

Timothy Hackworth Primary School - Design Technology Curriculum Overview



Article 6: All children have the right to life and to be healthy.

Article 17: All children have the right to honest information that they can understand.

Article 14: All children have the right to their own beliefs.

Article 15: All children have the right to meet with friends.

Article 19: All children have the right to be looked after and kept safe.

Article 23: All children have the right to special care and support if they are disabled.

Article 24: All children have the right to good food, water, clothing, a safe place to live and to have your needs met.

Article 27: All children have the right to a good standard of living.

Article 28: All children have the right to a good quality education.

Article 29: All children have the right to be the best that they can be.

Article 31: All children have the right to relax and play.

Each project at KS1 and KS2 includes a *Design, Make, Evaluate Assignment* that is based upon the 3 S's of '*Something, for Somebody, for Some Purpose*'. These DMEAs are supported by a number of *focused tasks*, designed to equip children with the knowledge, skills and understanding to subsequently make their own informed design decisions, with the potential for innovation, in response to the assignment brief. Children are taught to consider the user, and purpose, of each product that they are to design with the aim of producing a functioning authentic prototype that is meaningful to themselves and others.

Design Technology can make a significant contribution to Physical Health and Mental Wellbeing, offering children of all abilities the opportunity to express themselves and experience success through discussion, drawing, painting and modelling, within a range of materials and media, including Computing. In cooking and nutrition, children are taught the crucial life skill of how to apply the principles of nutrition to healthy eating and are taught how to prepare and cook a number of simple, healthy dishes that they could reproduce and/or adapt at home. As the National Curriculum itself states, Design Technology provides children with the opportunity to develop a love of cooking that opens the door to one of the greatest expressions of human creativity, and provides children with the skills to feed themselves and others affordably and well, now and in later life. Healthy eating is promoted alongside physical activity as part of an overall healthy lifestyle and many children find creative, practical tasks to be enjoyable and relaxing.

Wider links and links to other subjects are made explicit to ensure that, over time, the children develop a deeper understanding of the relevance and nature of all areas of Design Technology, now, in the next stage of their education and again in later life.

The sequence of learning set out in this overview aims to allow children to extend prior learning and make progress through the following:

- A balance of learning in all material areas - The children work in the three main material areas of 'structures and mechanisms', 'textiles' and 'cooking and nutrition' each year to ensure coverage, development and a breadth of skills, knowledge and understanding within the subject; 'electrical systems and control' is also taught, as required, in KS2;
- Contexts, users and purposes - To develop children's understanding of contexts, users and purposes, opportunities are provided across the year groups for pupils to work confidently within a range of contexts such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment. Children consider a range of users, starting with themselves and relatable book characters, and gradually progressing to include a wider range of individuals and commercial markets across their studies;
- Knowledge - Learning becomes progressively more challenging as the children move through school with, for example, KS1 children investigating where fruit and vegetables come from through to KS2 children considering the wider environmental impact of global eating habits;
- Understanding - Concepts and vocabulary that are key to the Design Process, such as Situation and Design Brief, are common to all projects so that the children develop a deeper understanding of the iterative nature of 'design' that enhances their problem solving skills within and beyond Design Technology. New concepts and vocabulary that are specific to individual projects or material areas are introduced or revised as appropriate;
- Practical skills - Practical skills in all material areas are practised and built upon as children progress from one year group to the next with, for example, KS1 children using a table knife to cut soft foods through to KS2 children using sharper knives on a wider range of foods, with greater independence. Expectations are that children will become increasingly accurate and independent with the increasingly challenging tasks set across the programme;
- Higher order thinking skills – A range of focused tasks, including investigation of existing products relevant to respective design briefs, help the children to develop their analytical and evaluative skills. Exposure to the work of renowned designers and opportunities for the children to make their own design decisions help pupils to develop their cultural awareness and creativity.

EYFS

In the EYFS there are three **characteristics of effective teaching and learning**:

- **playing and exploring** - children investigate and experience things, and 'have a go';
- **active learning** - children concentrate and keep on trying if they encounter difficulties, and enjoy achievements;
- **creating and thinking critically** - children have and develop their own ideas, make links between ideas, and develop strategies for doing things.

The development of children's artistic and cultural awareness supports their imagination and creativity. It is important that children have regular opportunities to engage with the arts, enabling them to explore and play with a wide range of media and materials. The quality and variety of what children see, hear and participate in is crucial for developing their understanding, self-expression, vocabulary and ability to communicate through the arts. The frequency, repetition and depth of their experiences are fundamental to their progress in interpreting and appreciating what they hear, respond to and observe.

Children learn to question, appreciate and understand the world in which they live by:

- investigating existing products (including disassembling products to learn about how they work);
- exploring the environment;
- designing and making.

Children are taught specific design and make skills using food, textiles, a range of construction materials and various construction kits. With practice, they develop their ability to choose suitable materials and appropriate tools and equipment for a task. A range of contexts is presented to provide opportunities for the children to make their own design decisions, and to discuss them, with a focus on:

- user;
- purpose;
- function;
- aesthetics.

Suggested focus products include investigating everyday, familiar products such as footwear, cutlery, crockery and eyewear, hats, toys, vehicles, chairs and fruit. These themes could be used to introduce the concept of products around us being purposefully designed and manufactured.

Early Learning Goals:**Creating with Materials**

Children at the expected level of development will:

- 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;
- Make use of props and materials when role playing characters in narratives and stories.

Children aged 3-4 will be learning to:

- Explore different materials freely, 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.
- Show different emotions in their drawings – happiness, sadness, fear, etc.
- Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.
- Explore different materials freely, 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.

Children in Reception will be learning to:

- 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.
- 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.

	Autumn	Spring	Summer
	Vocabulary to be used across all material areas of the overview to develop the children's understanding of the iterative Design Process: situation = problem, design brief = solution, context, user, purpose, product, existing products, research, investigate, design, design criteria, model, prototype, make, test, functional, evaluate, improve, appealing		
	Structures and Mechanisms	Textiles	Cooking and Nutrition
1	How can we safely rescue the animals from the Circus Ship?	How can we make the picnic more comfortable for Teddy and his friends?	Why is it so important to eat fruit?
	<p>Design Make Evaluate Assignment (DMEA) based on the 3 S's: Situation: The Circus Ship is sinking and Mr. Payne, the circus boss, is only interested in his own safety.</p> <p>Design Brief 1: Design, make and evaluate a prototype for a rescue boat (something) for one of the animals (someone) to get them safely to shore (some purpose). Context: story based, on the sea User: book character - elephant, giraffe, camel, bear, lion, leopard, tiger, hippo, gorilla, ostrich, zebra, crocodile, monkey, snake or antelope Purpose: To rescue a creature that is in distress.</p> <p>Design Brief 2: Design, make and evaluate a moving picture (something) for a children's book (someone) to illustrate this story (some purpose). Context: story based, picture book User: children Purpose: To illustrate a story.</p>	<p>Design Make Evaluate Assignment (DMEA) based on the 3 S's: Situation: The Teddy Bears are planning their annual picnic and it's going to be busy! Last year some guests complained that it was uncomfortable sitting on the ground as all the soft grassy spots had already been taken. Some guests also lost some belongings as they didn't have their names on.</p> <p>Design Brief: Design, make and evaluate a personalised blanket (something) for Teddy or his guest (someone) to provide a soft surface to sit on at the picnic (some purpose). Context: story based, in the woods User: book character - Teddy or his guest – bunny/other soft toy Purpose: To provide a soft base for an outdoor activity; the product should be personalised so that it doesn't get lost.</p>	<p>Design Make Evaluate Assignment (DMEA) based on the 3 S's: Situation: Many children eat too many sweets and chocolate snacks that are not good for their health.</p> <p>Design Brief: Design, make and evaluate a delicious fruit-based snack (something) for yourself (someone) for a school packed lunch (some purpose). Context: story based, in school User: self Purpose: To encourage children to adopt a healthier diet by swapping to healthier snacks.</p> <p>Focused tasks (FT): Rainbow fruit kebabs with sensory tasting Banana and oats yoghurt pots Fruit frisbees</p>
	<p>Children should know: Design How to design purposeful, functional, appealing product for themselves and other users based on design criteria; How to generate, develop, model and communicate their ideas through talking, mock-ups and, where appropriate, information and communication technology.</p> <p>Make How to select from and use a range of tools and equipment to perform practical tasks; How to select from and use a wide range of materials and components, including construction materials according to their characteristics.</p> <p>Evaluate How to explore and evaluate a range of existing products; Children should know how to evaluate their ideas and products against design criteria.</p> <p>Technical knowledge How to build structures, exploring how they can be made stronger, stiffer and more stable; How to use mechanisms, in this unit levers and sliders, in their products.</p>	<p>Children should know: Design How to design purposeful, functional, appealing products for themselves and other users based on design criteria; How to generate, develop, model and communicate their ideas through talking, drawing and templates.</p> <p>Make How to select from and use a range of tools and equipment to perform practical tasks; How to select from and use a wide range of materials and components, including textiles, according to their characteristics.</p> <p>Evaluate How to explore and evaluate a range of existing products; How to evaluate their ideas and products against design criteria.</p>	<p>Children should know: Design How to design purposeful, functional, appealing products for themselves and other users based on design criteria; How to generate, develop, model and communicate their ideas through talking.</p> <p>Make How to select from and use a range of tools and equipment to perform practical tasks; How to select from and use a wide range of materials and components, including <u>ingredients</u>, according to their characteristics.</p> <p>Evaluate How to explore and evaluate a range of existing products; How to evaluate their ideas and products against design criteria.</p> <p>Technical knowledge How to use the basic principles of a healthy and varied diet to prepare dishes; Where food comes – the focus for this unit is fruit.</p>
	<p>Essential reading link to this unit: The Circus Ship by Chris Van Dusen https://www.youtube.com/watch?v=qv4C9gkkuWs</p>	<p>Essential reading link to this unit: The Teddy Bears' Picnic by Jimmy Kennedy or other authors https://www.youtube.com/watch?v=wwM3oN6B3co</p>	<p>Potential reading link to this unit: Oliver's Fruit Salad by Vivian French, to encourage trying fruit. https://www.youtube.com/watch?v=FpR26kPqpHc Handa's Surprise by Eileen Browne, to discuss native and tropical fruits. https://www.youtube.com/watch?v=AjPIlMebjAw</p>
	Vocabulary to be used across all material areas of the overview to develop the children's understanding of the iterative Design Process: situation = problem, design brief = solution, context, user, purpose, product, existing products, research, investigate, design, design criteria, model, prototype, make, test, functional, evaluate, improve, appealing		
	<p>Vocabulary: template, measure, mark out, cut, fold, join, decorate, finish, base, curved, straight, surface, corner, edge, slide, lever, pivot, slot, bridge, guide, pull, push, down, forwards, backwards, construction materials, prototype, rescue boat, distress, stable, stability, stiff, stiffer; names of equipment, materials and components used, absorb, absorbent, flange.</p>	<p>Vocabulary: pattern piece, running stitch, names of equipment, materials and components used, picnic, textiles, personalised,</p>	<p>Vocabulary: Eatwell Guide, fruit, vegetables, starchy foods, dairy foods, fat, sugar, protein foods, vitamins and minerals, healthy diet, portion, exercise, healthy lifestyle, native, tropical, orchard, berry, berries ,hygiene, ingredients, juice, peel, spread, slice, spoon, measure, grate, thread, skewer, cut, squeeze, arrange, bridge technique, claw technique, senses, taste, texture, smell, aroma, appearance, sound, colour, rainbow, soft, juicy, hard, crunchy, sweet, sticky, smooth, sharp, crisp, sour, bland, flesh, skin, peel, seed, pip, core, names of equipment and ingredients used, kebabs, Frisbees, oats</p>

	Autumn	Spring	Summer
	Vocabulary to be used across all material areas of the overview to develop the children's understanding of the iterative Design Process: situation = problem, design brief = solution, context, user, purpose, product, existing products, research, investigate, design, design criteria, model, prototype, make, test, functional, evaluate, improve, appealing		
	Textiles	Cooking and Nutrition	Structures and Mechanisms
2	What simple props could be used to make stories more interesting for children who can't yet read?	Why is it so important to eat vegetables?	How can Farmer Boggis keep his chickens safe from Fantastic Mr. Fox?
	<p>Design Make Evaluate Assignment (DMEA) based on the 3 S's: Situation: Children love reading and we know it gives us advantages.</p> <p>Design Brief: Design, make and evaluate a character glove puppet (something) to use with pre-school children (someone) to help make a story more interactive and engaging (some purpose). Context: school/home User: pre-school children Purpose: To encourage an early love of reading. To help educate younger children.</p>	<p>Design Make Evaluate Assignment (DMEA) based on the 3 S's: Situation: Lola will never, not ever, eat a tomato, and lots of other healthy foods! Design Brief: Design, make and evaluate a delicious savoury snack (something) for Lola (someone) to show her how delicious healthy food can be (some purpose). Remember to name your snack to appeal to unadventurous eaters like Lola. Context: story-based at home User: book character – Lola (child) Purpose: To encourage Lola (and children like) to adopt a healthier diet.</p> <p>Focused tasks (FT): Rainbow salad wraps Rainbow salad pots</p>	<p>Design Make Evaluate Assignment (DMEA) based on the 3 S's: Situation: Mr. Fox keeps stealing chickens from Farmer Boggis's farm and Farmer Boggis is obviously not happy about this. Design Brief: Design, make and evaluate a chicken coop (something) for 3 chickens (someone) to keep them safe from predators (some purpose). The chicken coop must be on wheels so that it can be moved into the warmth of the barn at night. Context: story based, in a farmyard User: imaginary book characters - three nervous chickens Purpose: To provide a safe shelter/home and prevent predation.</p>
	<p>Children should know: Design How to design purposeful, functional, appealing products for themselves and other users based on design criteria; How to generate, develop, model and communicate their ideas through talking, drawing and templates.</p> <p>Make How to select from and use a range of tools and equipment to perform practical tasks; How to select from and use a wide range of materials and components, including construction materials, according to their characteristics.</p> <p>Evaluate How to explore and evaluate a range of existing products; How to evaluate their ideas and products against design criteria.</p>	<p>Children should know: Design How to design purposeful, functional, appealing products for themselves and other users based on design criteria; How to generate, develop, model and communicate their ideas through talking.</p> <p>Make How to select from and use a range of tools and equipment to perform practical tasks; How to select from and use a wide range of materials and components, including textiles, according to their characteristics.</p> <p>Evaluate How to explore and evaluate a range of existing products; How to evaluate their ideas and products against design criteria.</p> <p>Technical knowledge How to use the basic principles of a healthy and varied diet to prepare dishes; Where food comes – the focus for this unit is vegetables.</p>	<p>Children should know: Design How to design purposeful, functional, appealing products for themselves and other users based on design criteria; How to generate, develop, model and communicate their ideas through talking, drawing and templates.</p> <p>Make How to select from and use a range of tools and equipment to perform practical tasks; How to select from and use a wide range of materials and components, including ingredients, according to their characteristics.</p> <p>Evaluate How to explore and evaluate a range of existing products; How to evaluate their ideas and products against design criteria.</p> <p>Technical knowledge How to build structures, exploring how they can be made stronger, stiffer and more stable; How to use mechanisms, in this unit wheels and axles, in their products.</p>
	<p>Potential reading link to this unit: Class teacher could produce their own glove puppet based on a favourite book to demonstrate the product and hook children in. Children to choose their own book and character and read a section of their book to the class to test their product.</p>	<p>Essential reading for this unit: Charlie & Lola – I Will Never Not Ever Eat A Tomato by Lauren Child https://www.youtube.com/watch?v=PfRBUrNTXrVo Potential reading link to this unit: Zombies Don't Eat Veggies by Megan Lacera and Jorge Lacera, provides an opportunity for children to spot the similarity to focus text. https://www.youtube.com/watch?v=cxF5WURk-RY Oliver's Vegetables by Vivian French, links back to Year 1 learning using Oliver's Fruit Salad. https://www.youtube.com/watch?v=2yvllKqyVUc</p>	<p>Essential reading link to this unit: Fantastic Mr. Fox by Roald Dahl Mr. Fox's night time chicken raid clip at https://www.youtube.com/watch?v=aUbaLn_2xZY</p>
	<p>Vocabulary: components, seam, felt, pre-school, interactive, engaging, needle, eye, thread, cotton, knot, stitch, running stitch, safety, features, finishing techniques.</p>	<p>Vocabulary: imported, salad, mix, stir, whisk, sift, unhealthy, wraps, cheese scones, cheese straws, wraps, rinse, wash, slice, chop</p>	<p>Vocabulary: vehicle, chassis, body, wheel, axle, axle holder, friction, fixed, free moving, mechanism, chicken coop, combine, assemble, predator, nervous, shelter, chicken raid.</p>

	Autumn	Spring	Summer
3	Vocabulary to be used across all material areas of the overview to develop the children's understanding of the iterative Design Process: situation = problem, design brief = solution, context, user, purpose, product, existing products, research, investigate, design, design criteria, model, prototype, make, test, functional, evaluate, improve, appealing, fit-for-purpose, generate, develop, communicate, annotated sketches, cross-sectional diagrams, exploded diagrams, pattern pieces, computer-aided design, aesthetic qualities, functional properties, analyse, strengthen, stiffen, reinforce, complex structures, mechanical systems, electrical systems, program, monitor, control.		
	Structures and Mechanisms - Computer Aided Design	Textiles	Cooking and Nutrition
	Does packaging make a product more appealing?	Do adults still carry real money?	What could be better than chicken nuggets?
	<p>Design Make Evaluate Assignment (DMEA) based on the 3 S's: Situation: A local business has received a job lot of toys from a manufacturer in China but the toys are not packaged. She is looking for ideas to adapt the toys to make them appeal to young children.</p> <p>Design Brief 1: Design, make and evaluate a prototype for sustainable packaging (something) to appeal to children (someone) that will attract them to the toy (some purpose). Context: commercial, toy market User: children Purpose: To package a toy.</p> <p>Design Brief 2: Design, make and evaluate a moving point of sale display to match your packaging theme (something) to appeal to children (someone) that will use levers and linkages to interactively promote the toy (some purpose). Context: commercial, toy market User: children Purpose: To promote a toy.</p>	<p>Design Make Evaluate Assignment (DMEA) based on the 3 S's: Situation: We are living in the Technological Age where we rely heavily on our mobile phones, cars, bank cards and many other conveniences and sometimes find ourselves unprepared when things – like our car breaking down – go wrong.</p> <p>Design Brief: Design, make and evaluate a simple purse by manipulating and decorating a single piece of fabric (something) for an adult car driver (someone) to keep a small amount of change in the glove compartment of their car in case of emergency (some purpose). Context: car User: adult driver Purpose: To keep money tidily and out of sight in case of emergency.</p>	<p>Design Make Evaluate Assignment (DMEA) based on the 3 S's: Situation: McDonalds are looking to expand their children's menu to include a McPizza.</p> <p>Design Brief: Design, make and evaluate a delicious pizza style product (something) for children (someone) to provide a healthier alternative to chicken nuggets and burgers (some purpose). Your product must be quick to prepare and cook in a busy, commercial kitchen. Context: commercial, fast-food kitchen User: children Purpose: To provide a filling, nutritious fast-food product.</p> <p>Focused tasks (FT): Bruschetta with cheese, tomato, garlic and fresh herbs Breakfast pizza toast Pizza pinwheels</p>
	<p>Children should know: Design How to 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; How to generate, develop, model and communicate their ideas through discussion, annotated sketches, prototypes and computer-aided design.</p> <p>Make How to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately; How to select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities.</p> <p>Evaluate How to investigate and analyse a range of existing products; How to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Children should also know about key events and individuals in design and technology that have helped shape the world; the focus for this project is the inventor Ernő Rubik - Rubik's Cube.</p> <p>Technical knowledge How to apply their understanding to strengthen, stiffen and reinforce more complex structures; in this unit children will make shell structures; How mechanical systems work and how to use mechanical systems in their products; in this unit levers and linkages.</p>	<p>Children should know: Design How to 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; How to generate, develop, model and communicate their ideas through discussion, annotated sketches, prototypes and pattern pieces.</p> <p>Make How to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately; How to select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities.</p> <p>Evaluate How to investigate and analyse a range of existing products; How to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Children should also know about key events and individuals in design and technology that have helped shape the world; the focus for this project is the fashion designer Coco Chanel.</p>	<p>Children should know: Design How to 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; How to generate, develop, model and communicate their ideas through <u>discussion</u>, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p> <p>Make How to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately; How to select from and use a wider range of materials and components, including ingredients, according to their functional properties and aesthetic qualities.</p> <p>Evaluate How to investigate and analyse a range of existing products; How to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Children should also know about key events and individuals in design and technology that have helped shape the world; the focus for this project is the chef Jamie Oliver.</p> <p>Technical knowledge How to apply the principles of a healthy and varied diet; How to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Children should also understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed; in this unit, children will focus on dairy products.</p>
	<p>Essential reading link to this unit: The Dark by Lemony Snicket (Daniel Handler) https://www.youtube.com/watch?v=mmlL2KFQyyKw</p>		
<p>Vocabulary: structure, shell structure, frame structure, 3D, shape, net, cube, cuboid, vertex, vertices, face, length, width, score, tabs, adhesives, accurate, stiff, strong, corporate identity, font, lettering, text, graphics, CAD, innovative, linkage, linear, rotary, oscillating, reciprocating, edge, face, surface, pneumatic</p>	<p>Vocabulary: seam, seam allowance, applique, embroidery stitch, fastenings, buttons, press stud.</p>	<p>Vocabulary: savoury, fast food, food waste, litter, sustainable, convenience, tear, snip, press, nutritious, commercial, bruschetta, garlic, herbs, pinwheels, spring, summer, autumn, winter, seasons, seasonality, grown, reared, caught, processed.</p>	

	Autumn	Spring	Summer
4	Vocabulary to be used across all material areas of the overview to develop the children's understanding of the iterative Design Process: situation = problem, design brief = solution, context, user, purpose, product, existing products, research, investigate, design, design criteria, model, prototype, make, test, functional, evaluate, improve, appealing, fit-for-purpose, generate, develop, communicate, annotated sketches, cross-sectional diagrams, exploded diagrams, pattern pieces, computer-aided design, aesthetic qualities, functional properties, analyse, strengthen, stiffen, reinforce, complex structures, mechanical systems, electrical systems, program, monitor, control.		
	Cooking and Nutrition	Textiles	Structures and Mechanisms Electrical Systems and Control
	Voulez-vous du pain?	Why is the exit always through the gift shop?	How can we help Laszlo cope with his fear of the dark?
	<p>Design Make Evaluate Assignment (DMEA) based on the 3 S's: Situation: Following the nationwide Coronavirus lockdown, many people have vowed to keep shopping on their high streets and not just at supermarkets.</p> <p>Design Brief: Design, make and evaluate a bread product (something) for a family of 3 (someone) that could be used as part of a family meal (some purpose). Your product would be sold at a high street artisan bakery.</p> <p>Context: high street artisan shop User: family of 3 Purpose: To encourage consumers to continue to support local traders by purchasing a quality side dish to accompany a main meal.</p> <p>Focused tasks (FT): Garlic bread Bread buns Cornbread muffins</p>	<p>Design Make Evaluate Assignment (DMEA) based on the 3 S's: Situation: Museums, zoos and art galleries have suffered financial losses due to the Coronavirus lockdown.</p> <p>Design Brief: Design, make and evaluate an affordable textile souvenir (something) for an art lover (someone) as a product to boost much needed gift shop sales at a museum or art gallery (some purpose).</p> <p>Context: museum/art gallery User: history/art lover Purpose: Affordable gift/souvenir. The brief is open ended to encourage creativity but it is anticipated that most children will make a wall hanging.</p>	<p>Design Make Evaluate Assignment (DMEA) based on the 3 S's: Situation: Laszlo is afraid of the dark and doesn't feel happy alone in his room at night.</p> <p>Design Brief: Design, make and evaluate a prototype for a night light (something) for Laszlo (someone) to help him feel safe in his room at night (some purpose).</p> <p>Context: story based, in a child's bedroom User: book character, Laszlo (child) Purpose: To help children overcome their fear of the dark and get to sleep.</p>
	<p>Children should know: Design How to 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; How to generate, develop, model and communicate their ideas through <u>discussion</u>, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p> <p>Make How to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately; How to select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities.</p> <p>Evaluate How to investigate and analyse a range of existing products; How to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Children should also know about key events and individuals in design and technology that have helped shape the world. The focus for this project is the chef duo, The Hairy Bikers.</p> <p>Technical knowledge How to apply the principles of a healthy and varied diet; How to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Children should also understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed; the focus for this unit is staple carbohydrates -maize, rice, wheat and potatoes.</p>	<p>Children should know: Design How to 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; How to generate, develop, model and communicate their ideas through discussion, annotated sketches and computer-aided design.</p> <p>Make How to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately; How to select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities.</p> <p>Evaluate How to investigate and analyse a range of existing products; How to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Children should also know about key events and individuals in design and technology that have helped shape the world. The focus for this project is the textile designer Michael Brennand-Wood.</p> <p>Technical knowledge How to apply their understanding to strengthen, stiffen and reinforce more complex structures.</p>	<p>Children should know: Design How to 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; How to generate, develop, model and communicate their ideas through discussion, annotated sketches and cross-sectional diagrams.</p> <p>Make How to select from and use a wider range of tools and equipment to perform practical tasks; How to select from and use a wider range of materials and components, including ingredients, according to their functional properties and aesthetic qualities.</p> <p>Evaluate How to investigate and analyse a range of existing products; How to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Children should also know about key events and individuals in design and technology that have helped shape the world; the focus for this project is the inventor Thomas Edison.</p> <p>Technical knowledge How to apply their understanding to strengthen, stiffen and reinforce more complex structures; How electrical systems work and how to use electrical systems in their products, in this unit series circuits incorporating bulbs; How to apply their understanding of computing to program, monitor and control their products.</p>
	<p>Potential reading link to this unit: Berthe fait Une Pizza by Gwen Brookes https://www.youtube.com/watch?v=stggReR_CwI</p>		<p>Essential reading link to this unit: The Dark by Lemony Snicket (Daniel Handler) https://www.youtube.com/watch?v=mml2KFQyyKw</p>
<p>Vocabulary: carbohydrates, yeast, knead, dough, rise, carbon dioxide, prove, quality, purchase, trader, consumer, artisan, bakery, High Street, side dish, cornbread, muffin.</p>	<p>Vocabulary: right side, wrong side, hem, channel, tie dye, resist method, dye bath, fix, fabric pen, wall-hanging, gift shop, art gallery, souvenir, affordable.</p>	<p>Vocabulary: reduce, reuse, recycle, base, light, darkness, source, transparent, opaque, translucent, series circuit, connection, switch, battery, battery holder, bulb, bulb holder, insulator, conductor, wire, control, program, system, input device, output device, code, colourless.</p>	

	Autumn	Spring	Summer
5	Vocabulary to be used across all material areas of the overview to develop the children's understanding of the iterative Design Process: situation = problem, design brief = solution, context, user, purpose, product, existing products, research, investigate, design, design criteria, model, prototype, make, test, functional, evaluate, improve, appealing, fit-for-purpose, generate, develop, communicate, annotated sketches, cross-sectional diagrams, exploded diagrams, pattern pieces, computer-aided design, aesthetic qualities, functional properties, analyse, strengthen, stiffen, reinforce, complex structures, mechanical systems, electrical systems, program, monitor, control.		
	Textiles	Structures and Mechanisms Electrical Systems and Control	Cooking and Nutrition
	How can we further reduce carrier bag use?	How can we make UK holidays more appealing to children?	Should we eat less meat?
	<p>Situation: Most adults own many 'bags for life' but frequently find themselves buying more when they leave them in the car.</p> <p>Design Brief: Design, make and evaluate a textile bag or pouch (something) for shoppers (someone) to help keep bags for life visible and to hand to decrease the number of carrier bags being bought unnecessarily (some purpose).</p> <p>Context: home/car User: adult shopper Purpose: To store bags for life in one handy place and decrease the frequency that shoppers fail to remember their bags for life when shopping.</p>	<p>Design Make Evaluate Assignment (DMEA) based on the 3 S's: Situation: As a result of flight restrictions, and increasingly warm weather in this country, more British people are choosing to holiday at home.</p> <p>Design Brief: Design, make and evaluate a prototype for a carousel ride (something) for younger children (someone) to entertain children and help boost sales at a busy seaside resort (some purpose). Context: UK seaside resort User: young children Purpose: To entertain young children at UK holiday resorts.</p>	<p>Design Make Evaluate Assignment (DMEA) based on the 3 S's: Situation: Greggs the Bakers are a highly successful north-east based firm. Their nationwide success has been attributed to moving with the times, providing tasty food on-the-go and more recently picking up on the trend for vegetarian and vegan food. To maintain their success, Greggs are always looking for new ideas.</p> <p>Design Brief: Design, make and evaluate a delicious savoury, vegetarian product (something) for busy working people (someone) that can be purchased and eaten quickly as a lunch (some purpose). Context: nationwide, food retail User: busy, working adults Purpose: To serve as an on-the-go meal.</p> <p>Focused tasks (FT): Vegetarian Kebabs Mediterranean vegetable salad/ tart Tortilla breakfast wrap/cups</p>
	<p>Children should know: Design How to 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; How to generate, develop, model and communicate their ideas through discussion, annotated sketches, exploded diagrams, pattern pieces and computer-aided design.</p> <p>Make How to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately; How to select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities.</p> <p>Evaluate How to investigate and analyse a range of existing products; How to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Children should also know about key events and individuals in design and technology that have helped shape the world. The focus for this project is fashion designer Lulu Guinness.</p>	<p>Children should know: Design How to 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; How to generate, develop, model and communicate their ideas through discussion, annotated sketches and computer-aided design.</p> <p>Make How to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately; How to select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities.</p> <p>Evaluate How to investigate and analyse a range of existing products; How to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Children should also know about key events and individuals in design and technology that have helped shape the world. The focus for this project is inventor James Dyson.</p> <p>Technical knowledge How to apply their understanding to strengthen, stiffen and reinforce more complex structures; How mechanical systems work and how to use mechanical systems in their products, in this unit gears, pulleys and cams. How electrical systems work and how to use electrical systems in their products, in this unit series circuits and motors; How to apply their understanding of computing to program, monitor and control their products.</p>	<p>Children should know: Design How to 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; How to generate, develop, model and communicate their ideas through discussion.</p> <p>Make How to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately; How to select from and use a wider range of materials and components, including ingredients, according to their functional properties and aesthetic qualities.</p> <p>Evaluate How to investigate and analyse a range of existing products; How to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Children should also know about key events and individuals in design and technology that have helped shape the world. The focus for this project is chef Nigella Lawson.</p> <p>Technical knowledge How to apply the principles of a healthy and varied diet; How to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Children should also understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed; the focus for this unit is meat, fats and oils.</p>
<p>Vocabulary: embellish, handle, fastening, exploded view diagram, reduce, re-use, bag-for-life, embroidery stitch, plastic pollution, environment.</p>	<p>Vocabulary: pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, motor, electrical system, process, structure, stiffen, reinforce, triangulation, stability, inventor, James Dyson, gears, pulleys, cams.</p>	<p>Vocabulary: saturated, unsaturated, meat, fish, environment, climate change, meat free, vegetarian, vegan, pescatarian, meat eater, nationwide, food retail, Nigella Lawson, chef.</p>	

	Autumn	Spring	Summer
6	Vocabulary to be used across all material areas of the overview to develop the children's understanding of the iterative Design Process: situation = problem, design brief = solution, context, user, purpose, product, existing products, research, investigate, design, design criteria, model, prototype, make, test, functional, evaluate, improve, appealing, fit-for-purpose, generate, develop, communicate, annotated sketches, cross-sectional diagrams, exploded diagrams, pattern pieces, computer-aided design, aesthetic qualities, functional properties, analyse, strengthen, stiffen, reinforce, complex structures, mechanical systems, electrical systems, program, monitor, control.		
	Structures and Mechanisms	Textiles Computer-Aided Design	Cooking and Nutrition
	How can we meet children's right to a safe place to live in emergency situations?	How can we protect mobile phones from being damaged during everyday use?	Is it better to home cook?
	<p>Design Make Evaluate Assignment (DMEA) based on the 3 S's: Situation: An increasing number of people around the world are finding themselves homeless due to extreme weather, natural disasters, unemployment, war and conflict, rising populations and/or poverty.</p> <p>Design Brief: Design, make and evaluate a prototype for a temporary shelter (something) for a small family (someone) that would offer safe shelter from a range of elements in an emergency (some purpose). The shelter must be easy to assemble and withstand a number of climates and adverse weather conditions.</p> <p>Context: User: small family of mum, dad and two small children Purpose: To offer safe shelter from the elements until the family could be rescued or more permanent accommodation could be secured.</p>	<p>Design Make Evaluate Assignment (DMEA) based on the 3 S's: Situation: Many people now consider a mobile phone as an essential possession and would be inconvenienced if they were to be without it.</p> <p>Design Brief: Design, make and evaluate a prototype for a mobile phone case (something) for the under 16 market (someone) that would protect their phone from being damaged during everyday use (some purpose).</p> <p>Context: home User: young person, aged 10 to 16 Purpose: To protect a valuable possession from being damaged during frequent, everyday use.</p>	<p>Design Make Evaluate Assignment (DMEA) based on the 3 S's: Situation: Many people consider that takeaways and shop-bought food products to be better than homemade food products.</p> <p>Design Brief: Design, make and evaluate a number of popular food products (something) for yourself (someone) to help compare and contrast shop bought and takeaway food products (some purpose).</p> <p>Context: home User: self Purpose: To compare shop bought versus home cooking.</p> <p>Focused tasks (FT): Trifle Healthy chips Pizza</p>
	<p>Children should know: Design How to 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; How to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional diagrams and prototypes.</p> <p>Make How to select from and use a wider range of tools and equipment to perform practical tasks accurately; How to select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities.</p> <p>Evaluate How to investigate and analyse a range of existing products; How to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Children should also know about key events and individuals in design and technology that have helped shape the world. The focus for this project is the inventor Trevor Baylis.</p> <p>Technical knowledge How to apply their understanding to strengthen, stiffen and reinforce more complex structures; in this unit the children will make frame structures.</p>	<p>Children should know: Design How to 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; How to generate, develop, model and communicate their ideas through discussion, annotated sketches, pattern pieces and computer-aided design.</p> <p>Make How to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately; How to select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities.</p> <p>Evaluate How to investigate and analyse a range of existing products; How to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Children should also know about key events and individuals in design and technology that have helped shape the world. The focus for this project is the designer Steve Jobs.</p>	<p>Children should know: Design How to 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; How to generate, develop, model and communicate their ideas through discussion.</p> <p>Make How to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately; How to select from and use a wider range of materials and components, including ingredients, according to their functional properties and aesthetic qualities.</p> <p>Evaluate How to investigate and analyse a range of existing products; How to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Children should also know about key events and individuals in design and technology that have helped shape the world. The focus for this project is Ben and Jerry's ice cream.</p> <p>Technical knowledge How to apply the principles of a healthy and varied diet; How to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Children should also understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed; the focus for this unit is safe food storage.</p>
	<p>Vocabulary: cone, prism, temporary, permanent, emergency, homeless, extreme weather, natural disasters, unemployment, war and conflict, population, poverty, elements, assemble, withstand, adverse, accommodation, Trevor Baylis, frame structures.</p>	<p>Vocabulary: Computer Aided Design (CAD), essential, possession, inconvenienced, Steve Jobs.</p>	<p>Vocabulary: ratio, food storage, contamination, cross contamination, danger zone, microbes, freeze, refrigerator, processed.</p>