

D&T Curriculum Overview

Kapow offers full coverage of the KS1 and KS2 Design & Technology curriculum and we have categorised our content into five areas:

- Structures
- Mechanisms
- Electrical Systems
- Cooking and Nutrition
- Textiles







Aside from Electrical Systems, which is KS2 only, each of these acts as the focus for a topic within each year group:

	Cooking and Nutrition	Mechanisms	Structures	Textiles	Electrical Systems
Y1	Fruit and Vegetable Smoothie	Moving Storybook: Sliders Wheels and Axles	Windmills	Puppets	
Y2	A Balanced Diet	Moving Monsters Ferris Wheels	Baby Bear's Chair	Pouches	
Y3	Eating Seasonally	Pneumatic Toys	Castles	Cushions	Static Electricity
Y4	Adapting a Recipe	Slingshot Cars	Pavilions	Fastenings	Torches
Y5	What Could Be Healthier?	Pop-up Books	Bridges	Stuffed Toys	Electric Greetings Cards
Y6	Come Dine With Me	Automata Toys	Playgrounds	Waistcoats	Steady Hand Games

There are then four strands that run through each topic:



National Curriculum by Kapow's themes and topics

Key stage 1 National Curriculum D&T subject content	D&T Strands	Kapow Topics	
Pupils should be taught to:		Year 1	Year 2
Design purposeful, functional, appealing products for themselves and other users based on design criteria		Moving Story Books Windmills Puppets Wheels and Axles	Moving Monsters Baby Bear's Chair Pouches Ferris Wheels
Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology		Moving Story Books Windmills, Puppets Wheels and Axles	Moving Monsters Baby Bear's Chair Pouches Ferris Wheels
Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]		Moving Story Books Windmills Puppets Wheels and Axles	Moving Monsters Baby Bear's Chair Pouches Ferris Wheels
Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics		Moving Books Windmills Puppets Wheels and Axles Smoothies	Moving Monsters Baby Bear's Chair Pouches Ferris Wheels A Balanced Diet
Explore and evaluate a range of existing products		Moving Story Books Windmills Wheels and Axles Smoothies	Moving Monsters Pouches Ferris Wheels A Balanced Diet
Evaluate their ideas and products against design criteria		Moving Story Books Windmills Puppets Wheels and Axles	Moving Monsters Baby Bear's Chair Pouches Ferris Wheels

Build structures, exploring how they can be made stronger, stiffer and more stable	Technical Knowledge	Windmills	Baby Bear's Chair Ferris Wheels
Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	Technical Knowledge	Moving Story Books Wheels and Axles	Moving Monsters Ferris Wheels
Cooking and Nutrition: Use the basic principles of a healthy and varied diet to prepare dishes	Technical Knowledge	Fruit and Vegetable Smoothie	A Balanced Diet
Cooking and Nutrition: Understand where food comes from	Technical Knowledge	Fruit and Vegetable Smoothie	A Balanced Diet

Key stage 2 National Curriculum Computing subject content	D&T Strands	Kapow Topics			
		Y3	Y4	Y5	Y6
Pupils should be taught 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	Design	Eating Seasonally Pneumatic Toys Castles Cushions Static Electricity	Slingshot Cars Torches Pavilions Fastenings Adapting a Recipe	Bridges Pop-Up Books Greetings Cards What Could Be Healthier? Stuffed Toys	Playgrounds Automata Toys Come Dine With Me Waistcoats Steady Hand Game
Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	Design	Pneumatic Toys Castles Cushions Static Electricity	Slingshot Cars Torches Pavilions Fastenings	Bridges Pop-Up Books Greetings Cards What Could Be Healthier? Stuffed Toys	Playgrounds Automata Toys Waistcoats Steady Hand Game
Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	Make	Pneumatic Toys Castles Cushions Static Electricity	Slingshot Cars Torches Pavilions Fastenings	Bridges Pop-Up Books Greetings Cards Soft Toys	Playgrounds Automata Toys Waistcoats Steady Hand Game

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		Eating Seasonally Pneumatic Toys Castles Cushions Static Electricity	Slingshot Cars Torches Pavilions Fastenings Adapting a Recipe	Bridges Pop-Up Books Greetings Cards What Could Be Healthier? Stuffed Toys	Playgrounds Come Dine With Me Waistcoats Steady Hand Game
Investigate and analyse a range of existing products		Pneumatic Toys Castles Cushions Static Electricity	Slingshot Cars Torches Pavilions Fastenings Adapting a Recipe	Bridges Pop-Up Books Greetings Cards Stuffed Toys	Playgrounds Automata Toys Waistcoats Steady Hand Game
Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work		Pneumatic Toys Castles Cushions Static Electricity	Slingshot Cars Torches Pavilions Fastenings Adapting a Recipe	Bridges Pop-Up Books Greetings Cards Stuffed Toys	Playgrounds Automata Toys Waistcoats Steady Hand Game
Understand how key events and individuals in design and technology have helped shape the world		Pneumatic Systems	Slingshot Cars Torches	What Could Be Healthier?	Come Dine With Me
Apply their understanding of how to strengthen, stiffen and reinforce more complex structures		Castles	Pavilions	Bridges	Playgrounds
Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]		Pneumatic Toys	Slingshot Cars	Pop-Up Books	Automata Toys
Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]		Static Electricity	Torches	Greetings Cards	Steady Hand Games
Apply their understanding of computing to program, monitor and control their products		Pneumatic Toys	Torches	Computing > Mars Rover 2* , Computing > Micro:bit**	Computing > Bletchley Park 2***
Cooking and Nutrition: Understand and apply the principles of a healthy and varied diet		Eating Seasonally	Adapting a Recipe	What Could Be Healthier?	Come Dine With Me
Cooking and Nutrition: Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques		Eating Seasonally	Adapting a Recipe	What Could Be Healthier?	Come Dine With Me

Cooking and Nutrition: Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed		Eating Seasonally	Adapting a Recipe	What Could Be Healthier?	Come Dine With Me
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*Mars Rover 2 is used to familiarise pupils with CAD and consider how they can use their computing knowledge to control a physical system, while identifying how the product could be adapted to make it more effective

**Micro:bit involves pupils using coding to program a simple device. To make stronger links with D&T, ask pupils to consider how they could house the pedometer, polling program or scoreboard to suit its target audience

*** Bletchley Park 2 covers key components of a computer including different forms of input and asks pupils to design their own. To make stronger links with D&T, encourage them to consider how their computer would interact with physical systems

Overview of Kapow's topics by year

Year 1	<p><i>Food: Fruit and Vegetable Smoothie</i> (4 lessons) Children learn how to identify fruits and vegetables and then design and make a smoothie Go to topic</p>	<p><i>Mechanisms: Moving Story Books</i> (4 lessons) Children explore levers and sliders to make a moving story book Go to topic</p>	<p><i>Structures: Windmills</i> (4 lessons) Through the theme of windmills, pupils design and create their own structure and functioning windmill Go to topic</p>	<p><i>Textiles: Puppets</i> (4 lessons) Children learn the different ways they can join fabrics together through the creation of a puppet Go to topic</p>	<p><i>Mechanisms: Wheels and Axles</i> (4 lessons) Pupils experiment with mechanisms and troubleshoot why some wheels don't rotate, before designing and building a moving vehicle Go to topic</p>
Curriculum coverage	<p>Design Designing for others</p> <p>Make Chopping fruit and vegetables Making a smoothie</p> <p>Evaluate Evaluating and adapting designs</p> <p>Technical Knowledge Describing and grouping fruits by texture and taste Understanding the difference between fruit and vegetables</p>	<p>Design Designing for others</p> <p>Make Assembling accurately Creating different movements (up, down, along and around)</p> <p>Evaluate Testing a finished product</p> <p>Technical Knowledge Understanding what a mechanism is Understanding how to create different movement</p>	<p>Design Designing for others</p> <p>Make Assembling different components to work together to create motion Assembling accurately Cutting neatly</p> <p>Evaluate Testing a finished product</p> <p>Technical Knowledge Developing awareness of different structures for different purposes Understanding how to turn 2D nets into 3D structures Understanding what mechanisms are</p>	<p>Design Designing for others</p> <p>Make Selecting suitable equipment Sequencing steps for construction</p> <p>Evaluate Reflecting on their finished product</p> <p>Technical Knowledge Knowing the different ways fabric can be joined Understanding how to prepare fabric for joining</p>	<p>Design Designing mechanisms</p> <p>Make Adapting Mechanisms Measuring and cutting accurately Following a design brief Working to scale Identifying materials commonly used for wheels</p> <p>Evaluate Researching and testing mechanisms</p> <p>Technical Knowledge Understanding how an axle works</p>
Cross curricular links	Science		Maths	English	Maths

<p><i>Year 2</i></p>	<p><i>Food: A Balanced Diet</i> (4 lessons) Pupils explore what makes a balanced diet and taste test combinations of different food groups before designing and making a wrap Go to topic</p>	<p><i>Mechanisms: Moving Monsters</i> (4 lessons) Pupils analyse existing levers and linkage systems to identify components that they can use to plan, design and develop a mechanical monster Go to topic</p>	<p><i>Structures: Baby Bear's Chair</i> (4 lessons) Pupils experiment with different shapes and manipulate materials to explore and evaluate a range of structural properties. They apply this knowledge to their own design, make and test task Go to topic</p>	<p><i>Textiles: Pouches</i> (4 lessons) Children design and make their own wallet or purse, learning to use running stitch to join two pieces of fabric together Go to topic</p>	<p><i>Mechanisms: Ferris Wheel</i> (4 lessons) Pupils explore existing mechanisms in order to design, test and make their own big wheel style ride Go to topic</p>
<p><i>Curriculum coverage</i></p>	<p>Design Designing packaging for their smoothie</p> <p>Make Preparing food safely and hygienically Chopping safely using the bridge grip</p> <p>Evaluate Conducting product research Evaluating a design</p> <p>Technical Knowledge Understanding how fruit and vegetables grow Knowing the food groups Understanding what makes a balanced diet</p>	<p>Design Creating and using design criteria, generating ideas Planning for design and manufacture</p> <p>Make Cutting and assembling accurately Selecting appropriate equipment and materials</p> <p>Evaluate Carrying out primary research and applying to design</p> <p>Technical Knowledge Learning mechanical components Identifying input and output</p>	<p>Design Designing for others, using criteria and applying their knowledge of structures</p> <p>Make Cutting and assembling accurately</p> <p>Evaluate Examples of natural & manmade structures Testing and evaluating</p> <p>Technical Knowledge Understanding the definition and importance of strength, stability and stiffness Knowing that different shapes can strengthen or weaken structures and that materials can be manipulated to improve strength and stiffness</p>	<p>Design Considering purpose in the design process</p> <p>Make Threading a needle Sewing a running stitch Preparing fabrics for sewing</p> <p>Evaluate Discuss the making process and the finished product</p> <p>Technical Knowledge Identifying parts of a needle (point and eye) Understand the alternative ways of joining fabrics and embellishments</p>	<p>Design Designing mechanisms</p> <p>Make Measuring and cutting accurately, working to scale and following a design brief</p> <p>Evaluate Testing and adapting mechanisms Researching mechanisms</p> <p>Technical Knowledge Understanding how an axle works Know materials commonly used for wheels</p>
<p><i>Cross curricular links</i></p>	<p>Maths</p>		<p>Maths</p>		<p>Maths Science</p>

<p>Year 3</p>	<p>Food: Eating Seasonally (4 lessons) Pupils learn about seasonality and how the climate a food is grown in can alter the way it tastes and make a crumble and tart using seasonal ingredients Go to topic</p>	<p>Mechanisms: Pneumatic Systems (4 lessons) Pupils examine pneumatic systems using syringes and balloons then apply their understanding of mechanical systems to create their own pneumatic toys Coming Soon</p>	<p>Structures: Castles (4 lessons) Pupils learn more advanced construction techniques and plan for complex arrangements of structures with continual emphasis on evaluating throughout Go to topic</p>	<p>Textiles: Cushions (4 lessons) Pupils learn to sew cross stitch and appliqué and then apply this to the design and creation of a cushion Go to topic</p>	<p>Electrical Systems: Static Electricity (4 lessons) Pupils are introduced to static electricity and observe the effects of it on different objects before designing and making a simple game which uses static electricity Go to topic</p>
<p><i>Curriculum coverage</i></p>	<p>Design Designing to criteria Make Safely preparing fruit and vegetables Following a recipe Evaluate Tasting and evaluating their dessert Technical Knowledge Knowing what foods are in season and when Understanding the benefits of foods by their colour Knowing how climate alters the sweetness of food</p>	<p>Design Generating and communicating ideas using sketching and modelling, using the views of others to improve their designs Make Selecting appropriate materials and equipment for functional and aesthetic purposes Evaluate Assessing how well their product works and if it matches their design Technical Knowledge Understanding how pneumatic systems work</p>	<p>Design Planning for manufacture Establishing and using a design criteria to help focus and evaluate their work Make Using more demanding practical skills (paper engineering/paper folding techniques) Evaluate Evaluating as they work Evaluating their own and other's final product Technical Knowledge Application of prior knowledge and increasing knowledge of nets</p>	<p>Design Designing for a purpose Make Sewing cross stitch and using applique Evaluate Compare to designs Technical Knowledge Construction of cushions Understanding that fabrics can be layered for effect Knowing different stitch types</p>	<p>Design Using design criteria to develop ideas Make Using electrostatic energy to move objects in isolation as well as part of a system Evaluate Evaluate and adapt designs Technical Knowledge Understanding what static electricity means and how to generate it Knowing what a target audience is</p>
<p><i>Cross curricular links</i></p>	<p>Geography</p>	<p>Science</p>	<p>Maths</p>		<p>Science</p>

<p><i>Year 4</i></p>	<p><i>Food: Adapting a Recipe</i> (4 lessons) Pupils adapt a recipe by adding or altering the ingredients and then work in groups to create a final design that falls within a set budget and design brief Go to topic</p>	<p><i>Structures: Pavilions</i> (4 lessons) In an introduction to pavilion architecture, pupils experiment with frame structures before designing their own landscape and pavilion, using a wider range of materials and construction techniques Go to topic</p>	<p><i>Textiles: Fastenings</i> (4 lessons) Pupils research different types of fabric fastenings before deciding which they want to use in their design for a book sleeve Go to topic</p>	<p><i>Electrical Systems: Torches</i> (4 lessons) Pupils are introduced to electricity and electrical safety before making a simple electric circuit to create a functioning torch Coming Soon</p>	<p><i>Mechanisms: Slingshot Cars</i> (4 lessons) Pupils use kinetic energy to power slingshot cars, designing and making their own and then testing their effectiveness in time trials Go to topic</p>
<p><i>Curriculum coverage</i></p>	<p>Design Working within a design brief Make Following but adapting a recipe Preparing food hygienically Evaluate Discuss flavours identified Technical Knowledge Understanding the costs behind professional food preparation Understanding the factors that contribute to product design</p>	<p>Design Exploring and designing within a given context/theme Make Using a range of materials and equipment to create frame structures Evaluate Discuss existing pavilions Technical Knowledge Knowing what a pavilion is Building on prior knowledge of net structures and broadening knowledge of frame structures Knowing that architects consider light, shadow and patterns when designing</p>	<p>Design Designing for others and planning production Make Selecting suitable tools Evaluate Researching existing products Technical Knowledge Understanding stitches and their benefits Knowing how to use templates</p>	<p>Design Designing for others Make Creating neatly presented work Making an electrical circuit Evaluate Evaluating to improve their work Testing their final products Technical Knowledge Electricity is energy Batteries are used to store electricity Know terminology of: insulator, conductor, L.E.D., battery, coin cell batteries</p>	<p>Design Developing designs using the views of others to improve them Using nets and tabs to design and make the car body Make Measuring, marking, cutting and assembling accurately Evaluate Testing products in time trials Technical Knowledge Component names (chassis, axle etc.) Car body shape can impact speed (air resistance)</p>
<p><i>Cross curricular links</i></p>		<p>Maths</p>		<p>Science</p>	

<p><i>Year 5</i></p>	<p><i>Food: What Could Be Healthier?</i> (4 lessons) Pupils adapt a bolognese recipe by adding or altering ingredients and learn about the ethical and hygienic issues of food Go to topic</p>	<p><i>Mechanisms: Pop-Up Books</i> (4 lessons) Pupils use a range of mechanisms and construction techniques to create a pop up story book for younger children Go to topic</p>	<p><i>Textiles: Stuffed Toys</i> (4 lessons) Pupils learn blanket stitch and then design and make 3D stuffed toys Go to topic</p>	<p><i>Electrical Systems: Electric Greetings Cards</i> (4 lessons) Pupils explore electric circuits and apply this knowledge to design and make their own electric greetings cards Coming Soon</p>	<p><i>Structures: Bridges</i> (4 lessons) Pupils explore and experiment with a range of different bridge structures, forces and components involved in bridge building, before designing and making their own to test to destruction Coming Soon</p>
<p><i>Curriculum coverage</i></p>	<p>Design Adapting a recipe Make Cutting and preparing vegetables hygienically Cooking meat safely Evaluate Tasting and adapting the dish during cooking process Technical Knowledge Know where meat comes from and understand ethical issues around beef Know nutritional values of packaged food</p>	<p>Design Planning using storyboards and designs, communicating through words and illustrations Make Making functional components Using layers and spacers to construct pages Cutting and assembling with accuracy Evaluate Constantly evaluating progress against design Technical Knowledge Understand sliders, levers and linkages Understand structures and mechanisms</p>	<p>Design Designing for a purpose Make Accurately cutting and joining Evaluate Comparing 3D object to 2D design Technical Knowledge Understand constructions methods for 3D shapes Knowing how to create a hidden seam</p>	<p>Design Applying knowledge to generate design ideas Identifying target audiences Make Making circuits Evaluate Experimenting with circuits to consolidate knowledge of function Testing function of product Technical Knowledge Drawing circuit diagrams Knowing the function of different components Understanding the terminology: insulator, conductor, LED, battery</p>	<p>Design Design arch and truss bridges Make Selecting materials and equipment according to functional properties Working with increasing accuracy in practical tasks Use triangulation for bracing Evaluate Testing to destruction to evaluate the successful and unsuccessful properties of a design and its materials Technical Knowledge Understanding the importance of compression and tension in bridge structures</p>
<p><i>Cross curricular links</i></p>	<p>Maths Computing</p>	<p>English</p>			

<p>Year 6</p>	<p>Food: Come Dine With Me (4 lessons) Working in groups, children research and prepare a three course meal that will be taste tested and scored as well as researching the journey of their main ingredient ,from 'farm to fork' Go to topic</p>	<p>Mechanisms: Automata Toys (4 lessons) Pupils develop their woodworking skills and explore cams to design and make mechanical window displays Go to topic</p>	<p>Textiles: Waistcoats (4 lessons) After drawing a design in accordance with their own criteria, pupils learn how to measure, cut and assemble fabric to create a waistcoat Go to topic</p>	<p>Electrical Systems: Steady Hand Games (4 lessons) Pupils create electromagnetic toys and more complex electronic circuits to create a steady hand game Coming Soon</p>	<p>Structures: Playgrounds (4 lessons) Pupils have the opportunity to be creative and experiment with a wide range of materials and equipment, applying prior knowledge of net and frame structures as well as bracing and cladding to design and make a playground Coming Soon</p>
<p><i>Curriculum coverage</i></p>	<p>Design Using recipe books/websites Make Working with food hygienically and safely Working to a timescale Evaluate Tasting and evaluating their own food Technical Knowledge Understanding the risks of meat or fish when not cooked or stored properly Understanding safe storage of meat/fish</p>	<p>Design Experimenting with cams to make suitable design decisions Make Measuring, marking and cutting woodwork accurately Selecting appropriate equipment Assembling components accurately Evaluate Checking accuracy of work Technical Knowledge Naming types of cam Knowing how cams impacts follower movements</p>	<p>Design Designing for a process Make Accurate cutting and joining, using running stitch Creating something in a given style Evaluate Evaluating work continually Technical Knowledge Knowing how to create hidden seams</p>	<p>Design Generating ideas through sketching and discussion Modelling ideas through prototypes Make Cutting and assembling with accuracy Evaluate Adapting products to improve functionality Testing finished product Technical Knowledge Creating and using electric circuits in their designs Knowing how to make electromagnetic motors</p>	<p>Design Establishing and using a design criteria to help focus and evaluate their work Make Increasingly more demanding practical skills Selecting materials for their aesthetic and functional properties Make, strengthen and stiffen a range of structures Evaluate Exploring existing playground structures Technical Knowledge Applying knowledge of construction techniques to realise design ideas Stabilising more complex structures using bracing</p>
<p><i>Cross curricular links</i></p>	<p>PSHE</p>			<p>Science</p>	

