Design Technology yearly overview	Autumn	Spring	Summer
EYFS	**Creating With Materials** Creating with boxes – to make fire engines using different boxes. To make Salt dough Christmas decorations.	**Creating With Materials** The Three Little Pigs story props To make Easter Nests and use the vocabulary melting and heating.	**Creating With Materials** Mark making – paintings of minibeasts College – pattern Artist – Beatriz Milhaze To use different materials; paper, card, paint, crayon to create a college.
Year 1	**Textiles: Puppets**	**Mechanisms: Wheels and Axles**	**Food: Fruit and Vegetables: Smoothie**
Year 2	Mechanisms: Making a Moving Monster	**Structures: Baby Bear's Chairs**	**Food: A Balanced Diet**
Year 3	**Mechanical Systems: Pneumatic Toys**	**Textiles: Cushions**	**Food: Eating Seasonally**

Year 4	**Food: Adapting a Recipe**	**Textiles: Fastenings**	**Mechanical Systems: Making a Slingshot Car**
Year 5	**Mechanical Systems: Pop up Books**	**Food: What could be Healthier**	**Structures: Bridges**
Year 6	**Digital World: Navigating the World**	**Electrical Systems: Steady Hand Game**	**Food: Come Dine with Me**

Design Technology Curriculum

Respect Ambition Kindness Resilience Inclusivity

Our school values underpin our DT curriculum. We expect the children to respect each other's designs and products, to be ambitious in their ideas, to be kind when making comments about the work of others and to be resilient and not to give up. Within the classroom environment all children can be included and take part in all aspects of the lesson with necessary support where needed which underpins our school value of inclusivity.

Intent

Design and Technology has been planned from EYFS to Y6 to deliver an inspiring, creative, challenging and progressive curriculum for our pupils. We aim to deliver the subject within cross curricular activities where possible. We want to prepare our children to take part in the development of tomorrow's rapidly changing world, to solve real and relevant problems, to develop original ideas and to be creative and imaginative. We want to challenge and motivate our children to develop their creative thinking to encourage them to make positive changes and become problem solvers. We also want our children to undertsand that knowing how to cook is a crucial life skill, we want to enable them to feed themselves and others affordably and well now and in later life. We want them to use a range of tools confidently, safely and skillfully. We also want the children to have fun when designing and creating their products.

EYFS Autumn (Creating with Materials)

Creating with boxes – to make fire engines using different boxes.

To make Salt dough Christmas decorations

- **Make imaginative and complex small worlds with blocks and construction kits.**
- **Explore different materials freely, to develop ideas about how to use them and what to make.**
- **Develop own ideas and then decide which materials to use.**
- **Join materials and explore different techniques.**
- **Return to and build on their previous learning, refining ideas and developing their ability to represent them.**

EYFS Spring (Creating with Materials)

The Three Little Pigs story props

To make Easter Nests and use the vocabulary melting and heating.

- **S**hare their creations, **explaining** the process they have used.
- Make use of props and materials when role playing characters in narratives and stories.
- **Develop small motor skill**s so that they can use a range of tools competently, safely and confidently.
- **Create collaboratively, sharing** their ideas, resources and skills.

EYFS Summer (Creating with Materials)

Mark making – paintings of minibeasts
College – pattern
Artist – Beatriz Milhaze
To use different materials; paper, card, paint, crayon to create a college.

- ELG: Fine Motor skills: Use a range of small tools, including scissors, paint brushes and cutlery.
- ELG: Safely use and explore a variety of materials, tools and techniques, experiment with colour, design texture, form and function.

Key concepts **Design , Make and Evaluate**	**Technical Knowledge**	Cooking and Nutrition
Year 1 Autumn term	**Textiles:Puppets (Based on the story Meerkat Mail)**	Key concepts Design, make, evaluate, technical knowledge
Substantive Knowledge • I **can join fabrics together using different methods.** • **I can use a template to design a puppet based on a character.** • I can choose how to join two fabrics together. • I can embellish my puppet by decorating it. • **I can answer questions about how puppets can be made.**	**Learn** the different ways they can join fabrics together through the **creation** of a puppet.	Disciplinary Knowledge • I know how to think of some ideas of my own. • I can test and explore different methods of joining fabric and determine which would be best. • I know how to cut fabric and join it with glue, pins or staples • I know how to choose the best tools. • I know how to talk about my work and things that other people have done.
Vocabulary Character, features, decorate, design, fabric, puppet, technique, safety pin, glue, template.	**National Curriculum Links** Design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communciate their ideas through talking, drawing and templates, Make: select from and use a wide range of tools and equipment to perform practical tasks. Select from & use a variety of materials & textiles. Evaluate: explore & evaluate a range of products. Evaluate their ideas & products against design criteria.	Useful Links or sources of Information Kapow D & T Scheme
Year 1 Spring term	**Mechanisms Wheels and Axles**	Key concepts Design, make, evaluate, technical knowledge

Substantive Knowledge • **I understand how wheels move using axles and axle holders.** • I can identify what stops wheels from turning. • **I can design and draw a moving vehicle.** • I can build a moving vehicle with wheels and axles. • I can answer questions and talk about how wheels and axles work.	**Experiment** with mechanisms and **troubleshoot** why some wheels don't rotate, before **designing** and **building** a moving vehicle.	Disciplinary Knowledge • I know how to think of some of my own ideas. • I know how to use pictures and words to plan a design. • I know how to select tools and equipment to perform practical tasks. • **I know how to measure, assemble, join and combine materials and components.** • **I know how to evaluate my product.**
Vocabulary Accurate, axle, chassis, design, fix, mechanism, test, wheel.	**National Curriculum Links** Design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communciate their ideas through talking, drawing and templates, Make: select from and use a wide range of tools and equipment to perform practical tasks. Select from & use a variety of materials & textiles. Evaluate: explore & evaluate a range of products. Evaluate their ideas & products against design criteria. Technical Knowledge: explore and use mechanisms (wheels and axles) in products.	Useful Links or sources of Information Kapow D & T Scheme
Year 1 Summer term	**Fruit and vegetables: Smoothie**	Key concepts Cooking and Nutrition
Substantive Knowledge • **I know the difference between fruit and vegetables.** • I know where plants grow and which parts we eat. • **I can select fruit and vegetable combinations by tasting them.** • **I can prepare, chop and blend fruit and vegetables to make a smoothie.**	Learn how to identify fruits and vegetables. Apply this knowledge to design and make a smoothie.	Disciplinary Knowledge • I know how fruit and vegetables grow. • **I can identify and describe the taste and texture**. • I know how to be hygienic in the kitchen. • I know which foods are healthy. • I **know how to use the correct tools safely.**

• I can talk about how I made my product saying what was good about it and what I would change.		
Vocabulary Blender, carton, fruit, healthy, ingredients, peel, peeler, recipe, slice, smoothie, template, vegetable, fruit.	**National Curriculum Links** Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.	Useful Links or sources of Information Kapow D & T Scheme
Year 2 Autumn term	**Mechanisms: Making a Moving Monster**	Key concepts
Substantive Knowledge • **I can look at objects and understand how they move.** • I can create linkages. • I can explore different design options using linkages. • **I can make a moving monster using linkages.** • **I can talk about my product and say how I might improve it.**	**Learn** how to use different types of linkages with different materials.	Disciplinary Knowledge • I **know how to select from a range of materials and components including construction materials.** • I know how to measure, mark out and assemble all the components. • **I know how to explain what went well in my work and how I would improve it next time.** • **I understand that mechanisms are a collection of moving parts that work together in a machine.** • I know that there is an input and output. • I can identify mechanisms in everyday objects. • I understand that a lever is something that turns on a pivot and a linkage is a system of levers.
Vocabulary **I**nput, output, linkage, mechanical, pivot, axle, design criteria, wheel**.**	**National Curriculum Links** Design: design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. Make: Select from and use a range of tools and equipment to perform practical tasks. Select from	**Useful Links or sources of Information** Kapow D & T Scheme

	and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. Evaluate: Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria. Technical Knowledge: Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms in their products.	
Year 2 Spring term	**Structures: Baby Bear's Chair**	**Key concepts**
Substantive Knowledge • I can explore the concept and features of structures and the stability of different shapes. • **I understand that the shape of the structure affects it's strength.** • **I can make and produce a structure according to my design.** • **I can talk about the stiffness and stability**.	• Build structures, **exploring** how they can be made stronger, stiffer and more stable.	Disciplinary Knowledge • **I know how to describe my design using pictures, diagrams, words and models.** • I know how to select from a range of materials and components including construction materials and textiles according to their characteristics. • I can identify natural and man made structures. • I understand what is meant by stability and can identify structures which are stable. • I know that structures with wide, flat bases are the most stable. • **I know how to explain what went well in my work and how I would improve it next time.**
Vocabulary Design criteria, natural, man-made, properties, structure, stable, shape.	**National Curriculum Links** **National Curriculum Links** Design: design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. Make: Select from and use a range of tools and equipment to perform practical tasks. Select from and use a wide range of materials and	**Useful Links or sources of Information** Kapow D & T Scheme

	components, including construction materials, textiles and ingredients, according to their characteristics. Evaluate: Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria. Technical Knowledge: Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms in their products.	
Year 2 Summer term	**Food: A balanced Diet**	**Key concepts**
Substantive Knowledge • **I know what makes a balanced diet.** • I can test food combinations. • I can design a healthy wrap. • **I can make a healthy wrap based on my design.** • I can talk about my product and how I might improve it.	**Learn** about the food groups (carbohydrates, proteins, fruits and vegetables, dairy, oils and spreads) to understand a balanced diet and to **develop** a healthy wrap.	**Disciplinary Knowledge** I know how to be hygienic in the kitchen. I know how to weigh and measure ingredients. I **know how to prepare simple food dishes.** **I can use simple tools safely.** I know which foods are healthy and can identify a variety of healthy foods. I know what hidden sugars are. I know where to find nutritional information. **I know there are five food groups.** **I know that the ideal ingredients would be from** five food groups.
Vocabulary Balanced diet, design criteria, ingredients, fruit, protein, vegetables, food groups, carbohydrates, dairy, oils, spreads.	**National Curriculum Links** Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.	**Useful Links or sources of Information** Kapow D & T Scheme
Year 3 Autumn term	**Mechanical System: Pneumatic Toys**	**Key concepts**

Substantive Knowledge	**Explore** pneumatic systems, then apply this **understanding** to design and make a pneumatic toy including thumbnail sketches and exploded diagrams.	**Disciplinary Knowledge**
• **I can research pneumatic toys and can understand how pneumatic systems work.** • I can design a toy that uses a pneumatic system. • I can create a pneumatic system. • **I can test and finalise ideas against a design criteria.** • I can talk about how I made my product and how I would change it to improve it.		• **I know how to draw accurate diagrams with correct labels, arrows and explanations.** • I know how to correctly identify definitions for terms. • I know how to identify five appropriate design criteria. • I know how to communicate two ideas using thumbnail sketches. • I know how to communicate and develop one idea using an exploded diagram. • I know how to select appropriate equipment and materials to build a working pneumatic system within the housing to create the desired motion. • **I know how to create a finished pneumatic toy that fulfils the design brief.** • I know that mechanisms are a systems of parts that work together to create motion. • I know that a pneumatic system can be used as part of a mechanism. • **I know that a pneumatic system can force air over a distance to create movement.**
Vocabulary Mechanism Lever Pivot Linkage system Pneumatic system Thumbnail sketch Input Output Component Research	**National Curriculum Links** Design: Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Make: select from and use a wider range of tools and equipment to perform practical tasks accurately. Select from and use a wider range of	**Useful Links or sources of Information** Kapow D & T Scheme

Adapt Properties Reinforce motion	materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. Evaluate: Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world. Technical Knowledge: Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products. Understand and use electrical systems in their products. Apply their understanding of computing to program, monitor and control their products.	
Year 3 Spring term	**Textiles: Cushions**	**Key concepts**
Substantive Knowledge • **I know how to cross stitch and applique.** • I can design a product and its template. • **I can decorate fabric using applique and cross stitch.** • **I can assemble a cushion.** • I can talk about my product and say how I would improve it.	**Learn and apply** two new sewing techniques cross stitch and applique. Utilise these new skills to design and make a cushion.	**Disciplinary Knowledge** • I know how to put a step by step plan together and what to do next. • I know how to describe and explain my design using accurately labelled sketches and words. • I know how to select from and use a range of materials and components including textiles. • **I know how to evaluate my product, both with how it works and it's appearance**. • I know what I could or did change to make it better.
Vocabulary Applique, cross stitch, design, equipment, fabric, knot, patch, running stitch, seam, thread, texture.	**National Curriculum Links** Design: Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes,	**Useful Links or sources of Information** Kapow D & T Scheme

	pattern pieces and computer-aided design. Make: select from and use a wider range of tools and equipment to perform practical tasks accurately. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. Evaluate: Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world. Technical Knowledge: Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products. Understand and use electrical systems in their products. Apply their understanding of computing to program, monitor and control their products.	
Year 3 Summer term	**Food: Eating Seasonally**	**Key concepts**
Substantive Knowledge • **I know that climate affects food growth.** • I understand the advantages of eating seasonal foods grown in the UK. • **I can create a recipe that is healthy and nutritious using seasonal vegetables.** • **I can safely follow a recipe when cooking.** • I can talk about my food product and say how I might improve it.	Learn about various fruits and vegetables, and when, where and why they are grown in different seasons. **Discover** the relationship between colour and health benefits.	**Disciplinary Knowledge** • I know how to cook and prepare a dish using a range of techniques. • **I know what to do to be hygienic and safe.** • I know the basic rules of food contamination. • **I know that not all fruit and vegetables can be grown in the UK.** • I know each country has it's own climate. • I know that imported food will have travelled far away and has an impact on the environment. • I know what foods are currently in season.

		• I know that each fruit/vegetable gives us nutritional benefit.
Vocabulary Climate, diet, ingredients, natural, processed, reared, recipe, seasonal.	**National Curriculum** Understand and apply the principles of a healthy and varied diet. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	**Useful Links or sources of Information** Kapow D & T Scheme
Year 4 Autumn term	**Food: Adapting a Recipe**	**Key concepts**
Substantive Knowledge • **I know how to follow a baking recipe.** • I know how to make and test a prototype. • **I know how to design a biscuit to a given budget.** • **I know how to make a biscuit that meets a given brief.** • I know how to evaluate my food product.	Work in groups to **adapt** an existing biscuit recipe, whilst taking into account the cost of the ingredients and other expenses against a set budget.	**Disciplinary Knowledge** • I know how to cook and prepare a dish using a range of cooking techniques. • I know what to do to be hygienic and safe. • I know how to consider taste, smell, texture, appearance, packaging, target audience. • **I know how to create branding and packaging for my product**.
Vocabulary Design criteria, research, texture, innovative, aesthetic, measure, cross-contamination, diet, processed, packaging.	**National Curriculum Links** Understand and apply the principles of a healthy and varied diet. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Understand seasonality,and know where and how a variety of ingredients are grown, reared, caught and processed.	**Useful Links or sources of Information** Kapow D & T Scheme.
Year 4 Spring term	**Textiles: Fastenings**	**Key concepts**

Substantive Knowledge • I know how to identify and evaluate different types of fastenings. • I **know how to design a product to meet design criteria.** • I know how to make and test a paper template. • **I know how to assemble a book jacket.** • **I know how to evaluate my product.**	**Analyse and evaluate** a range of existing fastenings, then devise a list of design criteria to design, generate templates and make a fabric book sleeve.	Disciplinary Knowledge • **I am beginning to consider my target audience and gather information on this.** • I know how to research some existing designs. • I know how to use prototypes and pattern pieces. • I know how to select from and use a wider range of equipment to perform practical tasks. • **I know how to measure, mark out and cut and shape materials with some accuracy.** • I know how to investigate and analyse a range of existing products.
Vocabulary Fabric, fastening, fix, design criteria, template.	**National Curriculum Links** Design: Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Make: select from and use a wider range of tools and equipment to perform practical tasks accurately. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. Evaluate: Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world. Technical Knowledge: Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products. Understand and use electrical systems in their products. Apply their understanding of computing to program, monitor and control their products.	**Useful Links or sources of Information** Kapow D & T Scheme

Year 4 Summer term	Mechanical Systems: Making a Slingshot Car	Key concepts
Substantive Knowledge • I know how to build a car chassis. • **I can design a shape that reduces air resistance.** • **I can make a model based on a chosen design.** • **I can assemble and test my completed product.** • I can evaluate my product.	Using a range of materials **design** and make a car with a working slingshot mechanism and house the mechanism using a range of nets.	**Disciplinary Knowledge** • I am beginning to consider my target audience and gather information on this. • **I know how to research some existing designs.** • I know how to use prototypes and pattern pieces. • I know how to select from and use a wider range of equipment to perform practical tasks. • I know how to measure, mark out and cut and shape materials with some accuracy. • I know how to investigate and analyse a range of existing products. • **I know that a chassis is the frame of a car.** • I know that all moving things have a kinetic energy.
Vocabulary Air resistance, design, structure, graphics, research, model, chassis, template.	**National Curriculum Links** Design: Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Make: select from and use a wider range of tools and equipment to perform practical tasks accurately. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. Evaluate: Investigate and analyse a range of existing products. Evaluate their ideas and	**Useful Links or sources of Information** Kapow D & T Scheme

	products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world. Technical Knowledge: Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products. Understand and use electrical systems in their products. Apply their understanding of computing to program, monitor and control their products.	
Year 5 Autumn term	**Mechanical Systems: Pop up Books**	**Key concepts**
Substantive Knowledge • I can research and design a pop up book. • **I can follow my design brief to make a product (pop up book).** • **I can use layers and spacers to cover the working mechanism.** • **I can create a high quality product suitable for a target user.** • I can evaluate my product.	**Create** a functional four page pop up storybook design, using lever, layers and spacers to create paper based mechanisms.	**Disciplinary Knowledge** • I know how to come up with a range of ideas. • **I know how to produce a detailed step by step plan**. • I know how important a prototype is and produced an accurate, well measured one. • I know how to select from and use a range of materials and components. • I know how to select from and use a wider range of tools and equipment to perform practical tasks accurately. • I know what is meant by input and output. • **I know mechanisms control movement.** • I know how to accurately measure to the nearest mm, cut and shape materials and components. • I know how to use techniques that involve a couple of steps. • **I know how to test and evaluate my final product and compare it to the design criteria**. • I know how to refer back to my design criteria as I design and make. • I know how key events in design technology have helped shape the world.

Vocabulary	**National Curriculum Links**	**Useful Links or sources of Information**
Design, input, motion, mechanism, criteria, research, reinforce, model.	Design: Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Make: select from and use a wider range of tools and equipment to perform practical tasks accurately. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. Evaluate: Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world. Technical Knowledge: Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products. Understand and use electrical systems in their products. Apply their understanding of computing to program, monitor and control their products.	Kapow D & T Scheme

Year 5 Spring term	**Food :What Could be healthier?**	**Key concepts**
Substantive Knowledge • I understand where food comes from. • I understand the term healthy. • **I can adapt a traditional recipe.** • **I can make a food product.** • I can evaluate my food product.	**Discover** the farm to fork process, **understand** the key welfare issues for rearing cattle. **Compare** the nutritional value of existing sauces and develop a healthier recipe.	**Disciplinary Knowledge** • **I understand where ingredients are reared and processed.** • I have an understanding of the ethical issues around the way in which cattle are farmed. • **I know what makes a balanced diet.** • I know the nutritional value of a recipe.

		• I **know how to write amended recipes.** • I know how to follow a recipe to make a dish with a heat source. • I know how to peel and chop. • I know how to avoid cross contamination.
Vocabulary Beef, reared, process, ethical, diet, ingredients, supermarket, farm, balanced.	**National Curriculum Links** Understand and apply the principles of a healthy and varied diet. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	**Useful Links or sources of Information** Kapow D & T Scheme
Year 5 Summer term	**Structures: Bridges**	**Key concepts**
Substantive Knowledge • **I can explore how to re-inforce a beam structure to improve it's strength.** • **I know how to build a spaghetti truss bridge**. • I know how to build a wooden truss bridge. • **I know how to complete and reinforce my truss bridge.** • I can evaluate my product.	**Test and analyse** various types of bridges to determine their strength and stability. **Explore** material properties and sources, before making, sawing and assembling a wooden truss bridge	Disciplinary Knowledge • I know how to come up with a range of ideas after I have collected information. • I know how to produce a detailed step by step plan and take into account the user's views. • **I can identify beam, arch and truss bridges.** • I can identify stronger and weaker structures. • I know how important a prototype is and produce an accurate, measured one. • I know how to select from and use a range of materials and components including construction materials. • I know how to select from and use a wider range of tools. • I know how to accurately measure out to the nearest mm.

		• **I know how to test and evaluate my final product and compare it to the design criteria, selecting materials or alternative ideas that are appropriat**e. I know how to refer back to my design criteria as I design and make.
Vocabulary Reinforce, truss bridge, wood sourcing, soft wood, hardwood, evaluate, quality of finish, accuracy, joints.	**National Curriculum Links** Design: Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Make: select from and use a wider range of tools and equipment to perform practical tasks accurately. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. Evaluate: Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world. Technical Knowledge: Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products. Understand and use electrical systems in their products. Apply their understanding of computing to program, monitor and control their products.	**Useful Links or sources of Information** Kapow D & T Scheme

Year 6 Autumn term	Digital World: Navigating the World	Key concepts
Substantive Knowledge • I can write a design brief and criteria based on a client's request. • **I can write a program to include multiple functions as part of a navigation device.** • I can develop a sustainable product concept. • **I can develop 3D CAD skills to produce a virtual model.** • I **can present a pitch to 'sell' the product to a client.**	**Design** and program a navigational tool to produce a multifunctional device for trekkers using CAD 3D modelling software. Pitch and explain the product to a guest panel.	Disciplinary Knowledge • I **know how to come up with a range of ideas after I have collected information.** • I know how to produce a step by step plan and take into account the user's views. • I know how to use market research to inform plans, taking into account culture and society designs. • I know how to refer back to my design criteria as I design and make. • **I know how key events and individuals in design technology have helped shape the world, and can identify key industries that use 3D CAD modelling.** • I know how much products cost to make, how innovative they are and how sustainable materials are. • I can program a N,E,S,W cardinal compass. • I can place & manoeuvre 3D objects using computer aided design. I can change their properties or combine more objects. • I know how to test and evaluate my final product and compare it to the design criteria. •
Vocabulary Pitch, investment, functional, function, feature, client, convince, stock, manufacture, 3D CAD, model, program, concept.	**National Curriculum Links** Design: Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Make: select from and use a wider range of tools and equipment to perform practical tasks	**Useful Links or sources of Information** Kapow D & T Scheme

	accurately. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. Evaluate: Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world. Technical Knowledge: Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products. Understand and use electrical systems in their products. Apply their understanding of computing to program, monitor and control their products.	
Year 6 Spring term	**Electrical Systems: Steady Hand Game**	**Key concepts**
Substantive Knowledge • I can research and analyse a range of children's toys. • I can design a steady hand game. • **I can construct a stable base.** • **I can assemble electronics and complete an electronic game.** • I can evaluate my product, identifying good points and what I might change.	**Understand** what us meant by fit for purpose design and form follows function. Design and **develop** a steady hand game using a series circuit, including housing and backboard.	Disciplinary Knowledge • **I know how to come up with a range of ideas after I have collected information.** • I can identify and name components in a specified product. • **I know how to produce a step by step plan.** • I know how to use market research to inform plans. • **I know how to select from and use a range of materials and components.** • I know how to accurately measure out to the nearest mm, cut and shape materials and components. • **I know how to test and evaluate my final product and compare it to the design criteria.** • I know how to refer back to my design criteria as I design and make.

Vocabulary Net, assemble, tabs, stable, design criteria, electrical circuit.	**National Curriculum Links** **National Curriculum Links** Design: Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Make: select from and use a wider range of tools and equipment to perform practical tasks accurately. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. Evaluate: Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world. Technical Knowledge: Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products. Understand and use electrical systems in their products. Apply their understanding of computing to program, monitor and control their products.	**Useful Links or sources of Information** Kapow D & T Scheme
Year 6 Summer term	**Food: Come Dine with Me**	**Key concepts**
Substantive Knowledge • **I can research and design a three course meal.** • I understand where food comes from and I can write up a recipe. • **I can prepare a starter using a recipe.**	D**evelop** a three course menu focussed on three key ingredients, as part of a paired challenge to develop the best class recipes. **Explore** each key ingredient's farm to fork process.	**Disciplinary Knowledge** • **I know how to follow a recipe to make a dish with or without a heat source.** • I know how to peel, chop, slice, grate, mix, spread, knead or bake. • **I can describe the process from farm to fork.**

• **I can prepare a main course using a recipe.** • **I can prepare a dessert using a recipe**.		
Vocabulary Bridge method, cookbook, cross-contamination, farm to fork, flavour, ingredients, method, preparation, recipe, storyboard.	**National Curriculum Links** Understand and apply the principles of a healthy and varied diet. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	**Useful Links or sources of Information** Kapow D & T Scheme