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| **Threshold concept** | **End of phase expectation yr. 2** | **End of phase expectation yr. 4** | **End of phase expectation yr. 6** |
| **Design, make, evaluate and improve.** | **Design**Can generate, develop, model and communicate ideas through talking, drawing, templates and where appropriate using computing technologies.**Make**Can select from and use a range of tools and select and use materials suitable for their design**.****Evaluate and Improve**Can evaluate ideas and products against own design criteria and suggest how products can be improved. | **Design**Can communicate ideas through annotated sketches.**Make**Can follow a design and chose the most appropriate tools specific for the task. **Evaluate and Improve**Can evaluate ideas and products against own design criteria and consider the views of others to improve work to ensure it is fit or purpose. | **Design**Can generate model and communicate ideas through a range of platforms including exploded diagrams, cross sectional and computer aided designs.**Make**Can work through each stage of the design process using a systematic approach.**Evaluate and Improve**Can critically evaluate the product against the design process and design criteria, considering the views of others to improve work to ensure it is fit for purpose. |
| **Develop a range of practical skills** | **Food**Can safety and hygienically prepare healthy dishes using non-standard measures and explain the origin of the ingredients. | **Food**Can safety and hygienically follow a recipe using standard measurements and select appropriate utensils. | **Food**Can create and refine well-presented recipes using available seasonal produce and calculate ratios of ingredients.Can handle and store ingredients hygienically. |
|  | **Mechanics**Can use levers, wheels and winding mechanisms. | **Mechanics**Can use gears and linkages in a product  | **Mechanics**Can select from a range of mechanical systems to use in a product (e.g. gears, pulleys, cams, levers and linkages) |
|  | **Textiles**Can shape textiles using a template, join using a running stitch and decorate | **Textiles**Can join by selecting an appropriate stitch and decorate using a taught technique. | **Textiles**Can select from a wide range of stitches and combine stitches to suit the function of the product. |
|  | **Materials**Can measure, cut and join using techniques and tools provided | **Materials**Can use selected tools to measure, mark, cut, shape and join materials.  | **Materials**Can cut materials with precision and refine the finish. |
|  | **Electronics** | **Electronics**Can create and use series and parallel circuits  | **Electronics**Can create circuits that use a number of components. |
|  | **Computing**Can use ICT in product designs, where appropriate. | **Computing**Can use a computer to control products they have designed and made**.** | **Computing**Can use a computer to program ,monitor and control products.  |
| **Generate ideas and designs from the past and present and looking into the future.** | Can explore how products have been created, give an opinion and suggest improvements. | Can identify some real designers, dissemble products and generate new improved design. | Can evaluate and combine a range of ideas throughout history to create an innovate design that improves user experience. |

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| Valley Primary School Design and Technology Curriculum Statement |
| Intent |
| At Valley, our Design and technology curriculum aims to inspire pupils to be innovative and creative thinkers who have an appreciation for the product design cycle through ideation, creation, and evaluation. We want pupils to develop the confidence to take risks, through drafting design concepts, modelling, and testing and to be reflective learners who evaluate their work and the work of others. We intend for all children to acquire appropriate subject knowledge, skills and understanding as set out in the National Curriculum. Our intent reflects the school’s three curriculum drivers: * Community: Throughout our curriculum, we aim to build an awareness of the impact of design and technology on our lives and encourage pupils to become resourceful, enterprising citizens who will have the skills to contribute to future design advancements. With the intent of giving context and purpose to our learning, we invite members of our community into Valley to share their expertise and experiences in the real world.
* Our Place in History: Through Design and Technology we encourage children to think critically and reflect on issues that impact on themselves and the wider world. Our curriculum aims to give children an understanding of the history of design and technology, as well as preparing them for a future in the everchanging digital world that we are currently living in.
* Ambition and Aspiration: Our Design and technology curriculum intends to unlock our children’s full potential and develop them to be future designers, engineers and technologists. With the ability to think creatively, critically and problem solve, we hope to prepare children for jobs that potentially don’t exist yet.
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| Implementation  |
| The Design and technology National curriculum outlines the three main stages of the design process: design, make and evaluate. Each stage of the design process is underpinned by technical knowledge which encompasses the contextual, historical, and technical understanding required for each strand. Cooking and nutrition has a separate section, with a focus on specific principles, skills and techniques in food, including where food comes from, diet and seasonality. The National curriculum organises the Design and technology attainment targets under four subheadings: Design, Make, Evaluate, and Technical knowledge. At Valley, we use the Design and technology Kapow Primary scheme which covers these strands of learning through various units of work. This is a spiral curriculum, with key areas revisited again and again with increasing complexity, allowing pupils to revisit and build on their previous learning. The skills and knowledge that children acquire are shared amongst five main areas of design and technology: * Mechanisms
* Structures
* Textiles
* Cooking and Nutrition
* Electronical systems (KS2 only)

The units covered and progression throughout these areas of learning are outlined in the Progression of Skills document.  |
| Impact |
| Valley’s Design and technology curriculum aims to leave pupils equipped with a range of skills to enable them to succeed in their secondary education and be innovative and resourceful members of society. The expected impact of our primary Design and technology curriculum intends that children will: * Understand the functional and aesthetic properties of a range of materials and resources.
* Understand how to use and combine tools to carry out different processes for shaping, decorating, and manufacturing products.
* Build and apply a repertoire of skills, knowledge and understanding to produce high quality, innovative outcomes, including models, prototypes, and products to fulfil the needs of users, clients, and scenarios.
* Understand and apply the principles of healthy eating, diets, and recipes, including key processes, food groups and cooking equipment.
* Have an appreciation for key individuals, inventions, and events in history and of today that impact our world.
* Recognise where our decisions can impact the wider world in terms of community, social and environmental issues.
* Self-evaluate and reflect on learning at different stages and identify areas to improve.
* Meet the end of key stage expectations outlined in the National curriculum for Design and technology.
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**National Curriculum expectations**

**By the end of EYFS**

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| Expressive Arts and Design (Exploring and Using Media and Materials) | Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. |
| Expressive Arts and Design (Being Imaginative) | Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories. |
| Physical Development (Moving and Handling) | Children handle equipment and tools effectively, including pencils for writing |

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| Key Stage 1 |
| Design  | Pupils should be taught to: • 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 | Pupils should be taught to: • 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  | Pupils should be taught to: • explore and evaluate a range of existing products; • evaluate their ideas and products against design criteria. |
| Technical Knowledge  | Pupils should be taught to: • build structures, exploring how they can be made stronger, stiffer and more stable; • explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. |
| Cooking and Nutrition  | Pupils should be taught to: • use the basic principles of a healthy and varied diet to prepare dishes; • understand where food comes from |

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| Key Stage 2 |
| Design  | Pupils should be taught to: • 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 computeraided design. |
| Make | Pupils should be taught to: • 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  | Pupils should be taught to: • investigate and analyse a range of existing products; • evaluate their ideas and products against their own design criteria and consider the views of others to improve their work; • understand how key events and individuals in design and technology have helped shape the world. |
| Technical Knowledge  | Pupils should be taught to: • apply their understanding of how to strengthen, stiffen and reinforce more complex structures; • understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]; • understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]; • apply their understanding of computing to program, monitor and control their products. |
| Cooking and Nutrition  | Pupils should be taught to: • understand and apply the principles of a healthy and varied diet; • prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques; • understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. |