

# Design and Technology Progression Map

## EYFS - the Early Learning Goals that link most closely to the DT National Curriculum

### EYFS

#### Three and four year olds:

**Physical Development:** Use large-muscle movements to wave flags and streamers,

paint and make marks. Choose the right resources to carry out their own plan. Use one-handed tools and equipment, for example, making snips in paper with scissors. Use a comfortable grip with good control when holding pens and pencils.

**Expressive Arts and Design:** Explore different materials freely, in order to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures. Create closed shapes with continuous lines, and begin to use these shapes to represent objects. Draw with increasing complexity and detail, such as representing a face with a circle and including details. Use drawing to represent ideas like movement or loud noises. Show different emotions in their drawings and paintings, like happiness, sadness, fear, etc. Explore colour and colour mixing.

#### Reception:

**Physical Development:** Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor. Develop overall body-strength, balance, coordination and agility.

**Expressive Arts and Design:** Explore, use and refine a variety of artistic effects to express their ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills.

#### ELGs:

**Physical Development/Fine Motor Skills:** Hold a pencil effectively in preparation for fluent writing - using the tripod grip in almost all cases. Use a range of small tools, including scissors, paintbrushes and cutlery. Begin to show accuracy and care when drawing.

**Expressive Arts and Design/Creating with Materials:** Hold a pencil effectively in preparation for fluent writing - using the tripod grip in almost all cases.

- Use a range of small tools, including scissors, paintbrushes and cutlery. Begin to show accuracy and care when drawing
- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the process they have used.

### Key Stage 1: National Curriculum Expectations

#### **Pupils should be taught about:**

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example,

### Key Stage 2 : National Curriculum Expectations

#### **Pupils should be taught about:**

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home,

<p>the home and school, gardens and playgrounds, the local community, industry and the wider environment].</p> <p>When designing and making, pupils should be taught to:</p> <p><u>Design</u> 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> <p><u>Make</u> 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> <p><u>Evaluate</u> explore and evaluate a range of existing products evaluate their ideas and products against design criteria</p> <p><u>Technical knowledge</u> 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>	<p>school, leisure, culture, enterprise, industry and the wider environment].</p> <p>When designing and making, pupils should be taught to:</p> <p><u>Design</u> 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> <p><u>Make</u> 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> <p><u>Evaluate</u> 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> <p><u>Technical knowledge</u> 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>
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	Year 1 & 2	Year 3 & 4	Year 5 & 6
<p><b>Design</b></p>	<p><b>Mechanisms</b> <b>Cycle A: Christmas cards -levers</b> <b>Cycle B: Toy with a winding mechanism</b> Explaining how to adapt mechanisms, using bridges or guides to control the movement.</p>	<p><b>Mechanisms</b> <b>Designing a catapult</b> Developing design criteria from a design brief. Generating ideas using thumbnail sketches and exploded diagrams. Learning that different types of</p>	<p><b>Mechanisms</b> <b>Design a Mayan mask with moving parts</b> Design a mask which uses a mixture of structures and mechanisms. Naming each mechanism, input and output accurately. Storyboarding ideas for a book.</p>

	<p>Designing a moving story book for a given audience.          Designing a vehicle that includes wheels, axles and axle holders, which will allow the wheels to move,          Creating clearly labelled drawings which illustrate movement.          Creating a class design criteria for a moving image.          Selecting a suitable linkage system to produce the desired motions.          Selecting appropriate materials based on their properties.</p> <p><b>Structures:</b>  <b>Cycle A: Moving storybooks</b>  <b>Cycle A: Natural sculptures (Andy Goldsworthy)</b></p> <p>Learning the importance of a clear design criteria, including individual preferences and requirements in a design.          Generating and communicating ideas using sketching and modelling          Learning about different types of structures, found in the natural world and in everyday objects.</p> <p><b>Cooking and Nutrition:</b>  <b>Cycle A: Fruit kebabs</b>  <b>Cycle B: Party planning-sandwiches</b></p> <p>Designing a healthy snack based on a food combination which works well together.</p> <p><b>Textiles:</b></p>	<p>drawings are used in design to explain ideas clearly.          Designing a shape that reduces air resistance.          Drawing a net to create a structure from.          Choosing shapes that increase or decrease speed as a result of air resistance.          Personalising a design.</p> <p><b>Structures:</b>  <b>Cycle A: Food packaging</b></p> <p>Designing with key features to appeal to a specific person/ purpose.          Drawing and labelling a design using 2D shapes, labelling: the 3D shapes that will create the features - materials and colours.          Designing a stable structure that is aesthetically pleasing and selecting materials to create a desired effect.          Building frame structures designed to support weight.</p> <p><b>Electrical systems:</b>  <b>Electric game</b>          Designing a game that works using static electricity, including the instructions for playing the game.          Identifying a design criterion and a target audience.</p>	<p>After experimenting with a range of cams, creating a design for an automata toy based on a choice of cam to create a desired movement.          Understanding how linkages change the direction of a force.          Making things move at the same time.</p> <p><b>Structures</b>  <b>Cycle A: Bridges</b>  <b>Cycle A: wire and clay 3D form</b></p> <p>Designing a stable structure that is able to support weight.          Creating frame structure with focus on triangulation.          Designing a project featuring a variety of different structures, giving careful consideration to how the structures will be used, considering effective and ineffective designs.</p> <p><b>Electrical systems - Motor vehicles</b></p> <p>Designing an electronic project with a simple electrical control circuit          Creating a labelled design showing positive and negative parts in relation to the LED and the battery.          Designing a project and identifying and naming the components required          Drawing a design from three different perspectives          Generating ideas through sketching and discussion.          Modelling ideas through prototypes.</p>
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	<p><b>Cycle A: Pin cushion</b> <b>Cycle B: Sewing royal purses</b></p> <p>Using a template to create a design for a purse</p>	<p>Designing a torch, considering the target audience and creating both design and success criterion focusing on features of individual design ideas</p> <p><b>Cooking and Nutrition:</b> <b>Cycle A: Christmas cooking</b> <b>Cycle B: Falafels (Egyptian cookery)</b></p> <p>Creating a healthy and nutritious recipe using seasonal ingredients, considering the taste, texture, smell, and appearance of the dish. Designing a snack within a given budget, drawing upon previous taste testing.</p> <p><b>Textiles:</b> <b>Cycle B: Embroidery bookmarks (Easter)</b></p> <p>Designing and making a template from an existing cushion and applying individual design criteria. Writing design criteria for a product, articulating decisions made Designing a personalised Book sleeve</p>	<p><b>Cooking and Nutrition:</b> <b>Cycle A: Greek cooking</b> <b>Cycle B: Fair Trade cooking</b></p> <p>Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute, or add additional ingredients Writing an amended method for a recipe to incorporate the relevant changes to ingredients Designing appealing packaging to reflect a recipe. Writing a recipe, explaining the key steps, method, and ingredients Including facts and drawings from research undertaken.</p> <p><b>Textiles</b> <b>Cycle B: Mary Quant graphic motif</b> <b>Cycle B: Embroidered Tudor symbols</b></p> <p>Writing design criteria for a product, articulating decisions made. Designing a personalised Book sleeve.</p>
<p><b>Make</b></p>	<p><b>Mechanisms:</b> <b>Cycle A: Christmas cards -levers</b> <b>Cycle B: Toy with a winding mechanism</b></p> <p>Following a design to create moving models that use levers and sliders</p>	<p><b>Mechanisms:</b> <b>Designing a catapult</b></p> <p>Making linkages using card for levers and split pins for pivots Experimenting with linkages adjusting the widths, lengths, and thicknesses of card used.</p>	<p><b>Mechanisms:</b> <b>Cycle B: Design a Mayan mask with moving parts</b></p> <p>Making mechanisms and/or structures using sliders, pivots and folds to produce movement Using layers and spacers to hide</p>

	<p>Adapting mechanisms  <b>Structures:</b>  <b>Cycle A: Moving storybooks</b>  <b>Cycle A: natural sculptures (Andy Goldsworthy)</b></p> <p>Making stable structures from card, tape and glue  Following instructions to cut and assemble the supporting structure of a windmill  Making functioning turbines and axles which are assembled into a main supporting structure  Making a structure according to design criteria  Creating joints and structures from paper/card and tape</p> <p><b>Cooking and Nutrition:</b>  <b>Cycle A: Fruit kebabs Cycle B: Party planning-sandwiches</b></p> <p>Chopping fruit and vegetables safely to make a smoothie  Identifying if a food is a fruit or a vegetable  Learning where and how fruits and vegetables grow  Slicing food safely using the bridge or claw grip  Constructing a wrap that meets a design brief</p> <p><b>Textiles:</b>  <b>Cycle A: Pin cushion</b></p>	<p>Cutting and assembling components neatly.  Selecting materials according to their characteristics  <b>Following a design brief</b>  <b>Creating a pneumatic system to create a desired motion</b>  <b>Building secure housing for a pneumatic system</b>  <b>Using syringes and balloons to create diverse types of pneumatic systems to make a functional and appealing pneumatic toy</b></p> <p>Selecting materials due to their functional and aesthetic characteristics  Manipulating materials to create different effects by cutting, creasing, folding, weaving  Measuring, marking, cutting and assembling with increasing accuracy,  Making a model based on a chosen design.</p> <p><b>Structures:</b>  <b>Cycle A: Food packaging</b></p> <p>Constructing a range of 3D geometric shapes using nets  Creating specific features for individual designs  Making facades from a range of recycled materials  Creating a range of different shaped frame structures  Making a variety of free standing frame structures of different shapes</p>	<p>the workings of mechanical parts for an aesthetically pleasing result.  Measuring, marking, and checking the accuracy of the jelutong and dowel pieces required  Measuring, marking, and cutting components accurately using a ruler and scissors  Assembling components accurately to make a stable frame  Understanding that for the frame to function effectively the components must be cut accurately and the joints of the frame secured at right angles  Selecting appropriate materials based on the materials being joined and the speed at which the glue needs to dry/set</p> <p><b>Structures:</b>  <b>Cycle A: Bridges</b>  <b>Cycle A: wire and clay 3D form</b></p> <p>Making a range of different shaped beam bridges  Using triangles to create truss bridges that span a given distance and supports a load  Building a wooden bridge structure Independently measuring and marking wood accurately  Selecting appropriate tools and equipment for tasks  Using the correct techniques to saws safely  Identifying where a structure needs reinforcement and using card corners for support</p>
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	<p><b>Cycle B: Sewing royal purses</b></p> <p>Cutting fabric neatly with scissors  Using joining methods to decorate a purse  Sequencing steps for construction  Selecting and cutting fabrics for sewing  Decorating a pouch using fabric glue or running stitch</p>	<p>and sizes  Selecting appropriate materials to build a strong structure and for the cladding  Reinforcing corners to strengthen a structure  Creating a design in accordance with a plan  Learning to create different textural effects with materials</p> <p><b>Electrical systems:</b></p> <p><b>Electric game</b></p> <p>Making an electrostatic game, referring to the design criteria</p> <p>Using a wider range of materials and equipment safely</p> <p>Using electrostatic energy to move objects in isolation as well as in part of a system</p> <p>Making a torch with a working electrical circuit and switch</p> <p>Using appropriate equipment to cut and attach materials</p> <p>Assembling a torch according to the design and success criteria</p> <p><b>Cooking and Nutrition:</b>  <b>Cycle A: Christmas cooking</b>  <b>Cycle B: Falafels (Egyptian cookery)</b></p> <p>Knowing how to prepare themselves and a workspace to cook safely in, learning the basic rules to avoid food contamination</p>	<p>Building a range of structures drawing upon new and prior knowledge of structures</p> <p>Measuring, marking, and cutting wood to create a range of structures</p> <p>Using a range of materials to reinforce and add decoration to structures</p> <p><b>Electrical Systems: Motor vehicles</b></p> <p>Making a working circuit</p> <p>Creating an electronics vehicle, referring to a design criteria</p> <p>Mapping out where different components of the circuit will go</p> <p>Making electromagnetic motors and tweaking the motor to improve its function</p> <p>Constructing a stable base for an electric vehicle</p> <p>Accurately cutting, folding, and assembling a net</p> <p>Decorating the base of the vehicle to a high-quality finish</p> <p>Making and testing a circuit Incorporating a circuit into a base</p> <p><b>Cooking and Nutrition:</b>  <b>Cycle A: Greek cooking</b>  <b>Cycle B: Fair Trade cooking</b></p> <p>Cutting and preparing vegetables safely</p> <p>Using equipment safely, including knives, hot pans and hobs</p> <p>Knowing how to avoid cross- contamination</p> <p>Following a step-by-step method carefully to make a</p>
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		<p>Following the instructions within a recipe</p> <p>Following a baking recipe</p> <p>Cooking safely, following basic hygiene rules</p> <p>Adapting a recipe</p> <p><b>Textiles:</b>  <b>Cycle B: Embroidery bookmarks (Easter)</b></p> <p>Following design criteria to create a cushion</p> <p>Selecting and cutting fabrics with ease using fabric scissors</p> <p>Sewing cross stitch to join fabric</p> <p>Decorating fabric using appliqué</p> <p>Completing design ideas with stuffing and sewing the edges</p> <p>Making and testing a paper template with accuracy and in keeping with the design criteria</p> <p>Measuring, marking, and cutting fabric using a paper template</p> <p>Selecting a stitch style to join fabric, working neatly sewing small, neat stitches</p> <p>Incorporating fastening to a design</p>	<p>recipe</p> <p>Following a recipe, including using the correct quantities of each ingredient</p> <p>Adapting a recipe based on research</p> <p>Working to a given timescale</p> <p>Working safely and hygienically with independence</p> <p><b>Textiles:</b>  <b>Cycle B: Mary Quant graphic motif</b>  <b>Cycle B: Embroidered Tudor symbols</b></p> <p>Measuring, marking and cutting fabric accurately and independently</p> <p>Creating strong and secure blanket stitches when joining fabric</p> <p>Using applique to attach pieces of fabric decoration</p> <p>Using template</p> <p>pinning panels onto fabric</p> <p>Marking and cutting fabric accurately, in accordance with a design</p> <p>Sewing a strong running stitch, making small, neat stitches and following the edge</p> <p>Tying strong knots</p> <p>Decorating by attaching objects using thread and adding a secure fastening</p>
<b>Evaluate</b>	<p><b>Mechanisms:</b>  <b>Cycle A: Christmas cards -levers</b>  <b>Cycle B: Toy with a winding mechanism</b></p>	<p><b>Mechanisms:</b>  <b>Designing a catapult</b>  Testing and modifying the outcome,</p>	<p><b>Mechanisms:</b>  <b>Cycle B: Design a Mayan mask with moving parts</b>  Suggesting points for improvement</p>

	<p>Reviewing the success of a product by testing it with its intended audience</p> <p>Testing mechanisms, identifying what stops wheels from turning, knowing</p> <p>That a wheel needs an axle to move</p> <p>Using peer feedback to modify a final design</p> <p>Evaluating different designs by comparing them</p> <p>Testing and adapting a design</p> <p><b>Structures:</b>  <b>Cycle A: Moving storybooks</b>  <b>Cycle A: natural sculptures (Andy Goldsworthy)</b></p> <p>Creating joints and structures from paper/card and tape according to a design criteria</p> <p>Comparing the stability of different shapes</p> <p>Testing the strength of own structures</p> <p>Identifying the weakest part of a structure</p> <p>Evaluating the strength, stiffness, and stability of own structure</p> <p><b>Cooking and nutrition:</b>  <b>Cycle A: Fruit kebabs</b>  <b>Cycle B: Party planning-sandwiches</b></p> <p>Tasting and evaluating different food combinations</p> <p>Describing appearance, smell, and taste</p>	<p>suggesting improvements</p> <p>Evaluating the speed of a final product based on the effect of shape on speed and the accuracy of workmanship on performance</p> <p><b>Structures:</b>  <b>Cycle A: Food packaging</b></p> <p>Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison, to the original design</p> <p>Suggesting points for modification of the individual designs</p> <p>Describing what characteristics of a design and construction made it the most effective</p> <p>Considering effective and ineffective designs</p> <p><b>Electrical Systems: Electric games</b> Learning to give constructive criticism on own work and the work of others</p> <p>Testing the success of a product against the original design criteria and justifying opinions</p> <p>Testing and evaluating the success of a final product and taking inspiration from the work of peers</p> <p><b>Cooking and Nutrition:</b>  <b>Cycle A: Christmas cooking</b>  <b>Cycle B: Falafels (Egyptian cookery)</b></p> <p>Establishing and using design criteria to help test and review dishes</p> <p>Suggesting points for improvement</p> <p>Evaluating a recipe, considering taste, smell, texture, and appearance</p> <p>Describing the impact of the budget on the selection of ingredients</p>	<p>Applying points of improvements</p> <p>Describing changes they would make/do if they were to do the project again</p> <p><b>Structures:</b>  <b>Cycle A: Bridges</b>  <b>Cycle A: wire and clay 3D form</b></p> <p>Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary</p> <p>Suggesting points for improvements for own bridges and those designed by others</p> <p><b>Electrical Systems: Motor vehicles</b></p> <p>Evaluating a completed product against the original design sheet and looking at modifications that could be made to improve the reliability or aesthetics of it or to incorporate another type of electronic device, eg: buzzer</p> <p><b>Cooking and nutrition:</b>  <b>Cycle A: Greek cooking</b>  <b>Cycle B: Fair Trade cooking</b></p> <p>Identify the nutritional differences between different products and recipes</p> <p>Identify and describe healthy benefits of food groups</p> <p>Evaluating a recipe, considering: taste, smell, texture and origin of the food group</p>
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	<p>Suggesting information to be included on packaging</p> <p>Describing the taste, texture and smell of fruit and vegetables</p> <p>Taste testing food combinations and final products</p> <p>Describing the information that should be included on a label</p> <p>Evaluating which grip was most effective</p> <p><b>Textiles:</b>  <b>Cycle A: Pin cushion</b>  <b>Cycle B: Sewing royal purses</b></p> <p>Evaluating the quality of the stitching on others' work</p> <p>Discussing as a class, the success of their stitching against the success criteria  Identifying aspects of their peers' work that they particularly like and why</p>	<p>Evaluating and comparing a range of products  Suggesting modifications</p> <p><b>Textiles:</b>  <b>Cycle B: Embroidery bookmarks (Easter)</b></p> <p>Evaluating a product and thinking of other ways in which to create related items  Deciding how many of the criteria should be met for the product to be considered successful  Suggesting modifications for improvement</p>	<p>Taste testing and scoring final products</p> <p>Suggesting and writing up points of improvements in productions</p> <p>Evaluating health and safety in production to minimise cross contamination</p> <p><b>Textiles:</b>  <b>Cycle B: Mary Quant graphic motif</b>  <b>Cycle B: Embroidered Tudor symbols</b></p> <p>Evaluating work continually as it is created and suggest changes and improvements</p>
<p><b>Technical Knowledge</b></p>	<p><b>Mechanisms:</b>  <b>Cycle A: Christmas cards -levers</b>  <b>Cycle B: Toy with a winding mechanism</b></p> <p>Learning that levers and sliders are mechanisms and can make things move</p> <p>Identifying whether a mechanism is a lever or slider and determining what movement the mechanism will make</p> <p>Using the vocabulary: up, down, left, right, vertical and horizontal to</p>	<p><b>Mechanisms</b>  <b>Designing a catapult</b></p> <p>Learning that mechanisms are a system of parts that work together to create motion</p> <p>Learning that products change and evolve over time</p> <p>Learning that all moving things have kinetic energy</p> <p>Understanding that kinetic energy is the energy that something (object person) has by being in</p>	<p><b>Mechanisms:</b>  <b>Cycle B: Design a Mayan mask with moving parts</b></p> <p>Knowing that an input is the motion used to start a mechanism</p> <p>Knowing that output is the motion that happens because of starting the input</p> <p>Knowing that mechanisms control movement</p> <p>Describing mechanisms that can be used to change one kind of motion into another</p>

	<p>describe movement</p> <p>Identifying what mechanism makes a toy or vehicle roll forwards</p> <p>Learning that for a wheel to move it must be attached to an axle</p> <p>Learning that mechanisms are a collection of moving parts that work together in a machine</p> <p>Learning that there is an input and output in a mechanism Identifying mechanisms in everyday objects</p> <p>Learning that a lever is something that turns on a pivot</p> <p>Learning that a linkage is a system of levers that are connected by pivots</p> <p>Exploring wheel mechanisms Learning how axels help wheels to move a vehicle</p> <p><b>Structures:</b>  <b>Cycle A: Moving storybooks</b>  <b>Cycle A: natural sculptures (Andy Goldsworthy)</b></p> <p>Describing the purpose of structures, including windmills</p> <p>Learning how to turn 2D nets into 3D structures</p> <p>Learning that the shape of materials can be changed to improve the strength and stiffness of structures</p>	<p>motion</p> <p><b>Structures:</b>  <b>Cycle A: Food packaging</b></p> <p>Identifying suitable materials to be selected and used, considering weight, compression, and tension.</p> <p>Extending the knowledge of wide and flat based objects are more stable</p> <p>Understanding the terminology of strut, tie, span, and beam.</p> <p>Understanding the difference between frame and shell structure</p> <p>Building on prior knowledge of net structures and broadening knowledge of frame structures</p> <p>Learning that architects consider light, shadow and patterns when designing</p> <p>Implementing frame and shell structure knowledge</p> <p>Considering effective and ineffective designs</p> <p><b>Electrical systems:</b>  <b>Electrical games</b></p> <p>Understanding what static electricity is and how it moves objects through attraction or repulsion</p> <p>Generating static electricity independently</p> <p>Using static electricity to make objects move in a desired way</p> <p>Learning how electrical items work</p> <p>Identifying electrical products</p> <p>Learning what electrical conductors and</p>	<p>Using a bench hook saw safely and effectively</p> <p>Exploring cams, learning that different shaped cams produce different follower movements</p> <p>Exploring types of motions and direction of a motion</p> <p><b>Structures:</b>  <b>Cycle A: Bridges</b>  <b>Cycle A: wire and clay 3D form</b></p> <p>Exploring how to create a strong beam</p> <p>Identifying arch and beam bridges and understanding the terms: compression and tension</p> <p>Identifying stronger and weaker structures</p> <p>Finding different ways to reinforce structures</p> <p>Understanding how triangles can be used to reinforce bridges</p> <p>Articulating the difference between beam, arch, truss, and suspension bridges</p> <p>Knowing that structures can be strengthened by manipulating materials and shapes</p> <p>Identifying the shell structure in everyday life (cars, aeroplanes, tins, cans)</p> <p>Understanding man made and natural structures</p> <p><b>Electrical systems: Motor vehicles:</b>  <b>Torches</b></p> <p>Learning the key components used to create a functioning circuit</p> <p>Learning that graphite is a conductor and can be used as part of a circuit</p>
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	<p>Understanding that cylinders are a strong type of structure that are often used for windmills and lighthouses</p> <p>Understanding that windmill turbines use wind to turn and make the machines inside work</p> <p>Understanding that axles are used in structures and mechanisms to make parts turn in a circle</p> <p>Developing awareness of different structures for different purposes</p> <p>Identifying natural and man-made structures</p> <p>Identifying when a structure is more or less stable than another</p> <p>Knowing that shapes and structures with wide, flat bases or legs are the most stable</p> <p>Understanding that the shape of a structure affects its strength</p> <p>Using the vocabulary: strength, stiffness, and stability</p> <p>Knowing that materials can be manipulated to improve strength and stiffness</p> <p>Building a strong and stiff structure by folding paper</p> <p><b>Cooking and Nutrition:</b></p>	<p>insulators are</p> <p>Understanding that a battery contains stored electricity and can be used to power products</p> <p>Identifying the features of a torch</p> <p>Understanding how a torch works Articulating the positives and negatives about different torches</p> <p><b>Cooking and Nutrition:</b>  <b>Cycle A: Christmas cooking</b>  <b>Cycle B: Falafels (Egyptian cookery)</b></p> <p>Learning that climate affects food growth</p> <p>Working with cooking equipment safely and hygienically</p> <p>Learning that imported foods travel from far away and this can negatively impact the environment</p> <p>Learning that vegetables and fruit grow in certain seasons</p> <p>Learning that each fruit and vegetable gives us nutritional benefits</p> <p>Learning to use, store and clean a knife</p> <p>Understanding the impact of the cost and importance of budgeting while planning</p> <p>Understanding the environmental impact on future product and cost of production</p> <p><b>Textiles:</b>  <b>Cycle B: Embroidery bookmarks (Easter)</b></p> <p>Threading needles with greater independence</p>	<p>Learning the difference between series and parallel circuits</p> <p>Understanding that breaks in a circuit will stop it from working</p> <p>Understanding how electromagnetic motors work</p> <p>Learning that batteries contain acid, which can be dangerous if they leak</p> <p>Learning that when electricity enters a magnetic field it can make a motor</p> <p><b>Cooking and Nutrition:</b>  <b>Cycle A: Greek cooking</b>  <b>Cycle B: Fair Trade cooking</b></p> <p>Understanding where food comes from - learning that beef is from cattle and how beef is reared and processed</p> <p>Understanding what constitutes a balanced diet</p> <p>Learning to adapt a recipe to make it healthier</p> <p>Comparing two adapted recipes using a nutritional calculator and then identifying the healthier option</p> <p>Learning how to research a recipe by ingredient</p> <p>Recording the relevant ingredients and equipment needed for a recipe</p> <p>Understanding the combinations of food that will complement one another</p> <p>Understanding where food comes from, describing the process of 'Farm to Fork' for a given ingredient</p> <p><b>Textiles:</b></p>
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	<p><b>Cycle A: Fruit kebabs</b>  <b>Cycle B: Party planning-sandwiches</b></p> <p>Understanding the difference between fruits and vegetables</p> <p>Describing and grouping fruits by texture and taste</p> <p>Understanding what makes a balanced diet</p> <p>Knowing where to find the nutritional information on packaging and knowing the five food groups</p> <p><b>Textiles:</b>  <b>Cycle A: Pin cushion,</b>  <b>Cycle B: Sewing royal purses</b></p> <p>Learning different ways in which to join fabrics together: pinning, stapling, glueing</p> <p>Joining items using fabric glue or stitching</p> <p>Identifying benefits of these techniques</p> <p>Threading a needle</p> <p>Sewing running stitch, with evenly spaced, neat, even stitches to join fabric</p> <p>Neatly pinning and cutting fabric using a template</p>	<p>Tying knots with greater independence</p> <p>Sewing cross stitch and appliqué</p> <p>Understanding the need to count the thread on a piece of even weave fabric in each direction to create uniform size and appearance</p> <p>Understanding What fabrics can be layered for affect</p> <p>Understanding that there are different types of fastenings and what they are</p> <p>Articulating the benefits and disadvantages of different fastening types</p>	<p><b>Cycle B: Mary Quant graphic motif</b>  <b>Cycle B: Embroidered Tudor symbols</b></p> <p>Learning to sew blanket stitch to join fabric</p> <p>Applying blanket stitch so the space between the stitches are even and regular</p> <p>Threading needles independently</p> <p>Learning different decorative stitches</p> <p>Application and outcome of the individual technique</p> <p>Sewing accurately with even regularity</p>
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EYFS Vocab - paint, mark, snip, grip, control, materials, draw, tripod grip, accurate, tools, technique, design, texture, explain, describe, balance, agility, develop, emotion, ideas

KS1 Vocab - plan, design, axles, create, label, link, motion, sketch, model, structure, healthy, levers, sliders, mechanism, stable, assemble, support, joint, chop, prepare, slice, cut, construct, brief, decorate, sew, sequence, stitch, identify, modify, evaluate, compare, test, adapt, stability, texture, result, product, mechanism, vertical, horizontal, input, output, pivot, thread, pin, fabric, nutrition, staple, glue, technique, function

KS2 Vocab (Year 3&4) - plan, develop, design, brief, sketch, diagram, net, structure, resistance, speed, features, materials, stable, weight, aesthetics, static, electricity, instructions, identify, criteria, target, torch, healthy, nutritious, recipe, seasonal, ingredients, taste, texture, appearance, budget, template, cushion, links, levers, pivots, adjust, assembling components, motion, creasing, weaving, geometric, nets, facade, frame, cladding, reinforce, electrostatic, system, circuit, switch, contamination, sew, cross stitch, applique, fastening, modify, criticism, review, evaluate, mechanism, kinetic energy, compression, tension, strut, tie, span, beam, architects, attraction, repulsion, conductors, insulators, climate, hygiene

KS2 Vocab (Year 5&6) - design, develop, plan, mechanism, cams, automata, linkages, force, structure, frame, triangulation, ineffective, electrical control, circuit, LED, components, prototypes, recipe, nutrition, amend, adapt, method, design criteria, sliders, pivots, aesthetics, jelutong, dowel, components, stable, function, truss, reinforce, decorate, electromagnetic, motor, assemble, contamination, hygiene, 3D, 2D, stitch, applique, running stitch, knots, fastening, evaluate, modify, reliable, product, input, output, direction of motion, compression, tension, suspension, manipulate, graphite, conductor, series circuit, parallel circuit, magnetic, acid, reared, processed, balance, compare, contrast, apply, technique, regularity