

Design and Technology

Intent



At Ditton Lodge our vision statement is that 'Together we succeed as lifelong learners'. This is carried throughout every area of the curriculum including DT.

Our values are that children LEARN (Listen, Enjoy & take risks, Aim high & achieve, Respect and Never give up) these values will be demonstrated by students within each lesson.



Intent

Design & Technology



Intent:

At Ditton Lodge design and technology should be fully inclusive to every child. Our aims are to: fulfil the requirements of the National Curriculum for design and technology, provide a broad and balanced curriculum, ensure the progressive development of knowledge and skills, to learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens through evaluation of past and present design and technology, develop a critical understanding of its impact on daily life and the wider world, to participate successfully in an increasingly technological world using the language of design and technology.



Design & Technology



The aims of teaching design and technology in our school are:

- Develop creative, technical and imaginative thinking in children and to develop confidence to participate successfully in an increasingly technological world.
- Enable children to talk about how things work and to develop their technical knowledge,
- Apply a growing body of knowledge, understanding and skills in order to design and make prototypes and products for a wide range of users,
- Encourage children to select appropriate tools and techniques when making a product, whilst following safe procedures,
- Develop an understanding of technological processes and products, their manufacture and their contribution to our society,
- Foster enjoyment, satisfaction and purpose in designing and making things,
- Critique, evaluate and test their ideas and products, and the work of others,
- Understand and apply the principles of nutrition and to learn how to cook,
- Understand how key events and individuals in design and technology have helped shape the world.



Design & Technology



Purpose of study (The National Curriculum)

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.



Design & Technology



Aims

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

(The National Curriculum, 2014)



Design & Technology

Why is DT important?



Design and Technology is about providing opportunities for children to develop their capability. By combining their design and making skills with knowledge and understanding they learn to create quality products.

D&T is often one of a child's favourite subjects. Children like making decisions for themselves and doing practical work. They love creating products they can see, touch – and even taste – for themselves. They feel proud to have done so.

D&T brings learning to life. It is a motivating context for discovering literacy, mathematics, science, art, PSHE and ICT. Primary Design and Technology also provides a firm basis for later learning in the subject and a platform for developing skills in literacy and numeracy.



Implementation



To ensure high standards of teaching and learning in design and technology, we implement a curriculum that is progressive throughout the whole school based on the Kapow website and curriculum. Design and technology is taught as part of a termly topic, focusing on knowledge and skills stated in the National Curriculum. At Ditton Lodge, we ensure that design and technology is given the same importance as the core subjects, as we feel this is important in enabling all children to gain 'real-life' experiences.

The design and technology curriculum at Ditton Lodge is based upon the 2014 Primary National Curriculum in England and is supported by CUSP, which provides a broad framework and outlines the knowledge and skills taught in each Key Stage. Teachers can use these documents, videos, knowledge strips and vocabulary to plan their design and technology lessons suitable to their class's interests and what they want to learn about. The progression grids ensure the curriculum is covered and the skills/knowledge taught is progressive from year group to year group.

When teaching design and technology, teachers should follow the children's interests to ensure their learning is engaging, broad and balanced. A variety of teaching approaches are used based on the teacher's judgement.



Content and Sequence



Implementation





































CUSP DT Long term sequence	Block A	Block B	Block C	Block D	Block E	Block F
Year 1	Mechanisms	Structures	Food and Nutrition	Understanding Materials	Textiles	Food and Nutrition
Year 2	Textiles	Food and Nutrition	Mechanisms	Understanding Materials	Food and Nutrition	Structures
Year 3	Textiles	Food and Nutrition	Mechanisms	Food and Nutrition	Systems	Structures
Year 4	Food and Nutrition	Mechanisms	Textiles	Structures	Systems	Food and Nutrition
Year 5	Food and Nutrition	Systems	Textiles	Mechanisms	Structures	Food and Nutrition
Year 6	Food and Nutrition	Mechanisms	Food and Nutrition	Structures	Systems	Textiles

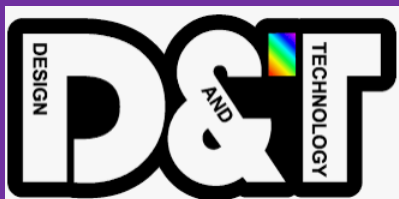


Content and Sequence



Implementation

Year	Block A	Block B	Block C	Block D	Block E	Block F
1	<p>Core discipline: Mechanisms Key Concept: Sliders and levers</p> 	<p>Core discipline: Structures Key Concept: Freestanding structures</p> 	<p>Core discipline: Food and Nutrition Key Concept:</p> 	<p>Core discipline: Understanding Materials Key Concept: Selecting materials <i>CUSP link: Materials</i></p> 	<p>Core discipline: Textiles Key Concept: Joining techniques <i>CUSP link: Hot and cold places</i></p> 	<p>Core discipline: Food and Nutrition Key Concept:</p> 
2	<p>Core discipline: Textiles Key Concept: Exploring shape using a template</p> 	<p>Core discipline: Food and Nutrition Key Concept: <i>CUSP link: Animals, including humans (Keeping healthy)</i></p> 	<p>Core discipline: Mechanisms Key Concept: Axles and wheels</p> 	<p>Core discipline: Understanding Materials Key Concept: Manipulating materials <i>CUSP link: Use of everyday materials</i></p> 	<p>Core discipline: Food and Nutrition Key Concept:</p> 	<p>Core discipline: Structures Key Concept: Developing strength in structures</p> 
3	<p>Core discipline: Textiles Key Concept: Stiffening and strengthening fabric</p> 	<p>Core discipline: Food and Nutrition Key Concept: <i>CUSP link: Animals, including humans</i></p> 	<p>Core discipline: Mechanisms Key Concept: Levers and linkages <i>CUSP link: Forces and magnets</i></p> 	<p>Core discipline: Food and Nutrition Key Concept:</p> 	<p>Core discipline: Systems Key Concept: How things are powered</p> 	<p>Core discipline: Structures Key Concept: Spanning gaps</p> 
4	<p>Core discipline: Food and Nutrition Key Concept:</p> 	<p>Core discipline: Mechanisms Key Concept: Hinges</p> 	<p>Core discipline: Textiles Key Concept: Fixings and fastenings</p> 	<p>Core discipline: Structures Key Concept: Designing structures using a frame to make them stronger and sturdier</p> 	<p>Core discipline: Electrical Systems Key Concept: Switches and circuits revisited <i>CUSP link: Electricity</i></p> 	<p>Core discipline: Food and Nutrition Key Concept: <i>CUSP link: Animals, including humans (Digestion)</i></p> 
5	<p>Core discipline: Food and Nutrition Key Concept:</p> 	<p>Core discipline: Systems Key Concept: Greener power</p> 	<p>Core discipline: Textiles Key Concept: Durability of fabric</p> 	<p>Core discipline: Mechanisms Key Concept: Pulleys and gears <i>CUSP link: Forces</i></p> 	<p>Core discipline: Structures Key Concept: Developing structures that are fit for purpose and design</p> 	<p>Core discipline: Food and Nutrition Key Concept: <i>CUSP link: World countries</i></p> 
6	<p>Core discipline: Food and Nutrition Key Concept:</p> 	<p>Core discipline: Mechanisms Key Concept: Pulleys and gears</p> 	<p>Core discipline: Food and Nutrition Key Concept:</p> 	<p>Core discipline: Structures Key Concept: Designing structures revisited – combining skills and knowledge</p> 	<p>Core discipline: Electrical Systems Key Concept: Complex switches and circuits <i>CUSP link: Electricity</i></p> 	<p>Core discipline: Textiles Key Concept: Sustainable materials</p> 





Progression of Skills




Implementation

Year	Block A	Block B
1	Core discipline: Mechanisms Key concept: Sliders and levers How can you make a picture move?	Core discipline: Structures Key concept: Freestanding structures How can you stop a tower from toppling over?
2	Core discipline: Textiles Key concept: Exploring shape using a template How can you repurpose an item of clothing?	Core discipline: Food and Nutrition Key concept: Nutrients and the body What does healthy mean?
3	Core discipline: Textiles Key concept: Stiffening and strengthening fabric How can you make a box out of cloth?	Core discipline: Food and Nutrition Key concept: Individual diets What do we mean by a balanced diet?
4	Core discipline: Food and Nutrition Key concept: Ultra-processed food What's really in your food?	Core discipline: Mechanisms Key concept: Hinges How many ways are there to open a door?
5	Core discipline: Food and Nutrition Key concept: Food choices Why are our diets so different?	Core discipline: Systems Key concept: Greener power Details to follow
6	Core discipline: Food and Nutrition Key concept: Multicultural influences on food Can street foods save us?	Core discipline: Mechanisms Key concept: Pulleys and gears - rotary and linear movement How do pulleys and gears let you see the world?



Progression of Skills

Implementation













Year	Block A	Block B
1	<p>Mechanisms Sliders and levers How can you make a picture move?</p> <p>Know common uses of sliders Know different methods to create card sliders Know how sliders can create simple mechanisms Be able to design and make a slider product Be able to evaluate the success of their outcomes and recommend improvements</p> 	<p>Structures Freestanding structures How can you stop a tower from toppling over?</p> <p>Know a freestanding structure is a structure that stands on its own foundation or base without attachment to anything else Be able to build structures that are freestanding using a range of different materials</p> 
2	<p>Textiles Exploring shape using a template How can you repurpose an item of clothing?</p> <p>Know how to cut out shapes which have been created by using a template Know how to use a range of basic sewing skills Be able to use a template to transfer a pattern Be able to cut out and join fabric shapes using a template</p> 	<p>Food and Nutrition Nutrients and the body What does healthy mean?</p> <p>Know why vegetables are so important to our health Know what processed foods are Be able to prepare a range of salad vegetables Be able to shape and season a bread snack</p> 
3	<p>Textiles Stiffening and strengthening fabric How can you make a box out of cloth?</p> <p>Know fabric can be stiffened Know stiffened fabric can hold a form Be able to select and apply solutions to stiffen fabric Be able to make a box using stiffened fabric</p> 	<p>Food and Nutrition Individual diets What do we mean by a balanced diet?</p> <p>Know what is meant by the term balanced Know why fresh foods are better Be able to make a fruit and yoghurt dessert Be able to make homemade chips Be able to flavour foods to increase their sensory qualities</p> 
4	<p>Food and Nutrition Ultra-processed food What's really in your food?</p> <p>Know processed foods have many added ingredients Be able to make, roll and shape bread dough Be able to make a soup</p> 	<p>Mechanisms Hinges How many ways are there to open a door?</p> <p>Know types of hinges and the related terminology Know common uses for hinges Be able to make a variety of model hinges Be able to make and evaluate hinged products using modelling materials</p> 
5	<p>Food and Nutrition Food choices Why are our diets so different?</p> <p>Know some foods and key ingredients from other cultures Know how other cultures' food can be nutritious Be able to make, roll and cook a flatbread Be able to prepare a range of vegetables Be able to present foods to a high standard</p> 	<p>Core disciplines Systems Key concepts Greater power Details to follow</p> 
6	<p>Food and Nutrition Multicultural influences on food Can street foods save us?</p> <p>Know what street foods are Know how snacks can be good foods to eat Be able to make a burrito Be able to make and roll bread dough Be able to make a savoury pastry</p> 	<p>Mechanisms Pulleys and gears - rotary and linear movement How do pulleys and gears let you see the world?</p> <p>Know types of pulley systems and gears Know common uses of pulleys and gears Know how pulleys and gears can create simple mechanisms and change direction of movement Be able to design and make a model Ferris wheel powered by gears Be able to evaluate the success of their outcomes and recommend improvements</p> 



Implementation

Progression of Skills






Year	Block C	Block D
1	<p>Core discipline: Food and Nutrition</p> <p>Key concept: Exploring food senses How does food affect your senses? CUSP link: Animals, including humans</p> 	<p>Core discipline: Understanding Materials</p> <p>Key concept: Selecting materials Can you build with bread? CUSP link: Everyday materials</p> 
2	<p>Core discipline: Mechanisms</p> <p>Key concept: Axles and wheels Are bigger wheels always better?</p> 	<p>Core discipline: Understanding Materials</p> <p>Key concept: Manipulating materials How can you waterproof a hat? CUSP link: Uses of everyday materials</p> 
3	<p>Core discipline: Mechanisms</p> <p>Key concept: Levers and linkages - mechanical advantage How can you do a lot of work with little effort? CUSP link: Forces and magnets</p> 	<p>Core discipline: Food and Nutrition</p> <p>Key concept: Food as medicine How does food affect your body and mind? CUSP link: Animals, including humans</p> 
4	<p>Core discipline: Textiles</p> <p>Key concept: Fixings and fastenings How do you keep a tea towel from slipping off a hook?</p> 	<p>Core discipline: Structures</p> <p>Key concept: Designing structures using a frame to make them stronger and sturdier Which shapes will give a structure stability?</p> 
5	<p>Core discipline: Textiles</p> <p>Key concept: Durability of fabric Which fabric is ideal for creating a functional and hardwearing lunch bag?</p> 	<p>Core discipline: Mechanisms</p> <p>Key concept: Pulleys and gears - transferring rotational force How can you lift a car onto a roof? CUSP link: Forces</p> 
6	<p>Core discipline: Food and Nutrition</p> <p>Key concept: Food and mood Does food affect the way you feel?</p> 	<p>Core discipline: Structures</p> <p>Key concept: Designing structures revisited - combining skills and knowledge How strong is a piece of spaghetti?</p> 





Progression of Skills

Implementation













Year	Block C	Block D
1	<p>Food and Nutrition Exploring food senses How does food affect your senses? Know why colourful food can be healthier Know how different foods can affect senses Be able to peel, chop and grate a selection of vegetables Be able to modify food to suit food senses</p> 	<p>Understanding Materials Selecting materials Can you build with bread? Know building materials have different properties which enable them to be used for different purposes Be able to identify, sort and select materials that can be used in construction Be able to combine materials</p> 
2	<p>Mechanisms Axes and wheels Are bigger wheels always better? Know how wheels and axles work together Know the size and position of wheels affects how they move Be able to create a simple wheel mechanism Be able to use wheel mechanisms to propel a simple vehicle</p> 	<p>Understanding Materials Manipulating materials How can you waterproof a hat? Know materials can be modified to become waterproof Know origami comes from the Japanese words ori - folding and kami - paper Be able to make paper waterproof Be able to transform flat paper by folding and creasing to form a hat</p> 
3	<p>Mechanisms Lever and Linkages - mechanical advantage How can you do a lot of work with little effort? Know types of levers and linkages Know key terminology relating to levers and linkages Know how levers and linkages can change the direction of movement Be able to design and make simple lever and linkage products Be able to evaluate the success of outcomes and recommend improvements</p> 	<p>Food and Nutrition Food as medicine How does food affect your body and mind? Know food can help body and mind Know how to prepare and cook a range of vegetables Be able to peel and grate a range of vegetables Be able to add flavour and texture to foods</p> 
4	<p>Textiles Fixings and fastenings How do you keep a tea towel from slipping off a hook? Know fastenings have different functions Know a shank provides a small amount of space between the button and fabric Be able to select appropriate fastenings and attach them to fabric Be able to make a shank for a button</p> 	<p>Structures Designing structures using a frame to make them stronger and sturdier Which shapes will give a structure stability? Know triangles provide stability in a structure Know structural engineers work with architects to ensure structures withstand forces Be able to make triangles to form and join trusses Be able to identify the forces that affect structures</p> 
5	<p>Textiles Durability of fabric Which fabric is ideal for creating a functional and hardwearing lunch bag? Know how to waterproof cotton fabric Know which fabrics are both functional and hardwearing Be able to use beeswax to waterproof cotton fabric Be able to repurpose a pair of jeans</p> 	<p>Mechanisms Pulleys and gears - transferring rotational force How can you lift a car onto a roof? Know types of gears and terminology relating to gears Know common uses of pulleys and gears Know how pulleys and gears can change the direction of movement Be able to design and make products that use pulleys and gears to lift loads Be able to evaluate the success of outcomes and recommend improvements</p> 
6	<p>Food and Nutrition Food and mood Does food affect the way you feel? Know the difference between slow release and quick release carbohydrates Know how food can improve mood and energy levels Be able to dice, slice, peel, grate and cook a range of vegetables Be able to make a sauce and a stock Be able to use height and colour to improve the visual appeal of food</p> 	<p>Structures Designing structures revisited - combining skills and knowledge How strong is a piece of spaghetti? Know structures can be supported with guy lines and flying buttresses Know the shorter the piece of spaghetti, the stronger it will be Be able to construct a flying buttress to support a tower Be able to use appropriate lengths of spaghetti to increase strength and stability</p> 





Progression of Skills

Implementation













Year	Block E	Block F
1	<p>Core discipline: Textiles</p> <p>Key concept: Joining techniques</p> <p>How can two squares of fabric keep you warm? CUSP link: Hot and cold places</p> 	<p>Core discipline: Food and Nutrition</p> <p>Key concept: Vitamins in food</p> <p>Why are vegetables the best?</p> 
2	<p>Core discipline: Food and Nutrition</p> <p>Key concept: Processed food</p> <p>How healthy is your food?</p> 	<p>Core discipline: Structures</p> <p>Key concept: Developing strength in structures</p> <p>How strong is a piece of paper?</p> 
3	<p>Core discipline: Systems</p> <p>Key concept: How things are powered</p> <p>How are things powered?</p> 	<p>Core discipline: Structures</p> <p>Key concept: Spanning gaps</p> <p>What makes a bridge strong?</p> 
4	<p>Core discipline: Electrical Systems</p> <p>Key concept: Switches and circuits revisited</p> <p>How useful are switches? CUSP link: Electricity</p> 	<p>Core discipline: Food and Nutrition</p> <p>Key concept: Benefits of fresh food</p> <p>Is cheap food always worse for you? CUSP link: Animals, including humans</p> 
5	<p>Core discipline: Structures</p> <p>Key concept: Developing structures that are fit for purpose</p> <p>How are frames strengthened, reinforced and made rigid?</p> 	<p>Core discipline: Food and Nutrition</p> <p>Key concept: Cultural influences on diet</p> <p>What can you learn from different cultures' diets? CUSP link: World countries</p> 
6	<p>Core discipline: Electrical Systems</p> <p>Key concept: Complex switches and circuits</p> <p>Can switches perform more than one function? CUSP link: Electricity</p> 	<p>Core discipline: Textiles</p> <p>Key concept: Sustainable materials</p> <p>How can you reduce, recycle, repurpose?</p> 





Content and Sequence

Implementation

Year	Block E	Block F
1	Textiles Joining techniques How can two squares of fabric keep you warm? Know fabric can be joined together using a running stitch Know the types and names of tools needed for sewing Be able to create a running stitch Be able to select tools for sewing Be able to thread a needle 	Food and Nutrition Vitamins in food Why are vegetables the best? Know the importance of including a range of vegetables in a diet Be able to peel, grate, season and bread/crumble a range of vegetables 
2	Food and Nutrition Processed food How healthy is your food? Know the difference between health food and ultra-processed foods Be able to shape and form ingredients to make delicious food Be able to use a range of culinary techniques 	Structures Developing strength in structures How strong is a piece of paper? Know paper becomes stronger when it is folded Know a load is the amount of weight a structure must carry Be able to fold paper to increase strength and stability Be able to test and record how much weight paper can hold 
3	Systems How things are powered How are things powered? Know different types of energy Know why designers need to carefully consider energy sources Be able to identify how things are powered Be able to suggest appropriate energy sources for design problems 	Structures Spanning gaps What makes a bridge strong? Know bridges are structures that allow people and vehicles to cross over an open space Know towers, piers and arches provide strength to a bridge Be able to design and build a beam bridge that can hold the weight of 100 pennies Be able to identify and name parts of a bridge 
4	Electrical Systems Switches and circuits revisited How useful are switches? Know a switch is an interruption in a circuit Know switches are widely used in a range of products Be able to incorporate different types of switches into circuits to perform a function 	Food and Nutrition Benefits of fresh food Is cheap food always worse for you? Know that cheap processed food often contains additives, salt and sugar which makes it less healthy than unprocessed food Be able to peel, grate and chop vegetables to make economical, tasty and healthy food 
5	Structures Developing structures that are fit for purpose How are frames strengthened, reinforced and made rigid? Know engineers use a range of methods to strengthen and reinforce structures Be able to identify and describe ways that frames are strengthened and reinforced 	Food and Nutrition Cultural influences on diet What can you learn from different cultures' diets? Know how foods can be used as medicines Know how eating food from different countries can help us be healthy Be able to roll and shape ingredients Be able to slice and ribbon a range of vegetables Be able to stir-fry vegetables 
6	Electrical Systems Complex switches and circuits Can switches perform more than one function? Know more than one switch can be used to change the functionality of a product Be able to use switches to adapt a product in response to a design brief 	Textiles Sustainable materials How can you reduce, recycle, repurpose? Know plastic waste can be recycled and repurposed into practical, useful items Be able to make a crochet hook out of a chopstick Be able to use plastic bags and snack packets to create practical items 





Design and Technology in EYFS

Implementation

Our wider curriculum is taught through 'Expressive Arts and Design'. EYFS staff have a good understanding of how the ELG's feed into the National curriculum through our half termly coverage grids and our long-term plans. Subject leaders throughout the school are also aware of the ELG's that link to each foundation subject and the progression of the subject. Exciting and meaningful activities are planned to build on the children's natural curiosity. These will stimulate their senses as well as encourage them to ask questions, explore and wonder at their environment, they will undertake investigate and design projects that engage their interests.

Expressive Arts and Design

Creating with Materials

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
- Share their creations, explaining the process they have used.
- Make use of props and materials when role playing characters in narratives and stories.

Being Imaginative and Expressive

- Invent, adapt and recount narratives and stories with peers and their teacher.
- Sing a range of well-known nursery rhymes and songs.
- Perform songs, rhymes, poems and stories with others, and (when appropriate) try to move in time with music.



Cross Curricular Links



Get cross curricular with D&T

Although many subjects can offer an interesting context for learning, here are just a few examples of some meaningful links between D&T and other subjects.

Maths

Measuring accurately is a key D&T skill and allows children to apply and consolidate their mathematical understanding.

English

Pupils can apply their instructional writing skills in the planning process of their D&T work as well as developing their speaking and listening skills when communicating their ideas to others.

Science

An understanding of forces is essential for creating mechanisms (pulleys, wheels and axles, levers and linkages).

Computing

The curriculum requires pupils to use their Computing knowledge and skills within their D&T work - providing them with real life opportunities to put their skills to practical use.

Art

The ability to visually express their ideas accurately is an artistic skill. It enables children to develop their ideas, plan their project and communicate the concept to others.

Example of planning



Although we follow the same syllabus for Key Stage One and Two, we do adapt the plans in order that they are sufficient for both teachers to teach from and for students to learn.


Teachers are non-specialists and the plans have therefore been set out to ensure that staff have the information and training they need in order that they can successfully deliver the lessons to our students.

Example of planning: Key Stage One



Implementation


Year 1: Mechanisms
How do you make a picture move?

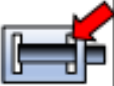



Core content:


Investigate how sliders work.
Design and make a card slider product.


Technical vocabulary:


Slider – a rigid bar which moves backwards and forwards along a straight line. 

Slot – a narrow cut which a slider can pass through. 

Bridge – rectangles cut from rigid material and stuck to the surface which the slider passes under. 


Push – a force to move something away from you. 





Pull – a force to move something closer to you. 

Rigid – stiff and difficult to move or bend 

Connections

Little Red Riding Hood
Deans of London (1855)



Revisiting prior learning 	Taught content 	Point of practice 	Point of reflection 
<p>1. Scissors can be used more accurately by placing the material to be cut near the pivot of the scissors and making small cuts</p>	<p>Define the terms: <i>slider, push, pull, linear</i> and <i>movement</i></p> <p>Explore sliding mechanisms in greetings cards, interactive books and everyday objects</p> <p>Explain the movement and forces involved in sliders: <i>push, pull, linear</i></p> <p>Define the terms: <i>weave</i> and <i>template</i></p> <p>Use scissors and templates to make a paper weave (pattern plate)</p> <p>Evaluate results</p>	<p>Prior to the lesson, ask pupils to bring in examples of pop-up books and cards.</p> <p>Introduce pupils to the key question for this unit: How can you make a picture move? Show a simple picture book and invite pupils to suggest ways that the pictures could be made to move. Show some examples of pop-up books and explain the techniques that have been used to make the images move.</p> <p>Introduce pupils to the term <i>slider</i> and refer to the Knowledge Note to share the definition of this word. Show pupils specific examples of sliders in interactive books and use the supporting images to explain the application of sliders in everyday objects.</p> <p>Demonstrate the type of movement created by sliding mechanisms (<i>linear</i>) and use the Knowledge Note to explain the forces involved: <i>push</i> and <i>pull</i>. Challenge pupils to demonstrate these forces.</p> <p>Explain to pupils that they will make a slider product in Lesson 3 and in today's lesson they will create a paper weave (pattern plate) to practise the skills they will need to use when making their own product.</p> <p>Explain the terms <i>weave</i> and <i>template</i> and demonstrate how to use the template to cut strips of equal width from coloured paper or thin card. Demonstrate how to construct the pattern plate and allow pupils to create their own.</p> <p>Adjustments such as reducing the size of the plate and number of strips required may be necessary for less able pupils. Teachers may also wish to provide pre-cut strips for pupils to use.</p> <p>Once the weave patterns are complete, use questioning to support pupils in evaluating the finished result. Prompt pupils to make a record of the processes they have used, with some simple notes and drawings in their portfolios.</p>	<p>Can explain what a slider is</p> <p>Can explain the way a slider moves and the direction it moves in</p> <p>Can demonstrate a push and a pull force</p> <p>Can use a template to cut strips of paper accurately and safely</p> <p>Can use the 'up and under' weaving method accurately and consistently</p> <p>Can identify what they have done well and how their work could be improved</p> <p>Can make a record of what they have learnt and the techniques they have used, with simple sentences and drawings</p>

Example of planning: Key Stage One



Implementation

Challenge pupils to define what a slider is
Pose questions to pupils:
What is a slider?
Where are sliders used?
What is a rail?
What is a track?

Provide plenty of opportunities for pupils to explore different slider products
Pose questions to pupils:
How do sliders work in a pop-up interactive book?
How does a roller coaster stay upside down on the track?
How do drawer runners work?

SLIDERS


How can you make a picture move?

A slider is a rigid bar that moves backwards and forwards in a straight line.

Slider Examples

- Free-range cards
- Pop-up books
- Roller coasters
- Curtain rails
- Drawer runners

Pattern Plate



I like my pattern plate because it is really colourful. I used scissors and a glue stick to make it.

Challenge pupils to mark out, cut and glue card strips to make pattern plates and then evaluate them
Pose questions to pupils:
How accurately did you cut the strips?
How can you improve the pattern?
Did any strips tear?
Did any strips crease?
Would you change the colours of the strips?

Example of planning: Key Stage One



Implementation

SLIDERS

How can you make a picture move?

I could have used some yellow paper for my sun.

I could have added some colour to the clouds.

I cut slots for the slider bar with scissors.

The boat did very smoothly.

My toy is suitable for 5-year-old boys and girls to play with.

My shark fin could have been on another slider.

Text boxes:

- Top Left:** Provide opportunities for pupils to experiment by making different slider mechanisms. Pose questions to pupils: Which slider mechanism is easiest to make? How can the mechanisms be made to slide more smoothly?
- Bottom Left:** Instruct pupils to design and make a greetings card or novelty toy that involves a slider mechanism. Pose questions to pupils: Who will the product be designed for? How will your design work? What difficulties might you encounter?
- Right:** Prompt pupils to evaluate the success of their slider mechanism. Pose questions to pupils: How smoothly does the slider move? How can the slider toy be made stronger? Could you have used other materials to improve the function or aesthetics? Do you think the intended user will like it? How much could you sell it for? Could you have added a handle to the sliding bar?

Example of planning: Key Stage One



Year 6: Textiles
How can we reduce, recycle and repurpose?

Core content:

Learn how to reduce waste by recycling and repurposing snack packets and plastic bags into useful items.

Technical vocabulary:

Recycle – to collect and treat used objects and materials in order to use them again.

Reduce – to become or to make something smaller in terms of size, degree of importance or quantity.

Repurpose – to change something slightly in order to make it suitable for a different use.

Chain – a crochet stitch where connected loops of yarn or thread form a chain.

Seal – to fasten or close securely.

Skein – a loosely coiled length of yarn.

Connections

Isatou Ceesay
(born 1972)
Gambian activist and social entrepreneur

Revisiting prior learning	Taught content	Point of practice	Point of reflection
1. A chain stitch can be made using yarn	<p>Explore ways in which objects and materials can be repurposed</p> <p>Crochet using repurposed materials</p> <p>Identify properties of materials</p> <p>Explain how a material's properties will determine its use</p>	<p>Explain to pupils that they are going to be learning about how a range of materials can be recycled, reused and repurposed rather than being thrown away. Introduce pupils to the Knowledge Note and define the key terms for this unit. Pose questions to pupils: What does repurposing mean? Why is it important to reduce the amount of waste we produce? How is the planet being affected by the waste materials we create?</p> <p>Revisit how to make a chain with yarn, using a crochet hook. Demonstrate how to make a crochet hook from a chopstick by sharpening one end with a pencil sharpener to form a point and using a utility knife or hacksaw to cut a small notch into the stick.</p> <p>Demonstrate how an old T-shirt can be cut into strips to make a skein of yarn. Using the crochet sticks they have made, pupils then crochet a series of connected chains to form a small square (approx. 10cm x 10cm) which could be used as a coaster or heat-resistant mat.</p> <p>Through questioning and discussion, establish that when repurposing items, it is important to consider the properties of the materials in deciding their new use.</p> <p>Pupils make a record of their work, using photographs, notes and drawings in their portfolio.</p>	<p>Can use the crochet technique correctly</p> <p>Can identify the properties of T-shirt fabric</p> <p>Can explain why T-shirt fabric is a suitable material to crochet with and why it can be used to make a heat-resistant mat</p>

Example of planning: Key Stage Two



Implementation

Y6 Textiles
How can we reduce, recycle, repurpose?

Look at the work of Isatu Ceesay and the recycling women of Gambia
Talk about why we need to reduce, reuse and repurpose waste

Revisit how to crochet
Make a chain of crochet stitches using yarn

Make strips of yarn out of an old t-shirt
Create a coaster or mat by building up rows of crochet chain
Produce strips of yarn out of plastic bags

Fashion a crochet hook from a wooden chopstick
Use a pencil sharpener to create a point at one end of the chopstick.
Cut a notch using a utility knife or a hacksaw
Crochet a small purse or pocket using plastic yarn

Collect foil-lined snack bags
Open them up and connect the bags together to create a large sheet of foil fabric

Iron the joins to fuse the pieces of foil together
Ask pupils: What could this be used for? Explain your reasoning.

Impact

Design and Technology Impact



How do you document learning, monitor progress and achievement?



Students are expected to record learning in their learning journals and some lessons and photographs and videos are taken in each lesson as their work progresses. The children may record their work through the form of writing, mind maps, pictures etc and will involve students answering specific questions. During lessons, teachers may use discussion to support students in self-assessing their work and they may be asked to edit and improve their work during this time using blue pen.

During each individual lesson, teachers will use the school's marking policy in order that they can assess students' progress against the lessons objectives. This also takes into account how far students have used the minimum expectations set out in this policy. By the end of the lesson, staff are expected to know whether students have achieved the objective and teaching in the next lesson will be adapted if needed to ensure that understanding is complete, and any misconceptions have been addressed.

Impact



How do you measure the impact of Design and Technology teaching?

Teacher assessment

The use of videos and photographs

An assessment grid which is available online

Check that the key objectives are met in each lesson

Key questioning throughout each lesson



Ditton Lodge Primary School Formative Assessment Toolkit September 2021



Ditton Lodge's curriculum subject coverage is planned sequentially and with a clear rationale for making connections with prior learning: selecting, organising and integrating new knowledge with prior learning. Our knowledge and vocabulary-rich learning modules are positioned to support and enhance learning so that pupils both retrieve and transfer knowledge.

It is the gleaning of information through responsive teaching and a range of well-chosen pedagogical practice that informs the next steps, such as:

- Deliberate practice and rephrasing of taught content - Think aloud and the use of My Turn, Your Turn
- Cumulative quizzing within the learning sequence.
- Retrieval practice, including just two things (self-testing).
- Asking relevant questions that engage all pupils, not just a few using techniques that allow everyone to participate, such as show what you know or think-pair-share
- Vocabulary use and application. Pupils' practise and define words. Words are used, connected and deconstructed for meaning within the learning sequence.
- Summarising and explaining the learning question from the sequence.

Impact

How do you measure the impact of Design and Technology teaching?



Subject Leaders use iAbacus as a tool for developing their subject, as seen in this example:





What do you consider to be the strengths of Design and technology within the school?

A well thought out and comprehensive syllabus that engages and informs students by using:

- Links with the other subjects
- Practical skills are developed and enhanced
- Children have access to specialist teaching videos

How do you know?

- Learning journals
- Half-termly learning walks/observations
- Pupil Voice Questionnaire
- Pictures and videos

