

Designing and Technology Progression Map

	EYFS	KS1		Lower KS2		Upper KS2		
	Nursery & Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3

Zoo Enclosure

- Know how to make freestanding structures more stable
- Generate ideas based on their own experiences and design criteria and communicate their ideas through talking and drawings.
- Select and use appropriate tools and materials.
- Use simple finishing techniques suitable for the structure they are creating.
- Evaluate their product against the original design criteria and the intended user and purpose.

Bridge

- Know how to make freestanding structures stronger, stiffer and more stable.
- Generate ideas based on their own experiences and design criteria and communicate their ideas through talking and drawings.
- Select and use appropriate tools and materials.
- Use simple finishing techniques suitable for the structure they are creating.
- Evaluate their product against the original design criteria and the intended user and purpose.

Keepsake box

- Know how to use nets of cubes and cuboids to construct shell structures.
- Generate ideas and a design criteria collaboratively through discussion, focusing on the needs of the user and the purpose.
- Develop ideas through analysing existing shell structures and use computer-aided design to create their own net.
- Evaluate their own products against design criteria and purpose.

Food packaging

- Know how to use the nets of more complex 3D shapes to construct shell structures.
- Develop their knowledge of how to construct strong, stiff shell structures using a range of materials.
- Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user, the purpose, and the functionality.
- Select and use appropriate tools and software shape and assemble with some accuracy.
- Use computer-generated finishing techniques suitable for the product they are creating.
- Evaluate their own products against design criteria and the intended user and purpose.

A shelter

- Understand how to strengthen 3-D frameworks.
- Know the user's needs by carrying out research into existing products, using web-based resources.
- Generate realistic ideas and design criteria collaboratively through discussion and annotated sketches.
- Know which tools are appropriate to accurately measure, mark out, cut, shape and join materials.
- Know which finishing and decorative techniques are suitable for their product.
- Evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.

Adventure playground equipment

- Understand how to strengthen, stiffen and reinforce 3-D frameworks.
- Carry out research into user needs and existing products, using interviews, questionnaires and web-based resources.
- Develop a design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost.
- Competently select from and understand the use of appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks.
- Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.

- Use research and exploration, such as the study of different cultures, to identify and understand user needs.
- Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.
- Analyse the work of past and present professionals and others to develop and broaden their understanding.
- Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists.

Fruit sticks and fruit faces

- Use tools, including plastic knives, with playdough
- Cut and arrange soft fruit

Fruit kebabs

- Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.
- Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste.
- Know how to prepare a healthy dish, including fruit.
- Know and use sensory vocabulary relevant to the project (e.g. Taste, smell).

Fruit smoothies

- Generate ideas and design criteria through investigating a variety of fruit and vegetables.
- Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.
- Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.
- Taste and evaluate a range of fruit and vegetables to determine the intended user’s preferences.
- Evaluate ideas and finished products against design criteria, including intended user and purpose.

Healthy sandwiches

- Plan the main stages of a recipe, listing ingredients, utensils and equipment.
- Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.
- Know how to use the bridge knife technique – Harder food (e.g. carrots) and peeling soft vegetables (e.g. courgettes).
- Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.
- Know and use relevant technical and sensory vocabulary appropriately.

Healthy pizzas

- Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose.
- Plan the main stages of a recipe, listing ingredients, utensils and equipment.
- Know how to use the Claw knife technique – Soft food (e.g. cucumber) and grating soft foods (e.g. cheese).
- Select and use appropriate utensils and equipment to prepare and combine ingredients.
- Evaluate the ongoing work and the final product with reference to the design criteria.

Rainbow salad wraps

- Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.
- Write a step-by-step recipe, including a list of ingredients, equipment and utensils
- Know how to use the Claw knife technique – Hard food (e.g. apples) and grating hard foods (e.g. carrots).
- Make, decorate and present the food product appropriately for the intended user and purpose.
- Understand how key chefs have influenced eating habits to promote varied and healthy diets

Dosa Pancakes with Masala Dal

- Write a step-by-step recipe, including a list of ingredients, equipment and utensils
- Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.
- Know how to finely chop herbs, pee (e.g. carrot) and finer grating (e.g. Parmesan cheese, nutmeg).
- Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.
- Understand how key chefs have influenced eating habits to promote varied and healthy diets

- Understand and apply the principles of nutrition and health
- Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet
- Become competent in a range of cooking techniques
- Understand the source, seasonality and characteristics of a broad range of ingredients.

Finger Puppet

- Understand how simple 3-D textile products are made, using a template to create two identical shapes.
- Understand how to join fabrics using different techniques e.g. running stitch, glue.
- Know how to use different finishing techniques such as adding sequins, wool or eyes.
- Design a functional and appealing product for a chosen user and purpose based on simple design criteria and communicate their idea through talking and drawing.
- Know how to choose appropriate tools and textiles for their product.
- Evaluate their final products against original design criteria.

Soft Toy

- Understand how simple 3-D textile products are made, using a template to create two identical shapes.
- Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.
- Know how to use different finishing techniques such as adding sequins, wool, eyes, buttons, ribbons and fabric crayons
- Design a functional and appealing product for a chosen user and purpose based on simple design criteria and communicate their idea through talking and drawing.
- Know how to choose appropriate tools and textiles for their product.
- Evaluate their ideas throughout and final products against original design criteria.

Pouch to Hold a Precious Item

- Understand how to securely join two pieces of fabric together including the need for patterns and seam allowances.
- Know how to add fastenings and reinforce fabric to support them.
- Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s.
- Produce annotated sketches, prototypes, final product sketches and pattern pieces in order to plan the main stages of making.
- Understand the functional characteristics of appropriate tools, fabrics and fastenings in order to choose and use them with some accuracy e.g. cutting, joining and finishing.
- Test their product against the

Embroidered cushion

- Understand how to securely join two pieces of fabric together, include seam allowances and know how to strengthen, stiffen and reinforce fabrics.
- Know which fabrics and tools will be best for the functionality of their product and use them with greater accuracy.
- Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user, the purpose, and the functionality.
- Evaluate their own products against design criteria and the intended user and purpose.

Product that can hold an electrical device

- Understand how fabrics can be strengthened and reinforced after securely joining two pieces of fabric together.
- Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.
- Know which fabrics, tools and fastenings will be best for the functionality of their product and use them with greater accuracy.
- Test and evaluate their product against the original design criteria and with the intended user and consider others' views.

Product that can keep something cold

- Know that a 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.
- Understand how fabrics can be strengthened, stiffened and reinforced where appropriate.
- Generate innovative ideas by carrying out research including surveys, interviews and questionnaires.
- Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.
- Use a range of tools and equipment to make products that are accurately assembled and well finished.
- Test and evaluate their product against the original design criteria and with the intended user and consider others' views.

- Identify and solve their own design problems and understand how to reformulate problems given to them.
- Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.
- Analyse the work of past and present professionals and others to develop and broaden their understanding.
- Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups.
- Understand how more advanced mechanical systems used in their products enable changes in movement and force.

Ginger biscuits

- Mix ingredients and shape biscuits.
- Look at changes when food is cooked / boiled sweets put in oven.

Mini pancakes

- Generate initial ideas and design criteria through investigating fruit toppings.
- Use simple utensils and equipment to mix and combine ingredients.
- Know how to prepare food for baking and frying such as adding oil to frying pans/saucepans.
- Evaluate ideas and finished products against design criteria, including intended user and purpose.
- Know and use sensory vocabulary relevant to the project (e.g. Taste, smell).

Fruit hot cross buns

- Design appealing products for a particular user based on simple design criteria.
- Communicate these ideas through talk and drawings.
- Know how to shape and assemble dough and use hands to rub fat into flour.
- Know how to prepare food for baking and frying such as greasing baking tins.
- Select from a range of fruit according to their characteristics e.g. colour, texture and taste to create a chosen product.
- Evaluate ideas and finished products against design criteria, including intended user and purpose.

Scrummy scones

- Select and use appropriate utensils and equipment to prepare and combine ingredients.
- Know how to combine using a sieve, flour, raising agents and spices together in to a bowl and mix, stir and combine wet and dry ingredients uniformly.
- Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.
- Know how to use appropriate equipment and utensils to prepare and combine food.

Fantastic fish cakes

- Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.
- Plan the main stages of a recipe, listing ingredients, utensils and equipment.
- Know how to coat food with ingredients such as beaten egg and breadcrumbs and independently spread ingredients accurately onto foods.
- Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.
- Know and use relevant technical and sensory vocabulary appropriately.

Mexican food

- Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose.
- Carry out sensory evaluations of a range of relevant products and ingredients.
- Use the hob or electric saucepan to cook simple dishes.
- Make, decorate and present the food product appropriately for the intended user and purpose.
- Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.

Food using 5 war time ingredients

- Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.
- Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.
- Write a step-by-step recipe, including a list of ingredients, equipment and utensils
- Know how to use hands to shape mixtures in to evenly sized pieces and handle hot food safely using oven gloves.
- Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.

- Understand and apply the principles of nutrition and health
- Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet
- Become competent in a range of cooking techniques
- Understand the source, seasonality and characteristics of a broad range of ingredients.

Moving greeting card

- Know how to use basic sliders and levers
- Understand that different mechanisms produce different types of movement.
- Generate ideas based on simple design criteria and their own experiences, and communicate their ideas through drawings
- Understand how to choose and use tools, explaining their choices, to cut, shape and join paper and card.
- Use simple finishing techniques suitable for the product they are creating.
- Evaluate their product against the purpose and the user and whether it meets design criteria.

Vehicle

- Explore and use wheels, axles and axle holders.
- Know the difference between fixed and freely moving axles.
- Generate ideas based on simple design criteria and their own experiences, and communicate their ideas through drawings
- Understand how to choose and use tools, explaining their choices, to cut, shape and join cardboard and wood.
- Use simple finishing techniques suitable for the product they are creating.
- Evaluate their product against the purpose and the user and whether it meets design criteria.

Moving page from a class book

- Understand and use lever and linkage mechanisms.
- Know the difference between fixed and loose pivots.
- Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user.
- Use annotated sketches develop and communicate ideas.
- Understand how to choose and use appropriate tools with some accuracy to cut, shape and join paper and card.
- Evaluate their own products and ideas against criteria and user needs, as they design and make.

A moving book

- Understand and use lever and linkage mechanisms with fixed and loose pivots.
- Investigate, analyse and evaluate books and, where available, other products which have a range of lever and linkage mechanisms.
- Demonstrate the correct and accurate use of measuring, marking out, cutting, joining and finishing skills and techniques.
- Evaluate the final products against the intended purpose and with the intended user, drawing on the design criteria previously agreed.

A moving object or character

- Understand that mechanical systems have an input, process and an output.
- Understand how cams can be used to produce different types of movement and change the direction of movement.
- Know how to use the equipment needed to make a product that is accurately assembled and well finished.
- Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.

A moving vehicle with a motor

- Understand that mechanical and electrical systems have an input, process and an output.
- Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and motors.
- Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.
- Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished.
- Evaluate throughout and the final product in use, comparing it to the original design specification. Analyse the quality of the design, the manufacture, functionality and innovation shown for the intended user and purpose.

- Use a variety of approaches to generate creative ideas and avoid stereotypical responses.
- Select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties.
- Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups.
- Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.

Vegetarian sushi

- Mix and combine ingredients

Stuffed jacket potatoes

- Generate initial ideas and design criteria through investigating toppings.
- Communicate these ideas through talk and drawings.
- Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.
- Know how to lightly garnish foods.
- Evaluate ideas and finished products against design criteria, including intended user and purpose.
- Know how to prepare healthy and varied dishes, including vegetables.

Soup using vegetables grown in Science

- Design appealing products for a particular user based on simple design criteria.
- Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.
- Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.
- Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences.
- Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.
- Know how to prepare healthy and varied dishes, including vegetables.

A product with a light

- Understand and use a simple electrical system in their products, such as bulbs, batteries and wires.
- Connect simple electrical components and a battery in a series circuit to achieve a functional outcome
- Investigate and analyse a range of existing battery-powered products.
- Use annotated sketches develop and communicate ideas.
- Test their product against the original design criteria and with the intended user.

A noise making product

- Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers.
- Gather information about users' needs and wants, and develop design criteria to inform the design of products that are fit for purpose.
- Develop ideas through analysing existing electrical systems.
- Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.

A product with different brightness

- Understand and use electrical systems in their products.
- Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user, the purpose, and the functionality.
- Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities.
- Continually evaluate and modify the working features of the product to match the initial design specification.

A product to protect a valuable item

- Generate, develop, model and communicate realistic ideas through discussion and exploded diagrams.
- Investigate electrical sensors such as light dependent resistors (LDRs) and a range of switches to understand how they are operated by the user and how they work.
- Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product.
- Test the system to demonstrate its effectiveness for the intended user and purpose.

- Understand how more advanced electrical and electronic systems can be powered and used in their products.
- Apply computing and use electronics to embed intelligence in products that respond to inputs and control outputs, using programmable components.

