

# Curriculum Overview: Design and Technology



**Dorchester Primary School**

A Hull Collaborative Academy Trust school.



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*Working together in a safe and inclusive environment to develop creative, disciplined, and aspirational pupils.*



## The Dorchester Curriculum



### The Vision

Our curriculum vision at Dorchester is to provide children with an ambitious, academic and personal curriculum which will open up future opportunities for success.

### Curriculum Aims

Our curriculum aims to provide:

- A cumulative acquisition of concepts, knowledge and skills which enables all children to achieve their goals
- A creative, enquiry based curriculum which promotes inquisitive minds, independence and a love for learning.
- A sense of belonging, identity and community to succeed in the modern world

### Values

These aims are underpinned by our school values:

- Our school values respect, so our curriculum provides plentiful opportunities for children to work collaboratively, practice active listening, turn taking and acts of service.
- Our school values tolerance therefore our curriculum promotes social awareness and represents diverse voices
- Our school values self-belief so our curriculum promotes a growth mindset and develops independence
- Our school values empathy therefore our curriculum provides opportunities for children to view the world from different perspectives
- Our school values resilience so our curriculum promotes goal setting and problem solving

### Curriculum Concepts

Children will also develop their understanding of identified curriculum concepts throughout all subjects. These concepts branch across our whole curriculum, creating horizontal links across all subjects. They aim to develop flexible knowledge and skills that children can apply to multiple curriculum areas.

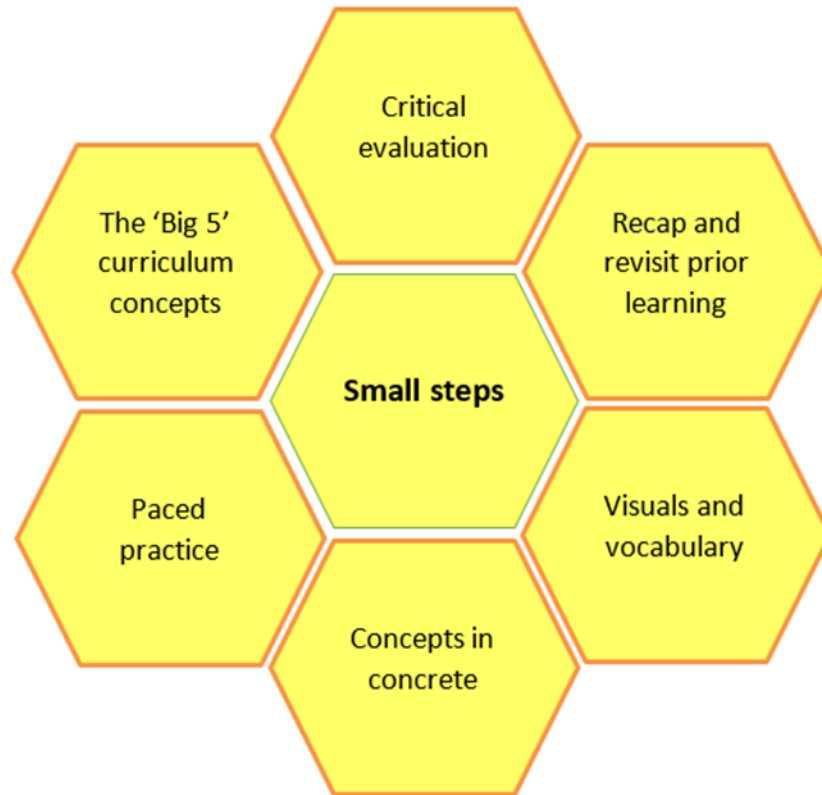
Compare and Contrast

Interpret and Summarise

Written and Oral Expression

Infer and Enquire

Predict and Connect



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## Dorchester Learning Framework

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We have created a learning framework to support our teachers in planning, delivering and assessing the curriculum. This framework has been devised using research into knowledge acquisition and working memory to enable all children to learn and remember what we teach.

Progress at Dorchester means 'knowing more and remembering more'

### Assessment

We have adopted a three-tier assessment model for wider curriculum subjects. Teachers will gather assessment information on what children have learnt (and retained): in the short term (e.g. within / after a lesson), the medium-term (e.g. after a unit of work), and long-term (e.g. at the end of their phase or key stage). Assessments will be used to inform the learning moving forward.

## Curriculum Timetabling

At Dorchester, we want to ensure that we celebrate the talents of all pupils and provide everyone with opportunities to shine. Therefore, we have calculated the number of teaching hours available and have ensured that all pupils receive a broad and balanced curriculum based on the starting points of our children

Maths, Reading (including EARS for fluency and book talk KS1) and Writing (including spelling and handwriting are taught daily.

Science, RE, PE, Music, PSHE and MFL (KS2) are taught weekly except where blocking of other subjects is needed. Computing is built within the curriculum subject areas as well as some standalone knowledge

History and Geography along with Art and DT are taught in alternating blocks per half term.

Day	Am (Hours)	Pm (Hours)
Mon	2hrs 45min	2hr 25mins
Tue	2hrs 45min	2hr 25mins
Wed	2hrs 45min	2hr 25mins
Thur	2hrs 45min	2hr 25mins
Fri	2hrs 45min	2hr 25mins

Curriculum Area	Hours per day	Weekly (B = Blocked)	Hours Per Year
English			
Reading	1	5 hrs	185 hours
Reading-Fluency	15 mins	1hr 15 mins	46 hours
			<b>231 hour</b>
Writing	45 mins	4 hr 15 mins	157 hours
- <i>Handwriting</i>	10 mins	50 mins	30
- <i>Spelling</i>	10mins	50mins	30
			<b>217 hours</b>
Maths			
Maths	1	5	<b>185 hours</b>
Computer Sciences			
Science	-	1hr	<b>35 hours</b>
Computing	-	45 mins	<b>26 hours</b>
Creative			
Art	-	1hr 30mins (B)	<b>24 hours</b>
Design and Technology	-	1hr 30 mins (B)	<b>24 hours</b>
Music	-	20 mins	<b>11 hours</b>
Humanities			
History	-	1hr 30 mins (B)	<b>24 hours</b>
Geography	-	1hr 30 mins (B)	<b>24 hours</b>
RE	-	45 minutes	<b>24 hours</b>
Additional			
Physical Education	-	1 hour	<b>35 hours</b>
MFL	-	20 mins	<b>11 hours</b>
PSHE	-	20 mins	<b>11 hours</b>



## The Design and Technology Curriculum



### The D&T Vision

At Dorchester our vision is for children to use creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. We aim for them to acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils will 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.

### D&T Curriculum

Our D&T curriculum will:

- Teach the children key substantive knowledge through five key lenses: mechanisms, structures, electrical systems, cooking & nutrition, and textiles.
- Teach the substantive concepts of design, make, evaluate, technical knowledge and technical skills and build on these year by year.
- Ensure children know more, remember more, and can do more in D&T.

### Personal Development in the D&T curriculum

- Citizenship – we nurture students' understanding of citizenship, their sense of belonging, and their role in shaping the world around them by learning about different life skills.
- Character – we promote empathy and compassion through learning about how to have basic skills to help with living everyday life.
- British Values –we explore everyday life skills to help provide us with knowledge needed throughout our whole lives.
- Inclusion and equal opportunities – we promote inclusion and equal opportunities by ensuring everyone has basic life skills.
- Wider opportunities – we give opportunities to explore and learn everyday basic life skills.



## Design Technology

### Geography Knowledge Overview

### Lenses

Mechanisms	Structures	Textiles	Cooking and Nutrition	Electrical Systems
Pupils will gain an understanding of how different mechanisms work, evaluate products with different mechanisms and design and make working products to fit a design brief. They will gain technical knowledge needed to make different mechanisms work effectively.	Pupils will learn the technical knowledge used by designers to make structures which are strong and stable. They will learn and apply strengthening techniques, explore the benefits of different shapes and materials, and apply this to their own designs and products.	Pupils will gain the technical knowledge needed to work with textiles such as stitching, sewing, and threading. They will study textile designs and how to make products which are practical as well as stylish and then apply this learning to their own designs and products.	Pupils will learn where food comes from and how nutritional information can be used to plan a balanced and healthy diet. They will also learn techniques needed to prepare and cook food safely and design dishes and meals for specific purposes.	Pupils will learn how electronics and digital technologies are used when designing and creating products. They will gain the technical knowledge needed to program devices to make use of electric circuits including switches to power and control a product.


### Substantive Concepts

Design	Make	Evaluate	Technical skills	Technical knowledge
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### Curriculum Concepts in the D&T Curriculum

<b>Compare and Contrast –</b> Compare structures, materials, tools and joins for different products.	<b>Interpret and Summarise –</b> Decide on the purpose of the product and evaluate.	<b>Infer and enquire-</b> Investigate, research, and explore different skills needed to create products.	<b>Predict and Connect-</b> Figure out how to make a product. Use own knowledge to design and make.	<b>Written and Oral Expression –</b> Evaluations and use of tier 3 vocabulary.
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		KS1			LKS2			Year 5			Year 6		
Design and Technology	EYFS	Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring/Summer	Summer
<b>Cycle 1</b>	Expressive arts and design  (See EYFS LTP)	Moving Picture  Mechanisms	Purse/Pouch  Textiles	Healthy Salad  Cooking and Nutrition	Bridges  Structures	Mobile Phone Case  Textiles	Grab and Go Food  Cooking and Nutrition	Pizza's  Cooking and Nutrition	Drawstring Bag  Textiles	Playground/Parks  Structures/Mechanisms	Christmas Cards  Electrical Systems	Sauces  Cooking and Nutrition	Textiles  Costume Creation Year 6 Play
<b>Cycle 2</b>		Chair  Structures	Puppet  Textiles	Fruit Smoothie  Cooking and Nutrition	Nightlight  Electrical Systems	Fabric Book Sleeve  Textiles	Sandwiches  Cooking and Nutrition						

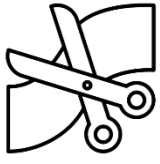
 <b>Mechanisms</b>	EYFS	KS1 -Moving Picture Books	LKS2	Year 5-Playgrounds/Parks - Cams	Year 6
Design	Develop their own ideas and then decide which materials to use to express them. Explore different materials freely, to develop their ideas about how to use them and what to make.	To create a simple plan before making a product. To be able to label my plan. To create a product for an intended user. To produce more than one design and choose a final design.  Extension: To think of what order to carry out the design making process. To give reasons for their choice of tools, materials, or techniques.		To create a clear plan including -specific measurements -materials -equipment needed -methods, including alternative methods -detailed instructions including visual step by step plans. To draw plans from different perspectives. To be able to explain how their design appeals to a specific audience.	
Make	Make simple models which express their ideas.	To measure and cut out materials. To join and combine materials using a variety of methods.  Extension To use finishing techniques to improve the appearance of a product.		To measure, mark out, cut and shape out accurately on a range of materials and components. To assemble, join and combine components using different methods. To be able to accurately apply a range of finishing techniques to their products.	
Evaluate		To evaluate their product as they are making it and suggest changes. To evaluate their product by discussing how well it works and meets the design brief.		To evaluate an end product against a design criteria and consider the views of others to improve their work.	
Technical Skills	Manipulate and play with different materials.	To cut with scissors. To join materials. To make a lever. To make a slider.		To create a hydraulics mechanism. To create a pneumatics mechanism.	
Technical Knowledge		To identify how mechanisms, work in existing products e.g. sliders/levers and wheels/axels. To analyse mechanisms in existing products. To describe the properties of materials they are using. To know the audience of their product.		To know that a mechanical system has an input, process, and output. To be able to explore how more advanced mechanisms work- levers and linkages, pneumatic and hydraulics. To be able to apply mechanisms to create movement.	

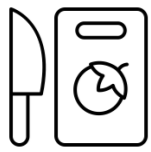





**Structures**

	EYFS	KS1 –Chair	LKS2-Bridge	Year 5-Playground	Year 6
Design	Develop their own ideas and then decide which materials to use to express them. Explore different materials freely, to develop their ideas about how to use them and what to make.	To create a simple plan before making a product. To be able to label my plan. To create a product for an intended user.  Extension: To think of what order to carry out the design making process. To give reasons for their choice of tools, materials or techniques.	To be able to draw and label designs with measurements. To be able to design an appealing and attractive product.  Extension: To able to produce realistic designs based on own research.	To create a clear plan including -specific measurements -materials -equipment needed -methods, including alternative methods -detailed instructions including visual step by step plans. To draw plans from different perspectives. To be able to explain how their design appeals to a specific audience.	
Make	Make imaginative and complex ‘small worlds’ with blocks and construction kits, such as a city with different buildings and a park. Join different materials and explore different texture.	To join a stable structure together. To be able to choose materials suitable for the job. To measure and cut out materials.  Extension To use finishing techniques to improve the appearance of a product.	To use appropriate tools and construction materials to make a structure. To be able to work with some accuracy (year 3) accurately (year 4) to measure, make cuts and make holes. To be able to work with some accuracy (year 3) accurately (year 4) to assemble, join and combine materials. To be able to select materials suitable for a given task.	To use a range of appropriate tools. To assemble, join and combine components using different methods. To be able to accurately apply a range of finishing techniques to their products.	
Evaluate		To evaluate my structure in terms of design. To evaluate their product by discussing how well it works and meets the design brief.	To evaluate my structure and suggest ways of improvement.	To evaluate my product on appearance and function against the design criteria. To be able to justify decisions made in the design and making process.	
Technical Skills	Create collaboratively, sharing ideas, resources, and skills.	To join materials. To make a chair. To be able to measure. To be able to cut.	To join materials. To make a truss bridge.	To make cuts (scissors, snips, saw) accurately. To make holes (punch, drill) accurately.	
Technical Knowledge	Return to and build on their previous learning, refining ideas and developing their ability to represent them.	To be able to make materials for a structure stronger by folding, joining or rolling. To be able know how to join materials to make a chair.	To be able to identify the structure of a bridge and analyse the support techniques to make the structure strong.	To understand different methods of strengthening bridges.	

 <b>Textiles</b>	EYFS	KS1 – Purse/Pouch Puppet	LKS2- Mobile Phone Case Fabric Book Sleeve	Year 5- Drawstring Bag	Year 6
Design	Develop their own ideas and then decide which materials to use to express them. Explore different materials freely, to develop their ideas about how to use them and what to make.	To create a simple plan before making a product. To be able to label my plan. To create a product for an intended user.  Extension: To think of what order to carry out the design making process. To give reasons for their choice of tools, materials, or techniques.	To be able to draw and label designs with measurements. To be able to design an appealing and attractive product.  Extension: To be able to produce realistic designs based on own research.	To create a clear plan including -specific measurements -materials -equipment needed -methods, including alternative methods -detailed instructions including visual step by step plans. To draw plans from different perspectives. To be able to explain how their design appeals to a specific audience.	
Make	Join different materials and explore different texture.	To be able to choose materials suitable for the job. To measure and cut out materials with some accuracy Cut, shape, and join fabric to make a simple garment. Use basic sewing techniques.  Extension To use finishing techniques to improve the appearance of a product.	To be able to select the appropriate textiles for a product. To be able to work with some accuracy (year 3) accurately (year 4) to measure, make cuts and use a backstitch. To be able to select materials suitable for a given task.	To use pattern pieces, appropriate materials, and tools to create a product. To be able to accurately apply a range of finishing techniques to their products. To use a range of appropriate tools.	
Evaluate		To evaluate my structure in terms of design. To evaluate their product by discussing how well it works and meets the design brief.	To evaluate my structure and suggest ways of improvement.	To evaluate my product on appearance and function against the design criteria. To be able to justify decisions made in the design and making process.	
Technical Skills	Create collaboratively, sharing ideas, resources, and skills. Use one handed tools and equipment – making small snips in paper with scissors. Develop their small motor skills so that they can use a range of tools competently, safely, and confidently.	To be able to use a running stitch. To make a pouch/purse. To make a puppet. To be able to measure. To be able to cut.  Extension To be able to use a cross stitch.	To use previously taught stitches to join materials. To use backstitch to join materials. (year 4) To be able to use sharp scissors accurately to cut. To mark out using own patterns and templates. To be able to make a mobile phone case. To be able to make a fabric book sleeve.	To join two pieces of material together using the blanket stitch. To create objects that require a seam allowance. To be able to make a drawstring bag.	
Technical Knowledge		To be able to know how to measure, mark out and cut fabric. To be able know how to do a running stitch or cross stitch.	To understand the need for a seam allowance. (year 4) Know that a single fabric shape can be used to make a 3D textiles product. Understand how a cross stitch design is created.	To understand how pattern pieces are used to make a product.	

 <p><b>Cooking &amp; Nutrition</b></p>	EYFS	KS1 – Healthy salad Fruit smoothie	LKS2- Grab and Go food Sandwiches	Year 5- Pizzas	Year 6 - Sauces
Design		To create a simple plan before making a product. To be able to label my plan. To create a product for an intended user.  Extension: To give reasons for their choice of tools, materials, or techniques.	To be able to draw and label designs. To be able to design an appealing and edible product.  To be able to select ingredients suitable for a given task. Use exploded diagrams.	To create a clear plan including -specific measurements -equipment needed -detailed instructions including visual step by step plans.	To create a clear plan including -specific measurements -equipment needed -detailed instructions including visual step by step plans.
Make		To use create a finished product (mushing, chopping, blending, peeling, grating, spreading, and cooking).	To use a wider range of technical skills and tools to create a finished product.	To use a range of tools and cooking methods to prepare and make a pizza.	To use a range of tools and techniques to produce the desired effect.
Evaluate		To evaluate their healthy product against their original design and a design criteria.	To evaluate their finished product against their original design and a design criteria.	To evaluate their finished product against their original design, a design criteria and consider the views of others.	To evaluate their finished product against their original design, a design criteria and consider the views of others.
Technical Skills		To be able to chop, cut, spread, peel, blend, mush, or grate.	To chop, slice, grate, roll, and fold food into different pieces. To assemble or cook ingredients. To be able to measure ingredients.	To use previous taught skills and adapt the size of pieces based on the requirements of the recipe.	To use previous taught skills and adapt the size of pieces based on the requirements of the recipe. To create and refine recipes including ingredients methods, cooking times and temperatures. To measure accurately and calculate ratios of ingredients to scale up or down.
Technical Knowledge	Talk about the differences between materials and changes they notice. Make healthy choices about food and drink. Know and talk about the different factors that support their overall health and wellbeing: Healthy eating	To identify different techniques to prepare a healthy and balanced product.	To identify techniques used and wrote a method to create an existing product. Know that a healthy diet is made up of a variety and balance of different foods. Know that food and drink are needed to provide energy for the body to be active and healthy.	To identify how the different cooking techniques can be used to create a dish. Know that some people have allergies to certain foods that can affect their health. Work in a safe and hygienic way.	To identify how the different cooking techniques can be used to create a dish. Know that some people have allergies to certain foods that can affect their health. Work in a safe and hygienic way.

 <b>Electrical Systems</b>	EYFS	KS1	LKS2 - Nightlight	Year 5	Year 6 – Christmas cards
Design			To be able to draw and label designs. To be able to design an appealing and attractive product. Design a nightlight.  Extension: To able to produce realistic designs based on own research.		To create a clear plan including -specific measurements -materials -equipment needed -methods -detailed instructions including visual step by step plans. To be able to explain how their design appeals to a specific audience.
Make			To choose components that can be controlled by switches or by electrical equipment. To be able to select materials suitable for a given task.		To choose components that can be controlled by switches or by ICT equipment. Use a rang of tools and techniques to make a product.
Evaluate			To evaluate my nightlight and identify any improvements that could be made.		To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
Technical Skills			To use science skills (resistance, batteries in series or parallel, variable resistance to dim lights or control speed) to alter the way electrical products behave. Use precise electrical connections.		Create a range of electrical circuits and identify their components.
Technical Knowledge			Know how more complex electrical circuits can be used to create functional products. Know how to program a computer and control their products.		Know how to program a computer and control their products.

Development matters document

**Expressive arts and design**

- Explore different materials freely, to develop their ideas about how to use them and what to make.
- Develop their own ideas and then decide which materials to use to express them.
- Join different materials and explore different textures.
- Return to and build on their previous learning, refining ideas and developing their ability to represent them.
- Create collaboratively, sharing ideas, resources and skills.

**Personal, Emotional and Social Development**

- Make healthy choices about food, drink, activity and toothbrushing.

Next Step in Learning

In KS1 children will design purposeful, functional, appealing products for themselves and other users based on design criteria. They will generate, develop, model, and communicate their ideas through talking, templates, mock-ups and, where appropriate, information and communication technology. They will select from a range of tools and equipment to perform practical skills. They will also select from a range of materials. They will explore and evaluate a range of existing products and their own ideas. They will build structures and explore and use mechanisms.

They will use the basic principles of a healthy and varied diet to prepare dishes and understand where food came from.

## D&T Year 1 and 2 Overview

### National Curriculum

#### Design

- Design purposeful, functional, appealing products for themselves and other users based on design criteria
- Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

#### Make

- Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

#### Evaluate

- Explore and evaluate a range of existing products
- Evaluate their ideas and products against design criteria

#### Technical knowledge

- Build structures, exploring how they can be made stronger, stiffer and more stable
- Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

### Prior Learning

In EYFS, children will have explored different materials freely, to develop their ideas about how to use them and what to make. Developed their own ideas and then decided which materials to use to express them. Joined different materials and explored different textures.

### Next Step in Learning

In lower KS2 children will begin to research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. They will generate, develop, model, and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern piece and computer-aided design. They will select from a wider range of materials and components. They will investigate and analyse a range of existing products. They will evaluate their ideas and products against their own design criteria. They will understand how to strengthen more complex structures and use mechanical systems.

### End of Unit Assessment

Children will know how to design, make, and evaluate a moving picture.

### Key Unit Vocabulary

assemble  
design  
evaluate  
mechanism  
model  
lever  
slider

### Mechanisms – moving picture MTP

Key Concept See grids above for more steps.	Lesson Sequence	Learning Question	Knowledge
Technical knowledge	1	Can you say what makes a good moving picture? Year 1  Can you research moving pictures and consider how these work? Year 2  Can you choose an audience for your product? Both	Explore and evaluate a range of existing products by evaluating the product against the purpose. Look at the functions and materials used.
Design	2	Can you design a moving picture? Can you label your design?	Begin to design products using pictures and words based on a design criteria. Design products that have a clear purpose.
Technical skills	3	Can you practise the skills needed to make a lever or slider?	Use a range of materials to make a product. Design products that have a clear purpose.
Make Technical knowledge	4/5	Can you make a moving picture using a simple mechanism?	Use a range of materials and tools to make a product and explain why these have been used.
Evaluate	6	Can you evaluate your moving picture? Year 1  Can you evaluate your moving picture and suggest ways for improvement? Year 2	Evaluate ideas and products against the set design.

## D&T Year 1 and 2 Overview

### National Curriculum

#### Design

- Design purposeful, functional, appealing products for themselves and other users based on design criteria
- Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

#### Make

- Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

#### Evaluate

- Explore and evaluate a range of existing products
- Evaluate their ideas and products against design criteria

#### Technical knowledge

- Build structures, exploring how they can be made stronger, stiffer and more stable
- Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

### Prior Learning

In EYFS, children will have explored different materials freely, to develop their ideas about how to use them and what to make. Developed their own ideas and then decided which materials to use to express them. Joined different materials and explored different textures.

### Next Step in Learning

In lower KS2 children will begin to research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. They will generate, develop, model, and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern piece and computer-aided design. They will select from a wider range of materials and components. They will investigate and analyse a range of existing products. They will evaluate their ideas and products against their own design criteria. They will understand how to strengthen more complex structures.

### End of Unit Assessment

Children will design, make, and evaluate their chair.

### Key Unit Vocabulary

mould  
natural  
stiff  
stable  
strong  
test  
weak  
design  
construct

### Structures – chairs MTP

Key Concept See grids above for more steps.	Lesson Sequence	Learning Question	Knowledge
Technical Knowledge	1	What materials would be good for the structure of a chair? Year 1 How might we join these materials together? Year 1  Can you describe how a structure can be made stronger? Year 2 Can you identify shapes which increase stability? Year 2	Know how to join materials together to make a chair. Explore how materials can be made stronger, stiffer and more stable.
Design	2	Can you design a chair?	Use simple drawings and labels to record my ideas.
Technical skills	3	Can you practise the skills needed to join materials together?	Use a range of materials to make a product strong. Design products that have a clear purpose.
Make	4/5	Can you make a chair?	Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].
Evaluate	6	Can you evaluate your chair? Year 1  Can you evaluate your chair and suggest ways for improvement? Year 2	Evaluate ideas and products against the set design.



**National Curriculum**

Design

- Design purposeful, functional, appealing products for themselves and other users based on design criteria

Make

- Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

Evaluate

- Explore and evaluate a range of existing products
- Evaluate their ideas and products against design criteria

**Prior Learning**

In EYFS, children will have explored different materials freely, to develop their ideas about how to use them and what to make. Developed their own ideas and then decided which materials to use to express them. Joined different materials and explored different textures.

**Next Step in Learning**

In lower KS2 children will begin to research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. They will generate, develop, model, and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern piece and computer-aided design. They will select from a wider range of materials and components. They will investigate and analyse a range of existing products. They will evaluate their ideas and products against their own design criteria.

**End of Unit Assessment**

Children will design, make, and evaluate their purse/pouch or puppet.

**Key Unit Vocabulary**

decorate  
design  
fabric  
glue  
model  
accurate  
running stitch  
sew  
shape

**Textiles – purse/pouch and puppets (cycle 2) MTP**

Key Concept See grids above for more steps.	Lesson Sequence	Learning Question	Knowledge
Make	1	Can you demonstrate basic sewing skills?	Use a range of materials to make a product including textiles. Design products that have a clear purpose.
Design	2	Can you design a purse/pouch? Can you design a puppet?	Design products that have a clear purpose based on my own design criteria.
Make	3/4	Can you make and decorate a textiles purse/pouch? Can you make and decorate a textiles puppet?	Use a range of materials to make a product, including construction materials, textiles and ingredients and explain why the materials have been selected.
Evaluate	5	Can you evaluate your purse/pouch? Year 1 Can you evaluate your pouch/purse and stitching and suggest ways for improvement? Year 2  Can you evaluate your puppet? Year 1 Can you evaluate your puppet and stitching and suggest ways for improvement? Year 2	Evaluate my ideas and products against set design criteria.



National Curriculum

- Use the basic principles of a healthy and varied diet to prepare dishes.
- Understand where food comes from.

Prior Learning

In EYFS, children will have made healthy choices about food, drink, activity and toothbrushing.

Next Step in Learning

In lower KS2 children will begin to understand and apply the principles of a healthy and varied diet. They will prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. They will begin to know how a variety of ingredients are grown.

End of Unit Assessment

Children will be able to say where fruit and vegetables are grown, they will be able to identify fruits and vegetables and use them to make a healthy fruit smoothie or salad.

Cooking and Nutrition – salad and fruit smoothie (cycle 2) MTP

Key Concept See grids above for more steps.	Lesson Sequence	Learning Question	Knowledge
Cooking and Nutrition	1	What is a healthy salad made up of? Can you tell me where fruit and vegetables grow?  What is included in a fruit smoothie? Can you tell me where fruit and vegetables grow?	Explore and evaluate a range of existing products by looking at function and materials. Tell you where food comes from.
	2	Can you design a healthy salad? Can you design a fruit smoothie?	Use simple drawings and labels to record my ideas
	3	Can you make a healthy salad? Can you make a fruit smoothie?	Use a range of ingredients to prepare a healthy dish.
	4	Can you evaluate your healthy salad? Can you evaluate your fruit smoothie?	Evaluate my ideas and products against set design criteria.

Key Unit Vocabulary

blender  
fruit  
healthy ingredients  
peel  
recipe  
slice  
smoothie  
vegetable  
salad  
ground  
tree  
balanced diet  
nutrients

## D&T Year 3 and 4 Overview

### National Curriculum

#### Design

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.
- Generate develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and design.

#### Make

- Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately
- Select from and use a wider range of materials and components, including construction materials according to their functional properties and aesthetic qualities.

#### Evaluate

- Investigate and analyse a range of existing products.
- Evaluate ideas and products against their own design criteria and consider the views of others to improve their work.
- Understand how key events and individuals in design and technology have helped shape the world.

#### Technical knowledge

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

### Prior Learning

In KS1 children will have designed purposeful, functional, appealing products for themselves and other users based on design criteria. They will have generated, developed, modelled, and communicated their ideas through talking, templates, mock-ups and, where appropriate, information and communication technology. They will have selected from a range of tools and equipment to perform practical skills. They will also have selected from a range of materials. Explored and evaluated a range of existing products and their own ideas. Built structures and explored and used mechanisms.

### Next Step in Learning

In UKS2 children will continue to research and develop design criteria to inform the design if innovative, functional, appealing products that are fit for purpose. They will generate, develop, model, and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern piece and computer-aided design. They will select from a wider range of materials and components. They will investigate and analyse a range of existing products. They will evaluate their ideas and products against their own design criteria. They will apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

### End of Unit Assessment

Children will have explored existing bridges then designed, made, and evaluated their own bridge models.

### Structures – bridges MTP

Key Concept See grids above for more steps.	Lesson Sequence	Learning Question	Knowledge
Technical Knowledge	1	Can you research and describe the features of a bridge? Can you explore what shape makes a bridge structure?	Explain why certain materials were used to make existing products. Generate and develop ideas.
Design	2	Can you design a bridge?	Use different ways to creatively record and present my design to show they are fit for purpose.
Make	3/4	Can you make a bridge?	Choose suitable materials from a wider range and explain its suitability.
Evaluate	5	Can you evaluate the effectiveness of your structure based on your design criteria? Year 3 Can you evaluate and suggest improvements for your design? Year 4	Evaluate and suggest improvements for my design.

### Key Unit Vocabulary

bridge  
design criteria  
evaluation  
structure  
stable  
theme  
texture  
features  
truss

## D&T Year 3 and 4 Overview

### National Curriculum

#### Design

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.
- Generate develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and design.

#### Make

- Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately
- Select from and use a wider range of materials and components, including construction materials according to their functional properties and aesthetic qualities.

#### Evaluate

- Investigate and analyse a range of existing products.
- Evaluate ideas and products against their own design criteria and consider the views of others to improve their work.
- Understand how key events and individuals in design and technology have helped shape the world.

#### Technical knowledge

- Understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors)

### Prior Learning

In KS1 children will have designed purposeful, functional, appealing products for themselves and other users based on design criteria. They will have generated, developed, modelled, and communicated their ideas through talking, templates, mock-ups and, where appropriate, information and communication technology. They will have selected from a range of tools and equipment to perform practical skills. They will also have selected from a range of materials. Explored and evaluated a range of existing products and their own ideas.

### Next Step in Learning

In UKS2 children will continue to research and develop design criteria to inform the design if innovative, functional, appealing products that are fit for purpose. They will generate, develop, model, and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern piece and computer-aided design. They will select from a wider range of materials and components. They will investigate and analyse a range of existing products. They will evaluate their ideas and products against their own design criteria. They will understand and use electrical systems in their products.

### End of Unit Assessment

Children will have designed, made, and evaluated their own nightlights.

## Electrical Systems – nightlight MTP

Key Concept See grids above for more steps.	Lesson Sequence	Learning Question	Knowledge
Evaluate Technical Knowledge	1	Can you evaluate nightlights? Can you research how to make them?	Explain why certain materials were used to make existing products.
Design	2	Can you design a nightlight	Generate and develop ideas using exploding diagrams and prototypes.
Make	3/4	Can you make a nightlight	Choose suitable materials from a wider range and explain its suitability.
Evaluate	5	Can you evaluate the effectiveness of your nightlight based on your design criteria? Year 3 Can you evaluate your nightlight and suggest improvements? Year 4	Explain why certain materials were used to make existing products and I can evaluate and suggest improvements for my design.

### Key Unit Vocabulary

battery  
bulb  
conductor  
design criteria  
component  
electricity  
function  
switch  
test  
wire  
nightlight  
electronic item

National Curriculum

Design

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and design.

Make

- Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately
- Select from and use a wider range of materials and components, including construction materials according to their functional properties and aesthetic qualities.

Evaluate

- Investigate and analyse a range of existing products.
- Evaluate ideas and products against their own design criteria and consider the views of others to improve their work.
- Understand how key events and individuals in design and technology have helped shape the world.

Prior Learning

In KS1 children will have designed purposeful, functional, appealing products for themselves and other users based on design criteria. They will have generated, developed, modelled, and communicated their ideas through talking, templates, mock-ups and, where appropriate, information and communication technology. They will have selected from a range of tools and equipment to perform practical skills. They will also have selected from a range of materials. Explored and evaluated a range of existing products and their own ideas.

Next Step in Learning

In UKS2 children will continue to research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. They will generate, develop, model, and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern piece and computer-aided design. They will select from a wider range of materials and components. They will investigate and analyse a range of existing products. They will evaluate their ideas and products against their own design criteria.

End of Unit Assessment

By the end of the unit children will have designed, made, and evaluated their product.

Textiles – mobile phone case and fabric book sleeve MTP

Key Concept See grids above for more steps.	Lesson Sequence	Learning Question	Knowledge
Evaluate	1	Can you identify and evaluate different phone cases?  <b>Can you identify and evaluate different fastenings?</b>	Explain why certain materials were used to make existing products.
Design	2	Can you design a mobile phone case?  <b>Can you design a fabric book sleeve?</b>	Use different ways to creatively record and present my designs to show they are fit for purpose.
Design	3	Can you make a mobile phone case from paper?  <b>Can you make a book sleeve from paper?</b>	Generate and develop ideas using exploding diagrams and prototypes.
Make	4	Can you choose appropriate tools, fabrics, and fastenings to make your mobile phone case?  <b>Can you choose appropriate tools, fabrics, and fastenings to make your fabric book sleeve?</b>	Choose and use appropriate tools from a wider range to perform practical tasks and choose suitable materials from a wider range and explain its suitability.
Evaluate	5	Can you evaluate your product?	Evaluate and suggest improvements for my design.

Key Unit Vocabulary

assemble  
book sleeve  
mobile phone case  
design criteria  
evaluation  
fabric  
fastening  
running stitch  
stencil  
template  
target audience  
aesthetic

National Curriculum

- Understand and apply the principles of a healthy and varied diet.
- Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.
- Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.

Prior Learning

In KS1, children will have used the basic skills of a healthy diet to prepare dishes and understand where food comes from.

Next Step in Learning

In UKS2 children will continue to understand and apply the principles of a healthy and varied diet. They will prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. They will understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.

End of Unit Assessment

By the end of the unit, the children will be able to make, adapt and evaluate their own recipes.

Cooking and Nutrition – grab and go food and **sandwiches** MTP

Key Concept See grids above for more steps.	Lesson Sequence	Learning Question	Knowledge
Cooking and Nutrition	1	Can you research and say why the ingredients are used? Can you list the ingredients needed?	Explain why certain ingredients were used to make exiting products.
	2	Can you design a product? Can you design a basic recipe?	Use different ways to creatively record and present my design to show they are fit for purpose.
	3	Can you follow a basic recipe? Can you make grab and go food? <b>Can you make a sandwich?</b>	Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, or kneading.
Evaluate	4	Can you evaluate the food you made?	Evaluate and suggest improvements for my design.

Key Unit Vocabulary

equipment  
evaluation  
ingredients  
recipe  
healthy  
utilities  
flavour  
method

**D&T Year 5 Overview**

**National Curriculum**

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

**Prior Learning**

In lower KS2 children will have begun to understand and apply the principles of a healthy and varied diet. Prepared and cooked a variety of predominantly savoury dishes used a range of cooking techniques. They will have begun to know how a variety of ingredients are grown.

**Next Step in Learning**

Continue to develop, understand, and strengthen skills and knowledge.

**End of Unit Assessment**

By the end of the unit, the children will have designed, produced, and evaluated a pizza.

**Cooking and Nutrition – pizza’s MTP**

Key Concept See grids above for more steps.	Lesson Sequence	Learning Question	Knowledge
Cooking and Nutrition	1	Can you explain how foods get from places to the table?	Understand seasonality and know where and how a variety of ingredients are grown, reared, caught, and processed.
	2	Can you research and design a pizza?	Explore a range of cooking techniques to produce a product.
	3	Can you make a pizza?	Explore a range of cooking techniques to produce a product. Understand the importance of correct storage and handling of ingredients.
Evaluate	4	Can you evaluate the food you made?	Evaluate and suggest improvements for my design.

**Key Unit Vocabulary**

ingredients  
healthy  
processed  
nutrients  
recipe  
research



## D&T Year 5 Overview

### National Curriculum

#### Design

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

#### Make

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

#### Evaluate

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- understand how key events and individuals in design and technology have helped shape the world

### Prior Learning

In lower KS2 children will have begun to research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. They will have generated, developed, modelled, and communicated their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern piece and computer-aided design. Selected from a wider range of materials and components. Investigated and analysed a range of existing products. Evaluated their ideas and products against their own design criteria.

### Next Step in Learning

Continue to develop, understand, and strengthen skills and knowledge.

### End of Unit Assessment

By the end of the unit, the children will have designed, produced, and evaluated a drawstring bag.

### Key Unit Vocabulary

drawstring bag  
pattern pieces  
product  
evaluation  
material  
design  
tools

### Textiles – Drawstring bag MTP

Key Concept See grids above for more steps.	Lesson Sequence	Learning Question	Knowledge
Technical Knowledge	1	Can you understand how pattern pieces are used to make a product? Can you identify different drawstring bags? Have pattern pieces been used?	Explain why certain materials were used to make existing products.
Design	2	Can you design a drawstring bag?	Use different ways to creatively record and present my design to show they are fit for purpose.
Make	3/4	Can you choose appropriate tools and materials to make your bag?	Choose and use appropriate tools from a wider range to perform practical tasks and to choose suitable materials from a wider range and explain its suitability.
Evaluate	5	Can you evaluate your product and justify decisions made in the design and making process?	Evaluate and suggest improvements for my design.

## D&T Year 5 Overview

### National Curriculum

#### Design

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

#### Make

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

#### Evaluate

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- understand how key events and individuals in design and technology have helped shape the world

#### Technical knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- apply their understanding of computing to program, monitor and control their products.

### Prior Learning

In lower KS2 children will have begun to research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. They will have generated, developed, modelled, and communicated their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern piece and computer-aided design. Selected from a wider range of materials and components. Investigated and analysed a range of existing products. Evaluated their ideas and products against their own design criteria. Understood how to strengthen more complex structures and use mechanical systems.

### Next Step in Learning

In KS3 children will use research and exploration, such as the study of different cultures, to identify and understand user needs. They will identify and solve their own design problems and understand how to reformulate problems given to them. Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools. They will select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture and select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties. They will analyse the work of past and present professionals and others to develop and broaden their understanding. They will understand and use the properties of materials and the performance of structural elements to achieve functioning solutions. Understand how more advanced mechanical systems used in their products enable changes in movement and force.

### End of Unit Assessment

Children will design and make a playground with working mechanisms. They will also consider the shapes they use to reinforce and strengthen their structures.

### Key Unit Vocabulary

design  
mechanism  
structure  
motion  
pivot  
prototype  
template  
input  
output  
function  
research  
materials

### Structures/Mechanisms – playground/parks MTP

Key Concept See grids above for more steps.	Lesson Sequence	Learning Question	Knowledge
Technical knowledge	1	Can you research how structures/mechanisms in a park work?	Explore how more advanced mechanisms work and apply them to create movement. Understand different methods of strengthening structures.
Design	2	Can you design a playground?	Generate and develop ideas using pattern pieces and computer aided design.
Make	3/4/5 (if needed)	Can you join and combine a range of materials competently? Can you make a playground?	Use a range of appropriate tools competently.
Evaluate	6	Can you evaluate your playground and suggest ways for improvement?	Evaluate appearance and function against original criteria.



## D&T Year 6 Overview

### National Curriculum

#### Design

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

#### Make

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

#### Evaluate

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- understand how key events and individuals in design and technology have helped shape the world

#### Technical knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products.

### Prior Learning

In lower KS2 children will have begun to research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. They will have generated, developed, modelled, and communicated their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern piece and computer-aided design. Selected from a wider range of materials and components. Investigated and analysed a range of existing products. Evaluated their ideas and products against their own design criteria. They will have understood and used electrical systems in their products.

### Next Step in Learning

In KS3 children will use research and exploration, such as the study of different cultures, to identify and understand user needs. They will identify and solve their own design problems and understand how to reformulate problems given to them. Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools. They will select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture and select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties. They will analyse the work of past and present professionals and others to develop and broaden their understanding. They will understand and use the properties of materials and the performance of structural elements to achieve functioning solutions. Understand how more advanced electrical and electronic systems can be powered and used in their products [for example, circuits with heat, light, sound and movement as inputs and outputs].

### End of Unit Assessment

Children will have designed, made, and evaluated their own Christmas card using an electrical system.

### Key Unit Vocabulary

design  
electrical system  
assemble  
circuit  
component  
conductor  
evaluation  
fine motor skills  
function  
form  
insulator  
fit for purpose

### Electrical Systems – Christmas cards MTP

Key Concept See grids above for more steps.	Lesson Sequence	Learning Question	Knowledge
Technical knowledge	1	Can you research how to create electrical circuits that control products?	Know how to program a computer and control their products.
Design	2	Can you design a Christmas card with an electrical system?	Research and develop design criteria to design innovative functional and appealing products.
Make	3/4	Can you assemble electronics and complete your electrical card?	Select and use specialist tools and equipment to perform practical tasks accurately.
Evaluate	5	Can you evaluate your electrical Christmas card and suggest ways for improvements?	Evaluate your ideas and products against your own design criteria and consider the views of others to improve your work.

## D&T Year 6 Overview

### National Curriculum

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

### Prior Learning

In lower KS2 children will have begun to understand and apply the principles of a healthy and varied diet. Prepared and cooked a variety of predominantly savoury dishes used a range of cooking techniques. They will have begun to know how a variety of ingredients are grown.

### Next Step in Learning

In KS3 children will understand and apply the principles of nutrition and health. They will cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet. Become competent in a range of cooking techniques and understand the source, seasonality, and characteristics of a broad range of ingredients.

### End of Unit Assessment

By the end of the unit, the children will have designed, produced, and evaluated a cooking sauce.

### Cooking and Nutrition – sauces MTP

Key Concept See grids above for more steps.	Lesson Sequence	Learning Question	Knowledge
Cooking and Nutrition	1 (2 lessons if needed)	Can you research ingredients that are used in sauces? Can you research how food is reared, caught, and processed? Do you know how food is grown?	Understand seasonality and know when and how a variety of ingredients are grown, reared, caught, and processed.
	2	Can you design a sauce recipe? Can you make a recipe page?	Use a range of cooking techniques to produce a sauce. To be able to measure put ingredients accurately and use ratios to scale up or down a recipe.
	3	Can you prepare a sauce?	Use a range of cooking techniques to produce a sauce. Measure out ingredients accurately and use ratios to scale up or down a recipe. Understand the importance of correct storage and handling of ingredients.
	4	Can you evaluate your sauce against your design criteria and suggest ways for improvement?	Evaluate your ideas and products against your own design criteria and consider the views of others to improve your work.

### Key Unit Vocabulary

ingredients  
healthy  
processed  
nutrients  
recipe  
research  
sauce

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“Technology like  
art is a soaring  
exercise of the  
human  
imagination.”  
Daniel Bell

