Sir Edmund Hillary Primary School Design & Technology Curriculum

Aims

The National Curriculum for Design 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.

Intent - *What are we trying to achieve for our children in Design Technology?*

At Sir Edmund Hillary Primary School, we want to encourage an openness and flexibility of mind, so as to meet new challenges and problems. Design and Technology is about providing opportunities for our children to develop their capability. By combining their design and making skills with knowledge and understanding they will learn to create quality products. Our children are encouraged to be creative and innovative, and are actively encouraged to think about important issues such as sustainability and enterprise.

Our Design Technology education involves two important elements- learning about the designed and made world and how things work, as well as learning to design and make functional products for particular purposes and users. By taking part in an inspiring and rigorous practical subject, our children should be able to use their creativity, imagination and social skills to design and make products that solve real and relevant problems in a variety of contexts. Our children will also get the opportunity to develop the life skills and knowledge associated with healthy living, food nutrition and cookery.

To support staff in their subject knowledge we use the DATA – Design and Technology Association resources.

Implementation - *How is the curriculum delivered?*

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In the EYFS DT is specifically named in the area of 'Expressive Arts and Design'. It makes an important contribution to children's development in all seven areas of learning. Designing typically involves talk and physically arranging materials and components; children might draw their ideas before they make if they wish to. Children can design as they make. In EYFS designing and making is fluid. Children need to be given opportunities to make their own choices/ decisions and to discuss the reasons for these. Children can draw what they have made.

At Sir Edmund Hillary Primary School, children in EYFS are taught procedures for safety and hygiene. They are able to develop practical skills and techniques using a range of materials (food, textiles and construction materials.) Our children develop their knowledge and understanding in relation to mechanisms, structures, working with food and textiles. They can explore and use a range of construction kits within continuous provision. We encourage children to ask questions about existing products. There are opportunities for children to explore the designed and made world through the indoor and outdoor environment and role play. Children are encouraged to learn and use appropriate technical vocabulary linked to all their design and technology activity.

At Sir Edmund Hillary, we implement a Design Technology curriculum that;

- meets the objectives outlined in the National Curriculum
- is sequenced throughout the whole school, on a Cycle A/B structure for Design contexts because of the nature of the Mixed Year group classes. The Design, Make and Evaluate content has a year group progression thereby giving opportunity for both repetition and deepening of concepts whilst covering the National Curriculum breadth.
- is delivered in weekly lessons over 6 weeks for one half term within each full term
- has key progressive development within design contexts using structures, mechanisms, textiles and cookery
- provides opportunities for retrieval practice of prior knowledge and vocabulary to ensure children are learning the whole curriculum
- provides whole class differentiation through questioning and various methods of recording
- is understood to be linked significantly to other disciplines such as those found within mathematics, science, computing and art.

Impact - What difference is the curriculum making? How do you know whether pupils know what you think they know?

Our Design Technology Curriculum is planned to demonstrate progression. Children's knowledge and skills will develop progressively as they move through the school, not only developing a deep knowledge, understanding and appreciation of Designing and Making a finished product to be proud of, but also appreciate how designers and engineers contribute to society and the skills of tenacity and creativity that are needed to work in this field. We measure the impact of our Design Technology curriculum using the following measures:

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- Evidence from children's books will show a broad and balanced Design Technology curriculum, demonstrating appropriate pitch and challenge. Subject Leaders will endeavour to create a climate of high standards in Design Technology that match standards in other subjects such as English and Maths. All parts of the design process will be in evidence in Workbooks- Investigative and Evaluative Activities, Focussed Tasks, Annotated Designs in Different Formats (incl. annotated sketches, cross sections, exploded diagrams, prototypes and mock ups, and Computer Aided Design) Photograph records of the finished products may also be used.
- Our Long-Term Plan (LTP) will show a clear progression of knowledge and skills that builds on Foundation Stage Learning and then across Key Stage 1 and 2, building on prior knowledge
- Pupil discussion about their learning
- End point assessments at the evaluation point of the product within each unit show how much children have learned within that part of the curriculum. This will be evident as tick sheets alongside the evaluation within D.T books

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Subject Structure

Design

Research & develop
Design Criteria
Product development
Client's needs

Modelling & Planning
Discussion
Drawing & ICT
3D models & prototypes
Annotating
Selecting materials & tools

Make

Dexterity and accuracy,
Cutting, Shaping, Joining, Finishing, Sewing, Chopping, Mixing
Safe & effective usage of tools

Materials
Construction kits
Paper & Card
Textiles
Wood
Fruit, vegetables, grains

Evaluate

Existing products

Own designs and products

Technological Development
Events
Individuals
Sustainability

Technical knowledge

Trial & Improve
Structures
Mechanisms
Electrical Systems
Inc programming, monitoring & control

Cooking & Nutrition
Principles of a healthy diet
Range of savoury dishes
Food sources

Attitudes & Inter-Disciplinary Knowledge
Aspects of Science, Mathematics, Computing and Art support the DT curriculum

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Journey Time

When I learn **Design & Technology**

I am learning to Design and Make and Evaluate **Something**, for **Somebody**, for **Some Purpose**

The 'Something' is called a Product. To help me design a product I will test and evaluate other people's products.
The 'Somebody' is sometimes called a Client and I will have their wants and needs in mind as I design and make.
I will get skilful at working with my fingers and know how structures have strength, mechanisms work, and how I can use electricity in a product.
I will be able to reflect on what I have made, whilst making and when finished, evaluating against Design Criteria.
I will be able to plan & make nutritious meals, because I understand a healthy diet.

Architect, Chef, Engineer, Builder, Carpenter, Electrician, Clothing & Fashion Designer, Nutritionist, Programmer, Systems Analyst, Robot Maker,

Fnd

Expressive Arts & Design

Lwr KS2

Textiles

Mechanisms Wheels & Axles

Mechanisms Sliders & Levers

Textiles

Electrical Simple Circuits Torches

Mechanisms Levers & Linkages

Upr KS2

Cycle A

Structures Frames

Cooking & Nutrition Soups/ Culture/ Seasonality

Mechanisms Pulleys & Gears

Mechanisms & Electrical Systems Motorised Vehicles

Electrical Systems Monitoring & Control

Textiles- design & decorate fabric. CAD

Upr KS2

Cycle B

Mechanisms Cams

Cooking & Nutrition Biscuits

Structures – Tripods

Lwr KS2

Mechanisms Sliders & Levers

Cooking & Nutrition Sandwiches

Structures

Cycle B

KS1

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Design	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
NC		- 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		- 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			
Research & Develop	• know what I would like to make and the materials / tools I need to use	know that before something is made, it has to be designed state what products they are designing and making say whether their products are for themselves or other users describe what their products are for	know that a product has be to designed for a reason, purpose, and audience say what products they are designing and how their products will work say how they will make their products suitable for their intended users use simple design criteria to help develop their ideas	• know how to describe the purpose of their products • know how to start using research to inform basic design criteria • know how to indicate the design features of their products that will appeal to intended users • explain how particular parts of their products work	• know how to describe the purpose of their products and how they meet the needs of the user • know that it is important to gather information about the needs and wants of particular individuals and groups • know how to develop their own design criteria and use these to inform their ideas • know how to carry out own research in order to inform the design of a product	• know & understand the target group in order to develop a suitable product • know that it is important to carry out research, using surveys, interviews, questionnaires and web-based resources • know how to use a set of design criteria based on research from the target group. • know that a design must be fit for purpose.	• know how to consider the customer in creating designs by identify the needs, wants, preferences & values of particular individuals or groups • know how to carry out research, using surveys, interviews, questionnaires and web-based resources know how to demonstrate that their design meets a Design Specification and is fit for purpose • know how to explain how particular parts of their products work • know how to develop a simple 'Design Specification' to guide their thinking
Modelling & Planning	• Know how to design my product and talk about my design. • Know how to discuss my work as it progresses. • Know how to show accuracy when drawing • know how to begin to experiment with design elements	• know how to generate ideas by drawing on their own experiences • know how to use knowledge of existing products to help come up with ideas • know how to develop and communicate ideas by talking and drawing • know that certain materials are chosen for their properties • know what a template is and how it can be used	• know how to follow a set of instructions to learn a principal of design or technology • know that exploring materials, components and construction kits and making templates and mock- ups helps in planning projects • know how to use characteristics of materials to select components • know that designs are always discussed and improved before the final design is chosen • use ICT technology, where appropriate, to develop and communicate their ideas	• generate realistic ideas, focusing on the needs of the user • follow a brief set of instructions to learn a principal of design or technology and apply this learning in their planning • model their ideas using prototypes and pattern pieces • know how to select tools and equipment suitable for the task • know how to order the main stages of making • know that designs are always discussed and improved before the final design is chosen	• know how to use annotated sketches and exploded diagrams to develop and communicate their ideas showing detail of material used • know how to choose materials and components according to functional properties • make design decisions that take account of the availability of resources • know and understand how to annotate a design to ensure the criteria have been met • know that design criteria can be developed within the process.	• know how to use research to inform design. • follow a several set of instructions to learn several principals of design or technology and apply this learning in their planning • know how to adapt existing designs and amend them to create new versions. • know how to use computer-aided design to develop and communicate their ideas • formulate step by step plans as a guide to making know that budget must be considered when designing	• use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas developing detail of material used and why, including measurements • model their ideas using several prototypes and pattern pieces • use computer-aided design to develop and communicate their ideas • make design decisions, taking account of constraints such as time, resources and cost • explain choices of materials and components according to functional properties and aesthetic qualities • know about different views and perspectives when planning and drawing • show how their design ideas draw on their research

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Make		EYFS	Y1	Y2	Y3	Y4	Y5	Y6
NC			- 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			- 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		
Dexterity, Accuracy, Safety & Effective Use of tools	Cutting & Shaping	•Know how to use a variety of materials, tools and techniques with care and precision to make a product including scissors, paint brushes and cutlery. •Know how to use a range of different techniques for joining materials, eg split pins, tape, glue •Know how to build with age-appropriate resources, e.g. blocks, junk modelling	•know how to measure, mark out, cut and shape a range of materials. •Know how to hold a pair of scissors correctly. •Know how to cut accurately along different sizes and shapes of lines. •know how to cut accurately and safely with scissors •Begin to cut wood using a bench hook and hacksaw	•Know the correct names for basic tools. •know that different cutting tools have different jobs, and which would be best for their task. •Cut accurately and safely with scissors •Cut wood using a bench hook and hacksaw •Use a template to help plan cutting •Know that tracing can be used to make a template	•Know how to cut, fold, trace and shape accurately •know how to explain their choice of tools and equipment in relation to the skills and techniques they will use. •know how to work from a provided plan or template •know how to Cut wood, card and textiles having measured and marked •know how to cut out internal shapes •know how to drill through square section wood with supervision	•know how to explain their choices of tools & equipment in relation to the skills and techniques they will use. •know how to work from a plan they have developed •Know how to create and use a paper template in making. •know how to increase accuracy when cutting wood, card and textiles having measured and marked •know how to cut out internal shapes accurately •know how to drill through square section wood with supervision with accuracy	•Know how to formulate step by step plans as a guide to making. •Be resourceful in solving practical problems. •Know and use correct sawing techniques and use bench hooks and hot glue guns safely. •know how to use a craft knife, safety ruler and cutting mat with 1:1 supervision if needed •know how to drill through square section wood with supervision if needed	•Know how to create something with own ideas generated from exploration. •know how to use a craft knife, safety ruler and cutting mat with supervision if needed •know how to use a hand drill safely to drill holes accurately in project pieces.
	Joining		•Know that there are different ways to join materials e.g. glue, Sellotape and Blu-tack. •Join appropriately using split pins, clips, glue or tape •Use a running stitch to join similar fabrics	•Know how to join paper and card accurately with tape and glue •know how to use an overhand knot in thread to attach an item to fabric. •Know about and begin to use fabric glue and running stitch to decorate	•Know how to join and finish accurately by selecting and using a wide range of tools and equipment. •know how to select appropriate joining means (split pins, clips, glue) for appropriate material and purpose. •know how to use a glue gun with supervision •know how to use Running Stitch and Back Stitch	•know that some joins prevent movement and some joins promote movement •know how to use a hot glue gun safely •Know how to select the most appropriate stitch or sewing technique from a simple range. •Know how to add a fastening to their textile project.	•know how to join materials using the most appropriate method for the materials and purpose, make appropriate adaptations. •know how to use a glue gun with appropriate level of supervision •know how to create strong and secure blanket stitches when joining fabric.	•know how to join materials using the most appropriate method for the materials & purpose, make appropriate adaptations & articulate why. •know how to choose from a wider range of stitches to join, fasten, decorate and embellish. •know how to use templates & pin panels onto fabric •know how to mark and cut fabric accurately, in accordance with a design
	Finishing		•Know how to use finishing techniques, incl. those from art & design to improve the appearance & create a product they are proud of	•Know how to use finishing techniques to improve the appearance of their product based on their own ideas to create a product they are proud of	•Know how to use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.	•Know how to use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.	•Know how to apply a range of finishing techniques accurately, including those from art and design.	•Plan for the application of a range of finishing techniques, including those from art and design, from the initial design phases.

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	Preparing Food	•Know how to make simple models with age-appropriate resources •Know how to manipulate different tools with success •Know how to represent and construct my own thoughts, ideas and feelings •Know how to create collaboratively – sharing ideas, resources and skills	• know how to measure and weigh food using non-standard measures (spoons, cups) to develop a sense of proportions. • know how to cut and grate fruit and vegetables under supervision • know how to assemble and blend some savoury foods • know how to use a knife and fork • know how to chop a range of fruit and vegetables. • know that it is important to washing hands and keep tools & surfaces clean.	• know how to measure and weigh food using standard measures (gms) to develop a sense of proportions. • know how to cut and grate fruit and vegetables under supervision • know how to assemble and blend savoury foods • know how to use a knife and fork • know how to slice food safely using the bridge or claw grip • know that it is important to washing hands and keep tools & surfaces clean.	• know how to cut, peel, grate and chop a variety of ingredients with supervision • know how to combine a variety of ingredients using a variety of methods including blending, mixing, spreading and baking • know how to follow a recipe • know that it is important to washing hands and keep tools & surfaces clean.	• know how to cut, peel, grate and chop a variety of ingredients • know how to combine a variety of ingredients using a variety of methods including blending, mixing, spreading and baking • know how to follow a recipe using standard measures (ml, gms) • know that cleanliness in preparation is 'hygiene' • Understand importance of washing hands and keeping tools & surfaces clean.	• know how to combine a variety of ingredients using a variety of methods including assembling, blending, baking and heating • know how to measure and weigh ingredients appropriately to prepare savoury dishes • Know how to use equipment safely, including knives, hot pans and hobs. • Know about basic food safety rules such as cooking meat and eggs	• know how to combine a variety of ingredients using a variety of methods including assembling, blending, baking and heating • know how to measure and weigh ingredients appropriately using the correct standard measures to prepare savoury dishes • Know how to use equipment safely, including knives, hot pans and hobs. • Follow a recipe using a mixture of standard measures (ml, gms) and non-standard measures (tea, dessert & tablespoons)

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Evaluate	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
NC		- explore and evaluate a range of existing products - evaluate their ideas and products against design criteria		- 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			
Existing Products		• Know that when exploring a product they should consider: - who products are for - what products are for - how products work - what they like and dislike about products - what materials products are made from	• Know that when exploring a product they should consider: - who products are for - what products are for - how products work - what they like and dislike about products - how and where products are used - what materials products are made from - how products could be improved	• Know that when exploring a product they should investigate and analyse: - how well products have been designed & made - why materials have been chosen - what methods of construction have been used - how well products work - how well products achieve their purposes - how well products meet user needs - whether products can be recycled or reused	• Know that when exploring a product they should investigate and analyse: - how well products have been designed & made - why materials have been chosen - what methods of construction have been used and where they were made - how well products work - how well products achieve their purposes - how well products meet user needs and want - whether products can be recycled or reused	• Know that when exploring a product they should investigate and analyse: - how much products cost to make - how innovative products are - how sustainable the materials in products are – including where they have been made	• Know that when exploring a product they should investigate and analyse: - how much products cost to make - how innovative products are - how sustainable the materials in products are - what impact products have beyond their intended purpose
Own Products and Designs	• Know what I like / dislike about my models / products • Know how to explain the process I have used • Know how to talk about what I would change to make it better • Know how to adapt my work when necessary	• know how to describe their design ideas and what they are making • know that a product or outcome needs to be evaluated • know how to make simple judgements about their products and ideas against design criteria • know how to verbally suggest how their products could be improved	• know how to explore the features of their outcome against the design criteria • Know that testing their own products leads to making adaptations • know that evaluation is identifying the strongest and the weakest part of a design or product once made. • Know that their peers' feedback can help to modify a design. • Evaluate different designs.	• Know how to evaluate their own and others' work based on the finished product and in-comparison to the original design. • Know how to test the success of a product against the original design criteria and justify opinions • know that evaluation leads to suggesting points for modification of their individual designs. • Know that views of others can be key to adapting and modifying designs.	• Know how to evaluate outcomes made by the class. • Know which characteristics of a design and construction make it most effective and justify this. • know how to use their previously learned evaluation tools to identify effective and ineffective designs with reasons. • Know that budget has to be considered when testing, evaluating and modifying a product or outcome. • know how to compare and evaluate a range of different products.	• Know that modifications can be made to their own work as they are working. • Know how to evaluate a completed product against the original design sheet and suggest modifications to improve its reliability or aesthetics or to incorporate other features. • Know about sustainable choices • know how to give and receive constructive criticism in order to make improvements.	• know that a design plan can be modified based on peer evaluation. • Know how to test and adapt a design to improve it as it is developed (at any stage). • Identify what makes a successful outcome including health and safety aspects. • Know how to identify changes they would make if they were to do this again. • Know how to record necessary information such as resource lists and health and safety measures. • Know how to make sustainable design choices
Technological Development				Pupils should know: about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products			

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Technical Knowledge		EYFS	Y1	Y2	Y3	Y4	Y5	Y6
NC			- 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. - use the basic principles of a healthy and varied diet to prepare dishes - understand where food comes from.		- understand and apply the principles of a healthy and varied diet - prepare and cook a variety of predominantly savory dishes using a range of cooking techniques - understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. - apply their understanding of how to strengthen, stiffen and reinforce more complex structures - 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. - understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]		
Fields of exploration using an Iterative Process- Trial &	Structures	• know a range of tools and their purposes. • know how items can be combined and changed. • know how to select the most appropriate resources. • Know how to explore a range of baking / cooking experiences.	• know how to make free standing structures from card • know that the shape of materials can be changed to improve the strength and stiffness of structures. • know that different structures have different purposes. • Know that shapes and structures with wide, flat bases or legs are the most stable. • know how to use the vocabulary strength, stiffness and stability accurately.		• know how to build a frame structure that is made more stable through use of tripod • know how to select and use suitable materials to for a structure, considering weight, compression and tension. • know how to extend the knowledge of wide and flat based objects being more stable. • know how to consider effective and ineffective designs.		• know how diagonal struts may strengthen frame structures • know how to build frame structures having built initial prototype to test • know how to identify stronger and weaker structures and give reasons. • know that they could find different ways to reinforce structures • Know that structures can be strengthened by manipulating materials and shapes.	
	Mechanisms	• Know how to follow instructions to assist in the baking /cooking and complete some steps independently. • Know how to use non-standard measures e.g. spoons/cups and, alongside an adult some non-standard measures e.g. scales. • know how to work safely and hygienically • know how to use some techniques e.g. mix, spread, roll • know about some healthy choices in relation to eating. • Know and understand the importance of a healthy diet.	• know that levers and sliders are mechanisms and can make things move. . • know how to use the vocabulary up, down, left, right, vertical and horizontal to describe movement. • Identify what mechanism makes a toy or vehicle roll forwards (through exploration). • know that for a wheel to move it must be attached to an axle. • Know about the movement of simple mechanisms such as levers, sliders, *(Y1 – hinge, slider)*	• Know that mechanisms are a collection of moving parts that work together in a machine. • know that there is an input and an output in a mechanism. • Identify mechanisms in everyday objects. • know that a lever is something that turns on a pivot. • know that a linkage is a system of levers that are connected by pivots. • Explore wheel mechanisms. • know that axels help wheels to move a vehicle. • Know about the movement of simple mechanisms such as levers, sliders, wheels & axles *(Y2 – hinge, slider and lever)*	• know that mechanisms are a system of parts that work together to create motion. • Know that mechanical systems have an input, process and output • Know how mechanical systems such as cams, levers and linkages create movement	• know that products change and evolve over time. • know that all moving things have kinetic energy. • know that kinetic energy is the energy that something an (object, person) when it is in motion. • Know how mechanical systems such as cams, levers and linkages create movement	• Know that an input is the motion used to start a mechanism. • Know that output is the motion that happens as a result of starting the input. • Know that mechanisms control movement. • know how to describe mechanisms that can be used to change one kind of motion into another. • Know how mechanical systems such as pulleys or gears create movement	• know that different shaped cams produce different follower movements. • knowhow to describe types of motions and direction of a motion. • know that mechanical systems have an input, process and output and can be controlled from a monitoring system • Know how mechanical systems such as pulleys or gears create movement

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	Electrical		N/A	N/A	• know that electrical systems have an input, process and output • know how simple electrical circuits and components can be used to create functional products using a switch • know to program a computer to control their products • know the features of a torch and understand how it works. • know how to articulate the positives and negatives about different torches. • know how to identify electrical products and learn how they work. • know that a battery contains stored electricity and can be used to power products.	• know that electrical systems have an input, process and output and can be controlled from a monitoring system • know how to program a computer to monitor changes in the environment and control products • know the key components used to create a functioning circuit. • know that breaks in a circuit will stop it from working
	Textiles		• know that a 3-D textiles product can be assembled from two identical fabric shapes • Use sewing techniques to join and decorate (running stitch with guidance – Y1) • know different ways in which to join fabrics together e.g. pinning, stapling, gluing. • know how to thread a needle with support. • know how to sew running stitch, with evenly spaced, neat stitches to join fabric. (Y2) • know how to neatly pin and cut fabric using a template. (Y2)		• know that a single fabric shape can be used to make a 3D textiles product • know how to choose and modify threads based on their qualities • know how to thread needles with greater independence. • know how to tie knots with greater independence. • know how to count threads on a piece of even weave fabric in each direction to create uniform size and appearance. • know that fabrics can be layered for effect.	• know that a 3D textiles product can be made from a combination of fabric shapes • know how to choose and modify fabrics & threads and articulate their choices based on their qualities • know how to thread needles independently. • know different decorative stitches and the effects they give. • know how to sew accurately with even regularity of stitches. • know how to select from a range of known stitches to best suit the task.
	Cooking & Nutrition		• know how to identify differences between fruit & vegetables and understand their importance in a balanced diet. • know that all food comes from plants or animals • know how to describe and group fruits by texture and taste. • Know that food has to be farmed, grown elsewhere (e.g. home) or caught • know that food ingredients should be combined according to their sensory characteristics • know what makes a simple balanced diet. • Know the five food groups. (Y2) • Know where to find the nutritional information on packaging. (Y2)		• 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 • know that food ingredients can be fresh, pre-cooked and processed • Know that a healthy diet is made up from a variety and balance of different food and drink • know that climate affects food growth. • know that imported foods travel from far away and this can negatively impact the environment. • know that vegetables and fruit grow in certain seasons. • Know that to be active and healthy, food and drink are needed to provide energy for the body • know that when planning ingredients for dishes their cost is important for budgeting (Y4) • know the environmental impact on products and cost of production. (Y4)	• know that food is grown, reared and caught in the UK, Europe and ***the wider world*** • know that seasons may affect the food available how food is processed into ingredients that can be eaten or used in cooking • know that recipes can be adapted to change the appearance, taste, texture and aroma – adding or substituting ingredients • know what constitutes a balanced diet. • Adapt a recipe to make it healthier. • know how to compare two adapted recipes using a nutritional calculator and identify the healthier option (Y6) • know how to design menus demonstrating an understanding of a healthy balanced diet • know how to record the relevant ingredients and equipment needed for a recipe. • know where food comes from, describing the process of 'Farm to Fork' for a given ingredient.

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Inter-Disciplinary Knowledge and Attitudes

Inter-Disciplinary Knowledge and Attitudes	Attitudes		• follow procedures for safety and hygiene • make a prototype, understanding it is not the finished product • measure, mark out, cut and shape materials and components • use finishing techniques, including those from art and design to create a product they are proud of	• follow procedures for safety and hygiene with thought and care • make a prototype, understanding it is not the finished product, and record learning from the process • apply themselves to measuring and making with an attention to accuracy • Use techniques that require two steps	• follow procedures for safety and hygiene with thought and care giving reasons and consequences for not following these • Choose an element of their planned 'making sequence' to trial in prototype, recording their learning and refining their process as a result. • demonstrate resourcefulness when tackling practical problems • apply themselves to measuring and making with an attention to high degree of accuracy • Use techniques that require three or more steps
	Science		- Properties of materials that make them suitable or unsuitable for particular purposes. (structures) - Everyday materials, investigate physical properties of fabric types against suitability for the product to be made. (textiles) - understand that plants have leaves, stems, roots, flowers and fruits; understand the importance of growing plants *(Y1)* and how seasons affect growth. (Cooking and nutrition) *(Y2)*	- Using and developing skills of observing and questioning. - Humans get nutrition from what they eat. - Discuss changes of state if heat is used. - discuss the properties and suitability of materials for particular purposes. - Physical properties of fabrics. - identify and compare the suitability of a variety of fabrics for particular uses. - know how to construct simple series circuits and have a basic understanding of conductors, insulators and open and closed switches. - Forces and movement: explore the effects of simple machines on movement.	- Compare and group together everyday materials on the basis of their properties. - apply knowledge and understanding of circuits, switches, conductors and insulators. - using and developing skills of observing, questioning, changing state of ingredients. - Properties of materials and changes of state. - recognise the impact of diet on the way their bodies function. - apply knowledge and understanding of circuits, switches, conductors and insulators. -Recognise that some mechanisms, including pulleys and gears, allow a smaller force to have a greater effect. - Work scientifically investigating properties of fabrics. -Children plan different types of scientific enquiries to answer questions.
	Mathematics	-	-Use appropriate standard and non-standard measures. (structures) - Recognise and name common 2-D and 3-D shapes. - Carry out a simple survey to find out preferences; construct and interpret the information in e.g. pictograms (Y1) and bar graphs. (Y2) - Describe position, direction and movement.	- compare and sort common 2-D and 3-D shapes in everyday objects. - Recognise 3-D shapes in different orientations and describe them. - use a ruler to measure to the nearest cm, half cm or mm. - Draw 2-D shapes and make 3-D shapes using modelling materials. - Nets of shapes and accurate measurements mm/cm. - use mathematical vocabulary to describe position, direction and movement. - choose and use appropriate standard units (i.e. cm/mm) to estimate and accurately measure length/height.	- Identify 3-D shapes, including cubes and other cuboids, from 2-D representations. - recognise, describe and build simple 3-D shapes. - Apply understanding and skill to carry out accurate making use of mathematical and computing skills to present results of sensory evaluations graphically, handling and interpreting data. - Measuring using standard units i.e. cm/mm. -measuring mass kg/g. -Understand and use approximate equivalences between metric and imperial units. -understand ratios. - Apply understanding and skill to carry out accurate measuring using standard units i.e. cm/mm. - apply knowledge of how 2-D nets can be formed into 3-D shapes;

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	Computing		-Use technology purposefully to create and manipulate digital content. - Digital graphics and text could be incorporated into final products as the background or moving parts. (mechanisms) - Use digital photographs to help order the main stages of making and support children's writing.	- design and create digital content on screen, creating nets for their products and combining text with graphics. - design and create digital content on screen using computer-aided design (CAD) software, creating nets for their products and combining graphics with text. - Opportunity to create pattern pieces using a computer program. - design, write and debug programs that accomplish specific goals, including controlling physical systems. - use search technologies for research purposes and be discerning when evaluating digital content. - Digital graphics and text could be incorporated into final products as the background or moving parts.	- use technologies for research purposes and be discerning when evaluating digital content. -use technologies for research purposes and be discerning when evaluating digital content. - design, write and debug programs that accomplish specific goals, including controlling physical systems. - Use sequence, selection, and repetition in programs. - Work with variables and various forms of input and output. - making use of mathematical and computing skills to present results of sensory evaluations graphically, handling and interpreting data. - use technology purposefully to retrieve digital content. - use search technologies for research purposes and be discerning when evaluating digital content. - Children express themselves and develop ideas using a range of information and communication technology resources.
	Art & Design		- Use colour, pattern, line, shape - Use and develop drawing skills. -Use a range of media and materials creatively to design and make products.	- Using and developing drawing skills. - investigating visual and tactile qualities of fabrics and using colour and pattern appropriately. - Using a range of tools and decorative techniques. - Develop sketching techniques. - Use techniques with colour, pattern, texture, line and shape.	- use and develop drawing skills. - Use techniques with colour, pattern, texture, line and shape. - investigate methods of adding colour, pattern and texture on to textiles and how to make their own textiles through weaving or felt making.

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Long Term Plan for National Curriculum Coverage

	KS1a	KS1b	Y3/4 a	Y3/4b	Y5/6 a	Y5/6b
Aut 1						
Aut 2	Structures – bridges	Textiles – Christmas pouch	Structures Tripod	Textiles - sew	Structures Frames	Textiles- design & decorate a fabric piece Using CAD
Spr 1						
Spr 2	Cooking & Nutrition Sandwiches	Mechanisms Sliders & Levers Easter card	Cooking & Nutrition Biscuits	Electrical Systems Simple circuits Torches	Cooking & Nutrition Soups Celebrating culture/ seasonality	Electrical Systems Monitoring and control
Sum 1						
Sum 2	Mechanisms Sliders & Levers Castles	Mechanisms Wheels & Axles – pirate ship	Mechanisms Cams	Mechanisms Levers & Linkages	Mechanisms Pulleys & Gears	Mechanisms & Electrical Systems Motorised Vehicle