

Design Technology Overview

EYFS	Pre-School			Reception
(Expressive Art &	Explore different materials freely, to development to use them and what to make.			on their previous learning, refining ideas ir ability to represent them.
Design)	Develop their own ideas and then decide use to express them.	which materials to	Create collaborativ	ely, sharing ideas, resources and skills.
	Mechanisms (Autumn 2)	Structures (Spring 2)	Cooking & Nutrition (Summer 2)
Year 1	Levers & Sliders	Freestanding Struct	tures	Preparing fruit & vegetables
	Prior learning	Prior learning		Prior learning
	 Early experiences of working with paper and card to make simple flaps and hinges. Experience of simple cutting, shaping 	 Experience of using build walls, towers an Experience of using scissors or hole punch 	nd frameworks. g of basic tools e.g.	Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell.
	and joining skills using scissors, glue, paper fasteners and masking tape.	materials e.g. plastic, card. • Experience of different methods of joining card and paper.	Experience of cutting soft fruit and vegetables using appropriate utensils.	
	Designing			Designing
	Generate ideas based on simple design criteria and their own experiences, explaining what they could make.	Designing Generate ideas based on simple design criteria and their own		Design appealing products for a particular user based on simple design criteria.
	mure.	experiences, explaining make.		Generate initial ideas and design criteria through investigating a variety of fruit and vegetables.



• Develop, model and communicate their ideas through drawings and mockups with card and paper.

Making

- Plan by suggesting what to do next.
- Select 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.

Evaluating

- Explore a range of existing books and everyday products that use simple sliders and levers.
- Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria.

Technical knowledge and understanding

- Explore and use sliders and levers.
- Understand that different mechanisms produce different types of movement.

• Develop, model and communicate their ideas through talking, mock-ups and drawings.

Making

- Plan by suggesting what to do next.
- Select and use tools, skills and techniques, explaining their choices.
- Select new and reclaimed materials and construction kits to build their structures.
- Use simple finishing techniques suitable for the structure they are creating.

Evaluating

- Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings.
- Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.

Technical knowledge and understanding

• Communicate these ideas through talk and drawings.

Making

- 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.

Evaluating

- 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.

Technical knowledge and understanding

- Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.
- Understand and use basic principles of a healthy and varied diet to prepare



	Know and use technical vocabulary relevant to the project.	 Know how to make freestanding structures stronger, stiffer and more stable. Know and use technical vocabulary relevant to the project. 	dishes, including how fruit and vegetables are part of <i>The eatwell plate</i> . • Know and use technical and sensory vocabulary relevant to the project.
Year 2	Textiles (Autumn 2) Templates and joining techniques	Mechanisms (Spring 1) Wheels & Axels	Cooking & Nutrition (Summer 2) Preparing fruit & vegetables
	Prior learning	Prior learning	Prior learning
	Explored and used different fabrics.Cut and joined fabrics with simple techniques.	 Assembled vehicles with moving wheels using construction kits. Explored moving vehicles through play. 	Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell.
	Thought about the user and purpose of products.	Gained some experience of designing, making and evaluating products for a specified user and purpose.	Experience of cutting soft fruit and vegetables using appropriate utensils.
	Designing		Designing
	Design a functional and appealing product for a chosen user and purpose based on simple design criteria.	 Developed some cutting, joining and finishing skills with card. Designing 	Design appealing products for a particular user based on simple design criteria.
	Generate, develop, model and communicate their ideas as appropriate through talking, drawing,	Generate initial ideas and simple design criteria through talking and using own experiences.	Generate initial ideas and design criteria through investigating a variety of fruit and vegetables.



templates, mock-ups and information and communication technology.

Making

- Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing.
- Select from and use textiles according to their characteristics.

Evaluating

- Explore and evaluate a range of existing textile products relevant to the project being undertaken.
- Evaluate their ideas throughout and their final products against original design criteria.

Technical knowledge and understanding

- 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.

• Develop and communicate ideas through drawings and mock-ups.

Making

- Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing.
- Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics.

Evaluating

- Explore and evaluate a range of products with wheels and axles.
- Evaluate their ideas throughout and their products against original criteria.

Technical knowledge and understanding

- Explore and use wheels, axles and axle holders.
- Distinguish between fixed and freely moving axles.
- Know and use technical vocabulary relevant to the project.

• Communicate these ideas through talk and drawings.

Making

- 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.

Evaluating

- 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.

Technical knowledge and understanding

- Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.
- Understand and use basic principles of a healthy and varied diet to prepare



	 Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. Know and use technical vocabulary relevant to the project. 		dishes, including how fruit and vegetables are part of <i>The eatwell plate</i> . • Know and use technical and sensory vocabulary relevant to the project.
Year 3	Structures (Summer 1) Shell Structures (using computer aided designs)	Cooking & Nutrition (Summer 1) Healthy & varied diet	Mechanical systems (Summer 2) Levers and linkages
	Prior learning	Prior learning	Prior learning
	Experience of using different joining, cutting and finishing techniques with	Know some ways to prepare ingredients safely and hygienically.	Explored and used mechanisms such as flaps, sliders and levers.
	 paper and card. A basic understanding of 2-D and 3-D shapes in mathematics and the 	Have some basic knowledge and understanding about healthy eating and The eatwell plate.	Gained experience of basic cutting, joining and finishing techniques with paper and card.
	physical properties and everyday uses of materials in science.	Have used some equipment and	Designing
	Familiarity with general purpose	utensils and prepared and combined ingredients to make a product.	Generate realistic ideas and their own design criteria through discussion,
	software that can be used to draw accurate shapes, such as Microsoft	Designing	focusing on the needs of the user.
	Word, or simple computer-aided design (CAD), such as 2D Primary by Techsoft.	Generate and clarify ideas through discussion with peers and adults to	Use annotated sketches and prototypes to develop, model and
	Designing	develop design criteria including appearance, taste, texture and aroma	communicate ideas.



- Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and the functional and aesthetic purposes of the product.
- Develop ideas through the analysis of existing shell structures and use computer-aided design to model and communicate ideas.

Making

- Plan the order of the main stages of making.
- Select and use appropriate tools and software to measure, mark out, cut, score, shape and assemble with some accuracy.
- Explain their choice of materials according to functional properties and aesthetic qualities.
- Use computer-generated finishing techniques suitable for the product they are creating.

Evaluating

 Investigate and evaluate a range of shell structures including the materials, for an appealing product for a particular user and purpose.

 Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.

Making

- Plan the main stages of a recipe, listing ingredients, utensils and equipment.
- Select and use appropriate utensils and equipment to prepare and combine ingredients.
- Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.

Evaluating

- Carry out sensory evaluations of a variety of ingredients and products.
 Record the evaluations using e.g. tables and simple graphs.
- Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.

Making

- Order the main stages of making.
- Select from and use appropriate tools with some accuracy to cut, shape and join paper and card.
- Select from and use finishing techniques suitable for the product they are creating.

Evaluating

- Investigate and analyse books and, where available, other products with lever and linkage mechanisms.
- Evaluate their own products and ideas against criteria and user needs, as they design and make.

Technical knowledge and understanding

- Understand and use lever and linkage mechanisms.
- Distinguish between fixed and loose pivots.
- Know and use technical vocabulary relevant to the project.



	components and techniques that have been used. • Test and evaluate their own products against design criteria and the intended user and purpose. Technical knowledge and understanding • Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. • Develop and use knowledge of how to construct strong, stiff shell structures. • Know and use technical vocabulary relevant to the project.	Know how to use appropriate equipment and utensils to prepare and combine food. Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. Know and use relevant technical and sensory vocabulary appropriately.	
Year 4	Textiles (Spring 2) 2D shape to 3D product	Cooking & Nutrition (Summer 1) Healthy & varied diet	Mechanical systems (Summer 2) Pneumatics
	Prior learning	Prior learning	Prior learning
	 Have joined fabric in simple ways by gluing and stitching. 	Know some ways to prepare ingredients safely and hygienically.	Explored simple mechanisms, such as sliders and levers, and simple structures.
	Have used simple patterns and templates for marking out.	Have some basic knowledge and understanding about healthy eating and The eatwell plate.	Learnt how materials can be joined to allow movement.
	Have evaluated a range of textile products.		Joined and combined materials using simple tools and techniques.



Designing

- 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.

Making

- Plan the main stages of making.
- Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing.
- Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.

Evaluating

- Investigate a range of 3-D textile products relevant to the project.
- Test their product against the original design criteria and with the intended user.

 Have used some equipment and utensils and prepared and combined ingredients to make a product.

Designing

- 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.
- Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.

Making

- Plan the main stages of a recipe, listing ingredients, utensils and equipment.
- Select and use appropriate utensils and equipment to prepare and combine ingredients.
- Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.

Designing

- Generate realistic and appropriate ideas and their own design criteria through discussion, focusing on the needs of the user.
- Use annotated sketches and prototypes to develop, model and communicate ideas.

Making

- Order the main stages of making.
- Select from and use appropriate tools with some accuracy to cut and join materials and components such as tubing, syringes and balloons.
- Select from and use finishing techniques suitable for the product they are creating.

Evaluating

 Investigate and analyse books, videos and products with pneumatic mechanisms.



seam allowan • Know and use relevant to the	ces. e technical vocabulary e project. ems (Autumn 2)	 equipment and orersis to prepare and combine food. Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. Know and use relevant technical and sensory vocabulary appropriately. Structures (Spring 2) Frame structures	Cooking & Nutrition (Summer 2) Celebrating culture & seasonality
seam allowan • Know and use	ces. e technical vocabulary	 combine food. Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. Know and use relevant technical and 	
seam allowan • Know and use	ces. e technical vocabulary	combine food.	
	ne need for patterns and	Know how to use appropriate equipment and utensils to prepare and	
Understand he pieces of fabri	ow to securely join two ic together.	Technical knowledge and understanding	
reinforce existi	_	Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.	mechanisms.Know and use technical vocabulary relevant to the project.
	ct and/or fabric. rledge and understanding	Record the evaluations using e.g. tables and simple graphs.	Understand and use pneumatic
Understand has influenced	ount others' views. ow a key event/individual digital the development of the	Carry out sensory evaluations of a variety of ingredients and products.	Evaluate their own products and ideas against criteria and user needs, as they design and make.



- Initial experience of using computer control software and an interface box, a standalone box or microcontroller, e.g. Crumble.
- Some experience of writing and modifying a program to make a light turn on or flash on and off.
- Understanding of the essential characteristics of a series circuit and experience of creating a batterypowered, functional, electrical product.

Designing

- Develop a design specification for a functional product that responds automatically to changes in the environment.
- Generate, develop and communicate ideas through discussion, annotated sketches and pictorial representations of electrical circuits or circuit diagrams.

Making

 Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.

- Experience of using measuring, marking out, cutting, joining, shaping and finishing techniques with construction materials.
- Basic understanding of what structures are and how they can be made stronger, stiffer and more stable.

Designing

- Carry out research into user needs and existing products, using surveys, interviews, questionnaires and webbased resources.
- Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost.
- Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches.

Making

 Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used.

- Have knowledge and understanding about food hygiene, nutrition, healthy eating and a varied diet.
- Be able to use appropriate equipment and utensils, and apply a range of techniques for measuring out, preparing and combining ingredients.

Designing

- Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.
- Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose.
- Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.

Making

 Write a step-by-step recipe, including a list of ingredients, equipment and utensils



- Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product.
- Create and modify a computer control program to enable their electrical product to respond to changes in the environment.

Evaluating

- Continually evaluate and modify the working features of the product to match the initial design specification.
- Test the system to demonstrate its effectiveness for the intended user and purpose.

Technical knowledge and understanding

- Understand and use electrical systems in their products.
- Understand the use of computer control systems in products.
- Apply their understanding of computing to program, monitor and control their products.

- Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks.
- Use finishing and decorative techniques suitable for the product they are designing and making.

Evaluating

- Investigate and evaluate a range of existing frame structures.
- Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.
- Research key events and individuals relevant to frame structures.

Technical knowledge and understanding

- Understand how to strengthen, stiffen and reinforce 3-D frameworks.
- Know and use technical vocabulary relevant to the project.

- Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.
- Make, decorate and present the food product appropriately for the intended user and purpose.

Evaluating

- Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams.
- 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.

Technical knowledge and understanding

 Know how to use utensils and equipment including heat sources to prepare and cook food.



	Know and use technical vocabulary relevant to the project.		 Understand about seasonality in relation to food products and the source of different food products. Know and use relevant technical and sensory vocabulary.
Year 6	Textiles (Spring 2) Using computer-aided design in textiles	Cooking & Nutrition (Summer 1) Celebrating culture & Seasonality	Mechanical systems (Summer 2) Pulleys or gears
	Prior learning	Prior learning	Prior learning
	Experience of stitching, joining and finishing techniques in textiles.	Have knowledge and understanding about food hygiene, nutrition, healthy	Experience of axles, axle holders and wheels that are fixed or free moving.
	Experience of making and using textiles pattern pieces.	 eating and a varied diet. Be able to use appropriate equipment and utensils, and apply a range of techniques for measuring out, preparing and combining ingredients. 	 Basic understanding of electrical circuits, simple switches and components. Experience of cutting and joining techniques with a range of materials
	Experience of simple computer-aided design applications.		
	Designing	Designing	including card, plastic and wood.
	Generate innovative ideas through research including surveys, interviews and quastiannaires.	Generate innovative ideas through research and discussion with peers and	An understanding of how to strengthen and stiffen structures.
	and questionnaires.Develop, model and communicate	adults to develop a design brief and criteria for a design specification.	Designing
	ideas through talking, drawing,	Explore a range of initial ideas, and make design decisions to develop a	Generate innovative ideas by carrying out research using surveys, interviews,



templates, mock-ups and prototypes including using computer-aided design.

 Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.

Making

- Produce detailed lists of equipment and fabrics relevant to their tasks.
- Formulate step-by-step plans and, if appropriate, allocate tasks within a team.
- Select from and use a range of tools and equipment, including CAD, to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.

Evaluating

- Investigate and analyse textile products linked to their final product.
- Compare the final product to the original design specification.

final product linked to user and purpose.

 Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.

Making

- 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.
- Make, decorate and present the food product appropriately for the intended user and purpose.

Evaluating

- Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams.
- Evaluate the final product with reference back to the design brief and design specification, taking into

questionnaires and web-based resources.

- Develop a simple design specification to guide their thinking.
- Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.

Making

- Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team.
- Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost.

Evaluating

- Compare the final product to the original design specification.
- Test products with intended user and critically evaluate the quality of the



- Test products with intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.
- Consider the views of others to improve their work.

Technical knowledge and understanding

- A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.
- Fabrics can be strengthened, stiffened and reinforced where appropriate.

account the views of others when identifying improvements.

 Understand how key chefs have influenced eating habits to promote varied and healthy diets.

Technical knowledge and understanding

- Know how to use utensils and equipment including heat sources to prepare and cook food.
- Understand about seasonality in relation to food products and the source of different food products.
- Know and use relevant technical and sensory vocabulary.

design, manufacture, functionality and fitness for purpose.

- Consider the views of others to improve their work.
- Investigate famous manufacturing and engineering companies relevant to the project.

Technical knowledge and understanding

- Understand that mechanical and electrical systems have an input, process and an output.
- Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.
- Know and use technical vocabulary relevant to the project.