

Design and technology

Long-term plan

Condensed mixed-age

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Suggested long-term plan: Design and technology

Overview (All year groups)

Cycle A	Autumn	Spring	Summer
Year 1/2	Structures: Stable structures	Textiles: Simple stitches	Mechanisms: Wheels and axles
Year 3/4	Structures: Product packaging	Digital world: Wearable technology	Cooking and nutrition: Eating seasonally
Year 5/6	Electrical systems: Wobble bots	Mechanical systems: Gears and pulleys	Structures: Bridges
Cycle B	Autumn	Spring	Summer
Year 1/2	Mechanisms: Levers	Cooking and nutrition: Balanced diet	Structures: A chair for a bear
Year 3/4	Cooking and nutrition: Adapting a recipe	Mechanical systems: Mechanical cars	Electrical systems: Exploring electrical products
Year 5/6	Textiles: Bags	Cooking and nutrition: Come dine with me	Digital world: Navigating the world

Click here for information on [different mixed-age year group combinations for D&T](#).

Kapow Primary is refreshing its D&T scheme for 2026/27 – learn more [here](#). Units will be added to the upcoming long-term plan as they are published, well in advance of teaching.

Click the link for a [combined mixed-age Art and D&T long-term plan](#).

Suggested long-term plan: Design and technology

Overview - Key stage 1

Year 1/2

Unit 1	<u>Structures: Stable structures</u> 5 lessons Investigating stable shapes and using an understanding of balance to discover how wide or heavy bases improve stability in freestanding structures. Pupils apply their understanding by designing and making a fun, stable pencil pot for a Year 1 pupil.	Unit 2	<u>Textiles: Simple stitches</u> 5 lessons Examining fabrics, practising basic sewing techniques and identifying how different materials are made from threads. Pupils learn how to thread a needle and sew simple stitches before designing and creating a piece of decorative bunting.
Unit 3	<u>Mechanisms: Wheels and axles</u> 5 lessons Developing an understanding of how wheels, axles and axle holders work while practising cutting straight and curved shapes with scissors. Pupils problem-solve to improve their wheel designs before designing, building and evaluating a pull-along toy against design criteria.		

Suggested long-term plan: Design and technology

Overview - Lower key stage 2

Year 3/4

Unit 1	<u>Structures: Product packaging</u> 5 lessons Exploring how 3D shell structures are created from nets and used in packaging, pupils evaluate what makes good packaging and follow a simple design criteria to create their own.	Unit 2	<u>Digital world: Wearable technology</u> 5 lessons Exploring the development of LEDs and how they have enabled a wide range of light-up wearable technologies. Pupils apply their understanding by creating and testing programs to control an array of LEDs before using computer-aided design (CAD) to develop a wearable product.
Unit 3	<u>Cooking and nutrition: Eating seasonally</u> 6 lessons Discovering where and when fruit and vegetables are grown by learning about seasonality in the UK. Pupils respond to a brief by designing a seasonal tart using ingredients harvested in the UK during May and June.		

Suggested long-term plan: Design and technology

Overview - Upper key stage 2

Year 5/6

Unit 1	<u>Electrical systems: Wobble bots</u> 5 lessons Building on existing knowledge of circuits by introducing motors and exploring how they create movement in products. Pupils investigate wobble mechanisms before designing and developing a wobble bot tailored to a specific user's needs.	Unit 2	<u>Mechanical systems: Gears and pulleys</u> 5 lessons Investigating the history, mechanics and uses of gears and pulleys. Pupils build a gear-and-pulley mechanism before applying their understanding to design an eco-bike.
Unit 3	<u>Structures: Bridges</u> 5 lessons Learning about different types of bridges and how why they are helpful in different situations. Pupils build models of truss bridges and suspension bridges to investigate strengthening techniques like using triangles and suspension cables.		

Suggested long-term plan: Design and technology

Overview - Key stage 1

Year 1/2

Unit 1	<u>Mechanisms: Levers</u> 5 lessons Investigating different types of levers and how they work in everyday mechanisms. Pupils identify pivots and levers in products before creating their own lever systems and exploring how they make tasks easier.	Unit 2	<u>Cooking and nutrition: Balanced diet</u> 6 lessons Learning about the importance of a balanced diet and using that knowledge to create a tasty wrap, this unit includes new lessons with both teacher and pupil videos.
Unit 3	<u>Structures: A chair for a bear</u> 5 lessons Investigating strong shapes and the properties of stiff and flexible materials by designing a chair inspired by the story 'There's a Bear on My Chair'. Pupils apply their understanding to build a suitable chair for the bear using appropriate materials and construction techniques.		

Suggested long-term plan: Design and technology

Overview - Lower key stage 2

Year 3/4

Unit 1	<u>Cooking and nutrition: Adapting a recipe</u> 5 lessons Designing and making biscuits for a chosen target audience by exploring existing products, following recipes and evaluating ingredients, taste and appearance. Pupils develop food preparation skills by adapting a biscuit recipe, creating their own design and evaluating how well their finished product meets the design criteria.	Unit 2	<u>Mechanical systems: Mechanical cars</u> 5 lessons Exploring mechanical systems by building and testing prototype cars to identify effective design features. Pupils conduct market research, create design criteria and evaluate products from a customer perspective before designing their own mechanical car kit.
Unit 3	<u>Electrical systems: Exploring electrical products</u> 5 lessons Investigating electrical components and circuits and how they are used in everyday products to improve safety and convenience. Pupils build simple circuits with switches before designing their own electrical product using a cross-sectional diagram.		

Suggested long-term plan: Design and technology

Overview - Upper key stage 2

Year 5/6

Unit 1	<u>Textiles: Bags</u> 5 lessons Creating a bag for a specific user using pattern piece templates. Pupils select and sew functional and decorative features, including pockets and fastenings, to meet the needs of their design brief.	Unit 2	<u>Cooking and nutrition: Come dine with me</u> 6 lessons Developing food preparation and evaluation skills by researching and preparing a three-course meal. Pupils investigate the journey of a main ingredient from 'farm to fork', taste-test and score their dishes, and write a recipe for a favourite meal.
Unit 3	<u>Digital world: Navigating the world</u> 5 lessons Programming a navigation tool to produce a multifunctional device for trekkers. Pupils combine 3D virtual objects to form a complete product concept using 3D computer-aided design modelling software.		