Design and technology curriculum
EYFS, KS1 and KS2

Pakeman Primary School

Design and technology curriculum
Progression of Knowledge
EYFS, KS1 and KS2

At Pakeman, we are a one and a half form entry school and therefore we have a Year A / Year B cycle of topics in nursery, KS1 and KS2 (this is not needed in 2 Plus or reception). In Reception, KS1 and KS2 we use the Kapow design and technology scheme of work. In 2 Plus, nursery and reception we use Development Matters. For each Kapow design and technology unit of work, children should be taught the **key knowledge**, **key skills** and **key vocabulary**. Please ensure that this information is fully covered in the series of lessons that you plan. As children move through the school, they will build on prior knowledge, skills and vocabulary.

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Design and technology Topic Map EYFS, KS1 and KS2 (Year A / Year B cycle)

The Kapow units of work are listed below for KS1 and KS2. In EYFS, we cover design and technology knowledge, skills and vocabulary through our topics and design and technology mini-themes (the reception mini-themes are linked to Kapow).

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
2-Plus	Topic: All About Me Mini-theme 1: Building homes	Art and design unit of work	Art and design unit of work	Topic: Transport Mini-theme 2: Vehicles	Topic: Down at the Farm Mini-theme 3: Cooking	Art and design unit of work
Nursery (Year A)	Art and design unit of work	Topic: Building & Construction Mini-theme 1: Buildings (junk modelling) Buildings (small world/construction)	Art and design unit of work	Topic: Pirates Mini-theme 2: Pirate role-play props	Topic: Shopping Mini-theme 3: Cooking	Art and design unit of work
Nursery (Year B)	Art and design unit of work	Topic: Building & Construction Mini-theme 1: Buildings (junk modelling) Buildings (small world/construction)	Art and design unit of work	Topic: Dinosaurs Mini-theme 2: Mask making	Topic: People Who Help Us Mini-theme 3: Cooking	Art and design unit of work
Reception	Art and design unit of work	Art and design unit of work	Topic: What We Eat Mini-theme 1: Soup making (Kapow)	Topic: Traditional Tales Mini-theme 2: Junk modelling (Kapow)	Art and design unit of work	Topic: Adventures Mini-theme 3: Boats (Kapow)
Year 1 and year 2 (Year A)	Art and design unit of work	Unit 1: Mechanisms: Wheels and axles (Option 1)	Art and design unit of work	Unit 2: Cooking and nutrition: Balanced diet	Art and design unit of work	Unit 3: Mechanisms: Fairground wheel
Year 1 and year 2 (Year B)	Art and design unit of work	Unit 1: Textiles: Puppets	Art and design unit of work	Unit 2: Structures: Baby Bear's chair	Art and design unit of work	Unit 3: Textiles: Pouches
Year 3 and year 4 (Year A)	Art and design unit of work	Unit 1: Electrical systems: Electric poster	Art and design unit of work	Unit 2: Textiles: Cross-stitch and appliqué (cushions)	Art and design unit of work	Unit 3: Digital world: Wearable technology
Year 3 and year 4 (Year B)	Art and design unit of work	Unit 1: Electrical systems: Torches	Art and design unit of work	Unit 2: Mechanical systems (Option 1: Mechanical cars)	Art and design unit of work	Unit 3: Cooking and nutrition: Eating seasonally
Year 5 and year 6 (Year A)	Art and design unit of work	Unit 1: Textiles: Stuffed toys	Art and design unit of work	Unit 2: Structure: Bridges	Art and design unit of work	Unit 3: Cooking and nutrition: Developing a recipe
Year 5 and year 6 (Year B)	Art and design unit of work	Unit 1: Digital world: Navigating the world	Art and design unit of work	Unit 2: Electrical systems: Steady hand game	Art and design unit of work	Unit 3: Mechanical systems (Option 1: Gears and pulleys)

Pakeman Primary School
DT curriculum – 2 Plus

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**All About Me**	**Nursery Rhymes**	**Favourite Stories**	**Transport**	**Down at the Farm**	**Under the Sea**
DT-related mini themes	Building homes			Vehicles	Cooking	
Key skills (overarching)	• Develop manipulation and control • Explore different materials and tools • Use large and small motor skills to do things independently, for example manage buttons and zips, and pour drinks • Explore different materials, using all their senses to investigate them. Manipulate and play with different materials					
Key Knowledge (overarching)	• Use their imagination as they consider what they can do with different materials • Make simple models which express their ideas					
Key knowledge (topic specific)	We can create buildings using a range of resources: small blocks, Duplo, big blocks, Podley. We can make small constructions and big constructions. Buildings are stronger if we use resources that can be joined together.			We can use our imagination to make an empty box/container into something else. Round objects can roll. We can use glue and tape to join resources together.	We must wash our hands before we cook. We can mix ingredients together. We can chop ingredients.	
Key vocabulary (topic specific)	build make big small Duplo			imagination box container round roll	wash clean cook make mix	

	blocks Podley strong join			glue tape stick join	stir ingredients chop careful safe	

Pakeman Primary School
DT curriculum – Nursery
Year A

Year A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Marvellous Me**	**Building & Construction**	**Making Music**	**Pirates**	**Shopping**	**Pets**
DT-related mini themes		Buildings (junk modelling) Buildings (small world/construction)		Pirate role-play props	Cooking	
Key skills (overarching)	• Use large-muscle movements to wave flags and streamers, paint and make marks • Use one-handed tools and equipment, for example, making snips in paper with scissors • Explore how things work • Explore different materials freely, in order to develop their ideas about how to use them and what to make					
Key Knowledge (overarching)	• Choose the right resources to carry out their own plan • Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them • Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park • Develop their own ideas and then decide which materials to use to express them • Create closed shapes with continuous lines, and begin to use these shapes to represent objects					
Key knowledge (topic specific)		We need to think carefully about the shapes we select for different purposes. If something doesn't work, we can try another way. We can ask for help if we support with an idea.		We can join materials in a range of ways including tape, glue, string. We need to make resources the correct size for the purpose (measure hat strap, eye patch string). We can roll, cut, fold paper/card.	We must wash our hands before we keep and keep them out of our mouths during cooking. A recipe helps us know how to cook something. Food changes when we cook it.	

Key vocabulary (topic specific)		construct think select shape flat curved roll try again help ask support idea		telescope boat hat eye-patch join tape glue string tie stick measure size roll fold	wash clean hygiene recipe cook change different hot cold safe	

Pakeman Primary School
DT curriculum – Nursery
Year B

Year B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Marvellous Me**	**Building & Construction**	**Songs & Rhymes**	**Dinosaurs**	**People Who Help Us**	**On Safari**
DT-related mini themes		Buildings (junk modelling) Buildings (construction)		Mask making	Cooking	
Key skills (overarching)	• Use large-muscle movements to wave flags and streamers, paint and make marks • Use one-handed tools and equipment, for example, making snips in paper with scissors • Explore how things work • Explore different materials freely, in order to develop their ideas about how to use them and what to make					
Key Knowledge (overarching)	• Choose the right resources to carry out their own plan • Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them • Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park • Develop their own ideas and then decide which materials to use to express them • Create closed shapes with continuous lines, and begin to use these shapes to represent objects					
Key knowledge (topic specific)		We need to think carefully about the shapes we select for different purposes. If something doesn't work, we can try another way. We can ask for help if we support with an idea.		We can join materials in a range of ways including tape, glue, string. We need to make resources the correct size for the purpose (measure mask straps). We can roll, cut, fold paper/card.	We must wash our hands before we keep and keep them out of our mouths during cooking. A recipe helps us know how to cook something. Food changes when we cook it.	

Key vocabulary (topic specific)		construct think select shape flat curved roll try again help ask support idea		mask join tape glue string tie stick measure size roll fold	wash clean hygiene recipe cook change different hot cold safe	

Pakeman Primary School
DT curriculum - Reception

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Who Am I?**	**Bears**	**What We Eat**	**Traditional Tales**	**Spring**	**Adventures**
DT-related mini themes			Soup Making (Kapow)	Junk Modelling (Kapow)		Boats (Kapow)
Key skills (overarching)	• Progress towards a more fluent style of moving, with developing control and grace • Develop their small motor skills so that they can use a range of tools competently, safely and confidently • Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor • Create collaboratively, sharing ideas, resources and skills • Use a range of small tools, including scissors, paintbrushes and cutlery • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function					
Key knowledge (overarching)	• 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 • Share their creations, explaining the process they have used					
Key knowledge (topic specific)			We can describe how fruits and vegetables look, feel, smell and taste. We can design and create our own recipes. We must learn how to use a knife safely. Fruit and vegetables can	We can reuse resources and use our imaginations to turn them into something else. Different materials can be easy or difficult to cut and shape. We need to plan and select the correct materials when making a model.		It is important to use waterproof materials to make a boat. There are different types of boats that are used for different things. The shape and structure of boats affects the way they move.

			have seeds inside them.	We can explain our ideas and creations to others.		If our design doesn't work we can improve it.
Key vocabulary (Topic specific)			texture taste appearance senses explore design recipe safety packaging	model junk Modelling tools materials resources craft idea plan develop creation explain		waterproof test materials predict float sink compare investigate structure improve reflect

Pakeman Primary School
Design and technology curriculum - Year 1/2
Year A

Year A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Toys**	**Heroes**	**Kings and Queens**	**Celebrations**	**Classroom adventures**	**Minibeasts**
Design and technology Unit of Work	**Art and design unit of work**	Mechanisms: Wheels and axles (Option 1)	**Art and design unit of work**	Cooking and nutrition: Balanced diet	**Art and design unit of work**	Mechanisms: Fairground wheel
Key skills (overarching)	• Begin to design and make simple products, using materials to suit the purpose (e.g., making a simple model or a toy) • Use basic tools safely (e.g., scissors, glue, simple hammers) • Begin to evaluate their products (e.g., "Does it stand up? Does it work?")					
Key knowledge (overarching)	• Identify a range of materials and describe their properties (e.g., metal is shiny and strong, fabric is soft) • Understand that tools are used for specific purposes • Learn about simple mechanisms (e.g., how a lever works or a simple moving toy)					
Key knowledge (topic specific)		1.Many things that move have parts inside to help them work. 2.Mechanisms usually limit unwanted movement. 3.An axle allows the wheel to turn without falling off.		1.That 'diet' means the food and drink that a person or animal usually eats. 2.What makes a balanced diet. 3.That the five main food groups are: carbohydrates, fruits and vegetables, protein, dairy and oils and spreads. 4.That I should eat a range of different foods from each food		1.Everyday objects have mechanisms. 2.Many things that move have parts inside to help them work. 3.Mechanisms usually limit unwanted movement. 4.Everyday objects utilise wheels and axles. 5.Wheels must be able to turn to work effectively. 6.Axles allow wheels to turn without falling off.

				group, and roughly how much of each food group. 5.That 'ingredients' means the items in a mixture or recipe. 6.How to cut, grate, snip and spread to prepare foods. 7.How to review and give a score to evaluate.		7.The features of a fairground wheel include the wheel, frame, pods, axle and axle holder.
Key vocabulary (topic specific)		axle axle holder better careful choose compare design mechanism movement product straight line tool turn user wheel		appearance balanced carbohydrates combination dairy design diet fruit grater ingredients menu oils proteins snip spread		design brief design criteria evaluate frame model opinion rotate survey
Week 1		LO: To develop cutting skills by shaping wheels		LO: To recognise foods and their food groups		LO: To explore wheel mechanisms and design a fairground wheel
Week 2		LO: To refine cutting skills by shaping round wheels		LO: To identify the balance of food groups in a meal		LO: To select materials with appropriate properties
Week 3		LO: To evaluate by comparing and		LO: To identify an appropriate piece of		LO: To build and test a moving wheel

		discussing different wheel designs		equipment to prepare a given food		
Week 4		LO: To create a design by drawing plans for a pull-along toy		LO: To select balanced combinations of ingredients		LO: To conduct a simple survey to gather opinions
Week 5		LO: To apply finishing techniques by decorating a pull-along toy		LO: To design based on criteria		LO: To finish and evaluate a structure with a rotating wheel
Week 6		N/A		LO: To evaluate a dish based on design criteria		N/A

Pakeman Primary School
Design and technology curriculum - Year 1/2
Year B

Year B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**This is Me!**	**Animals**	**Explorers**	**The Circus**	**Inventions**	**Holidays**
Design and technology Unit of Work	**Art and design unit of work**	Textiles: Puppets	**Art and design unit of work**	Structures: Baby Bear's chair	**Art and design unit of work**	Textiles: Pouches
Key skills (overarching)	• Begin to design and make simple products, using materials to suit the purpose (e.g., making a simple model or a toy) • Use basic tools safely (e.g., scissors, glue, simple hammers) • Begin to evaluate their products (e.g., "Does it stand up? Does it work?")					
Key knowledge (overarching)	• Identify a range of materials and describe their properties (e.g., metal is shiny and strong, fabric is soft) • Understand that tools are used for specific purposes • Learn about simple mechanisms (e.g., how a lever works or a simple moving toy)					
Key knowledge (topic specific)		1.To know that 'joining technique' means connecting two pieces of material together. 2.To know that there are various temporary methods of joining fabric by using staples, glue or pins. 3.To understand that different techniques for joining materials can be used for different purposes. 4.To understand that a template (or fabric pattern) is used to cut		1.To know that shapes and structures with wide, flat bases or legs are the most stable. 2.To understand that the shape of a structure affects its strength. 3.To know that materials can be manipulated to improve strength and stiffness. 4.To know that a structure is something which has been formed or made from parts.		1.To know that sewing is a method of joining fabric. 2.To know that different stitches can be used when sewing. 3.To understand the importance of tying a knot after sewing the final stitch. 4.To know that a thimble can be used to protect my fingers when sewing.

		out the same shape multiple times. 5.To know that drawing a design idea is useful to see how an idea will look		5.To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move. 6.To know that a 'strong' structure is one which does not break easily. 7.To know that a 'stiff' structure or material is one which does not bend easily.		
Key vocabulary (topic specific)		decorate design fabric glue model hand puppet safety pin staple stencil template		design criteria man-made natural properties structure stable shape model test		decorate fabric fabric glue knot needle needle threader running stitch sew template thread
Week 1		LO: To join fabrics together using different methods		LO: To explore the concept and features of structures and the stability of different shapes		LO: To sew a running stitch
Week 2		LO: To use a template to create my design		LO: To understand that the shape of the structure affects its strength		LO: To sew a running stitch
Week 3		LO: To join two fabrics together accurately		LO: To make a structure according to design criteria		LO: To join fabrics using a running stitch

Week 4		LO: To embellish my design using joining methods		LO: To produce a finished structure and evaluate its strength, stiffness and stability		LO: To decorate a pouch using fabric glue or stitching
Week 5		N/A		N/A		N/A
Week 6		N/A		N/A		N/A

Pakeman Primary School
Design and technology curriculum - Year 3/4
Year A

Year A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Stone Age to Iron Age**	**Journeys**	**Anglo Saxons**	**Mountains**	**Time-travellers**	**Rainforests**
Design and technology Unit of Work	**Art and design unit of work**	Electrical systems: Electric poster	**Art and design unit of work**	Textiles: Cross-stitch and appliqué (cushions)	**Art and design unit of work**	Digital world: Wearable technology
Key skills (overarching)	• Plan and design a product with more detail (e.g., sketching ideas, choosing appropriate materials) • Use more advanced tools (e.g., saws, drills, glue guns) under supervision • Make more complex models that may include mechanisms (e.g., moving parts, basic electrical circuits) • Evaluate products with consideration of their function and design					
Key knowledge (overarching)	• Understand that different materials have different properties and uses (e.g., glass is transparent, wood is strong) • Learn about more complex mechanisms (e.g., pulleys, gears) • Begin to understand that products are designed to meet specific needs (e.g., designing a product for a particular user or environment)					
Key knowledge (topic specific)		1.To understand that an electrical system is a group of parts (components) that work together to transport electricity around a circuit. 2.To understand common features of an electric product (switch, battery or plug, dials, buttons, etc.) 3.To list examples of common electric products (kettle, remote control, etc.)		1.Appliqué is a way of mending or decorating a textile by applying smaller pieces of fabric. 2.When two edges of fabric have been joined together, it is called a seam. 3.It is important to leave space on the fabric for the seam. 4.Some products are turned inside out after sewing so the stitching is hidden.		1.To understand that, in programming, a 'loop' is code that repeats something again and again until stopped. 2.To know that a micro:bit is a pocket-sized, codeable computer. 3.To know that a simulator is able to replicate the functions of an existing piece of technology.

		4.To understand that an electric product uses an electrical system to work (function). 5.To know the name and appearance of a bulb, battery, battery holder and crocodile wire to build simple circuits.				4.To know what the 'Digital revolution' is and features of some of the products that have evolved as a result. 5.To understand what is meant by 'point of sale display.' 6.To know that CAD stands for 'Computer-aided design'. 7.To know what a focus group is by taking part in one.
Key vocabulary (topic specific)		battery bulb circuit circuit component crocodile wire design criteria electric product electrical system feedback final design information design peer-assessment public research self-assessment sketch		accurate appliqué cross-stitch cushion design embellish fabric patch running stitch seam stuffing template thread		analogue analyse computer-aided design (CAD) control design criteria digital digital revolution display electronic fastening feature feedback form function product design

Week 1		LO: To understand the purpose of information design		LO: To learn how to sew cross-stitch and appliqué		LO: To research and evaluate existing products
Week 2		LO: To research a set topic to develop a range of initial ideas		LO: To design a product and its template		LO: To develop design criteria
Week 3		LO: To develop an initial idea into a final design		LO: To decorate fabric using appliqué and cross-stitch		LO: To use code to program and control a product
Week 4		LO: To assemble my final product and incorporate a simple circuit		LO: To assemble and complete a cushion		LO: To develop and communicate ideas
Week 5		N/A		N/A		LO: To develop ideas through computer-aided design
Week 6		N/A		N/A		LO: To improve a design based on feedback

Pakeman Primary School
Design and technology curriculum - Year 3/4
Year B

Year B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Ancient Egypt**	**Energy and power**	**Romans**	**Active Planet**	**Chocolate**	**Europe**
Design and technology Unit of Work	**Art and design unit of work**	Electrical systems: Torches	**Art and design unit of work**	Mechanical systems (Option 1: Mechanical cars)	**Art and design unit of work**	Cooking and nutrition: Eating seasonally
Key skills (overarching)	• Plan and design a product with more detail (e.g., sketching ideas, choosing appropriate materials).Use more advanced tools (e.g., saws, drills, glue guns) under supervision • Make more complex models that may include mechanisms (e.g., moving parts, basic electrical circuits) • Evaluate products with consideration of their function and design					
Key knowledge (overarching)	• Understand that different materials have different properties and uses (e.g., glass is transparent, wood is strong) • Learn about more complex mechanisms (e.g., pulleys, gears) • Begin to understand that products are designed to meet specific needs (e.g., designing a product for a particular user or environment)					
Key knowledge (topic specific)		1.Electrical conductors are materials which electricity can pass through. 2.Electrical insulators are materials which electricity cannot pass through. 3.A battery contains stored electricity that can be used to power products. 4.An electrical circuit must be complete for electricity to flow.		1.Extra information on drawings or diagrams can help the user understand a design or idea. 2.An exploded diagram shows how the parts of a product fit together. 3.A prototype is a detailed model that helps users understand how a product will work. 4.A problem or need is something that a designer can help to solve.		1.That seasonal means foods that grow in a given season in a given country. 2.Some seasonal foods that grow in the UK and what season they grow in. 3.That eating seasonal foods can have a positive impact on the environment. 4.How to describe the flavour and texture of foods.

		5.A switch can be used to complete and break an electrical circuit.		5.A target audience is a group of people that might like the idea.		5.How to cut and peel safely. 6.That the appearance of food is as important as taste. 7.That similar coloured fruits and vegetables often have similar nutritional benefits.
Key vocabulary (topic specific)		battery bulb buzzer circuit diagram component conductor electrical item electronic item insulator series circuit switch target audience test torch wire		bearing chassis force machine mechanism prototype target audience		appearance arid climate complementary design evaluate export import Mediterranean seasonal temperate tropical vegetable weather
Week 1		LO: To learn about electrical items and how they work		LO: To build a simple prototype car chassis		LO: To explain why food comes from different places around the world
Week 2		LO: To analyse and evaluate electrical products		LO: To build a prototype of a sustainable slingshot car chassis		LO: To explain the benefits of seasonal foods
Week 3		LO: To design a product to fit a set of specific user needs		LO: To build a prototype of a durable slingshot car chassis		LO: To develop cutting and peeling skills
Week 4		LO: To make and evaluate a torch		LO: To design a mechanised toy car		LO: To evaluate seasonal ingredients
Week 5		N/A		LO: To make a mechanical toy car from a kit		LO: To design a mock-up using criteria
Week 6		N/A		N/A		LO: To evaluate a dish

Pakeman Primary School
Design and technology curriculum - Year 5/6
Year A

Year A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Ancient Greece**	**Weather and climate**	**Vikings**	**Antarctica**	**Windrush**	**Citizens of the World**
Design and technology Unit of Work	**Art and design unit of work**	Textiles: Stuffed toys	**Art and design unit of work**	Structure: Bridges	**Art and design unit of work**	Cooking and nutrition: Developing a recipe
Key skills (overarching)	• Design and make products with more complexity (e.g., using CAD software for design or making a functional, decorative object) • Use a range of tools and materials safely and accurately • Evaluate products systematically (e.g., testing, improving, considering costs, environmental impact) • Develop an understanding of food technology, including nutritional aspects of designing meals					
Key knowledge (overarching)	• Understand that the properties of materials influence their use in design (e.g., why certain materials are used for specific functions in engineering or product design) • Understand how systems and mechanisms work (e.g., electrical circuits, linkages, cams) • Learn about sustainability in design (e.g., reusing materials, recycling)					
Key knowledge (topic specific)		1.To know that blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric. 2.To understand that it is easier to finish simpler designs to a high standard. 3.To know that soft toys are often made by creating appendages separately and then		1.To understand some different ways to reinforce structures. To understand how triangles can be used to reinforce bridges. 2.To know that properties are words that describe the form and function of materials. 3.To understand why material selection is important based on their properties.		1.That beef comes from cows reared on farms. 2.That recipes can be adapted to suit nutritional needs and dietary requirements. 3.That nutritional information is found on food packaging. 4.That coloured chopping boards can prevent cross-contamination.

		attaching them to the main body. 4.To know that small, neat stitches which are pulled taut are important to ensure that the soft toy is strong and holds the stuffing securely.		4.To understand the material (functional and aesthetic) properties of wood.		5.That food packaging serves many purposes
Key vocabulary (topic specific)		accurate annotate appendage blanket-stitch design criteria detail evaluation fabric sew shape stuffed toy stuffing template		corrugation hardwood joints lamination properties quality of finish reinforce rigid sandpaper softwood stiffness strength saw wood file/rasp		abattoir balanced beef cook cross-contamination cut farm grate hygiene ingredients label measure nutrition process recipe
Week 1		LO: To design a stuffed toy		LO: To explore how to reinforce a beam (structure) to improve its strength		LO: To understand how ingredients are reared and processed
Week 2		LO: To sew a blanket stitch		LO: To build a spaghetti truss bridge		LO: To make adaptations to design a recipe
Week 3		LO: To create and add decorations to fabric		LO: To build a wooden truss bridge		LO: To evaluate nutritional content
Week 4		LO: To use a blanket stitch to assemble the components of a stuffed toy		LO: To complete, reinforce and evaluate my truss bridge		LO: To practise food preparation skills
Week 5		N/A		N/A		LO: To design a product label

Week 6		N/A		N/A		LO: To follow and make an adapted recipe

Pakeman Primary School
Design and technology curriculum - Year 5/6
Year B

Year B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**World War 2**	**Marvelous Maps**	**London**	**South America**	**The Sikh Empire**	**Food and farming**
Design and technology Unit of Work	**Art and design unit of work**	Digital world: Navigating the world	**Art and design unit of work**	Electrical systems: Steady hand game	**Art and design unit of work**	Mechanical systems Option 1: Gears and pulleys
Key skills (overarching)	• Design and make products with more complexity (e.g., using CAD software for design or making a functional, decorative object).Use a range of tools and materials safely and accurately • Evaluate products systematically (e.g., testing, improving, considering costs, environmental impact) • Develop an understanding of food technology, including nutritional aspects of designing meals					
Key knowledge (overarching)	• Understand that the properties of materials influence their use in design (e.g., why certain materials are used for specific functions in engineering or product design) • Understand how systems and mechanisms work (e.g., electrical circuits, linkages, cams) Learn about sustainability in design (e.g., reusing materials, recycling)					
Key knowledge (topic specific)		1.To know that accelerometers can detect movement. 2.To understand that sensors can be useful in products as they mean the product can function without human input. 3.To know that designers write design briefs and develop design criteria to enable them to fulfil a client's request.		1.To know that 'form' means the shape and appearance of an object. 2.To know the difference between 'form' and 'function'. 3.To understand that 'fit for purpose' means that a product works how it should and is easy to use. 4.To know that 'form over purpose' means		1.Mechanical systems that use gears in everyday objects (e.g. bicycle, clock, etc.). 2.Gears and pulleys allow us to transfer movement and force from one part of a mechanical system to another. 3.Gears allow us to increase the output of a mechanism.

		4.To know that 'multifunctional' means an object or product has more than one function. 5.To know that magnetometers are devices that measure the Earth's magnetic field to determine which direction you are facing.		that a product looks good but does not work very well. 5.To know the importance of 'form follows function' when designing: the product must be designed primarily with the function in mind. 6.To understand the diagram perspectives 'top view', 'side view' and 'back'.		4.Their final product can still be improved by different materials or techniques. 5.Evaluating their designs in detail will help them understand their successful and less successful parts.
Key vocabulary (topic specific)		application (apps) biodegradable client corrode design brief design criteria duplicate environmentally friendly equipment function GPS tracker smartphone		assemble battery benefit bulb buzzer circuit component conductor copper function insulator LED		annotate axle force gear gear system input machine market research mechanism output problem statement pulley system renewable energy research
Week 1		LO: To write a design brief and criteria based on a client request		LO: To research and analyse a range of children's toys		LO: To create a working gear system and explain its function
Week 2		LO: To write a program to include multiple functions as part of a navigation device		LO: To design a steady hand game		LO: To improve a working gear system and suggest some applications

Week 3		LO: To develop a sustainable product concept		LO: To construct a stable base		LO: To create a working pulley system and explain its function
Week 4		LO: To develop 3D CAD skills to produce a virtual model		LO: To assemble electronics and complete their electronic game		LO: To conduct market research to discover useful tasks an eco-gadget bike could perform
Week 5		LO: To present a pitch to 'sell' the product to a specified client		N/A		LO: To design and evaluate an eco-gadget bike using design criteria
Week 6		N/A		N/A		N/A