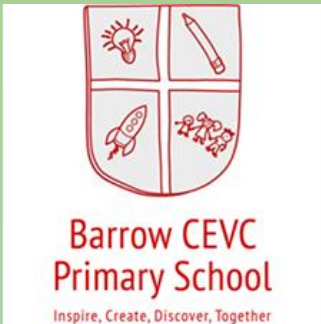




DESIGN & TECHNOLOGY INTENT

How do we know that our curriculum is having the desired impact?

Teachers	Children	Children's work
<ul style="list-style-type: none"> • Become more knowledgeable • Higher levels of confidence in delivering all aspects of the curriculum • Detailed understanding of how much children understand and can apply the taught content • Teach consistently well; applying pedagogical practices in all lessons • Plan learning sequences using progression of skills and knowledge • Understand how to identify any gaps in knowledge and skills and be able to address these • Gain advice and support from subject leads • Making learning across the curriculum accessible to all learners • High expectations and outcomes for all pupils across all subjects 	<ul style="list-style-type: none"> • Can talk about what they have learned, using the correct terminology • Are enthused and interested in a wide range of curriculum areas • Can talk about specific characteristics of subjects • Can describe the 'why' behind their work • Demonstrate good learning behaviours in all lessons • Are able to explain how their learning within a subject builds on previous learning • Are able to make thoughtful links between subjects • Can all access, enjoy and make progress across the curriculum – regardless of their starting points or additional needs. 	<ul style="list-style-type: none"> • Demonstrates that our children take pride in the work they produce • Children show the same effort and quality of work in all subjects • Shows their increasing understanding of key concepts • Shows a coherent teaching sequence within each unit of work • Demonstrates our curriculum's emphasis on subject specific terminology and vocabulary. • Children can enthusiastically talk about their work and what they have enjoyed and excelled in • Shows a variety of outcomes and within each of work across all subjects ie. Written work, photographs of practical work etc.
Visitors and Governors	<ul style="list-style-type: none"> • Give positive feedback about pupil engagement and behaviour in lessons and in pupil perception sessions • Comment on the high quality work they see • Recognise the knowledge and expertise of subject leaders in understanding the strengths and areas for development in their subjects 	<div data-bbox="1115 919 1305 1169">Parents</div> <ul style="list-style-type: none"> • Give positive feedback about their child's attitude to school and their learning • Share examples of when their child has enjoyed their learning • Engagement of parents at parents evenings, open book sessions and conversations for pupils with SEND



Design and Technology- Intent

At Barrow Primary School, we believe that Design and technology should be 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.

The children at Barrow are taught to 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.

Aims of the Design and Technology Curriculum

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.

INTENT



**Barrow CEVC
Primary School**
Inspire, Create, Discover, Together

INTENT

Design and Technology- Intent

The CUSP Design and Technology curriculum is organised into blocks with each block covering a particular set of

disciplines, including food and nutrition, mechanisms, structures, systems, electrical systems, understanding materials and textiles. Vertical progression in each discipline has been deliberately woven into the fabric of the curriculum so that pupils revisit key disciplines throughout their Primary journey at increasing degrees of challenge and complexity.

In addition to the core knowledge required to be successful within each discipline, the curriculum outlines key aspects of development in the Working as a Designer section. Each module will focus on promoting different aspects of these competencies. This will support teachers in understanding pupils' progress as designers more broadly, as well as how successfully they are acquiring the taught knowledge and skills.

Working as a Designer			
Design	Make	Evaluate	Apply
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.



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MENT

Early Years

During the Early Years Foundation Stage, the essential building blocks of children's design and technology capability are established. There are many opportunities for carrying out D&T-related activities in all areas of learning in the EYFS.

By the end of the EYFS, most children should be able to:

- Construct with a purpose in mind, using a variety of resources
- Use simple tools and techniques competently and appropriately
- Build and construct with a wide range of objects, selecting appropriate resources and adapting their work when necessary
- Select the tools and techniques they need to shape, assemble and join materials they are using



**Barrow CEVC
Primary School**

Inspire, Create, Discover, Together

Coverage Overview

Group	1	2	1	2	1	
EYFS	Build models small & large scale using construction equipment (indoor & outdoor)	Different techniques for joining materials, such as how to use adhesive tape and different sorts of glue Make pumpkin soup	Making puppets of story characters Use various construction materials – designing and making a house for the three pigs Make porridge	Junk modelling vehicles, buildings & landmarks	Design and build bug hotels	Making models from recycled materials – link to keeping our sea clean Designing and making a boat Designing and making kites
Year 1	Core discipline: Mechanisms Key concept: Sliders & levers	Core discipline: Structures Key concept: Freestanding structures	Core discipline: Food & nutrition Key concept:	Core discipline: Understanding materials Key concept: Selecting materials	Core discipline: Textiles Key concept: Joining techniques	Core discipline: Food & nutrition Key concept:
Year 2	Core discipline: Textiles Key concept: Exploring shape using a template	Core discipline: Food & nutrition Key concept: Keeping healthy	Core discipline: Mechanisms Key concept: Axles and wheels	Core discipline: Understanding materials Key concept: Manipulating materials	Core discipline: Food & nutrition Key concept:	Core discipline: Structures Key concept: Developing strength in structures
Year 3	Core discipline: Textiles Key concept: Stiffening & strengthening fabric	Core discipline: Food & nutrition Key concept: balanced diet	Core discipline: Mechanisms Key concept: Levers & linkages	Core discipline: Food & nutrition Key concept:	Core discipline: Systems Key concept: How are things powered?	Core discipline: Structures Key concept: Spanning gaps
Year 4	Core discipline: Food & nutrition Key concept:	Core discipline: Mechanisms Key concept: Hinges	Core discipline: Textiles Key concept: Fixings & fastenings	Core discipline: Structures Key concept: Designing structures using a frame to make them stronger and sturdier	Core discipline: Electrical Systems Key concept: Switches and circuits	Core discipline: Food & nutrition Key concept:
Year 5	Core discipline: Electrical Systems Key concept: Greener power	Core discipline: Food & nutrition Key concept:	Core discipline: Textiles Key concept: Durability of fabric	Core discipline: Mechanisms Key concept: Pulleys & gears	Core discipline: Structures Key concept: Developing structures that are fit for purpose & design	Core discipline: Food & nutrition Key concept:
Year 6	Core discipline: Food & nutrition Key concept:	Core discipline: Structures Key concept: Designing structures revisited – combining skills and knowledge	Core discipline: Food & nutrition Key concept:	Core discipline: Textiles Key concept: Sustainable materials	Core discipline: Electrical Systems Key concept: Complex switches & circuits	Core discipline: Mechanisms Key concept: Pulleys & gears

Content Progression

Year 1 Design and Technology: Mechanisms – Block A
How can you make a picture move?


The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Exploring sliders and their applications	Experimenting with different slider systems	Developing practical skills
Developing practical skills	Developing practical skills	Evaluating outcomes
	Developing designing and problem-solving skills	

At the end of this block, pupils will ...

Know:	Be able to:
Common uses of sliders	Design and make a slider product
Different methods to create card sliders	Evaluate the success of their outcomes and recommend improvements
How sliders can create simple mechanisms	

In this block, pupils will investigate how sliders work. They will design and make their own card slider product.



Little Red Riding Hood
Doris of London (1986)

CUSP Curriculum with Unity Schools Partnership

Year 2 Design and Technology: Mechanisms – Block C
Are bigger wheels always better?


The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Understanding how wheels and axles work	Exploring the size of wheels and positioning of axles	Building and testing a simple vehicle

At the end of this block, pupils will ...

Know:	Be able to:
How wheels and axles work together	Create a simple wheel mechanism
The size and position of wheels affects how they move	Use wheel mechanisms to propel a simple vehicle

In this block, pupils will learn how wheels and axles work together. They will build simple wheel mechanisms. They will explore how the size of the wheel and position of the axle affects the movement of simple vehicles.



Karl Friedrich Benz (1844 – 1929)
Inventor of the automobile wheel

CUSP Curriculum with Unity Schools Partnership

Year 3 Design and Technology: Mechanisms – Block C
How can you do a lot of work with little effort?

This block is set in the context of the CUSP Science unit 'Forces and magnets'.


The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Exploring levers and their applications	Exploring levers and their applications	Making a linkage and levers product
Developing practical skills	Developing practical skills	Evaluating outcomes
	Developing design skills	

At the end of this block, pupils will ...

Know:	Be able to:
Types of levers and linkages	Design and make simple levers and linkage products
Key terminology relating to levers and linkages	Evaluate the success of their outcomes and recommend improvements
How levers and linkages can change the direction of movement	

In this block, pupils will investigate various linkages and levers to design and make their own linkage and levers product. Pupils will select and use a variety of modelling materials to create their final outcomes.



Archimedes (287BC – 212BC)

CUSP Curriculum with Unity Schools Partnership

Mechanisms

Year 4 Design and Technology: Mechanisms – Block B
How many ways are there to open a door?


The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Exploring types of hinges	Developing practical skills	Developing practical skills
Developing practical skills	Evaluating outcomes	Evaluating outcomes

At the end of this block, pupils will ...

Know:	Be able to:
Types of hinges and the related terminology	Make a variety of model hinges
Common uses for hinges	Make and evaluate hinged products using modelling materials

In this block, pupils will investigate how hinges work. They will then select a range of modelling materials and tools to make their own hinged products, evaluating and modifying them throughout.



London's Tower Bridge uses huge hinges to lift up the road to allow boats to pass on the Thames.

CUSP Curriculum with Unity Schools Partnership

Year 5 Design and Technology: Mechanisms – Block D
How can you lift a car onto a roof?

This block is set in the context of the CUSP Science unit 'Forces'.


The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Exploring pulleys and gears and their applications	Developing designing and problem-solving skills	Developing designing and problem-solving skills
Developing practical skills	Developing practical skills	Developing practical skills
	Evaluating outcomes	Evaluating outcomes


At the end of this block, pupils will ...

Know:	Be able to:
Types of gears and terminology relating to gears	Design and make products that use pulleys and gears to lift loads
Common uses of pulleys and gears	Evaluate the success of their outcomes and recommend improvements
How pulleys and gears can change the direction of movement	

In this block, pupils will investigate how pulleys and gears work. They will design and make their own pulleys and gears products, selecting and using a variety of modelling materials to create final outcomes.



The London Eye (2000)



George Washington Gale Ferris Jr. (1859 – 1896)

CUSP Curriculum with Unity Schools Partnership

Year 6 Design and Technology: Mechanisms – Block B
How do pulleys and gears let you see the world?

The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Exploring pulleys and their applications	Developing designing and problem-solving skills	Developing designing and problem-solving skills
Experimenting with different pulley systems	Developing practical skills	Developing practical skills
	Evaluating outcomes	Evaluating outcomes

At the end of this block, pupils will ...

Know:	Be able to:
Types of pulley systems and gears	Design and make a model Ferris wheel powered by gears
Common uses of pulleys and gears	Evaluate the success of their outcomes and recommend improvements
How pulleys and gears can create simple mechanisms and change direction of movement	

In this block, pupils will investigate how pulleys and gears work and design and make their own gear product. Pupils will select and use a variety of modelling materials to create final outcomes.



The London Eye (completed 2000)


CUSP Curriculum with Unity Schools Partnership

Content Progression

Year 1 Design and Technology: Structures – Block B
How can you stop a tower from toppling over?

The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3	At the end of this block, pupils will ...	
Identification of the problem Exploring materials	Explicit teaching of skills relating to the brief Evaluation and adaptation	Application of skills Evaluation and adaptation	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


The Leaning Tower of Pisa (started in 1173 and completed in 1372)

In this block, pupils will investigate what needs to be in place so that a structure can remain standing on its own. They will use a range of materials to explore and reason about why some structures may fall.

CUSP Design & Technology (Long-term progress)	Block A	Block B	Block C	Block D	Block E	Block F
Year 1	Structures	Structures	Food and Nutrition	Understanding Materials	Textiles	Food and Nutrition
Year 2	Textiles	Food and Nutrition	Structures	Understanding Materials	Food and Nutrition	Structures
Year 3	Textiles	Food and Nutrition	Structures	Food and Nutrition	Systems	Structures
Year 4	Food and Nutrition	Systems	Textiles	Structures	Electrical Systems	Food and Nutrition
Year 5	Food and Nutrition	Systems	Textiles	Structures	Food and Nutrition	Textiles
Year 6	Food and Nutrition	Systems	Textiles	Structures	Electrical Systems	Textiles

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Year 2 Design and Technology: Structures – Block F
How strong is a piece of paper?

The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3	At the end of this block, pupils will ...	
Explicit teaching of skills Exploring materials	Explicit teaching of skills Exploring materials	Application of skills Evaluation and adaptation	Know: Paper becomes stronger when it is folded A lead to the amount of weight a structure must carry	Be able to: Fold paper to increase strength and stability Test and record how much weight paper can hold


Dame Zaha Hadid (1950 – 2016)


The Shard, London (2012)

In this unit, pupils will discover that they can increase the strength and stability of paper by folding. They will test and record their paper structures and design a paper tower that is at least 50cm tall and can bear a 2kg weight.


CUSP Design & Technology (Long-term progress)	Block A	Block B	Block C	Block D	Block E	Block F
Year 1	Structures	Structures	Food and Nutrition	Understanding Materials	Textiles	Food and Nutrition
Year 2	Textiles	Food and Nutrition	Structures	Understanding Materials	Food and Nutrition	Structures
Year 3	Textiles	Food and Nutrition	Structures	Food and Nutrition	Systems	Structures
Year 4	Food and Nutrition	Systems	Textiles	Structures	Electrical Systems	Food and Nutrition
Year 5	Food and Nutrition	Systems	Textiles	Structures	Food and Nutrition	Textiles
Year 6	Food and Nutrition	Systems	Textiles	Structures	Electrical Systems	Textiles


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Year 3 Design and Technology: Structures – Block F
What makes a bridge strong?

The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3	At the end of this block, pupils will ...	
Identifying features of bridges Exploring ways to stabilise a simple structure	Introducing a design and make challenge Identifying ways to stabilise a structure	Application of skills Evaluation and adaptation	Know: Bridges are structures that allow people and vehicles to cross over an open space Towers, piers and arches provide strength to a bridge	Be able to: Design and build a bridge that can hold the weight of 100 pennies Identify and name parts of a bridge


Sir John Wolfe Barry (1838 – 1918)


Sir Horace Jones (1803 – 1887)


Tower Bridge (1890)

In this block, pupils will investigate how the shape and features of a bridge can affect how strong it is. They will also identify types of bridges and the structural changes that engineers and architects make to increase the stability of structures.

CUSP Design & Technology (Long-term progress)	Block A	Block B	Block C	Block D	Block E	Block F
Year 1	Structures	Structures	Food and Nutrition	Understanding Materials	Textiles	Food and Nutrition
Year 2	Textiles	Food and Nutrition	Structures	Understanding Materials	Food and Nutrition	Structures
Year 3	Textiles	Food and Nutrition	Structures	Food and Nutrition	Systems	Structures
Year 4	Food and Nutrition	Systems	Textiles	Structures	Electrical Systems	Food and Nutrition
Year 5	Food and Nutrition	Systems	Textiles	Structures	Food and Nutrition	Textiles
Year 6	Food and Nutrition	Systems	Textiles	Structures	Electrical Systems	Textiles


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Structures

Year 4 Design and Technology: Structures – Block D
Which shapes will give a structure stability?

The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3	At the end of this block, pupils will ...	
Exploration of the key question Exploration of materials and techniques	Conducting investigations relating to the key question Evaluating and adapting	Application of knowledge and skills Evaluating and adapting	Know: Triangles provide stability in a structure Structural engineers work with architects to ensure structures withstand forces	Be able to: Make triangles to form and join structures Identify the forces that affect structures


Rona Agrawal (born 1980)
The Shard (started 2009 – completed 2012)


The Shard (started 2009 – completed 2012)

In this block, pupils will explore which shapes can be used to provide stability in structures. They will use a range of materials to investigate 3D shapes and in Lesson 3 they will collaborate on a class graphic novel structure.


CUSP Design & Technology (Long-term progress)	Block A	Block B	Block C	Block D	Block E	Block F
Year 1	Structures	Structures	Food and Nutrition	Understanding Materials	Textiles	Food and Nutrition
Year 2	Textiles	Food and Nutrition	Structures	Understanding Materials	Food and Nutrition	Structures
Year 3	Textiles	Food and Nutrition	Structures	Food and Nutrition	Systems	Structures
Year 4	Food and Nutrition	Systems	Textiles	Structures	Electrical Systems	Food and Nutrition
Year 5	Food and Nutrition	Systems	Textiles	Structures	Food and Nutrition	Textiles
Year 6	Food and Nutrition	Systems	Textiles	Structures	Electrical Systems	Textiles


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Year 5 Design and Technology: Structures – Block E
How are frames strengthened, reinforced and made rigid?

The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3	At the end of this block, pupils will ...	
Identification of the problem Exploring materials	Explicit teaching of skills relating to the brief Evaluation and adaptation	Application of skills Evaluation and adaptation	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


Abraham Darby III (1758 – 1789)


Iron Bridge (1779)

In this unit, pupils will look at a range of ways that frames are reinforced to make them stable. They will identify joints and supports and create a model shelter based on what they have learnt.


CUSP Design & Technology (Long-term progress)	Block A	Block B	Block C	Block D	Block E	Block F
Year 1	Structures	Structures	Food and Nutrition	Understanding Materials	Textiles	Food and Nutrition
Year 2	Textiles	Food and Nutrition	Structures	Understanding Materials	Food and Nutrition	Structures
Year 3	Textiles	Food and Nutrition	Structures	Food and Nutrition	Systems	Structures
Year 4	Food and Nutrition	Systems	Textiles	Structures	Electrical Systems	Food and Nutrition
Year 5	Food and Nutrition	Systems	Textiles	Structures	Food and Nutrition	Textiles
Year 6	Food and Nutrition	Systems	Textiles	Structures	Electrical Systems	Textiles


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Year 6 Design and Technology: Structures – Block D
How strong is a piece of spaghetti?

The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3	At the end of this block, pupils will ...	
Identification of the problem Testing materials	Explicit teaching of skills relating to the brief Evaluation and adaptation	Application of skills Evaluation and adaptation	Know: Structures can be supported with gas lines and flying buttresses The shorter the piece of spaghetti, the stronger it will be	Be able to: Construct a flying buttress to support a tower Use appropriate lengths of spaghetti to increase strength and stability


Blackpool Tower
by architect James Maxwell (1838 – 92) and William Charles Tuke (1843 – 93)


Blackpool Tower (1894)


Blackpool Tower (1894)

In this block, pupils will test the strength of spaghetti and then apply what they have learned to construct a tower that is at least one metre tall.


CUSP Design & Technology (Long-term progress)	Block A	Block B	Block C	Block D	Block E	Block F
Year 1	Structures	Structures	Food and Nutrition	Understanding Materials	Textiles	Food and Nutrition
Year 2	Textiles	Food and Nutrition	Structures	Understanding Materials	Food and Nutrition	Structures
Year 3	Textiles	Food and Nutrition	Structures	Food and Nutrition	Systems	Structures
Year 4	Food and Nutrition	Systems	Textiles	Structures	Electrical Systems	Food and Nutrition
Year 5	Food and Nutrition	Systems	Textiles	Structures	Food and Nutrition	Textiles
Year 6	Food and Nutrition	Systems	Textiles	Structures	Electrical Systems	Textiles

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Content Progression

[illegible]

Food and Nutrition




Year 6 Design and Technology: Food and Nutrition – Block C


Does food affect the way you feel?

The number and duration of the block is as follows:


Lesson 1	Lesson 2	Lesson 3	At the end of this block, pupils will...
Exploring nutrition	Exploring healthy options for lunch	Exploring reasons for healthy choices	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Know:</p> <ul style="list-style-type: none"> The differences between healthy and unhealthy food Children and adult nutritional needs </div> <div style="width: 45%;"> <p>Be able to:</p> <ul style="list-style-type: none"> Classify, critic and evaluate food choices Understand the importance of healthy eating </div> </div>
Evaluating outcomes	Introducing outcomes	Understanding and planning	<p>How food can:</p> <ul style="list-style-type: none"> Regulate their mood and energy Control their weight Give strength and energy Improve digestion Improve appearance of teeth <p>Pupils will learn how to:</p> <ul style="list-style-type: none"> Recognise the signs of poor nutrition Plan and cook, apply knowledge to make their own healthy choices Understand the importance of healthy eating, mood and behaviour



Protein-rich soups



Smoothies



Healthy eating

Unit	Lesson	Topic	Lesson	Topic
Unit 1	Lesson 1	Exploring nutrition	Lesson 2	Exploring healthy options for lunch
	Lesson 3	Evaluating outcomes	Lesson 4	Introducing outcomes
	Lesson 5	Understanding and planning		
Unit 2	Lesson 6	Protein-rich soups	Lesson 7	Smoothies
	Lesson 8	Healthy eating	Lesson 9	Understanding and planning
	Lesson 10		Lesson 11	

Content Progression



Year 1 Design and Technology: Understanding Materials – Block D

Can you build with bread?

- This block is set in the context of the CUSP Science unit 'Materials'.
- The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Exploring materials	Explicit teaching of skills relating to the brief	Application of skills Evaluation and adaptation



Frank Lloyd Wright
(1867 – 1959)



Foffingwater (1935)
Frank Lloyd Wright

At the end of this block, pupils will ...

Know:	Be able to:
Building materials have different properties which enable them to be used for different purposes	Identify, sort and select materials that can be used in construction Combine materials

In this block, pupils will be able to identify a range of construction materials. They will investigate how materials can be changed by adding heat or water. They will use a combination of materials to create a small model house.

CUSP Design & Technology 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	Electrical 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	Electrical Systems	Textiles



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Year 2 Design and Technology: Understanding Materials – Block D

How can you waterproof a hat?

- This block is set in the context of the CUSP unit 'Uses of everyday materials'.
- The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Exploration and testing of materials Reference to other designers	Exploration of materials and properties	Application of knowledge and skills to fulfil a brief Evaluation



Arthur Wellesley – First Duke of Wellington
(1769 – 1852)



At the end of this block, pupils will ...

Know:	Be able to:
Materials can be modified to become waterproof Origami comes from the Japanese words: ori – folding and kami – paper	Make paper waterproof Transform flat paper by folding and creasing to form a hat

In this block, pupils will investigate materials to discover whether they absorb or resist water. Pupils will also use wax or oil crayons to create a waterproof coating for a paper hat which they have made by creasing and folding a sheet of paper.

CUSP Design & Technology 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	Electrical 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	Electrical Systems	Textiles



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Understanding materials

Content Progression

Year 1 Design and Technology: Textiles – Block E
How can two squares of fabric keep you warm?


The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Identification of the problem	Explicit teaching of skills relating to the brief	Application of skills
Exploring materials		Evaluation and adaptation

At the end of this block, pupils will ...

Know:	Be able to:
Fabric can be joined together using a sewing stitch	Create a sewing stitch
	Select tools for sewing
	Thread a needle

In this unit, pupils will learn how to sew pieces of fabric together to form a patch. They will be able to name the parts of a needle and may be able to thread it.



The Boyes Topiary (1877)

CSP Design & Technology Curriculum Progression	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
Year 1	Materials	Materials	Text and Textiles	Understanding Materials	Textiles	Text and Textiles
Year 2	Textiles	Text and Textiles	Materials	Understanding Materials	Textiles	Text and Textiles
Year 3	Textiles	Text and Textiles	Materials	Understanding Materials	Textiles	Text and Textiles
Year 4	Text and Textiles	Materials	Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 5	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 6	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 7	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles

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Year 2 Design and Technology: Textiles – Block A
How can you repurpose an item of clothing?


The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Exploring materials and techniques	Explicit teaching of skills	Application of skills
	Evaluation	Evaluation and adaptation


At the end of this block, pupils will ...

Know:	Be able to:
How to cut out shapes which have been created by using a template	Use a template to transfer a pattern
How to use a range of basic sewing skills	Cut out and join fabric shapes using a template

In this block, pupils will learn how to use a template to create a simple patchwork by repurposing clothing to create something practical and useful. They will develop their skills using a needle and thread to create small, even stitches.



Patchwork (unknown)



Frank Rusk Fulford (born 1917)

CSP Design & Technology Curriculum Progression	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
Year 1	Materials	Materials	Text and Textiles	Understanding Materials	Textiles	Text and Textiles
Year 2	Textiles	Text and Textiles	Materials	Understanding Materials	Textiles	Text and Textiles
Year 3	Textiles	Text and Textiles	Materials	Understanding Materials	Textiles	Text and Textiles
Year 4	Text and Textiles	Materials	Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 5	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 6	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 7	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles

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Year 3 Design and Technology: Textiles – Block A
How can you make a box out of cloth?

The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Identification of the problem	Explicit teaching of skills relating to the brief	Application of skills
Exploring materials		Evaluation and adaptation

At the end of this block, pupils will ...

Know:	Be able to:
Fabric can be stiffened	Select and apply solutions to stiffen fabric
Stiffened fabric can hold a form	Make a box using stiffened fabric

In this block, pupils will explore ways to stiffen fabric. They will have the opportunity to cover a box with cloth and then go on to create a rigid box out of fabric.



Box (unknown)



Greta Schreyer

CSP Design & Technology Curriculum Progression	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
Year 1	Materials	Materials	Text and Textiles	Understanding Materials	Textiles	Text and Textiles
Year 2	Textiles	Text and Textiles	Materials	Understanding Materials	Textiles	Text and Textiles
Year 3	Textiles	Text and Textiles	Materials	Understanding Materials	Textiles	Text and Textiles
Year 4	Text and Textiles	Materials	Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 5	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 6	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 7	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles

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Textiles

Year 4 Design and Technology: Textiles – Block C
How do you keep a tea towel from slipping off a hook?


The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Identification of the problem	Explicit teaching of skills	Application of skills
Exploring materials		Evaluation and adaptation

At the end of this block, pupils will ...

Know:	Be able to:
Fastenings have different functions	Select appropriate fastenings and attach them to fabric
A shirt provides a small amount of space between the fabric and fabric	Make a shirt for a button

In this block, pupils will learn how to use a button onto fabric. They will identify the different functions of fastenings and reflect on the advantages/disadvantages of using certain fastenings. They will also create a solution to the problem of a towel slipping off a hook.



George de Mestral (1897–2000) Velcro®

CSP Design & Technology Curriculum Progression	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
Year 1	Materials	Materials	Text and Textiles	Understanding Materials	Textiles	Text and Textiles
Year 2	Textiles	Text and Textiles	Materials	Understanding Materials	Textiles	Text and Textiles
Year 3	Textiles	Text and Textiles	Materials	Understanding Materials	Textiles	Text and Textiles
Year 4	Text and Textiles	Materials	Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 5	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 6	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 7	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles

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Year 5 Design and Technology: Textiles – Block C
Which fabric is ideal for creating a functional and hardwearing lunch bag?


The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Identification of the problem	Specific teaching of skills relating to the brief	Application of skills
Exploring materials		Evaluation and adaptation

At the end of this block, pupils will ...

Know:	Be able to:
How to waterproof cotton fabric	Use techniques to waterproof cotton fabric
Which fabrics are both functional and hardwearing	Repurpose a pair of jeans

In this block, pupils will consider the durability of fabrics. They will design and make a functional and hardwearing lunch bag. They will create flat bags to investigate the properties of a range of fabrics and consider durability and waterproofing.



John Stroud (1859–1962)

CSP Design & Technology Curriculum Progression	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
Year 1	Materials	Materials	Text and Textiles	Understanding Materials	Textiles	Text and Textiles
Year 2	Textiles	Text and Textiles	Materials	Understanding Materials	Textiles	Text and Textiles
Year 3	Textiles	Text and Textiles	Materials	Understanding Materials	Textiles	Text and Textiles
Year 4	Text and Textiles	Materials	Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 5	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 6	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 7	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles

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Year 6 Design and Technology: Textiles – Block F
How can we reduce, recycle and repurpose?

The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Identification of the problem	Exploring materials	Application of skills
Explicit teaching of skills		Evaluation and adaptation

At the end of this block, pupils will ...

Know:	Be able to:
Plastic waste can be recycled and repurposed into practical, useful items	Make a cushion back out of a chipstick
	Use plastic bags and snack packets to create practical items

In this block, pupils will learn how they can reduce waste by recycling and repurposing snack packets and plastic bags into useful items.



Isadora Creary (born 1972)

CSP Design & Technology Curriculum Progression	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
Year 1	Materials	Materials	Text and Textiles	Understanding Materials	Textiles	Text and Textiles
Year 2	Textiles	Text and Textiles	Materials	Understanding Materials	Textiles	Text and Textiles
Year 3	Textiles	Text and Textiles	Materials	Understanding Materials	Textiles	Text and Textiles
Year 4	Text and Textiles	Materials	Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 5	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 6	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles
Year 7	Text and Textiles	Textiles	Text and Textiles	Text and Textiles	Text and Textiles	Text and Textiles

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Content Progression

Year 3 Design and Technology: Systems – Block E
How are things powered?

The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Understand what energy is and why we need it	Identify types of energy Understand how types of energy influence design choices	Explore energy in the context of design choices

At the end of this block, pupils will ...

Know:	Be able to:
Different types of energy	Identify how things are powered
Why designers need to carefully consider energy sources	Suggest appropriate energy sources for design problems

In this block, pupils will look at different types of energy and how these can be used to power different devices. They will consider how design choices are influenced by energy sources.

Images: Wind turbine (Wind), solar powered yacht / boat / charger

Small table:

Year 3 Design and Technology Curriculum Progression	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
Year 1	Introduction	Design	Food and Nutrition	Understanding Materials	Textiles	Food and Nutrition
Year 2	Textiles	Food and Nutrition	Introduction	Understanding Materials	Food and Nutrition	Textiles
Year 3	Textiles	Food and Nutrition	Introduction	Food and Nutrition	Textiles	Textiles
Year 4	Food and Nutrition	Textiles	Textiles	Textiles	Food and Nutrition	Food and Nutrition
Year 5	Food and Nutrition	Textiles	Textiles	Textiles	Food and Nutrition	Food and Nutrition
Year 6	Food and Nutrition	Textiles	Textiles	Textiles	Food and Nutrition	Food and Nutrition

Year 4 Design and Technology: Electrical Systems – Block E
How useful are switches?

This block is set in the context of the CUSP Science unit 'Electricity'.

The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Review switches and circuits and the associated vocabulary	Explore different types of switches and how they are used	Create a simple game involving an interruption in a circuit

At the end of this block, pupils will ...

Know:	Be able to:
A switch is an interruption in a circuit	Incorporate different types of switches into circuits to perform a function
Switches are widely used in a range of products	

Images: Thomas Edison (Inventor of the modern version, 1850)

In this block, pupils will learn how different types of switches work within electrical circuits and how these can be used to perform a function in a product.

Small table:

Year 4 Design and Technology Curriculum Progression	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
Year 1	Introduction	Design	Food and Nutrition	Understanding Materials	Textiles	Food and Nutrition
Year 2	Textiles	Food and Nutrition	Introduction	Understanding Materials	Food and Nutrition	Textiles
Year 3	Textiles	Food and Nutrition	Introduction	Food and Nutrition	Textiles	Textiles
Year 4	Food and Nutrition	Textiles	Textiles	Textiles	Food and Nutrition	Food and Nutrition
Year 5	Food and Nutrition	Textiles	Textiles	Textiles	Food and Nutrition	Food and Nutrition
Year 6	Food and Nutrition	Textiles	Textiles	Textiles	Food and Nutrition	Food and Nutrition

Systems

Year 5 Design and Technology: Systems – Block B
How can we keep ourselves safe on the road?

This block combines pupils' knowledge from science, Computing and DT knowledge acquired up to far in KS2.

The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Understanding and selecting materials	Using fixings and fastenings	Using knowledge of programming to control a product

At the end of this block, pupils will ...

Know:	Be able to:
Technology can be used to program and control a product	Combine elements of their design knowledge to fulfil a brief

In this block, pupils will draw on the knowledge they have learnt so far to design and make a road safety light. Pupils will write a simple program for a micro:bit and evaluate their outcome against the design brief.

Image: Early bicycle (inventor of the Draisienne like light projector)

Small table:

Year 5 Design and Technology Curriculum Progression	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
Year 1	Introduction	Design	Food and Nutrition	Understanding Materials	Textiles	Food and Nutrition
Year 2	Textiles	Food and Nutrition	Introduction	Understanding Materials	Food and Nutrition	Textiles
Year 3	Textiles	Food and Nutrition	Introduction	Food and Nutrition	Textiles	Textiles
Year 4	Food and Nutrition	Textiles	Textiles	Textiles	Food and Nutrition	Food and Nutrition
Year 5	Food and Nutrition	Textiles	Textiles	Textiles	Food and Nutrition	Food and Nutrition
Year 6	Food and Nutrition	Textiles	Textiles	Textiles	Food and Nutrition	Food and Nutrition

Year 6 Design and Technology: Electrical Systems – Block E
Can switches perform more than one function?

This block is set in the context of the CUSP Science unit 'Electricity'.

The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Review switches and circuits and the associated vocabulary	Explore how multiple switches and components can be included in a circuit	Incorporate multiple switches into a product to meet a design brief

At the end of this block, pupils will ...

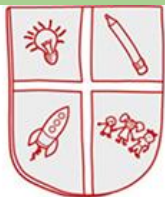
Know:	Be able to:
More than one switch can be used to change the functionality of a product	Use switches to adapt a product in response to a design brief

Image: Albert Einstein (1879 – 1955) (inventor of the modern version, 1879)

In this block, pupils will learn how switches can be combined with electrical components in different ways to change the functionality of a product.

Small table:

Year 6 Design and Technology Curriculum Progression	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
Year 1	Introduction	Design	Food and Nutrition	Understanding Materials	Textiles	Food and Nutrition
Year 2	Textiles	Food and Nutrition	Introduction	Understanding Materials	Food and Nutrition	Textiles
Year 3	Textiles	Food and Nutrition	Introduction	Food and Nutrition	Textiles	Textiles
Year 4	Food and Nutrition	Textiles	Textiles	Textiles	Food and Nutrition	Food and Nutrition
Year 5	Food and Nutrition	Textiles	Textiles	Textiles	Food and Nutrition	Food and Nutrition
Year 6	Food and Nutrition	Textiles	Textiles	Textiles	Food and Nutrition	Food and Nutrition



**Barrow CEVC
Primary School**
Inspire, Create, Discover, Together

Early Years to Key Stage 1



**Barrow CEVC
Primary School**
Inspire, Create, Discover, Together

RECEPTION LONG TERM PLAN 2023-2024

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
GENERAL THEMES	MARVELLOUS ME AND MY FRIENDS & FAMILY	FUN, FOOD AND CELEBRATIONS!	WE LOVE STORIES!	ARE WE THERE YET?	MINIBEAST MADNESS!	UNDER THE SEA!
EXPRESSIVE ARTS AND DESIGN	<p>The development of children's artistic and cultural awareness supports their imagination and creativity. It is important that children have regular opportunities to engage with the arts, enabling them to explore and play with a wide range of media and materials. The quality and variety of what children see, hear and participate in is crucial for developing their understanding, self-expression, vocabulary and ability to communicate through the arts. The frequency, repetition and depth of their experiences are fundamental to their progress in interpreting and appreciating what they hear, respond to and observe. Give children an insight into new musical worlds. Invite musicians in to play music to children and talk about it. Encourage children to listen attentively to music. Discuss changes and patterns as a piece of music develops.</p>					
	<p>Exploring Sound (Kapow)</p> <p>Exploring how to use our voice and bodies to make sounds, experimenting with tempo and dynamic when playing instruments and identifying sounds in the environment</p> <p>Join in with familiar songs and rhymes.</p> <p>Tapping out of simple rhythms.</p> <p>Performing - introducing the outside stage</p> <p>Handling and Naming percussion instruments</p> <p>Naming colours</p> <p>Begin to mix colours - introducing Painting Bench using poster paint</p> <p>Draw a self-portrait (enclosing lines): draw definite features</p> <p>Paul Klee: produce a piece of artwork using an artists style as a stimulus - shape people</p> <p>Talk about a famous artist.</p> <p>Transient art - faces - children use <u>igad</u> to capture their creations.</p> <p>Introduce Creation Station - using glue sticks</p> <p>Build models small and large scale using construction equipment. (indoor and outdoor)</p> <p>Making play <u>doh</u>.</p> <p>Domestic Role play</p> <p>Dolls house & other small World resources</p>	<p>Celebration Music (Kapow)</p> <p>Learning about the music from a range of cultural and religious celebrations, including Diwali, Hanukkah, Kwanzaa and Christmas</p> <p>Using chalk and pastels - firework creations .</p> <p>Transient Art - firework and poppies</p> <p>Christmas decorations</p> <p>Christmas cards</p> <p>Making a stick man using natural objects</p> <p>Mod-rock Christmas Puddings</p> <p>Draw a self-portrait (enclosing lines): draw definite features</p> <p>Junk modelling, take picture of children's creations and record them explaining what they did.</p> <p>Teach children different techniques for joining materials, such as how to use adhesive tape and different sorts of glue</p> <p>Making bread</p> <p>Performing Christmas Play</p> <p>Role Play The nativity Story</p>	<p>Musical Stories (Kapow)</p> <p>Music and instruments can be used to convey moods or represent characters.</p> <p>Explore how colour can be changed - introduce water colours</p> <p>Making lanterns, Chinese writing, puppet making,</p> <p>Recognise, create and describe pattern</p> <p>Draw a self-portrait (enclosing lines): draw definite features</p> <p>Collage -Henri Rousseau: produce a piece of artwork using an artists style as a stimulus - Tiger</p> <p>Clay Gingerbread people</p> <p>Making puppets of story characters</p> <p>Use various construction materials: designing and making a house for the three pigs.</p> <p>Use story maps, props, puppets & story bags to encourage children to retell, invent and adapt stories</p>	<p>Transport (Kapow)</p> <p>Children explore how they can use their voice and bodies to make sounds and experiment with tempo and dynamic when playing instruments.</p> <p>Make different textures - puffy paint globes</p> <p>Printing - using cars, wheels</p> <p>make patterns using different colours</p> <p>Mother's Day crafts</p> <p>Creating patterns - Easter eggs</p> <p>Draw a self-portrait (enclosing lines): draw definite features</p> <p>Create collaboratively: Easter Gardens</p> <p>Junk modelling vehicles and buildings, & landmarks.</p>	<p>Music and Movement (Kapow)</p> <p>Creating simple actions to songs, learning how to move to a beat and expressing feelings and emotions through movement to music</p> <p>Water colour painting <u>minibeasts</u>.</p> <p>Wool winding <u>minibeasts</u></p> <p>Creating collaboratively: caterpillars and butterflies</p> <p>Printing patterns - butterflies</p> <p>Using clay to make worms</p> <p>Weaving spider webs</p> <p>Draw a self-portrait (enclosing lines): draw definite features</p>	<p>Big Band (Kapow)</p> <p>Learning about the four different groups of musical instruments, following a beat using an untuned instrument and performing a <u>practised</u> song to a small audience</p> <p>Using chalks & pastels to create whale pictures.</p> <p>Water colour Rock Pool art</p> <p>Draw a self-portrait (enclosing lines): draw definite features</p> <p>Making models from recycled materials: link to keeping our sea clean</p> <p>Designing and making a boat.</p> <p>Designing and making kites</p>

INVENT



**Barrow CEVC
Primary School**

Inspire, Create, Discover, Together

Early Years to Key Stage 1

Design and Technology – EYFS – KS1

ELG 16 Creating with Materials	How this is achieved in EYFS	Art and Design KS1
<ul style="list-style-type: none"> Safely use and explore a variety of materials, tools and techniques, experimenting with <u>colour</u>, design, texture, form and function. Share their creations, explaining the process they have used. 	<p>Children can self-select from a range of tools and materials in the continuous provision. Children learn by experimenting with tools such as scissors, staplers and hole punches.</p> <p>They make use of fixing and joining materials such as sellotape, masking tape, string, pipe cleaners and glue.</p> <p>Through questioning children are encouraged to talk about what they like about their work and other children's designs and how they would improve it.</p> <p>Activity Examples:</p> <ul style="list-style-type: none"> Designing and making a kite on a windy day, choosing the best materials. Building a minibeast hotel outside. Creating vehicles outside with large bricks. Construction of houses, bridges and boats in the outdoor Builders Yard. Using junk model boxes to create vehicles inspired by Naughty Bus story. Using tools to prepare <u>snack</u> – E.g. cutting bananas. Selecting the best resources for den building outside. Cookery - Observing the effects of heat when melting chocolate when making Easter nests. 	<p>Design</p> <p>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.</p> <p>Make</p> <p>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.</p> <p>Evaluate</p> <p>Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria.</p> <p>Technical knowledge</p> <p>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.</p>

CONTENT