

Design and Technology Curriculum Intent

Design and Technology prepares pupils to participate in tomorrow's rapidly changing technologies. They learn to think and intervene creatively to improve quality of life. The subject calls for pupils to become autonomous and creative problem solvers, as individuals and members of a team. They must look for needs, wants and opportunities and respond to them by developing a range of ideas and making products and systems. They combine practical skills with an understanding of aesthetics, social and environmental issues, function and industrial practices. As they do so, they reflect on and evaluate present and past design and technology, its uses and effects. Through design and technology, all pupils can become discriminating and informed users of products, and become innovators.

At Villiers Design and Technology is taught through a Creative Curriculum, alongside History, Geography and Art and Design, where possible. We believe this enriches and enhances all the lessons taught, inspiring and encouraging children to make connections. Design and Technology runs throughout all these areas, so children can see how Design and Technology runs throughout and impacts on their everyday lives and especially the world of work. To enhance the learning they undertake in lessons, children are encouraged to complete their own Design and Technology projects at home and compete in school, and national competitions (linked to the Environment and wider world issues). We want the children to see Design and Technology as something that touches and enriches every area of their lives.

DT Covid catch up plan

In Villiers, there is a DT week every half term, to ensure all skills are covered. Staff will refer back to previous year's learning to reinforce missed skills where necessary, as well as covering this year's learning. Skills build up gradually throughout the school and are repeated a number of times throughout the year especially in design, research and evaluation. E.g. Have experience of ..., begin to ..., develop confidence in ..., Confidently, so pupils will have opportunities to develop any skills they have missed.

In addition, after the Spring 2021 Lockdown the DT Planning was revised, so all skills could be taught by the end of Summer 2021.

Aims of the Curriculum

Technology Education is about children developing design and making skills to make products that are useful, both to themselves and other people. It is an opportunity for children to be creative; and, to develop an understanding of the appropriateness of technological actions.

Aims and Objectives

The Design and Technology curriculum is planned to support the children to develop a love of creating and responding to DT. Specifically the Curriculum is designed for the children to:

- develop their designing and making skills;
- develop knowledge and understanding;
- develop their capability to create high quality products through combining their designing and making skills with knowledge and understanding;
- nurture creativity and innovation through designing and making;

- explore values about and attitudes to the made world and how we live and work within it;
- develop an understanding of technological processes, products, and their manufacture, and their contribution to our society.

Basic Skills at Villiers Primary School

Design and Technology at Villiers Primary School offers children opportunities to develop skills through participation in activities that relate to real life situations and experiences in a meaningful way.

Reasoning skills enable children to:

- communicate effectively and give opinions.
- draw and make deductions.
- use precise language to explain what they think.
- make judgements and decisions informed by reasons and/or evidence.

Enquiry skills enable children to:

- investigate, research and ask relevant questions.
- pose and define problems.
- plan what to do and ways to research.
- predict outcomes and anticipate consequences.
- test conclusions and improve ideas.

Creative thinking skills enable the children to:

- evaluate information.
- judge the value of what they read, hear and do.
- design and make, refining ideas as they go.
- develop criteria for judging the value of their own and others work or ideas.
- have confidence in their judgements.

Children are encouraged to communicate their ideas with peers and recognise the potential market for their products. Children are encouraged to evaluate their work and the work of others in order to improve on initial ideas.

Early Years Curriculum

The Early Years Foundation Stage (EYFS) is the statutory framework that sets the standards that all early years providers must meet to ensure that children learn and develop well and are kept healthy and safe. It promotes teaching and learning to ensure children are ready for school and gives children the broad range of knowledge and skills that provide the right foundation for good future progress through school and life.

In the Early Years Design Technology is taught through half termly topics, according to the children's interests. Topics in Nursery have included Growing, Ourselves, People Who Help Us and The Farm. Topics in Reception have included Fairy Tales, The Zoo, Space and Winter Wonderland. Staff plan following the EYFS Document 2021, taking into account the needs and development of the children. Design and Technology skills link with other key areas of the Curriculum including Physical Development and understanding the World.

The key skills that children are expected to achieve by the end of EYFS are to:

- Use various construction materials.
- Begin to construct, stacking blocks vertically and horizontally, making enclosures and creating spaces.
- Join construction pieces together to build and balance.
- Realise tools can be used for a purpose.
- Construct with a purpose in mind, using a variety of resources.
- Use simple tools and techniques competently and appropriately.
- Select appropriate resources and adapts work where necessary.
- Select tools and techniques needed to shape, assemble and join materials they are using.

KS1/KS2 Curriculum

- Design Technology will be taught using Topic and Science as a stimulus and link where possible. DT is taught as a discrete unit in Years 1-6 at the end of each half term, for a minimum of three hours, seven hours in a term, depending on the content needed to be delivered. (E.g. sewing will be a longer unit.
- Due to the nature of Early Years, DT will be taught as part of EYFS Topics that change based on the needs of the children.
- Preparation to be carried out by the class teacher, teaching assistants and child monitors (with supervision)
- All Design and Technology materials are stored in an Art store located in Year 4, with the exception of ICT equipment, which is stored in lockable containers and Cooking Equipment, which is stored in the Science cupboard.
- Materials to be collected and returned from the Art and DT Store before the start and the end of the day. Staff are to take only what they need.
- Child monitors to be trained to tidy away in time for the next lesson to begin.
- Every child in Year 1 will be given a sketchbook, which will be passed up to the next year group to continue until completed. When complete the finished work book should be saved and continue to be passed up to show progression.
- Villiers Primary School follows the detailed Medium Term Topic Plans giving lesson content, which is progressive and based on National Curriculum guidelines 2014.

Programmes of Study KS1 and KS2

National Curriculum in England: Design and Technology Programme of Study

Purpose of Study

Design and Technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils 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 acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential

contribution to the creativity, culture, wealth and well-being of the nation.

Aims

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

Attainment Targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Subject Content

Key Stage 1

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.

They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].

When designing and making, pupils should be taught to:

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

- 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.

Key Stage 2

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.

They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

When designing and making, pupils should be taught to:

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
- understand how key events and individuals in design and technology have helped shape the world

Technical knowledge

- 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

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

Key stage 1

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

Key stage 2

- 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.

Topic Overview for Villiers Primary School

(DT is taught in separate lessons, but linking to these Topic strands, where possible)

Year Group	Autumn	Spring	Summer
1	All About Me School and the Local Area	Toys Weather and Seasons	IBN Battuta and Explorers Around the World
	Remembrance Day School and the Local Area	Schools Weather and Seasons	Seaside holidays Seasides
2	Great Fire of London/Bonfire Night UK Countries and Capital Cities	Heroes (Significant Individuals) Seas and Oceans	Walter Tull Africa (contrasting with local area)
			George Stephenson Africa (contrasting with local area)
3	Local Area, Our High street Local Area-Our Street	Stone Age to Iron Age Britain Italy, compare to local area	Roman Empire and its impact on Britain Study of a region in UK
	Stone Age to Iron Age Britain The Geography of Europe	Roman Empire and its impact on Britain	Books through time Study of a region in UK

		Italy, compare to local area	
4	<p>Britain's Settlements – Anglo Saxons and Scots.</p> <p>The Vikings and Anglo-Saxons. Edward the Confessor</p> <p>Settlements</p> <p>Local area settlement – land use etc</p>		<p>Egyptians</p> <p>Rivers (River Nile)</p> <p>Water Cycle</p>
5	<p>Maya</p> <p>South America</p>	<p>Explorers, Migration, journeys to Britain</p> <p>Weather and Climate</p>	<p>Local Study –</p> <p>Local History School</p> <p>Local Study</p>
	<p>Tudors-Monarchs and their reigns –(Contrast to previous monarchs including Roman Emperors and Egyptian Pharaohs)</p> <p>Brazil</p>	<p>Explorers, Migration, journeys to Britain</p> <p>Mountains</p>	
6	<p>Children in World War 2</p> <p>Extended Period of Study</p> <p>Trading and Economics</p>	<p>Crime and Punishment</p> <p>Storms, earthquakes and volcanoes</p>	<p>Ancient Greece</p> <p>Our Changing World (weathering, erosion, climate change)</p>

History

Geography

DT Long Term Plan

DT	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	<p>All About Me! Preparing and Making a fruit or vegetable salad (Cutting, grating, peeling) (Cooking and Nutrition)</p>	<p>Christmas Cards - levers (Measuring, marking out, cutting, stronger and stable product)</p>	<p>All About Me! Design and make playground structures (Construction materials – Lego, Duplo, Meccano etc.)</p>	<p>All About Me! Making their own face from fabric (Combining materials, cutting) (Sewing) <i>Benjamin Shine (British male fabric artist) and Yoon Ji Seon (Korean female fabric artist).</i></p>	<p>Another World (including Island Life) Make an island village – building structures (Assembling and joining materials. E.g., glue/masking tape.)</p>	<p>Another World (including Island Life) Making a vehicle suitable for island life (Wheels and axles) <i>Shiro Nakamura (Japanese male car designer Nissan) and Ian Callum (British designer Jaguar)</i></p>
Year 2	<p>Fire! (The Great Fire of London) Making Tudor Houses (Building structures that are strong, stiff and stable)</p>	<p>Fire! (The Great Fire of London) Making a Tudor soup called pottage, served with bread (Cooking and Nutrition)</p>	<p>Heroes (Famous People) (Measuring, marking out, cutting, joining and assembling) Making Frame Structures for painted portraits</p>	<p>Easter Cards – levers (Assembling, cutting, shaping, joining)</p>	<p>Africa (contrasting with the Local Area) Making a felt puppet based on traditional puppets from Africa (Basic sewing techniques, cutting and joining) (Sewing)</p>	<p>SCIENCE – Use of everyday materials Design and Create their own Musical Instrument from suitable materials <i>Antoine-Joseph "Adolphe" Sax (Belgian male inventor/musician)</i></p>
Year 3	<p>Stone Age to Iron Age Creating a soft toy for a Stone Age child, who has time travelled to the future (Combing materials using simple stitches) (Sewing) <i>Steiff Company (German)</i></p>	<p>Christmas Christmas cards – pop ups (Measuring, folding, scoring, folding, levers, mechanisms)</p>	<p>The Roman Empire Look at Roman sandals and how they still exist today – design and make modern version <i>Tamara Mellon (British female fashion entrepreneur/co-founder of</i></p>	<p>The Roman Empire Catapults or ballistas (levers, linkages, pneumatic systems)</p>	<p>Study of a Region in the UK Making cobs - Bread in West Midland region (peeling, chopping, slicing, grating, mixing, spreading, kneading, baking) (Cooking and Nutrition) <i>Warburtons (British bread Company)</i></p>	<p>Study of a Region in the UK Bilston transport – (mechanical systems /electrical components. Make a simple vehicle that moves/ input and output) <i>CAF (Spanish public transport manufacturer)</i></p>

			luxury footwear brand Jimmy Choo)			
Year 4	<p>Anglo-Saxons, Vikings and Scots</p> <p>Anglo-Saxon Houses (measure, mark out, join and combine materials)</p> <p>British modern house design company Solo Timber Frame</p>	<p>Anglo-Saxons, Vikings and Scots</p> <p>Weaving Anglo-Saxon fabric (measure, tape or pin, range of stitches, weave)</p> <p>(Sewing)</p> <p>John Kay (British inventor of the flying shuttle) and Edmund Cartwright (English inventor, of the first power loom)</p>	<p>Anglo-Saxons, Vikings and Scots</p> <p>Anglo Saxon Honey Shortbread (Peeling, chopping, slicing, mixing, spreading, kneading, baking)</p> <p>(Cooking and Nutrition)</p>	<p>Egyptians (The River Nile)</p> <p>Making Automata * -</p> <p>Egyptian animals (Pulleys, cams and gears)</p>	<p>SCIENCE – Electricity</p> <p>Build an Olympic torch - lights (complex electrical systems used to make a functional product)</p> <p>Maglite (American torch manufacturer)</p> <p>Tokujin Yoshioka – Japan Olympic torch designer</p>	<p>Egyptians (The River Nile)</p> <p>Mummy case (measure, mark out, strengthen, join and combine materials)</p> <p>Disney (American Company)</p>
Year 5	<p>The Mayans</p> <p>Aztec masks (Measure, mark, cut, join, shaping, finishing)</p>	<p>The Mayans</p> <p>Patolli board game (Selecting materials, cutting, shaping, joining, measuring, marking out)</p> <p>British company Waddingtons Board Games founded by John Waddington</p>	<p>The Mayans -</p> <p>Make corn-flour tortillas (weigh, measure dry and liquid ingredients)</p> <p>(Cooking and Nutrition)</p>	<p>Local Study - School</p> <p>Making a canal bridge (Select and use a wide range of materials, according to their functional and aesthetic properties)</p> <p>Thomas Farnolls Pritchard (British bridge designer) and Abraham Darby III (British Engineer)</p>	<p>SCIENCE/COMP UTING –Forces</p> <p>Build a Space buggy (Pulleys, cams and gears to create movement, with complex electrical systems– lights etc. Input, process and output)</p> <p>National Aeronautics and Space Administration (American) and European Space Agency</p>	<p>Felt Phone Cases* /Computing</p> <p>(Stitch, measure, tape or pin, cut and join fabric. Using CAD)</p> <p>Stella McCartney – fashion designer(Sewing)</p>

Year 6	Children in WW2 Anderson Shelters (use tools safely and accurately, construct using permanent joins, strengthen a 3D framework) <i>Sir John Anderson (British Inventor)</i>	Children in WW2 Build a tank, capable of firing missiles (Complex electrical systems to produce working tank, including cams, pulleys, gears) BAE (British Manufacturer of tanks)	Storms Let's Go Fly A Kite * (Marking out, measuring, cutting, permanent joining techniques) <i>Homan Walsh (American who used a kite to help build the Niagara Falls Bridge)</i>	The Greeks/Computing Slippers (Cut, pin, sew, stitch. Using CAD) (Sewing)	SCIENCE/COMP UTING – Electricity (Complex electrical systems – bulbs, buzzers and motors /programme a computer to control a product)	The Greeks Salad Wrap (Peeling, chopping, slicing, grating, mixing, spreading, kneading, baking) (Cooking and Nutrition)
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Vocabulary

Year 1:

Nutrition, cooking, healthy, ingredients, design, research, product, criteria, template, component, technique, structure, stable, lever, slider, wheel, axle, mechanism, measure, mark, assemble, join, combine, method, temporary, purpose, evaluate

Year 2:

Nutrition, cooking, healthy, ingredients, design, research, product, criteria, template, component, technique, structure, stable, lever, slider, wheel, axle, mechanism, measure, mark, assemble, join, combine, method, temporary, purpose, evaluate

Year 3:

Nutrition, cooking, healthy, ingredients, design, research, product, innovative, criteria, template, component, technique, structure, stable, lever, slider, wheel, axle, mechanism, measure, mark, assemble, join, combine, method, temporary, purpose, evaluate

Year 4:

Vocabulary: Nutrition, cooking, seasonal, healthy, ingredients, savoury, hygiene, design, research, product, innovative, criteria, template, pattern piece, component, technique, structure, stable, lever, slider, wheel, axle, cam, pulley, gear, mechanism, measure, mark, assemble, join, combine, method, temporary, purpose, evaluate, prototype, annotated sketches, cross-sectional and exploded diagrams, functional, aesthetic, designer, engineer, inventor

Year 5:

Nutrition, cooking, seasonal, healthy, ingredients, savoury, hygiene, design, research, product, innovative, criteria, template, pattern piece, component, technique, structure, stable, lever, slider, wheel, axle, cam, pulley, gear, mechanism, measure, mark, assemble, join, combine, method, temporary, purpose, evaluate, prototype, annotated sketches, cross-sectional and exploded diagrams, functional, aesthetic, designer, engineer, inventor

Year 6:

Nutrition, cooking, seasonal, healthy, ingredients, savoury, hygiene, design, research, product, innovative, criteria, template, pattern piece, component, technique, structure, stable, lever, slider, wheel, axle, cam, pulley, gear, mechanism, computer- aided design (CAD), measure, mark, assemble, join, combine, method, temporary, purpose, evaluate, prototype, annotated sketches, cross-sectional and exploded diagrams, functional, aesthetic, designer, engineer, inventor

DT Progression and Skills taught during year

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Developing, planning and communicating ideas	<p>Begin to draw on their own experience to help generate ideas and research conducted on criteria.</p> <p>Begin to understand the development of existing products: What they are for, how they work, materials used. Start to suggest ideas and explain what they are going to do.</p> <p>Understand how to identify a target group for what they intend to design and make based on a design criteria.</p> <p>Begin to develop their ideas through talk and drawings.</p> <p>Begin to make templates and mock ups of their ideas in card and paper or using ICT.</p>	<p>Start to generate ideas by drawing on their own and other people's experiences.</p> <p>Begin to develop their design ideas through discussion, observation, drawing and modelling. Identify a purpose for what they intend to design and make.</p> <p>Understand how to identify a target group for what they intend to design and make based on a design criteria.</p> <p>Develop their ideas through talk and drawings and label parts.</p> <p>Make templates and mock ups of their ideas in card and paper or using ICT.</p>	<p>With growing confidence generate ideas for an item, considering its purpose and the user/s.</p> <p>Start to order the main stages of making a product. Identify a purpose and establish criteria for a successful product.</p> <p>Understand how well products have been designed, made, what materials have been used and the construction technique.</p> <p>Learn about inventors, designers, engineers and manufacturers who have developed ground-breaking products.</p> <p>Start to understand whether products can be recycled or reused.</p> <p>Know to make drawings with labels when designing.</p> <p>When planning explain their choice of materials and components including function and aesthetics.</p>	<p>Start to generate ideas, considering the purposes for which they are designing- link with Mathematics and Science.</p> <p>Confidently make labelled drawings from different views showing specific features.</p> <p>Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail.</p> <p>Identify the strengths and areas for development in their ideas and products.</p> <p>When planning consider the views of others, including intended users, to improve their work.</p> <p>Learn about inventors, designers, engineers and manufacturers who have developed ground-breaking products.</p> <p>When planning explain their choice of materials and components according to function and aesthetic.</p>	<p>Start to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces.</p> <p>Begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose.</p> <p>With growing confidence apply a range of finishing techniques, including those from art and design.</p> <p>Draw up a specification for their design- link with Mathematics and Science.</p> <p>Use results of investigations, information sources, including ICT when developing design ideas.</p> <p>With growing confidence select appropriate materials, tools and techniques.</p> <p>Start to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose.</p>	<p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, and pattern pieces.</p> <p>Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose.</p> <p>Accurately apply a range of finishing techniques, including those from art and design.</p> <p>Draw up a specification for their design- link with Mathematics and Science.</p> <p>Plan the order of their work, choosing appropriate materials, tools and techniques.</p> <p>Suggest alternative methods of making if the first attempts fail. Identify the strengths and areas for development in their ideas and products.</p> <p>Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose.</p>

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working with tools, equipment, materials and components to make quality products	<p>Begin to make their design using appropriate techniques.</p> <p>Begin to build structures, exploring how they can be made stronger, stiffer and more stable.</p> <p>Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</p> <p>With help measure, mark out, cut and shape a range of materials. Explore using tools e.g. scissors and a hole punch safely.</p> <p>Begin to assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape.</p> <p>Begin to use simple finishing techniques to improve the appearance of their product.</p>	<p>Begin to select tools and materials; use correct vocabulary to name and describe them.</p> <p>Build structures, exploring how they can be made stronger, stiffer and more stable.</p> <p>With help measure, cut and score with some accuracy.</p> <p>Learn to use hand tools safely and appropriately.</p> <p>Start to assemble, join and combine materials in order to make a product.</p> <p>Demonstrate how to cut, shape and join fabric to make a simple product.</p> <p>Use basic sewing techniques.</p> <p>Start to choose and use appropriate finishing techniques based on own ideas.</p>	<p>Select a wider range of tools and techniques for making their product i.e. construction materials and kits, textiles, mechanical components and electrical components.</p> <p>Explain their choice of tools and equipment in relation to the skills and techniques they will be using.</p> <p>Start to understand that mechanical and electrical systems have an input, process and output.</p> <p>Start to understand that mechanical systems such as levers and linkages or pneumatic systems create movement.</p> <p>Know how simple electrical circuits and components can be used to create functional products.</p> <p>Measure, mark out, cut, score and assemble components with more accuracy.</p> <p>Start to work safely and accurately with a range of simple tools.</p> <p>Start to think about their ideas as they make progress and be willing to change things if this helps them to improve their work.</p> <p>Start to measure, tape or pin, cut and join fabric with some accuracy.</p>	<p>Select a wider range of tools and techniques for making their product safely.</p> <p>Know how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques.</p> <p>Start to join and combine materials and components accurately in temporary and permanent ways.</p> <p>Know how mechanical systems such as cams or pulleys or gears create movement.</p> <p>Understand how more complex electrical circuits and components can be used to create functional products.</p> <p>Understand how to reinforce and strengthen a 3D framework.</p> <p>Sew using a range of different stitches. Weave.</p> <p>Demonstrate how to measure, tape or pin, cut and join fabric with some accuracy.</p> <p>Begin to use finishing techniques to strengthen and improve the appearance of their product using a range of equipment.</p>	<p>Select appropriate materials, tools and techniques e.g. cutting, shaping, joining and finishing, accurately.</p> <p>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.</p> <p>Understand how mechanical systems such as cams or pulleys or gears create movement.</p> <p>Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control.</p> <p>Understand that mechanical and electrical systems have an input, process and output.</p> <p>Begin to measure and mark out more accurately.</p> <p>Demonstrate how to use skills in using different tools and equipment safely and accurately with growing confidence cut and join with accuracy to ensure a good-quality finish to the product.</p> <p>Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment.</p>	<p>Confidently select appropriate tools, materials, components and techniques and use them safely and accurately.</p> <p>Assemble components to make working models. Aim to make and to achieve a quality product.</p> <p>With confidence pin, sew and stitch materials together to create a product.</p> <p>Demonstrate when make modifications as they go along.</p> <p>Construct products using permanent joining techniques.</p> <p>Understand how mechanical systems such as cams or pulleys or gears create movement.</p> <p>Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to control their products.</p> <p>Know how to reinforce and strengthen a 3D framework.</p> <p>Understand that mechanical and electrical systems have an input, process and output.</p> <p>Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment.</p>

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Evaluating processes and products	<p>Start to evaluate their product by discussing how well it works in relation to the purpose (design criteria).</p> <p>When looking at existing products explain what they like and dislike about products and why.</p> <p>Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make</p>	<p>Evaluate their work against their design criteria.</p> <p>Look at a range of existing products explain what they like and dislike about products and why.</p> <p>Start to evaluate their products as they are developed, identifying strengths and possible changes they might make.</p> <p>With confidence talk about their ideas, saying what they like and dislike about them.</p>	<p>Start to evaluate their product against original design criteria e.g. how well it meets its intended purpose</p> <p>Begin to disassemble and evaluate familiar products and consider the views of others to improve them.</p> <p>Evaluate the key designs of individuals in design and technology who have helped shape the world.</p>	<p>Evaluate their products carrying out appropriate tests.</p> <p>Start to evaluate their work both during and at the end of the assignment. Be able to disassemble and evaluate familiar products and consider the views of others to improve them.</p> <p>Evaluate the key designs of individuals in design and technology who have helped shape the world..</p>	<p>Start to evaluate a product against the original design specification and by carrying out tests.</p> <p>Evaluate their work both during and at the end of the assignment.</p> <p>Begin to evaluate it personally and seek evaluation from others.</p> <p>Evaluate the key designs of individuals in design and technology that have helped shape the world.</p>	<p>Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests.</p> <p>Evaluate their work both during and at the end of the assignment.</p> <p>Record their evaluations using drawings with labels.</p> <p>Evaluate against their original criteria and suggest ways that their product could be improved.</p> <p>Evaluate the key designs of individuals in design and technology who have helped shape the world.</p>

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Food and Nutrition	<p>Begin to understand that all food comes from plants or animals.</p> <p>Explore the understanding that food has to be farmed, grown elsewhere (e.g. home) or caught.</p> <p>Start to understand how to name and sort foods into the five groups in 'The Eat well plate'</p> <p>Begin to understand that everyone should eat at least five portions of fruit and vegetables every day.</p> <p>Know how to prepare simple dishes safely and hygienically, without using a heat source.</p> <p>Know how to use techniques such as cutting, peeling and grating.</p>	<p>Understand that all food comes from plants or animals.</p> <p>Know that food has to be farmed, grown elsewhere (e.g. home) or caught.</p> <p>Understand how to name and sort foods into the five groups in 'The Eat well plate'</p> <p>Know that everyone should eat at least five portions of fruit and vegetables every day.</p> <p>Demonstrate how to prepare simple dishes safely and hygienically, without using a heat source.</p> <p>Demonstrate how to use techniques such as cutting, peeling and grating</p>	<p>Start to know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.</p> <p>Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</p> <p>Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>Start to understand that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eat well plate'</p> <p>Begin to know that to be active and healthy, food and drink are needed to provide energy for the body</p>	<p>Understand that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.</p> <p>Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</p> <p>Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>Know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eat well plate'</p> <p>Know that to be active and healthy, food and drink are needed to provide energy for the body.</p>	<p>Understand that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.</p> <p>Begin to understand that seasons may affect the food available.</p> <p>Begin to understand how food is processed into ingredients that can be eaten or used in cooking.</p> <p>Begin to know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, with the use of a heat source.</p> <p>Start to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>Begin to understand that different food and drink contain different substances (E.g. nutrients, water and fibre) are needed for health.</p> <p>Weigh and measure accurately (time, dry ingredients, and liquids)</p>	<p>Know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.</p> <p>Understand that seasons may affect the food available. Understand how food is processed into ingredients that can be eaten or used in cooking.</p> <p>Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</p> <p>Understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>Know different food and drink contain different substances – nutrients, water and fibre – that are needed for health.</p> <p>Weigh and measure accurately (time, dry ingredients, and liquids)</p>

PSHE and British values

At Villiers we encourage children to work with others through collaboration and group projects. To think about Spiritual development through exploring ideas and feelings, Moral development through how designers have explored ideas through their work, Social development through respecting the ideas of others and Cultural development through the study of designers, engineers and chefs from differing cultures and the discussion of the pupil's beliefs and ideas.

The Design and Technology curriculum is designed to support the Villiers attitudes to learning, which represent the core British values as well as the needs to of the Villiers community. We develop drive and ambition by teaching the children the processes of their favourite designers and giving them the opportunities and skills to carry them out. We set frequent competitions to encourage children to see themselves as part of a global community, where design has an important role of not only passing on information, but also as a source for discussion and change. We develop resilience and reflectiveness by setting challenging work and maintaining high expectations of each child as an individual. Through Design Technology children can challenge themselves to improve, reflecting on their own work and that of others in a respectful and kind environment. The children work collaboratively to make larger scale projects and learn to share their ideas confidently whilst benefiting from the views, experiences and opinions of others. Through studying designers, engineers and chefs from different countries, race, religion and time periods our children learn about different cultures and people and experience examples of great moral courage and strength in the face of adversity. Through discussion about their own and other works of DT, pupils are given the opportunity to embody different people and points-of-view, which helps them to develop high levels of respect and tolerance.

Our School Context

Our Villiers community is a very diverse one and we celebrate that through studying designers, engineers and chefs from different cultures. We are an inclusive school that draws on the children's experiences to inspire their own art. Discussion, honesty and openness are encouraged in lessons, so children learn to understand that differences between us are to be respected and make us all the unique individuals we are. We have high expectations for all, so every child can do the best they can and aspire to do better.

Staff Development

At Villiers we believe in personal development for all members of the school community. The Design and Technology leader liaises on a regular basis with teachers planning Design and Technology and is always available for advice and support with planning and delivering lessons. Staff meetings are held to introduce new initiative. Books, displays and planning are scrutinised on a regular basis and feedback given orally and in written form with pointers to improve. The Design and Technology leader is open to suggestions from staff on how to develop the subject further, developing resources to support staff in teaching, delivering and assessing.

Overcoming Barriers to Learning

All children need a meaningful context, a clear purpose and concrete sensory experience in order to learn and progress in Design and Technology. Design and Technology is multi-sensory and should use the viewer's sense of touch, hearing and movement through space, as well as sight. By extending teaching and

learning in Design and Technology to include all the senses, teachers can provide for the variety of thinking skills and learning styles that will include all learners.

To overcome any potential barriers to learning in Design Technology, some pupils may require:

- alternative tasks to overcome any difficulties arising from specific religious beliefs relating to ideas or experiences that they are expected to represent
- alternative or adapted activities to overcome difficulties with manipulating tools, equipment or materials; for example, the use of computer-aided design and manufacture to produce quality products, or the assistance of others to carry out activities according to the pupil's instructions
- specific support to enable them to engage in certain practical activities; for example, technological aids such as talking weighing scales, jigs to aid cutting, kettle-tipping devices, or specialist ICT software to help with sequencing and following instructions
- opportunities to communicate through means other than writing or drawing, and help to record or translate their design ideas into a drawing
- opportunities to work in ways that avoid contact with materials to which they may be allergic
- time and opportunity to use non-visual means to gain understanding about, and to evaluate, different products and use this information to generate ideas
- more time than others to complete the range of work indicated in the programme of study; for example, by doing shorter assignments, or by combining experience with more than one material in an assignment.