



National curriculum aims in DT

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.

DT Intent

At Hugglescote, children receive an inspiring and practical Design and Technology curriculum designed to prepare them for the developing world. The subject encourages children to become creative problem-solvers, both as individuals and as part of a team, as well as allowing them to become informed consumers and potential innovators. Children learn to take risks, be reflective, innovative, enterprising, and resilient. We intend for children to use their creativity and imagination to design and make products that serve a real purpose and solve relevant problems within a variety of contexts. At our school, we believe that Design and Technology learning should be purposeful with a clear intended product, user and purpose. Evaluation is an integral part of the Design and Technology process which allows children to adapt and improve their product, teaching our children to become reflective and therefore allowing them to continually improve and progress.

Design and Technology allows children to apply the knowledge and skills learned in other subjects, particularly Maths, Science and Art. Children's interests are captured through project-based learning, ensuring that links are made in a cross curricular way, giving children motivation, and meaning for their learning. As well as designing, making, and evaluating products, pupils will also be taught cooking and nutrition. We believe that instilling a love of cooking in pupils will enable them to creatively become independent, preparing them to look after their future selves. We believe that it is important that pupils learn the importance of a balanced diet and food hygiene.

Skills, knowledge and vocabulary are taught progressively in the following areas:






Cooking and nutrition	Textiles	Mechanisms and mechanical systems	Structures	Electrical systems
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Disciplinary knowledge	Key vocabulary
<ul style="list-style-type: none"> • Apply creativity and imagination, design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. • 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. 	<p>Key vocabulary for each area of Design and Technology is available at the end of this document.</p>





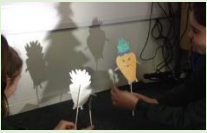






- Evaluation of past and present design and technology, develop a critical understanding of its impact on daily life and the wider world.
- Understand and can explain how high-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

<p>National Curriculum requirement KS 1 Substantive Knowledge</p>	<p><u>Design</u></p> <ul style="list-style-type: none"> • 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 <p><u>Make</u></p> <ul style="list-style-type: none"> • 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 <p><u>Evaluate</u></p> <ul style="list-style-type: none"> • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria <p><u>Technical knowledge</u></p> <ul style="list-style-type: none"> • 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. <p><u>Cooking and Nutrition</u></p> <ul style="list-style-type: none"> • use the basic principles of a healthy and varied diet to prepare dishes • understand where food comes from
<p>National Curriculum requirement KS 2 Substantive Knowledge</p>	<p><u>Design</u></p> <ul style="list-style-type: none"> • 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 <p><u>Make</u></p> <ul style="list-style-type: none"> • 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

	<p><u>Evaluate</u></p> <ul style="list-style-type: none"> • 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 <p><u>Technical knowledge</u></p> <ul style="list-style-type: none"> • 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. <p><u>Cooking and Nutrition</u></p> <ul style="list-style-type: none"> • 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 			
<p>Hugglescote Priorities</p>	<p><u>Reading</u></p> <ul style="list-style-type: none"> • Continuous reading – for example, reading for pleasure an article about food or machines. • Close reading – for example, reading instructions. • Skimming – for example, to see if a book contains any information on a specific material. • Scanning – for example, to look for specific information (e.g. on a web page). 	<p><u>Communication</u></p> <ul style="list-style-type: none"> • STEM sentences embedded throughout the school • Vocabulary is a focus • Working in teams/groups/pairs – sharing ideas, taking on board others' ideas, children coming to their own conclusions • Social skills, oracy and body language when sharing their product/talking to an audience 	<p><u>Community</u></p> <ul style="list-style-type: none"> • STEM ambassadors in KS2 to support STEM across the school • STEM week – members of the school community and wider community coming into school to share/talk about their profession/skills and to encourage children to consider a career path in the STEM sector • Diversity in STEM ambassadors/designers • Equality • Sustainability when discussing, evaluating, designing and making products 	<p><u>Physical and Mental Wellbeing</u></p> <ul style="list-style-type: none"> • Textiles Club – therapeutic, encourages children to explore their interests and talents • The creative and innovative nature of the subject • Encouraging children to persevere and that we learn through our mistakes • 5 ways to wellbeing • Healthy eating taught and encouraged through our 'Cooking and Nutrition' aspect of the curriculum – taught in majority of year groups as a priority • The Hugglescote Way

<p>British Values</p> 	 <p>Rule of Law</p> <p>Children will follow instructions and equipment rules to ensure safety when using the equipment.</p> <p>Children understand consequences for not following safety rules.</p> <p>Pupils learn to work both individually and in a group.</p>	 <p>Democracy</p> <p>When evaluating the work of themselves and others, children will be able to voice their opinion about what they like about the product, what is good about the product and how it can be further improved.</p>	 <p>Individual Liberty</p> <p>The children are given the opportunity to work collaboratively and express their views in a group scenario.</p> <p>All of our DT units allow children to create their own designs and make their own decisions about which tools and materials to use to make the best possible product.</p>	 <p>Respect & Tolerance</p> <p>During DT lessons, children will discuss and evaluate their ideas with their peers and respond with respectful comments.</p> <p>Our children are receptive to advice from others and take on board constructive feedback.</p> <p>Before designing, research is conducted into products created by others and work of famous designers and inventors, encouraging children to appreciate and understand alternative ideas.</p> <p>Food and nutrition objectives focus on food and ingredients from different cultures and different dietary needs (faiths, allergies and intolerances) are discussed.</p>
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EYFS Skills Progression			
Year EYFS	Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products.	Evaluating processes and products
	<ul style="list-style-type: none"> • Generate initial ideas through their own experiences. • Develop and communicate these ideas through talk. • Make their own decisions, such as what materials and tools to use. 	<ul style="list-style-type: none"> • Safely use and explore a variety of materials, tools, and techniques. • Use glue and tape to combine/join materials for a purpose. • Use scissors, paint brushes and other tools safely and effectively. • Use increasing knowledge and understanding of tools and materials to explore their interests. 	<ul style="list-style-type: none"> • Use appropriate vocabulary to describe their model/creation. • Share their creations, explaining the process they have used. • Begin to use an evaluative tone when talking about their creations. • Return to and build on previous learning, refining ideas and developing their ability to represent them. • Respond imaginatively to art works and objects. • Discuss problems and how they might be solved.
Breadth of Study			
Cooking and nutrition	Textiles	Mechanisms	Structures
<ul style="list-style-type: none"> • Know how to prepare themselves – washing hands, wearing an apron. • Follow instructions to make a dish. • Begin to describe the texture of foods. • Mix/stir to loosely combine ingredients. • Spoon ingredients between containers. • Use cutters. • Think of interesting ways of decorating the food that they have made. 	<ul style="list-style-type: none"> • Describe the texture of different materials. • Begin to describe the properties of materials. • Complete simple threading and weaving activities to develop fine motor skills. • Experiment with creating texture. • Know that different materials can be combined to make effects. 	<ul style="list-style-type: none"> • Explore pop up / moving books. • Know that moving toys and vehicles need an action from us to make them work. • Know that a push or pull action can make a moving toy or vehicle speed up/slow down/change direction. • Explore different ways of moving vehicles and toys such as using magnets, wind up toys, pulling back friction toys etc. • Explore how to make their creations move using different tools and materials. 	<ul style="list-style-type: none"> • Make a structure/model using different materials. • Talk about their creation and how they made it. • Talk with others about a model they have made. • Select appropriate resources and tools for their building projects • Construct with a purpose in mind e.g. make a bridge for the Billy goats to cross, or make a run for the marble to go from the table to the ground.
<p>Prior learning: In Nursery, children begun to:</p> <ul style="list-style-type: none"> • use various construction materials e.g. joining pieces, stacking vertically and horizontally, balancing, making enclosures and creating spaces • use available resources to create props • notice what other adults and children do, mirroring what is observed and adding their own variations • develop new skills and techniques • use tools for a purpose 			

<ul style="list-style-type: none"> •talk about the differences between materials •make healthy choices 					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Main: Introduction to Structures: Junk modelling Construction kits</p> <p>Exploring materials and tools Explaining how they made their creation Making for a Purpose</p> 	<p>Main: Chairs for The Three Bears</p>  <p>Additional experiences: Use different textures and materials to make houses for the three little pigs</p>  <p>Christmas baking</p> 	<p>Main: Making things move (using split pins)</p> <p>Teach children different techniques for joining materials, such as how to use adhesive tape and different types of glue.</p> <p>Shadow puppets</p> 	<p>Main: Easter baking</p>  <p>Additional experiences:</p> <p>Making armour</p>  <p>STEM WEEK: Bridges for the Three Billy Goats</p> 	<p>Main: Design and make rockets, planets and aliens!</p> <p>Design and make objects they may need in space, thinking about form and function.</p> 	<p>Main: Explore what makes a good sun hat</p>  <p>Additional experiences: Exploring different vehicles and how they move</p>  <p>Junk modelling light houses, bridges boats and transport</p>

EYFS END POINT

- Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function (EAD/CM)
- Children handle equipment and tools effectively, including pencils for writing (PD)
- 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 (EAD/BI)

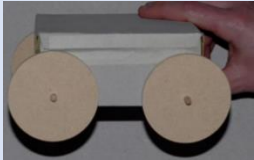


Year 1 Skills Progression			
Year Year 1	Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products.	Evaluating processes and products
	<ul style="list-style-type: none"> •Design products for a particular user based on simple design criteria. •Generate initial ideas and design criteria through own experiences. •Develop and communicate these ideas through talk and drawings. 	<ul style="list-style-type: none"> •Select and use tools and other equipment from a given selection. •Use tools and equipment to perform a job, such as to cut, shape, join and finish. •Select from a range of ingredients and materials to create the chosen product. 	<ul style="list-style-type: none"> • Describe how something works. • Ask questions about existing products, e.g. about the purpose and user of the product. • Decide whether they like/dislike the product and why. • Talk about their own creations and model how they work, such as performing a short story to the class/group with their puppets. • Decide if they have met the design criteria. • Begin to review ideas based on feedback from others.
Breadth of Study			
Cooking and nutrition	Textiles	Mechanisms	Structures
<ul style="list-style-type: none"> •Wash their hands and make sure that surfaces are clean before cooking/baking. •Cut food safely and neatly using simple tools. •Measure using cups and spoons. •Describe the texture of foods using new vocabulary. •Talk about what they eat at home and begin to understand what a healthy diet is. •Use their knowledge of a healthy diet to prepare their own fruit kebab/ice lolly. •Understand where fruit and vegetables come from, which fruits are grown in the UK and which are grown in warmer climates. 	<ul style="list-style-type: none"> •Know what the purpose of a puppet is. •Understand how a puppet is made. •Know that felt is a good material to make a hand puppet with as it is soft and easy to move/handle. •Understand that you use a template to create two identical shapes. •With support, know to thread a needle with cotton. •With support, understand how to join fabrics using the techniques of running stitch, gluing. •Know what the seam is. •Explore some finishing techniques, such as decorating using buttons, beads and ribbons. 	<ul style="list-style-type: none"> •Know that levers and sliders are a form of a mechanism, and that they are used to make things move in different directions. • Know that we use levers and sliders in books and pictures to bring it to life/to tell the story. Share examples. •Draw simple products to show how they work using directional arrows. •Know how to use a piece of card and a split pin to create a simple lever or slider. •Know what a 'pivot' is – a pin which makes things turn around from a fixed spot, like a seesaw. •Know that levers and sliders can make things go in a left, right, up, down direction. 	<p>Although not explicitly covered in a DT project in Year 1, continue to allow children to explore structures using construction materials.</p> <ul style="list-style-type: none"> •Make a structure or model using different materials. •Explore how to make their model stronger, stiffer and more stable. •Talk with their peers and adults about how they want to construct their product. •Select appropriate resources and tools. •Make simple plans before making objects, e.g. drawings, arranging pieces of construction before building.
Prior learning: Cooking and nutrition <ul style="list-style-type: none"> •The importance of washing hands and putting on an apron before cooking/baking 			

<ul style="list-style-type: none"> •Beginning to describe the texture of food •That we can follow instructions to make a dish/bake something <p>Textiles</p> <ul style="list-style-type: none"> •Telling stories using puppets •Experiment with creating texture •Describing the texture of different materials •Joining materials together using tape and glue •Using scissors safely and effectively <p>Mechanisms</p> <ul style="list-style-type: none"> •Exploring pop up/moving books •Vehicles and moving toys – knowing how they move (with a force) •Making structures and models with a purpose in mind 					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<p>Textiles – Templates and Joining 1</p> <p>Design, make and evaluate a hand puppet for a child to retell a traditional tale</p>  <p>Designer to study: Jim Henson – Sesame Street, The Muppets, Fraggle Rock</p>		<p>Mechanisms – Levers and Sliders</p> <p>Design, make and evaluate a moving picture which can be used in a story book about our project</p>  <p>Designer to study: Jane Wolfe (author) of pull the lever books</p>		<p>Cooking and Nutrition</p> <p>Design, make and evaluate a healthy ice lolly to keep guests cool at the Summer Fayre</p>  <p>Designer to study: Jamie Oliver – healthy lollipops recipe</p>

Year 2 Skills Progression			
Year Year 2	Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products.	Evaluating processes and products
	<ul style="list-style-type: none"> •Generate ideas based on simple design criteria and their own experiences, explaining what they could make. •Develop, model, and communicate their ideas through talking, mock-ups and drawings. 	<ul style="list-style-type: none"> •Join materials/components together in different ways. •Select and use tools, materials, skills, and techniques to perform practical tasks and explain their choices. •Plan by suggesting what to do next. •Measure, mark out, cut and shape materials and use simple finishing techniques. 	<ul style="list-style-type: none"> •Evaluate existing products against their design criteria. •Talk about their own creations and model how they work. •Evaluate their own product by discussing how well it works, considering purpose and intended user. •Suggest how they would improve their product to make it better. •Take on a kind, evaluative tone when speaking about other children's products.
Breadth of Study			
Cooking and nutrition	Textiles	Mechanisms	Structures
Although not explicitly covered in a DT project in Year 2, continue to teach children good food hygiene practices and healthy diet choices.	<ul style="list-style-type: none"> •Know what the purpose of a keyring is and who would use one. •Understand how a keyring is made. •Know which materials are best for a keyring and why (whether you want it to be plush or hard plastic). •Understand that you use a template to create two identical shapes. •Show how to thread a needle with cotton. •Understand and explain how to join fabrics using running stitch, gluing. •Know and explain what the seam is. •Explore some finishing techniques; decorating using fabric pens, buttons, beads and ribbons. 	<ul style="list-style-type: none"> •Know how a vehicle moves. •Know how many wheels different modes of transport have. •Know how to create a simple version of a wheel mechanism, using an axle, wheel and axle holder. •Knows where the wheel mechanism fits in the vehicle body. •Knows how to fix a broken wheel through problem solving. •Can design a vehicle of their choice using wheels and axles as main components. 	<ul style="list-style-type: none"> •Know the purpose of a hut, a beach hut specifically. •Know what huts are usually made from. •Know why a beach hut is usually colourful. •Be able to name parts of a beach hut. •Be able to use different strengthening, scoring and joining techniques. •Know how to measure, saw, sand and join pieces of wood together. •Know that using triangular corners make a strong wooden frame. •Know that wooden frames can be joined together to make 3D box frames and structures. •Explore how to make their hut stronger.

•Know how to add a loop of thread or a badge hook.

Prior learning:
Mechanisms
 •Sliders and levers – introduction to mechanisms
 •Vehicles and moving toys – knowing how they move (with a force)
Structures
 •Make a structure or model using different materials.
 •Explore how to make their model stronger.
 •Talk with their peers and adults about how they want to construct their product.
 •Select appropriate resources and tools.
 •Make simple plans before making objects, e.g. drawings, arranging pieces of construction before building.
Textiles
 •Understand that you use a template to create two identical shapes.
 •Know how to thread a needle with cotton.
 •Understand how to join fabrics using the techniques of running stitch, gluing.
 •Know what the seam is.
 •Explore some finishing techniques, such as decorating using buttons, beads and ribbons.

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<p>Mechanisms – Wheels and Axels</p> <p>Design, make and evaluate a moving vehicle to take small world people from place to place</p>  <p>Designer to study: Chris Bangle – BMW, Mini, Rolls-Royce</p>		<p>Structures - Freestanding</p> <p>Design, make and evaluate a beach hut for a family of 4 to go and rest in at the weekend</p>  <p>Designer to study: Benjamin Beale 'Bathing Machine'</p>		<p>Textiles – Templates and Joining 2</p> <p>Design, make and evaluate a keyring for a family member to help them to locate their keys in their bag.</p>  <p>Designer to study: Samuel Harrison – Inventor of the keyring/keychain</p>

KS1 END POINT

Designing:

- Children can use their own experiences and knowledge of existing products to design products that have a purpose and an intended user.
- Children explain how their products will look and work, and use mock-ups and templates to test their ideas.

Making:

- Children can follow a simple plan or recipe with support.
- Children have begun to select from a range of tools and equipment, such as scissors, graters, and use these safely.
- Children can select appropriate textiles, materials and components according to their characteristics.
- Children can assemble, join and combine materials, components and ingredients, as well as manipulating (cut, shape and join) fabrics.
- Children can use a basic running stitch.

Evaluating:

- Children can explain positives and things to improve for existing products.
- They explore what materials products are made from.
- As they work, children start to identify strengths and possible changes they might make to refine their existing design.
- Children evaluate their products and ideas against their simple design criteria.




Technical Knowledge:

- Children build simple structures, exploring how they can be made stronger, stiffer and more stable.
- Children talk about and start to understand the simple working characteristics of materials and components.
- Children explore and create products using mechanisms, such as levers, sliders and wheels.
- Children use the basic principles of a healthy and varied diet to prepare dishes. They understand where food comes from.

Year 3 Skills Progression					
Year Year 3	Developing, planning and communicating ideas		Working with tools, equipment, materials and components to make quality products.		Evaluating processes and products
	<ul style="list-style-type: none"> •Generate ideas through discussion and looking at existing products. •Design an appealing, functional product fit for purpose and user. •Put together a step-by-step plan which details the order of making and what equipment and tools they will need. •Describe their design verbally and using an accurately labelled sketch. 		<ul style="list-style-type: none"> •Use their plan throughout the main stages of making. •Choose suitable materials, utensils, tools, and equipment. •Use equipment and tools accurately and safely. •Measure, mark out, cut, assemble and join materials with more accuracy. •Select from and use finishing techniques for the product that they are creating. 		<ul style="list-style-type: none"> •Evaluate existing products in order to develop a design criteria as a class. •Evaluate their own product against the design criteria, considering intended purpose and intended user. •Explain what they changed to make their design better. •Analyse existing and own products using deeper questioning and considering the views of others.
Breadth of Study					
Cooking and nutrition	Textiles	Mechanical Systems	Structures	Electrical Systems	
<ul style="list-style-type: none"> •Know how to complete a taste test/tally chart to gather information. •Know the components of a sandwich – bread choice, spread, filling, appearance/shape. •Learn about the different food groups and can place the ingredients in their group. •Understand where the ingredients come from. •Know that sandwiches can form part of a healthy diet with a balance of foods. •Practice personal hygiene. •Practice healthy food preparation and storage, using a fridge, wrapping a sandwich once it's made, different chopping boards etc. •Be able to use two spoons to transfer ingredients with minimal spillage. •Use measuring spoons, jugs, scales (digital) to obtain accuracy. 		<ul style="list-style-type: none"> •Know that pneumatics is the use of pressurised air to create a motion. •Evaluate pre-existing pneumatics models. •Know that the input is the pressure. •Know that the output is the air that results in mechanical outcome. •Name some examples of pneumatics. •Know how to create a simple pneumatic mechanism using a syringe and a balloon. •Know how to create/use a hinged box. •Design and make a sea creature that can open its' mouth by at least 10cm with the use of pneumatics. •Know to check for airtight connections. •Know how much air pressure is needed to inflate the balloon to open the creatures mouth. 	<ul style="list-style-type: none"> •Know that a container is designed for specific purpose. •Know that the shape and size of a container will meet the needs of a product. •Know common features of a container (gift box) and which aspects of a container make it appealing. •Know which materials make the best containers. • Know how a container is constructed. •Know some ways to keep the container stay together (tabs – of a particular size). •Know the importance of precise measuring when making containers. 		

<ul style="list-style-type: none"> •Grate, cut and snip foods with accuracy and safety. •Consider own and other people's opinions after making the sandwich, adapting where necessary to improve. 			<ul style="list-style-type: none"> •Know how to add a lid and decide whether they will add a lid. 	
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<p>Prior learning:</p> <p>Structures</p> <ul style="list-style-type: none"> •Naming parts of a structure. •Explore making structures stronger. •Use different strengthening, scoring and joining techniques. •Know how to measure and join pieces together. <p>Cooking and nutrition</p> <ul style="list-style-type: none"> •How to cut and slice fruit safely •How to consider preferences when making a healthy fruit ice lolly •The essentials of personal hygiene when cooking <p>Mechanical Systems</p> <ul style="list-style-type: none"> •Children know what a mechanical system is. •Children have experience in using levers, sliders, wheels and axels in KS1. 					
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Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<p>Mechanical Systems - Pneumatics</p>  <p>Design, make and evaluate a moving pneumatic toy to educate others about sea creatures</p> <p>Designer to study: Otto von Guericke – German Physicist</p>		<p>Structures – Shell Structures</p>  <p>Design, make and evaluate a gift box for a plant to give to your grandparent on their birthday</p> <p>Designer to study: Katie Loxton gift boxes</p>		<p>Cooking and nutrition</p> <p>Design, make and evaluate a healthy Greek sandwich for a family to enjoy at a picnic</p>  <p>Designer to study: Akis Petretzikis – First Greek winner of Masterchef</p>



Year 4 Skills Progression				
Year Year 4	Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products.	Evaluating processes and products	
	<ul style="list-style-type: none"> •Generate ideas to design products that are fit for purpose, aimed at individuals or groups. •Consider the ideas of others when designing. •Use annotated sketches and information, such as web-based recipes, to develop and communicate their ideas. •Produce a plan and explain it to others. •Suggest some improvements and say what went well. 	<ul style="list-style-type: none"> •Be aware of the need to produce something that will be liked and used by others. •Show a good level of expertise when using a range of tools and equipment. •Choose materials based on functional properties and aesthetics and explain their choices. •Select from and use components, according to function and properties. •Accurately cut, shape, join and finish with some accuracy. •Work at their product and persevere even if their original idea may not have worked. 	<ul style="list-style-type: none"> •Know how to check if their design is successful. •Identify how to improve products using own design criteria. •Ask 'how well' questions about existing and own products. •Consider how own and existing products meet the needs of the user. •Investigate and evaluate the ingredients, materials, and components that they have chosen to use. •Identify strengths and things to improve in their own work. 	
Breadth of Study				
Cooking and nutrition	Textiles	Mechanical Systems	Structures	Electrical Systems
<ul style="list-style-type: none"> •Know what healthy drinks can be made from (and which food group they fall under). •Sample a range of healthy drinks (smoothies, juices, flavoured water), discussing and evaluating (recording) the taste, texture, appearance and nutritional value. •Know that healthy cold drinks are usually garnished. •Know how organisations and brands usually promote/advertise their healthy drinks. 	<ul style="list-style-type: none"> •Examine a collection of simple textile containers, discussing features, user, size, whether they are fit for purpose. •Talk about the use of different fabrics and how easy they will be to stitch through. •Know that bags/wallets/purses are designed for different uses, users, purposes. •Know how to perform running stitch and back stitch and test both out, challenging themselves to other stitches if suitable. •To carry out market research. 			<ul style="list-style-type: none"> •Understand the need for different forms of lighting, in particular night lights. •Explore a range of products which incorporate lighting in some form. •Use ICT to research the features of a night light. •Know how to make a range of switches including push-to-make, toggle and rotating. Test the functionality of each to control a bulb. •Know how to make a simple circuit (links to Science) •Know the dangers of mains electricity and know how to work safely. •Know which materials will make a good night light and justify why they have chosen a specific material.

<ul style="list-style-type: none"> • Know that healthy cold drinks cost very little to make in bulk but can be sold at higher price to make profit. • Know how to use knives, forks, spoons, peelers, sieves, graters and whisks safely and effectively. • Measure out ingredients using scales/measuring jug/measuring spoons. • Know how to combine ingredients to change taste/texture/appearance. • Name their drink and make their own label; write their own ingredients list and brief description. 	<ul style="list-style-type: none"> • Know how to take seam allowances into consideration. • Know how to be environmental and economical with their material choices e.g. by choosing an old piece of clothing to use as material. • Know that we can use plastic to add flexibility. • Explore and choose fastenings such as zip, button, popper and Velcro and finishing techniques such as embroidery, applique, iron on applique, fabric paints. 			
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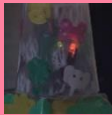
Prior learning:

Textiles

- joined fabrics in simple ways by gluing and stitching
- used simple patterns and templates for measuring and marking out
- evaluated their products against specific design criteria

Cooking and nutrition

- Practice personal hygiene and healthy food preparation and storage.
- To know how to complete a taste test/tally chart to gather information.
- To know the basis of a healthy diet and how to create a healthy product.
- To know about the different food groups and can place the ingredients in their group.

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<p>Textiles – 2D shape to 3D product</p> <p>Design, make and evaluate a purse/wallet for a child to hold ten coins safely</p> <p>(Under 'Bendy Bags' in units)</p> <p>Designer to study: Louis Vuitton</p> 		<p>Cooking/ nutrition</p> <p>Design, make and evaluate a healthy drink to keep children hydrated on Sports Day</p>  <p>Designer to study: Innocent Smoothies</p>		<p>Electrical Systems – Simple switches</p> <p>Design, make and evaluate a night light to provide comfort to a toddler through the night</p>  <p>Designer to study: Abe Donsky from Connecticut – Inventor of the night light</p>

Year 5 Skills Progression					
Year Year 5	Developing, planning and communicating ideas		Working with tools, equipment, materials and components to make quality products.		Evaluating processes and products
	<ul style="list-style-type: none"> •Come up with a range of their own ideas after they have collected information. •Take the user's view into account when designing. •Discuss their ideas with peers to develop a design brief and criteria. •Design purposeful, functional and appealing products for the intended user that are fit for purpose. • Communicate their design ideas through discussion, annotated drawings, exploded drawings and drawing from different views (and CAD where appropriate). •Produce a detailed step-by-step plan and equipment lists to support with the making process. 		<ul style="list-style-type: none"> •Explain why the finished product is going to be of good quality. •Explain how the product will appeal to the audience. •Use a range of tools and equipment with expertise. •Persevere through difficult stages of the making process. •Precisely measure for holes and joins. • Give reasons as to why they are using specific materials, tools and techniques. •Suggest some alternative plans. 		<ul style="list-style-type: none"> •Keep checking that the design is the best that it can be and adjust to improve as they go along. •Use other's views to develop improvements in their own product. •Evaluate appearance and function against the design criteria. •Evaluate whether the design and manufacture of their product is fit for purpose. •Compare the final product to the original design specification.
Breadth of Study					
Cooking and nutrition	Textiles	Mechanical Systems	Structures	Electrical Systems	
<ul style="list-style-type: none"> •Work with cleanliness and safety in mind. •Know the usual ingredients to make bread (and gluten free bread). •Be able to name a variety of bread products from a range of different cultures. •Know that breads can be different shapes and different colours. •Know that different breads are used for different things. •Know that some breads are healthier than others. •Explain the purpose of yeast. 	<ul style="list-style-type: none"> •Know that bags have different uses, users and purposes. • Know the simple component parts of a bag (through disassembly). • Discuss suitability in terms of appearance, function, comfort, cost and safety. •Take specific seam allowances into consideration. •Be able to pin the pattern to the fabric before cutting – minimal wastage in mind. 	<ul style="list-style-type: none"> •Know that gears and pulleys are a type of mechanism and know what a gear is. •Name some uses of gears. •Know and investigate how a single gear works and a train of gears work. •Name the follower, the driver and the amount of teeth the gear has. •Be able to justify choices – why would a certain combination make a faster vehicle than others? •Know what a pulley is and how it works. 			

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<ul style="list-style-type: none"> •Be able to adapt basic recipes by adding/substituting. •Use the zesting part of a grater to add flavour. •Know that bread can be made differently to suit different dietary req. •Use different cooking and shaping methods. •Know how to knead bread. <p>Paula:</p> <ul style="list-style-type: none"> •Know which vegetables grow above ground and below. •List foods for each season. •Know what 'free range' is. 	<ul style="list-style-type: none"> • Know how to stitch right sides together using stitch of their own choosing, to snip curved edges, to tack wadding to fabric. • Trial different techniques for adding colour, pattern and texture to the fabric e.g. <i>embroidery, simple appliqué, use of sequins, use of fabric paints.</i> •Choose from a variety of fastenings e.g. <i>zips, press studs, drawstrings, buckles, buttons etc.</i> 	<ul style="list-style-type: none"> •Name the follower and driver of the pulley. •Choose appropriate materials to use to create shell of vehicle, considering user and purpose. 		
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Prior learning:

Mechanical Systems

- So far, children know about and have experience in the following mechanical systems: pneumatics, wheels and axels, levers and sliders.
- Children know that there is an input and output which results in a mechanical outcome.
- Children have experience with problem solving when using mechanical systems.

Textiles

- An awareness of different textile containers and the purpose/user of those containers.
- Experience of choosing a fabric which is suitable for their product, user and purpose and which materials are environmental and economical.
- The skill of running stitch and back stitch.
- Knowledge of seam allowances.
- Knowledge of how to add plastic to add flexibility to their product.
- Experience of using some finishing techniques.

Cooking and nutrition

- An awareness of basic food hygiene and using equipment safely
- Experience of investigating existing products to inform design ideas
- Experience of evaluating food products according to appearance, texture, and taste
- Weighing and measuring skills
- An awareness of different healthy foods and drinks and how to ensure a healthy balanced diet.
- Knowledge about the different food groups.

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<p align="center">Mechanical Systems</p> <p align="center">Design and make a motorised moon vehicle to transport an astronaut across the moon</p>		<p align="center">Textiles with CAD (TinkerCad)</p> <p align="center">Design, make and evaluate a bag for _____ to ____.</p>		<p align="center">Cooking and nutrition</p> <p align="center">Bread – different types</p>



**Designer to study: Greek
Mechanics of Alexandria**

Eduardo San Juan

**Allow children to choose
user and purpose.**

'Designer bags' in units



Designer to study: Gucci

**Design, make and evaluate a new
bread for children to have with
their lunch.**



Designer to study: Paul Hollywood

Baking with Paula



Year 6 Skills Progression					
Year Year 6	Developing, planning and communicating ideas		Working with tools, equipment, materials and components to make quality products.		Evaluating processes and products
	<ul style="list-style-type: none"> • Use a range of information (using surveys, interviews and questionnaires) to inform their design. • Work within constraints of time, cost, and resources. • Share and clarify their ideas through discussion. • Write their own step-by-step plan to guide their making. • Follow and refine their plan if necessary • Justify their plan to someone else • Consider culture and society in designs 		<ul style="list-style-type: none"> • Use tools and materials precisely, using their knowledge of techniques and materials to refine their product. • Solve problems during the making process and change their way of working if needed. • Competently select from and use appropriate tools to accurately measure, mark, cut and assemble materials. • Consider use of product when selecting materials. • Securely connect electrical components to produce reliable, functional products. • Use finishing and decorating techniques suitable for the product they are designing and making. 		<ul style="list-style-type: none"> • Refer to the design specification for their own and existing products. • Continually modify the working features of their product to match the initial design specification. • Critically evaluate their products, identifying strengths and areas for development using knowledge of famous designs. • Carry out appropriate tests – is their product fit for purpose and does it meet all aspects of the design criteria? • Indicate how products are innovative.
Breadth of Study					
Cooking and nutrition	Textiles	Mechanical Systems	Structures	Electrical Systems	
<ul style="list-style-type: none"> • Weigh, mix, roll and knead ingredients with independence. • Know where cuts of meat come from. • Be able to talk about the eat well plate in detail, knowing that a healthy diet includes correct portions of fruit, vegetables, protein, carbohydrates, and fats. • Know that herbs can be used to add flavour or to garnish. • Know which food includes vitamins and minerals and why they are good for you. • Cut higher resistant foods with adult supervision. 		<ul style="list-style-type: none"> • Know where and how cams are used in the real world. • Know and explain how a cam is used to make a toy move. • Decide on purpose of their toy before designing and making. • Know how the cam and follower work together to create movement. • Know that different shapes cams produce different movements and choose which shape fits their product best. • Know what rotary and linear motion is. • Make models and prototypes to test their cam. 	<ul style="list-style-type: none"> • Know what a shelter is, give examples and explain how shelters are used. • Know what different shelters are usually made from and why. • Decide on specific design specification including how many children will need to fit under the shelter (small world people), whether it needs to be water/windproof and 	<ul style="list-style-type: none"> • Explore and investigate everyday appliances that use electricity. • Know how to make a simple circuit using batteries, wires, bulbs, buzzers, motors and switches. • Explore and develop electrical circuits by changing the components and making them better e.g making the light brighter, the buzzer louder. • Know what an alarm is and what the purpose of an alarm is. • Know how to use the switches in ordinary battery powered circuits. • Name different types of switches often used in alarm circuits and explain how they work. • Know how switches can be used with computer control technology. • Know how to use a computer control circuit using input switches and sensors. 	

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<ul style="list-style-type: none"> •Develop the skill of measuring ingredients with independence and accuracy, using both digital and analogue scales. •Ensure an equal amount of ingredient in each container by accurately spooning mixtures. 		<ul style="list-style-type: none"> •Develop techniques in cutting, shaping and joining to combine components. •Make ongoing adjustments as required to ensure that their toy works well. •Measure and mark accurately. 	<p>whether it needs to withstand any weight).</p> <ul style="list-style-type: none"> •Be able to suggest materials that would make good models of shelters. •Know how to test water resistance, wind protection, strength and durability and be able to draw their own conclusions. •Make their own decisions on materials, shapes, type of covering. •Know which 2D shapes make a rigid construction. •Know how to strengthen, stiffen and reinforce their structures. •Know of famous shelter designers and engineers. 		
<p>Prior learning:</p> <p>Electrical Systems</p> <ul style="list-style-type: none"> •Children are aware of the need for different forms of lighting. •Knowledge of how to make a range of switches including push-to-make, toggle and rotating. Test the functionality of each to control a bulb. •They how to make a simple circuit. •Children have been taught about the dangers of mains electricity and know how to work safely. •Children are aware which materials will make a good electrical product. and justify why they have chosen a specific material. •Children have some experience in controlling a simple device (bulb) using a sensor. <p>Structures</p> <ul style="list-style-type: none"> •Children have experience in creating their own structures, including shell structures and freestanding structures. •Children know that different structures are made for different purposes. •Children know some ways of strengthening structures, such as by using triangles / tabs. •Children have been taught how to accurately measure and how to use tools and resources safely. <p>Mechanisms</p> <ul style="list-style-type: none"> •Children know how movement can be created with levers and sliders, wheels and axels, pneumatics and gears and pulleys. •Children are aware of how simple mechanical systems work and how mechanical systems are used in everyday life. •Children know how to handle tools safely. •Children have experience in choosing materials for a specific purpose. 					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2

Mechanical Systems - Cams

Design, make and evaluate a moving toy for a child's entertainment.



Designer to study: Claus – German Clockmaker who invented a Jack in the Box

Structures – Frame structures

Design, make and evaluate a playground shelter to shelter ___ pupils from ___.



Designer to study: ESPO

Electrical Systems – Monitoring and Control

USE OF ICT

Design, make and evaluate an alarm circuit for the local bank to protect their safe.



Designer to study: Wilson Alarms

Cooking with Paula

KS2 END POINT

Designing:

- Children can use research to inform and develop detailed design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at a relevant target market.
- Children explain how their products have a clear purpose and indicate the design features of their product that will appeal to their intended user.
- Children explain, justify and demonstrate how their product works.

Making:

- Children can independently plan by suggesting what to do next, adapting as they go where necessary.
- Children confidently select from a range of components and equipment, explaining their choices.
- Children can select appropriate textiles, materials and components according to their functional and aesthetic qualities.
- Children can assemble, join, cut, shape, score and combine a range of materials with precision and accuracy.
- Children demonstrate how to measure, make a seam allowance, tape, pin, cut, shape and join fabrics with precision to make a complex product.
- Children join textiles using a greater variety of stitches.

Evaluating:


- Children complete detailed competitor analysis of other products on the market before designing and making their own.
- Children can critically evaluate the quality of design, manufacture and fitness for purpose of products as they design and make.
- Children evaluate their ideas and products against the original design criteria, making changes as needed.

Technical Knowledge:

- Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics in their products.
- Children understand and demonstrate that mechanical and electrical systems have an input, process and output.
- Children can explain that mechanical systems create movement and use mechanical systems in their products.
- Children apply their understanding of computing to program, monitor and control a product.


- Children have a deeper understanding of a healthy varied diet and can adapt, add to, substitute and personalise their own dishes.

Progression of vocabulary



Area of DT	EYFS	Year 1 Year 2 All of EYFS vocab plus:	Year 3 Year 4 All of Y1/2 vocab plus:	Year 5 Year 6 All of Y1-4 vocab plus:
<p>COOKING AND NUTRITION</p> 	<p>Ingredients: fruit and vegetable names, flour, sugar, eggs</p> <p>Sensory vocabulary: soft, juicy, crunchy, sweet, sour,</p> <p>Healthy diet: healthy diet, balanced,</p> <p>Method: bake, cook, mix</p>	<p>Ingredients: location grown, harvest</p> <p>Sensory vocabulary to describe fruits e.g. sticky, smooth, sharp, crisp, hard flesh, skin, seed, pip, core</p> <p>Healthy diet: choosing, ingredients</p> <p>Method: Chopping, slicing, peeling, cutting, squeezing, blending</p> <p>‘The claw’ and ‘the bridge’ chopping methods for keeping safe</p>	<p>Ingredients: name of products being used – type of bread, type of spread, type of filling, ingredients in healthy drinks</p> <p>Sensory vocabulary: texture, taste, sweet, sour, hot, spicy, cool, creamy, thin, thick, lumpy, smooth, appearance, smell, preference, greasy, moist, fresh, savoury, edible</p> <p>Grown, reared, caught, frozen, tinned, processed, harvested</p> <p>Healthy diet: varied</p>	<p>Ingredients: yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, gluten, dairy, savoury, granary, soft white, wholemeal, sesame, poppy seed, chapatti, soda, pitta, flavoured, naan, croissant, granary, baguette.</p> <p>Sensory vocabulary: dry, moist, soft, crusty, light, crumbly, doughy, stale</p> <p>Allergy, intolerance</p> <p>Seasonality</p> <p>Method:</p>




				Utensils, combine, fold, knead, prove, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble.
<p>TEXTILES</p>	Tools, fabric, material	Joining, finishing, tools, fabrics, components, template, pattern pieces, mark out, join, decorate, finish, seam	Fabric, names of specific fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance	Wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, fastenings
<p>MECHANISMS AND MECHANICAL SYSTEMS</p>	Join, card, tape, paper, pull, push, up, down	Slider, lever, pivot, slot, bridge/guide, card, masking tape, paper, fastener, join, pull, push, up, down, straight, curve, forwards, backwards, vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism	Pneumatics, air, syringe, airtight, connections, air pressure, input, output, process	Pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, CAM, rotary, oscillating, reciprocating, spindle, driver, follower, ratio, transmit, axle, mechanical system, guide, spacer

<p>STRUCTURES</p>	<p>Cut, fold, join, fix</p>	<p>Structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder</p>	<p>Shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision.</p>	<p>Frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent</p>
<p>ELECTRICAL SYSTEMS</p>			<p>Series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device</p>	<p>Reed switch, toggle switch, push-to-make switch, push-to-break switch, light dependent resistor (LDR), tilt switch, light emitting diode (LED), bulb, bulb holder, battery, battery holder, USB cable, wire, insulator, conductor, crocodile clip control, program,</p>


				<p>system, input device, output device, series circuit, parallel circuit</p>
<p>Design and Technology vocabulary applicable to all areas of DT</p>	<p>Design, make,</p>	<p>User, purpose, evaluate, suitability</p>	<p>model, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces</p>	<p>design criteria, annotate, design decisions, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype</p>



Progression of use of tools and equipment


Area of DT	EYFS	Year 1 Year 2 All of EYFS tools plus:	Year 3 Year 4 All of Y1/2 tools plus:	Year 5 Year 6 All of Y1-4 tools plus:
<p>COOKING AND NUTRITION</p> 	<p>Aprons Cups Mixing bowls Wooden spoon Whisk Cutters Rolling pins Cake cases Use a microwave with support</p>	<p>Safe knives Chopping board Spoons Ice lolly moulds Juicer/ whisk (adult support) Vegetable peeler (adult support) Kitchen scissors (adult support) Grater (adult support)</p>	<p>Knife, spoon, fork Weighing scales (digital) Measuring jugs Measuring spoons Blender/juicer/whisk (adult supervision) Vegetable peeler (adult supervision) Grater (adult supervision)</p>	<p>Different sized spoons Pastry brush Bread tins Baking trays Dinner knives Use an oven, hob, grill, kettle, toaster (adult support) Garlic press Weighing scales (analogue)</p>
<p>TEXTILES</p> 	<p>Glue Fabric Simple weaving and threading tools for exploration</p>	<p>Large eye needle Thread Scissors Decorative features e.g. buttons, beads Fabric pens Templates</p>	<p>Smaller eye needle Different coloured threads Larger range of decorative features Velcro Zips Buttons Fastening push pins Plastic</p>	<p>Fabric glue Pins Pin cushions Embroidery, simple appliqué, use of sequins, use of fabric paints. Larger variety of fastenings e.g. zips, press studs, drawstrings, buckles, buttons etc.</p>


<p>MECHANISMS AND MECHANICAL SYSTEMS</p> 	<p>Construction kits Building tools Cogs Wheels Moving toys Pop up books</p>	<p>Wheels Axles Levers Sliders Scissors Hole punches Different types of glue Different types of tape</p>	<p>Syringe Plastic tubing Balloons Rulers Burger boxes Egg boxes</p>	<p>Linkages Cams Pulleys Gears Electrical components, Selection of hand tools</p>
<p>STRUCTURES</p> 	<p>Construction kits Glue Tape Junk modelling Simple hand tools such as saws and hammers for exploration</p>	<p>More complex construction kits Selection of simple hand tools (saws) Bench hook</p>	<p>Card Rulers Different types of glue Different types of tape Templates</p>	<p>More complex hand tools Hole punches Screwdrivers Nails/screws</p>
<p>ELECTRICAL SYSTEMS</p> 			<p>Simple circuit components: wire, bulb, battery, switch, crocodile clips Battery holder Bulb holder Materials to make their own switches</p>	<p>More complex circuit components: resistor, LED, buzzer Insulating materials Conducting materials ICT USB cables</p>

Subject leader overview

Area of DT	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>COOKING AND NUTRITION</p> 	<p>BAKING</p> <ul style="list-style-type: none"> -Self-preparation -Following instructions -Describing texture -Mixing and stirring -Spoon ingredients -Using cutters -Decorating -Introduce healthy/unhealthy 	<p>HEALTHY FRUIT LOLLIES</p> <ul style="list-style-type: none"> -Preparing self and area -Cutting safely -Measuring texture -Describing texture in more detail -Talk about healthy diet -Understand how to make a healthy lolly -Know that fruits come from different countries and climates 	<p>Continue to talk about healthy diet and good food choices</p>	<p>GREEK SANDWICH</p> <ul style="list-style-type: none"> -Introduce research – taste test and tally -Components of a dish/product -Appearance and shape -Food groups -Know where some ingredients come from -Build on knowledge of healthy diet, explain how it fits -Use of equipment -Accuracy and safety -Opinions into consideration 	<p>HEALTHY DRINKS</p> <ul style="list-style-type: none"> -Know what a healthy drink is and what food groups -Sample -Garnish -Branding, costing etc -Profit margins -Measure with more accuracy -Introduction of more equipment – measuring jugs, spoons, graters, whisks. -Combine ingredients for desired texture and taste -Branding their own product 	<p>BREAD BAKING WITH PAULA</p> <ul style="list-style-type: none"> -Cleanliness and safety -Ingredients for allergies e.g. gluten -Cultures -Shape, colour, use, user -Purpose of yeast -Zesting -Kneading -Cooking methods -Shaping methods -Vegetables above and below ground -Seasonality -Free range 	<p>COOKING WITH PAULA</p> <ul style="list-style-type: none"> -Weigh, mix, roll, knead with independence -Cuts of meat -Eatwell plate -Herbs for garnishing and adding flavour -Vitamins and minerals -Cutting skills – higher resistant foods -Measuring with digital and analogue -Equal amounts of ingredient

<p>TEXTILES</p> 	<p>SHADOW PUPPETS AND SUN HATS</p> <p>Introduction to materials, user and purpose of textile products</p>	<p>HAND PUPPET</p> <p>Choose material to make suitable puppet, understand what a template is, thread needle and join fabrics using running stitch and glue, begin to finish Add seam</p>	<p>KEYRING</p> <p>Consolidating skills and knowledge taught in Y1 with the addition of more complex finishing techniques such as threading beads and buttons, adding a hook</p>		<p>PURSE OR WALLET</p> <p>Use of different fabrics and easiness of stitching through – suitability Running stitch and back stitch Seam allowances Economical choices Environmental choices Adding plastic for flexibility Fastener and finishing techniques</p>	<p>BAG</p> <p>Disassembly Suitability – appearance, function, comfort, cost, safety Pin and cut using a pattern Minimal wastage Snip curved edges Tack wadding More finishing techniques Fastenings – wider variety</p>	
<p>MECHANISMS AND MECHANICAL SYSTEMS</p> 	<p>INTRO TO MECHANISMS</p> <p>Pop up and moving books Moving toys Push and pull action Magnets Wind up toys Pulling back</p>	<p>SLIDERS AND LEVERS</p> <p>Explore sliders and levers in books/pictures etc. Make their own sliding picture. Directional arrows Pivot Up and down Left and right</p>	<p>WHEELS AND AXELS</p> <p>Explore wheels and axels Knows how a wheel and axel works Add wheel mechanism into vehicle Problem solve if issue arises</p>	<p>PNEUMATICS</p> <p>Explore pneumatics Know what the input and output is Evaluate existing products Know how to make a simple pneumatic mechanism Know how to create a hinged box Check for airtight connections Air pressure</p>		<p>PULLEYS AND GEARS</p> <p>Explore pulleys and gears Know how a single and train of gears work Explain uses Name the follower and driver Know why there are different amount of teeth Know what a pulley is and name the driver and follower</p>	<p>CAMS</p> <p>Explore use of CAMS Know how they are used and how they make toys move Know how the shape affects the movement Cam and follower Linear motion Prototypes to test Ongoing adjustments Measuring and marking</p>

<p>STRUCTURES</p> 	<p>INTRO TO STRUCTURES</p> <p>Construction kits Joining materials Cutting skills Using tools safely Junk modelling Exploring materials</p>		<p>FREESTANDING STRUCTURES BEACH HUTS</p> <p>Strengthening, scoring and joining Measure, saw, sand, join pieces of wood Explore strengthening – triangular corners Wooden frames</p>	<p>SHELL STRUCTURES PACKAGING</p> <p>Common features of a container Material – user and purpose Know how to construct a container Be able to add tabs Precise measuring Adding a lid</p>			<p>FRAME STRUCTURE – PLAYGROUND SHELTER</p> <p>Make own design spec Know users and purposes of different shelters Testing materials for water resistance, strength, wind resistance etc. Know which 2D shapes make a good frame. Strengthen, stiffen, reinforce. Suggest good materials.</p>

<p>ELECTRICAL SYSTEMS</p> 				<p>NIGHT LIGHT</p> <p>Introduction to using circuits in products Range of switches to test functionality Research using ICT Know which materials are best for an electrical product Talk about user, purpose etc and decide which components to use</p>		<p>ALARM SYSTEM</p> <p>More complex circuits Changing components to test the effect it has Explain how different switches work Explain purpose of components Use of computer control technology Input switches and sensors</p>
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