 2. Can I design a castle? 3. Can I construct 3D nets? 4. Can I construct and evaluate my final product? 5. End of Unit Assessment | 1. Can I evaluate existing products? 2. Can I develop design criteria? 3. Can I program and control a product? 4. Can I develop and communicate ideas? 5. End of Unit Assessment | 1. Can I explore how to reinforce a beam (structure) to improve its strength? 2. Can I build a spaghetti truss bridge? 3. Can I build a wooden truss bridge? 4. Can I complete, reinforce and evaluate my truss bridge? 5. End of Unit Assessment | 1. Can I research and design a three-course meal? 2. Can I prepare a starter? 3. Can I prepare the main course? 4. Can I prepare a dessert? 5. End of Unit Assessment |
| **Summer** | | | | | | |
| **EYFS** | **YEAR 1** | **YEAR 2** | **YEAR 3** | **YEAR 4** | **YEAR 5** | **YEAR 6** |
| 1. Can I explore and investigate the tools and materials in the junk modelling area? 2. Can I investigate cutting different materials? 3. Can I learn how to plan and select the correct resources needed to make a model? 4. Can I verbally plan and create a junk model? 5. Can I share a finished model and talk about the processes in its creation? 6. Can I explore different ways to temporarily join materials together? | 1. Can I identify if a food is a fruit or a vegetable? 2. Can I identify where plants grow and which parts we eat? 3. Can I taste and compare fruit and vegetables? 4. Can I make a fruit and vegetable smoothie? 5. End of Unit Assessment | 1. Can I sew a running stitch? 2. Can I sew a running stitch? 3. Can I join fabrics using a running stitch? 4. Can I decorate a pouch using fabric glue or stitching? 5. End of Unit Assessment | 1. Do I know that climate affects food growth? 2. Can I explain the advantages of eating seasonal foods grown in the UK? 3. Can I create a recipe that is healthy and nutritious using seasonal vegetables? 4. Can I safely follow a recipe when cooking? 5. End of Unit Assessment | 1. Can I learn about electrical items and how they work? 2. Can I analyse and evaluate electrical products? 3. Can I make and evaluate a torch? 4. Can I make and evaluate a torch? 5. End of Unit Assessment | 1. Can I explain where food comes from? 2. Can I explain the term ‘healthy’? 3. Can I adapt a traditional recipe? 4. Can I complete a food product? 5. End of Unit Assessment | 1. Can I design a playground with a variety of structures? 2. Can I build a range of structures? 3. Can I improve and add detail to structures? 4. Can I create the surrounding landscape? 5. End of Unit Assessment |

**Design and Technology Key Vocabulary**

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| Year Group | Autumn | Spring | Summer |
| EYFS | Seeds, roots, leaves, stem, plant, flower, bud, juicy, sweet, sour, dry, wet, bitter, chewy, watery, pumpkin, heavy, bumpy, rough, smooth, hard, spiky, big, huge, orange, soft, seedy, squashy, stringy, slimy, squelchy, hollow, carrot, sweetcorn, garlic, onion, potato, leek, spinach, peas, butternut squash, broccoli, safety, knife, blade, sharp, tool, edge, handle, chop, slice, cut, saucepan, blender, knife, chopping board, hob, boil, blend, mix, soup, creamy, delicious, packaging, tin, carton, pouch, lidded cup, barcode, ingredients, cardboard, metal, plastic, recyclable, reusable |  |  |
| Year 1 | Client  Stable  Strong  Structure  Windmill  Axle  Turbine | sliders  mechanism  adapt  design criteria  design  input  model  template  assemble  test | fruit  vegetable  seed  leaf  root  stem  smoothie  healthy  carton  design  flavour  peel  slice |
| Year 2 | Axle  Mechanism  Ferris wheel  Pod  Test  Weak  waterproof | balanced diet  balance  carbohydrate  dairy  fruit  ingredients  oils  sugar  protein  vegetable  design criteria | decorate  fabric  fabric glue  knot  needle  needle threader  running stitch  sew  template  thread |
| Year 3 | Pneumatic system  Mechanism  Input  Ourput  Linkage  Pivot  motion | 2D  3D  castle  design  key features  net  scoring  shape  stable  stiff  strong  structure  tab | climate  diet  imported  ingredients  natural  processed  reared  recipe  seasonal  seasons  sugar |
| Year 4 | Aesthetic  Fabric  Fastening  Prototype  Net  Running-stitch  Template  Assemble | research  criteria  design  ergonomic  timer  program  loop  coding  block  variable  pause  bug  debug  instructions  net  template  develop  join  assemble  test  form  function  prototype  process  cheap  user  model  evaluate  logo  clipart  brand identity  branding  Sketchpad  computer-aided design (CAD)  2D | series circuit  switch  component  design  design criteria  diagram  evaluation  LED  model  shape  target audience  input  recyclable  theme  aesthetics  assemble  equipment  ingredients  packaging  properties  sketch  test |
| Year 5 | CAD  Function  Input  Output  Motion  Linkage  Mechanism  Pivots  Sliders | beam bridge  arch bridge  truss bridge  strength  technique  corrugation  lamination  stiffness  rigid  factors  stability  visual appeal  aesthetics  joints  mark out  hardwood  softwood  wood file/rasp  sandpaper/glasspaper  bench hook/vice  tenon saw/coping saw  assemble  material properties  reinforce  wood sourcing  evaluate  quality of finish  accuracy | beef  reared  processed  ethical  diet  ingredients  supermarket  farm  balanced |
| Year 6 | Fabric  Fastening  Running-stitch  Sew  Seam  Thread  Adapt  Detail  Knot | equipment  flavours  ingredients  method  research  recipe  bridge method  cookbook  cross-contamination  farm to fork  preparation  storyboard | apparatus  design criteria  equipment  playground  landscape features  cladding |

**Design and Technology Cross-Curricular Links**

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| --- | --- | --- | --- |
| Year Group | Autumn | Spring | Summer |
| EYFS | ELGs  C&L: Speaking  PSED: Managing Self  UtW: The Natural World  PD: Fine Motor Skills  EA&D: Creating with Materials | ELGs  PD: Fine Motor Skills  EA&D: Creating with Materials | ELGs  PD: Fine Motor Skills  EA&D: Creating with Material |
| Year 1 | Mathematics  • Pupils should be taught to recognise and name common two-dimensional and three-dimensional shapes. | English: Reading – Comprehension  • Pupils should be taught to develop pleasure in reading, motivation to read, vocabulary and understanding by learning to appreciate rhymes and poems, and to recite some by heart. | Science  • Working scientifically: Identifying and classifying.  • Using their observations and ideas to suggest answers to questions.  PSHE  • What constitutes a healthy diet (including understanding calories and other nutritional content).  • The principles of planning and preparing a range of healthy meals. |
| Year 2 | Mathematics  • Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line’.  Science  • Identify and compare the suitability of a  variety of everyday materials, including  wood, metal, plastic, glass, brick, rock,  paper and cardboard for particular uses’. | Mathematics  Compare and order lengths, mass, volume /  capacity and record the results using >, < and = |  |
| Year 3 |  | History  • A study of an aspect or theme in British history that extends pupils’ chronological knowledge beyond 1066.  Mathematics  • Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them. | Geography  • Describe and understand key aspects of: physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle.  • Human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water. |
| Year 4 | British values:  • Mutual respect. | PSHE  • Choices about healthy lifestyle and the importance of mental health.  Computing:  • Design, write and debug programs that accomplish specific goals.  Maths:  • Geometry – properties of shapes. | Science  • Identify common appliances that run on electricity.  • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.  • Identify if a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.  • Recognise that a switch opens and closes a circuit and associate this with if a lamp lights in a simple series circuit.  • Recognise some common conductors and insulators, and associate metals with being good conductors. |
| Year 5 |  |  |  |
| Year 6 |  | Science  • Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies  function’  PSHE  • The principles of planning and preparing a range of healthy meals. |  |