



Design Technology Curriculum Overview



All Saints CE Primary School
Whitefield, Bury

Design Technology Overview

Driven by knowledge and skills breakdown and looking for natural links with Science, History or Geography

	Important considerations	Autumn	Spring	Summer
Year 1	<ul style="list-style-type: none"> Make products with one moving part (sliders, wheels and axles) Begin to assemble and join materials (finishing techniques, cut and measure) 	Mechanisms (one moving part): Create a simple pop up toy using different materials incorporating the use of a slider – (textiles, junk material and card)	Textiles(join by glue): Assembling and joining using glue associated with the school and Bury e.g. logos	Mechanisms (axle): Create a swing for a play person which includes a moving part making use of stiff card incorporating an axle
			<u>Food - Preparing fruit and vegetables</u> This will be connected to natural links with Science, History and Geography.	
Year 2	<ul style="list-style-type: none"> Make products with at least two moving parts, incorporating sliders and linkages Explore wheels and axles. Introduce sewing products. 	Structures (tall and stable): Create a tall structure of at least 30cm (something that looks aesthetically pleasing having explored tall buildings in London) using a range of straws, junk material, card	Textiles (join by sewing) and Structures (stable): Create a Namibia traditional village home with a textile roof which incorporates an African style design (which includes some sewing) and is aesthetically pleasing. Base made of a malleable material e.g. clay, plasticine	Mechanisms (axle and wheels): Create a moving vehicle with axles and wheels – links to historical unit on transport and reflects transport through the ages
			<u>Food - Preparing fruit and vegetables</u> This will be connected to natural links with Science, History and Geography.	

Design Technology Overview

Driven by knowledge and skills breakdown and looking for natural links with Science, History or Geography

	Important considerations	Autumn	Spring	Summer
Year 3	<ul style="list-style-type: none"> Make products which includes pulleys Measure more accurately Introduce greater levels of ICT 	Textiles (measuring and creative): Create a weaving loom to produce a A4 floor mat which incorporates a range of textiles and textures	Structures (stable and creative) Create an aesthetically pleasing structure specifically for the town of Bury taking account of large structures such as Blackpool Tower, Eiffel Tower. Made from construction kits e.g Meccano. Link to history units - Ancient Mayans and Stone Age	Mechanisms (pulley): Create a mechanism for loading objects onto a boat which incorporates a pulley system (lifting 1 kg) - links to geography unit of rivers
			<u>Food - Healthy and varied diet</u> This will be connected to natural links with Science, History and Geography.	
Year 4	<ul style="list-style-type: none"> Make products to include at least one lever Introduce electrical circuits Strengthen 3d frameworks 	Mechanisms (lever): Create a Roman weapon to propel a marble one metre which is operated by a lever system	Textiles (Running stitches): Taking account of the Bayeux Tapestry create a textile product which tells a story and incorporates fabric sewn onto fabric (applique) and stitch detail.	Mechanisms (incorporating a simple electrical circuit): Create an electrical torch which incorporates changing colours e.g. kaleidoscope
		<u>Food - Healthy and varied diet</u> This will be connected to natural links with Science, History and Geography.		

Design Technology Overview

Driven by knowledge and skills breakdown and looking for natural links with Science, History or Geography

	Important considerations	Autumn	Spring	Summer
Year 5	<ul style="list-style-type: none"> Make products to include gears Create prototypes before making final design 	Textiles (applique and at least 3 different stitches): Create a A4 personal flag for the opening ceremony of the Ancient Greek Olympics which incorporates a running stitch	Mechanisms (gears): Create a water mill system for a developing country which incorporates gears and links to Fairtrade.	Structures (use of recycled materials) – Create a structure including a prototype to reflect an aspect of European life which could become a European landmark out of recycled materials.
		<u>Food - Celebrating culture and seasonality</u> This will be connected to natural links with Science, History and Geography.		
Year 6	<ul style="list-style-type: none"> Ability to choose appropriate mechanisms, such as gears, pulleys or levers Raise awareness of cost associated with making a product 	Mechanisms (Applying previous knowledge of axles, sliders, wheels, pulleys, levers and gears): Create a vehicle capable of moving over different terrain which incorporates more than one mechanical system – History link	Structure and Textiles (Stable and appropriate for setting): Create a 3 D model of a structure, for example an Anderson Shelter or a Priest Hole.	Mechanisms (a complex electrical circuit with multiple components): Create a traffic light system that involves the use of IT
		<u>Food - Celebrating culture and seasonality</u> This will be connected to natural links with Science, History and Geography.		

DESIGN TECHNOLOGY: DISCIPLINARY KNOWLEDGE

EYFS and Key Stage 1

	EYFS	Year 1	Year 2
Designing	<ul style="list-style-type: none"> • Think of what they want to make with a given set of resources • Begin to be aware that the resources they have will limit what they can make • Talk to an adult about what they want to make • Make decisions about how to approach a task before starting • Start to choose the resources they need to make a product 	<ul style="list-style-type: none"> • Begin to research existing products before designing their own • When researching, find out how products work and which materials have been used. • Use own ideas to design something • Describe how their own idea works • Design a product which moves • Explain to someone else how they want to make their product • Make a simple plan before making • Begin to develop their own ideas through drawings, and where appropriate, make templates or mock ups of their initial ideas using ICT (if needed). 	<ul style="list-style-type: none"> • Begin to develop their design ideas using research and discussion with peers and adults. • Understand the purpose of their product • Have an identified target group in mind when designing and making a simple product. • Think of an idea and plan what to do next • Explain why they have chosen specific textiles or materials • Draw a simple design and label the parts of their product • Develop their own ideas through drawings, and where appropriate, make templates or mock ups of their initial ideas using ICT (if needed).

DESIGN TECHNOLOGY: DISCIPLINARY KNOWLEDGE

EYFS and Key Stage 1

	EYFS	Year 1	Year 2
Making	<ul style="list-style-type: none">• Handle equipment safely• Explore a variety of materials, tools and techniques, for example know how lego joins together• Begin to appreciate that glue does not work on all materials• Show increasing levels of independence in the making stage	<ul style="list-style-type: none">• Use own ideas to make something• Assemble and join materials using a variety of methods• Begin to build structures, exploring how they can be made stronger, stiffer and more stable.• Explore the use of different mechanisms (for example sliders, wheels and axles) in their products.• With help, measure, mark out and cut a range of materials.• Use tools safely (e.g. scissors and a hole punch).• Begin to assemble, join and combine materials and components together using a variety of temporary methods (e.g. glue or sellotape).• Begin to use simple finishing techniques to improve the appearance of their products.	<ul style="list-style-type: none">• Choose tools and materials and explain why they have chosen them• Join materials and components in different ways, including glue, sellotape and masking tape.• Can identify and name a simple selection of hand tools (e.g. scissors).• Carry out finishing techniques that have been modelled by the teacher• Use simple sewing techniques including cutting, shaping and joining fabric to make a simple product.• Build structures, exploring how they can be made stronger, stiffer and more stable.• With help, measure, cut and score with some accuracy.• Start to assemble, join and combine materials in order to make a product.• Start to choose and use appropriate finishing techniques based on their own ideas.

DESIGN TECHNOLOGY: DISCIPLINARY KNOWLEDGE

EYFS and Key Stage 1

	EYFS	Year 1	Year 2
Evaluating	<ul style="list-style-type: none"> • Be prepared to stop to check how well their product is developing • Changing strategy as needed when they know their product is not turning out the way they wanted • Be able to explain to others how they made their product and be able to offer a simple explanation as to how they would improve on it 	<ul style="list-style-type: none"> • Describe how something works • Explain what works well and not so well in the model they have made • Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make. 	<ul style="list-style-type: none"> • Evaluate their work against their design criteria. • Look at a range of existing products and what they like and dislike about products and why. • Start to evaluate their products as they are developed, identifying strengths and possible changes they might make. • With confidence talk about their ideas, saying what they like and dislike about their product.
Technical Knowledge	<ul style="list-style-type: none"> • Think of a range of ways of joining two resources together • Begin to use a wider range of tools carefully and skilfully • Begin to understand which materials are suitable for certain tasks. 	<ul style="list-style-type: none"> • Make their own model stronger • Make a product that has at least one moving part e.g. wind/ simple motor powered boat 	<ul style="list-style-type: none"> • Make a model stronger and more stable • Use wheels and axles, when appropriate to do so • Know how simple mechanisms work e.g. sliders and linkages • Make a product that has at least two moving parts.

DESIGN TECHNOLOGY: DISCIPLINARY KNOWLEDGE

EYFS and Key Stage 1

	EYFS	Year 1	Year 2
Food Technology	<ul style="list-style-type: none"> • Know why it is important to wash their hands before handling food • Begin to understand which foods go together and which do not • Begin to name certain foods such as sandwich, samosas etc. 	<ul style="list-style-type: none"> • Cut food safely • Know that all food comes from either plants or animals. • Use basic food handling, hygiene practices and personal hygiene • Know how to prepare simple dishes safely and hygienically without using a heat source. • Know how to use techniques such as cutting, peeling and grating. 	<ul style="list-style-type: none"> • Know that everyone should eat at least five portions of fruit and vegetables each day. • Demonstrate how to prepare simple dishes safely and hygienically without using a heat source. • Demonstrate how to use techniques such as cutting, peeling and grating. • Weigh ingredients to use in a recipe • Describe the ingredients used when making a dish or cake • Can talk about which food is healthy and which is not • Follow safe procedures for food safety and hygiene.

DESIGN TECHNOLOGY: DISCIPLINARY KNOWLEDGE

Lower Key Stage 2

Year 3

Year 4

Designing

- Research independently and generate some ideas before thinking about resources.
- Consider the purpose and audience for their product
- Order the main stages of making a product, continually referring to purpose and establish criteria for a successful product.
- Prove that a design meets the specification
- Design a product and make sure that it meets the design criteria including looking attractive (if needed)
- Draw annotated designs with labels that detail their material choices and suitability of the given materials
- Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products.
- Start to understand whether their products can be recycled or reused.
- When planning, explain their choices of materials and components, including function.
- Develop their own ideas through drawings, making templates or mock ups of their initial ideas using ICT (if needed).

- Research as a matter of course before considering designing a product.
- Use ideas from other people when designing e.g. creating a mood board of existing products
- Confidently make labelled drawings from different views, showing specific features.
- Produce a plan and explain the use of materials, equipment and processes
- Persevere and adapt work when original ideas do not work
- If the first attempt fails, identify strengths and future areas for development.
- Communicate ideas through annotated sketches that show different viewpoints of the product
- Begin to be very familiar with different inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products.

DESIGN TECHNOLOGY: DISCIPLINARY KNOWLEDGE

Lower Key Stage 2

	Year 3	Year 4
Making	<ul style="list-style-type: none">• Follow a step-by-step plan, choosing the right equipment and materials• Select the most appropriate tools and techniques for a given task• Work accurately to measure, mark out, make cuts, score, make holes and assemble components with more accuracy.• Start to work safely and accurately with a range of simple tools.• Choose finishing techniques to improve the appearance of their products using a range of equipment including ICT• Start to understand that mechanical systems (such as levers and linkages) create movement.• Start to think about their ideas as they make their product and be willing to change things if they help them to improve their work.• Start to measure, tape or pin, cut and join fabric with some accuracy.	<ul style="list-style-type: none">• Know which tools to use for a particular task and show knowledge of handling the tool accurately and safely.• Know which material is likely to give the best outcome based on its properties• Mark, measure and cut accurately a range of materials using appropriate tools, equipment and techniques.• Start to join and combine materials and components accurately in temporary and permanent ways.• Sew, weave or knit using a range of stitches• Show high levels of perseverance when things do not go as they would wish in the first instance.• Start to understand the mechanical and electrical systems have an input, process and output.• Know how mechanical systems (such as pulleys or gears) create movement.• Know how simple electrical circuit and components can be used to create functional products.• Understand how to reinforce and strengthen a 3D framework.• Begin to use finishing techniques to strengthen and improve their appearance of their product using a range of equipment, including ICT

DESIGN TECHNOLOGY: DISCIPLINARY KNOWLEDGE

Lower Key Stage 2

	Year 3	Year 4
Evaluating	<ul style="list-style-type: none">• Explain how to improve a finished model• Know why a model has or has not been successful• Evaluate their product against their original design criteria (e.g. how well it meets its intended purpose).• Begin to disassemble and evaluate familiar products and consider the views of others to improve them.• Evaluate the key designs of individuals in DT has helped shaped the world.	<ul style="list-style-type: none">• Evaluate and suggest improvements for designs• Evaluate products for both their purpose and appearance• Evaluate their own and others work• Evaluate their product, carrying out appropriate tests.• Evaluate their product both during and at the end of the assignment.• Present a product in an interesting way• Be able to disassemble and evaluate familiar products and consider the views of others to improve them.
Technical Knowledge	<ul style="list-style-type: none">• Know how to strengthen a product by stiffening a given part or reinforce a part of the structure• Use a simple IT program within the design• Create a product that incorporates a pulley mechanism.	<ul style="list-style-type: none">• Link scientific knowledge by using lights, switches or buzzers• Use IT where appropriate to add to the quality of the product• Create a product that incorporates at least one lever.• Use appropriate sewing techniques.

DESIGN TECHNOLOGY: DISCIPLINARY KNOWLEDGE

Lower Key Stage 2

	Year 3	Year 4
Food Technology	<ul style="list-style-type: none">• Describe how food ingredients come together• Weigh out ingredients and follow a given recipe to create a dish• Know when food is ready for harvesting• Demonstrate hygienic food preparation• Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of heat source.• Begin to understand how to use a range of techniques, such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.• Begin to know that to be active and healthy, food and drink are needed to provide energy for the body.	<ul style="list-style-type: none">• Bring a creative element to the food product being designed• Know which season various foods are available for harvesting• Recognise safe practices in the kitchen and can identify hazards e.g. hazards when using an oven• Know how to use a range of techniques, such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.• know that to be active and healthy, food and drink are needed to provide energy for the body.

DESIGN TECHNOLOGY: DISCIPLINARY KNOWLEDGE

Upper Key Stage 2

Year 5

Year 6

Designing

- Competently research products similar to the one they are intending to design and evaluate strengths and weakness to be incorporated into their own design.
- Research and use ICT where appropriate
- Design, with a range of initial ideas, after collecting information from investigating existing products
- Produce a detailed, step-by-step plan
- Explain how a product will appeal to a specific audience and how it meets the purpose
- Create annotated 3D designs of their design on isometric or squared paper from a range of viewpoints.
- With growing confidence, apply a range of finishing techniques including those from art and design.
- Start to appreciate how much the product costs to make.

- When researching, be competent in discriminating as to what would be and would not be helpful for their intended product.
- Use market research of existing products to inform their design
- Follow and refine original plans, justifying it in a convincing way
- Draw detailed 3D designs using exploded diagrams or cross sectional drawing where appropriate to display finer details
- Show that culture and society is considered in plans and design specification
- Show thought has been given to materials relating to recycling and sustainability.
- Know how much products cost and make choices accordingly.

DESIGN TECHNOLOGY: DISCIPLINARY KNOWLEDGE

Upper Key Stage 2

Year 5

Year 6

Making

- Name and use a range of tools and equipment competently
- Select appropriate materials, tools and technique (e.g. 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.
- Incorporate mechanical systems (such as pulleys or gears) to create movement in their products.
- Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products.
- Use finishing techniques to strengthen and improve the appearance of their products using a range of equipment including ICT.
- Make a prototype before making a final version
- Carry out finishing techniques to enhance the appearance and function of their product

- Confidently select appropriate tools, materials, components and techniques and use them efficiently.
- Know how to use any tool correctly and safely
- Know what each tool is used for
- Explain why a specific tool is best for a specific action
- Make modifications as they go along and explain their reasons.
- Construct products using permanent joining techniques.
- Use mechanical systems such as pulleys and gears competently to create movement in their products.
- Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products.
- Use finishing techniques to strengthen and improve the appearance of their products using a range of equipment including ICT.
- Pin, sew and stitch materials together to create a product

DESIGN TECHNOLOGY: DISCIPLINARY KNOWLEDGE

Upper Key Stage 2

	Year 5	Year 6
Evaluating	<ul style="list-style-type: none">• Evaluate a product against original design specifications and by carrying out tests.• Suggest alternative plans; outlining the positive features and drawbacks• Evaluate appearance and function against original criteria• Begin to evaluate their product personally and seek evaluation from others.	<ul style="list-style-type: none">• Test and evaluate designed products with specified audience where possible• Explain how products should be stored and give reasons• Evaluate product against clear criteria• Evaluate their work both during and at the end of the assignment.• Record their evaluations using drawing with labels.
Technical Knowledge	<ul style="list-style-type: none">• Suggest alternative plans; outlining the positive features and drawbacks• Evaluate appearance and function against original criteria• Create a product that incorporates gears.	<ul style="list-style-type: none">• Know which IT product would further enhance a specific product• Use knowledge to improve a made product by strengthening, stiffening or reinforcing• Use electrical systems correctly and accurately to enhance a given product• Know when a product they have made is improved by either the use of pulleys, levers or gears.

DESIGN TECHNOLOGY: DISCIPLINARY KNOWLEDGE

Upper Key Stage 2

	Year 5	Year 6
Food Technology	<ul style="list-style-type: none">• Be both hygienic and safe in the kitchen• Know how to prepare a meal by collecting the ingredients in the first place• Weigh and measure accurately (timings, dry ingredients and liquids)• Begin to understand that seasons may affect the food available.• Understand how food is processed into ingredients that can be eaten or used in cooking.• Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically, including where appropriate, the use of a heat source.• Begin to understand that different food and drink contain different substances – nutrients, water and fibre – that are needed for health.	<ul style="list-style-type: none">• Explain how food ingredients should be stored and give reasons• Work within a budget to create a meal• Understand the difference between a savoury and sweet dish• Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically, including where appropriate, the use of a heat source.• Know different food and drink contain different substances – nutrients, water and fibre – that are needed for health.

Long-term overview for Design Technology

YEAR 1

Create a simple pop up toy similar to one that children may have played with in the past

Find out about toys in the past, especially those before batteries, etc.

Design an initial idea, which has one moving part

Ensure that the moving part is strong enough when the making stage begins

Evaluate the final product against the original brief

Designing

- Begin to research existing products before designing their own
- When researching, find out how products work and which materials have been used.
- Design a product which moves
- Explain to someone else how they want to make their product
- Make a simple plan before making
- Begin to develop their own ideas through drawings, and where appropriate, make templates or mock ups

Making

- Begin to build structures, exploring how they can be made stronger, stiffer and more stable.
- Explore the use of different mechanisms (for example sliders, wheels and axles) in their products.
- With help, measure, mark out and cut a range of materials.
- Use tools safely (e.g. scissors and a hole punch).
- Begin to assemble, join and combine materials and components together using a variety of temporary methods
- Begin to use simple finishing techniques to improve the appearance of their products.

Evaluating

- Explain what works well and not so well in the model they have made
- Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make.

Technical Knowledge

- Make their own model stronger
- Make a product that has at least one moving part e.g. wind/ simple motor powered boat

Long-term overview for Design Technology

YEAR 1

Use textiles to make a logo related to your locality or school

Find out about locality or school and explore initial ideas

Design an initial idea, which focuses on gluing different textiles

Gather resources and make the product

Evaluate the final product against the original brief

Designing

- Begin to research existing products before designing their own
- Use own ideas to design something and be prepared to describe how their own idea works
- Begin to develop their own ideas through drawings, and where appropriate, make templates or mock ups

Making

- Assemble and join materials using a variety of methods
- With help, measure, mark out and cut a range of materials.
- Use tools safely (e.g. scissors and a hole punch).
- Begin to assemble, join and combine materials and components together using a variety of temporary methods (e.g. glue or sellotape).
- Begin to use simple finishing techniques to improve the appearance of their products.

Evaluating

- Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make.

Long-term overview for Design Technology

YEAR 1

Create a system that incorporates an axle as part of a swing

Investigate playgrounds and investigate moving parts, such as swings

Design an initial idea, which focuses on a swing

Gather resources and make a product that incorporates a swing

Evaluate the final product against the original brief and consider how they might have made changes

Designing

- Begin to research existing products before designing their own
- When researching, find out how products work and which materials have been used.
- Explain to someone else how they want to make their product
- Begin to develop their own ideas through drawings, and where appropriate, make templates or mock ups.

Making

- Begin to build structures, exploring how they can be made stronger, stiffer and more stable.
- Explore the use of different mechanisms (for example axles) in their products.
- With help, measure, mark out and cut a range of materials.
- Use tools safely (e.g. scissors and a hole punch).
- Begin to use simple finishing techniques to improve the appearance of their products.

Evaluating

- Explain what works well and not so well in the model they have made
- Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make.

Technical Knowledge

- Make their own model stronger
- Make a product that incorporates an axle

Long-term overview for Design Technology

YEAR 2

Create a tall structure similar to the ones seen in London

Research the large tower-like structure in London

Design a tall structure that would not seem out of place in London

Gather the resources needed to make the structure

Ensure the structure is strong, at least 30cms tall and can stand without additional support

Evaluate the final product giving consideration to how it may differ if it were to be made again

Designing

- Begin to develop their design ideas using research and discussion with peers and adults.
- Understand the purpose of their product
- Think of an idea and plan what to do next
- Explain why they have chosen specific textiles or materials
- Draw a simple design and label the parts of their product
- develop their own ideas through drawings, and where appropriate, make templates or mock ups.

Making

- Choose tools and materials and explain why they have chosen them
- Join materials and components in different ways, including glue, sellotape and masking tape.
- Build structures, exploring how they can be made stronger, stiffer and more stable.
- With help, measure, cut and score with some accuracy.
- Start to assemble, join and combine materials in order to make a product.

Evaluating

- Evaluate their work against their design criteria.
- Start to evaluate their product as it is being developed, identifying strengths and possible changes they might make.
- With confidence talk about their ideas, saying what they like and dislike about their product.

Technical Knowledge

- Make a model stronger and more stable,

Long-term overview for Design Technology

YEAR 2

Create a Namibia traditional village home that incorporates an African-style material roof

Research what traditional village homes look like in parts of Namibia

Take time to design the roof (made from textiles) taking account of Namibia art

Gather the resources needed to make the structure and the textile roof

Ensure that the roof design incorporates some sewing (running stitch)

Evaluate the final product against the original design and ensuring Namibia style pattern on the roof

Designing

- Begin to develop their design ideas using research and discussion with peers and adults.
- Understand the purpose of their product
- Explain why they have chosen specific textiles or materials
- Draw a simple design and label the parts of their product
- Develop their own ideas through drawings, and where appropriate, make templates or mock ups of their initial ideas.

Making

- Choose tools and materials and explain why they have chosen them
- Join materials and components in different ways, including sewing.
- Can identify and name a simple selection of hand tools (e.g. scissors).
- Use simple sewing techniques including cutting, shaping and joining fabric to make a simple product.
- With help, measure, cut and score with some accuracy.
- Start to assemble, join and combine materials in order to make a product.
- Start to choose and use appropriate finishing techniques based on their own ideas.

Evaluating

- Evaluate their work against their design criteria.
- Start to evaluate their products as they are developed, identifying strengths and possible changes they might make.
- With confidence, talk about their ideas, saying what they like and dislike about their product.

Technical Knowledge

- Make a model stronger and more stable,

Long-term overview for Design Technology

YEAR 2

Create a Victorian style vehicle that moves on axles and wheels

Research what vehicles looked like in Victorian times

Design a vehicle that takes account of the historical period and incorporates axles and wheels

Gather the resources needed to make the vehicle

Ensure that in the making phase, the axles and wheels are strong enough

Evaluate the vehicle against the original design and explain how it could be made stronger

Designing

- Research independently and generate some ideas before thinking about resources.
- Order the main stages of making a product, continually referring to purpose and establish criteria for a successful product.
- Design a product and make sure that it meets the design criteria including looking attractive (if needed)
- When planning, explain their choices of materials and components, including function.

Making

- Choose tools and materials and explain why they have chosen them
- Can identify and name a simple selection of hand tools (e.g. scissors).
- Build structures, exploring how they can be made stronger, stiffer and more stable.
- With help, measure, cut and score with some accuracy.
- Start to assemble, join and combine materials in order to make a product.
- Start to choose and use appropriate finishing techniques based on their own ideas.

Evaluating

- Evaluate their work against their design criteria.
- Start to evaluate their products as they are developed, identifying strengths and possible changes they might make.
- With confidence, talk about their ideas, saying what they like and dislike about their product.

Technical Knowledge

- Make a model stronger and more stable,
- Use wheels and axles, when appropriate to do so

Long-term overview for Design Technology

YEAR 3

Create a weaving loom to produce a A4 floor mat which incorporates a range of textiles and textures

Research different ways of weaving

Design a floor mat that has different patterns and textures

Gather the resources needed to make the floor mat

Show the correct techniques when weaving, knowing how to join different materials

Evaluate the floor mat against their original idea and make suggestions about improvements

Designing

- Begin to develop design ideas using research and discussion with peers and adults.
- Understand the purpose of their product
- Think of an idea and plan what to do next
- Draw a simple design and label the parts of their product
- Develop their own ideas through drawings, and where appropriate, make templates or mock ups of their initial ideas.

Making

- Follow a step-by-step plan, choosing the right equipment and materials
- Select the most appropriate tools and techniques for a given task
- Work accurately to measure, mark out, make cuts, score, make holes and assemble components with more accuracy.
- Start to work safely and accurately with a range of simple tools.
- Choose finishing techniques to improve the appearance of their products using a range of equipment
- Start to think about their ideas as they make their product and be willing to change things if they help them to improve their work.

Evaluating

- Explain how to improve a finished model
- Know why a model has or has not been successful
- Evaluate their product against their original design criteria (e.g. how well it meets its intended purpose).

Technical Knowledge

- If needed, use a simple IT program within the design.

Long-term overview for Design Technology

YEAR 3

Create a large structure to represent Bury in the way that the Angel of the North, Eiffel Tower or Blackpool represents an area.

Research to find out about other large structures that exist in the UK

Design a structure which is sympathetic to the area they live

Gather the resources needed to make the structure

Ensure that the structure is stable but also aesthetically pleasing

Evaluate the structure and consider what is pleasing and what could have been different

Designing

- Consider the purpose and audience for their product
- Design a product and make sure that it meets the design criteria including looking attractive (if needed)
- Draw annotated designs with labels that detail their material choices and suitability of the given materials
- Learn about designers who have developed ground breaking products.
- When planning, explain their choices of materials and components, including function.
- Develop their own ideas through drawings, making templates or mock ups of their initial ideas.

Making

- Select the most appropriate tools and techniques for the task
- Work accurately to measure, mark out, make cuts, score, make holes and assemble components with more accuracy.
- Start to work safely and accurately with a range of simple tools.
- Start to think about their ideas as they make their product and be willing to change things if they help them to improve their work.
- Start to measure, tape or pin, cut and join fabric with some accuracy.

Evaluating

- Explain how to improve a finished model
- Know why a model has or has not been successful
- Evaluate their product against their original design criteria (e.g. how well it meets its intended purpose).
- Evaluate the key designs of individuals in DT has helped shaped the world.

Technical Knowledge

- Know how to strengthen a product by stiffening a given part or reinforce a part of the structure.

Long-term overview for Design Technology

YEAR 3

Create a mechanism for loading objects onto a boat which incorporates a pulley system (lifting 1 kg)

Understand how pulleys work and look how objects are loaded onto boats

Design a pulley structure which is capable of lifting a weight of 1Kg

Gather the resources needed to make the pulley

Ensure that the pulley is stable and can swing to move weight from A to B

Evaluate the pulley structure and consider how it could be improved

Designing

- Consider the purpose of their product
- Prove that a design meets the specification
- Design a product and make sure that it meets the design criteria.
- Draw annotated designs with labels that detail their material choices and suitability of the given materials
- Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products.
- When planning, explain their choices of materials and components, including function.

Making

- Select the most appropriate tools and techniques for the task
- Work accurately to measure, mark out, make cuts, score, make holes and assemble components with more accuracy.
- Start to work safely and accurately with a range of simple tools.
- Start to understand that mechanical systems (pulley) create movement.
- Start to think about their ideas as they make their product and be willing to change things if they help them to improve their work.

Evaluating

- Know why a model has or has not been successful
- Evaluate their product against their original design criteria (e.g. how well it meets its intended purpose).
- Begin to disassemble and evaluate familiar products and consider the views of others to improve them.

Technical Knowledge

- Create a product that incorporates a pulley mechanism.

Long-term overview for Design Technology

YEAR 4

Create a Roman weapon to propel a marble one metre which is operated by a lever system

Research to find out more about Roman weapons

Design a weapon with a lever system that has the capability of propelling a marble at least 1m

Gather the resources needed to make the weapon

Ensure that the weapon looks authentic and is stable with a working lever system

Evaluate the end product (weapon) and consider how it could be improved

Designing

- Research Roman weapons before designing the product.
- Confidently make labelled drawings from different views, showing specific features.
- Produce a plan and explain how the lever will work.
- Communicate ideas through annotated sketches that show different viewpoints of the product
- Begin to be very familiar with different inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products.

Making

- Know which tools to use for a particular task and show knowledge of handling the tool accurately and safely.
- Know which material is likely to give the best outcome based on its properties
- Mark, measure and cut accurately a range of materials using appropriate tools, equipment and techniques.
- Start to join and combine materials and components accurately in temporary and permanent ways.
- Show high levels of perseverance when things do not go as they would wish in the first instance.
- Know how mechanical systems (such as levers) create movement.
- Understand how to reinforce and strengthen a 3D framework.
- Begin to use finishing techniques to strengthen and improve their appearance of their product using a range of equipment.

Evaluating

- Evaluate product for both their purpose and appearance
- Evaluate their product, carrying out appropriate tests.
- Evaluate their product both during and at the end of the assignment.
- Be able to disassemble and evaluate familiar products and consider the views of others to improve them.

Technical Knowledge

- Create a product that incorporates at least one lever.

Long-term overview for Design Technology

YEAR 4

Create a textile product which tells a story and incorporates fabric sewn onto fabric

Know enough about the Bayeux tapestry to gain a good insight into what is required

Create initial designs of an aspect of history studied that can be created using different fabrics

Consider the views of others before proceeding to the making stage

Use a range of stitching techniques, including applique, to create the end product

Evaluate the final product, taking account of the original design and explain where variations have occurred

Designing

- Competently research the Bayeux tapestry to gain ideas linked to the intended design and evaluate strengths and weakness to be incorporated into own design.
- Research and use ICT where appropriate
- Produce a detailed, step-by-step plan
- Explain how a product will appeal to a specific audience and how it meets the purpose
- With growing confidence, apply a range of finishing techniques including those from art and design.
- Start to appreciate how make products cost to make.

Making

- Select appropriate materials, tools and technique (e.g. cutting, shaping, joining and finishing) accurately.
- Select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities.
- Use finishing techniques to strengthen and improve the appearance of their products using a range of equipment
- Make a prototype before making a final version
- Carry out finishing techniques to enhance the appearance and function of their product

Evaluating

- Suggest alternative plans; outlining the positive features and drawbacks
- Evaluate appearance and function against original criteria
- Begin to evaluate their product personally and seek evaluation from others.

Technical Knowledge

- Use a range of sewing techniques, including applique and various stitches.

Long-term overview for Design Technology

YEAR 4

**Create an electrical torch which incorporates changing colours
e.g. kaleidoscope**

**Understand how a torch
works**

**Design a colour system that
can be attached to a torch to
create a kaleidoscope**

**Gather the resources
needed to the colour
changes**

**Ensure the kaleidoscope is
strong enough to withstand
constant use**

**Evaluate the kaleidoscope
against the original design**

Designing

- Produce a plan and explain the use of materials, equipment and processes
- Persevere and adapt work when original ideas do not work
- If the first attempt fails, identify strengths and future areas for development.
- Communicate ideas through annotated sketches that show different viewpoints of the product
- Begin to be very familiar with different inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products.

Making

- Know which tools to use for a particular task and show knowledge of handling the tool accurately and safely.
- Know which material is likely to give the best outcome based on its properties
- Mark, measure and cut accurately a range of materials using appropriate tools, equipment and techniques.
- Start to join and combine materials and components accurately in temporary and permanent ways.
- Show high levels of perseverance when things do not go as they would wish in the first instance.
- Know how simple electrical circuit and components can be used to create functional products.

Evaluating

- Evaluate and suggest improvements for designs
- Evaluate their product, carrying out appropriate tests.
- Evaluate their product both during and at the end of the assignment.
- Present a product in an interesting way

Technical Knowledge

- Link scientific knowledge by using lights, switches or buzzers
- Use IT where appropriate to add to the quality of the product.

Long-term overview for Design Technology

YEAR 5

Create a A4 personal flag for the opening ceremony of the Ancient Greek Olympics which incorporates a running stitch

Research what happened at the Greek Olympics

Design a flag that is made from different materials

Gather the resources needed to make the flag

Join different parts of the flag by sewing, showing appropriate sewing techniques

Evaluate the completed flag and consider how it could be improved

Designing

- Research as a matter of course before considering designing a product.
- Produce a plan and explain the use of materials, equipment and processes
- If the first attempt fails, identify strengths and future areas for development.
- Communicate ideas through annotated sketches that show different viewpoints of the product

Making

- Know which tools to use for a particular task and show knowledge of handling the tool accurately and safely.
- Know which material is likely to give the best outcome based on its properties
- Mark, measure and cut accurately a range of materials using appropriate tools, equipment and techniques.
- Start to join and combine materials and components accurately in temporary and permanent ways.
- Sew, weave or knit using a range of stitches
- Show high levels of perseverance when things do not go as they would wish in the first instance.

Evaluating

- Evaluate products for both their purpose and appearance
- Evaluate their own and others work
- Evaluate their product, carrying out appropriate tests.
- Evaluate their product both during and at the end of the assignment.
- Present a product in an interesting way

Technical Knowledge

- Use appropriate sewing techniques.

Long-term overview for Design Technology

YEAR 5

Create a water mill system for a developing country which incorporates gears

Know enough about a way a watermill works

Create initial design taking account of how gears work

Take time to ensure that the gear system is working well and stands up to continuous use

Make a water mill, that incorporates gears, and show it working

Evaluate the water mill against original ideas and seek views of others about its success

Designing

- Competently research how water mills work.
- Research and use ICT where appropriate
- Design, with a range of initial ideas, after collecting information from investigating existing products
- Produce a detailed, step-by-step plan
- Create annotated 3D designs of their design on isometric or squared paper from a range of viewpoints.
- With growing confidence, apply a range of finishing techniques including those from art and design.
- Start to appreciate how much the product costs to make.

Making

- Name and use a range of tools and equipment competently
- Select appropriate materials, tools and technique (e.g. cutting, shaping, joining and finishing) accurately.
- Incorporate mechanical systems (such as gears) to create movement in their products.
- Use finishing techniques to strengthen and improve the appearance of their products using a range of equipment including ICT.
- Make a prototype before making a final version
- Carry out finishing techniques to enhance the appearance and function of their product

Evaluating

- Evaluate a product against original design specifications and by carrying out tests.
- Suggest alternative plans; outlining the positive features and drawbacks
- Evaluate appearance and function against original criteria
- Begin to evaluate their product personally and seek evaluation from others.

Technical Knowledge

- Use a gear system within the watermill produced.

Long-term overview for Design Technology

YEAR 5

Create a structure to reflect an aspect of European life which could become a European landmark out of recycled materials

Know enough about European landmarks and lifestyle to create a structure to represent it

Create initial designs of different ideas for discussions

Listen to views of others before deciding on final idea

Use a range of materials (from waste materials) to make the structure

Evaluate the final structure and explain what it represents and where it would be placed

Designing

- Competently research products similar to the one they are intending to design and evaluate strengths and weakness to be incorporated into their own design.
- Research and use ICT (google) where appropriate
- Design, with a range of initial ideas, after collecting information from investigating existing products
- With growing confidence, apply a range of finishing techniques including those from art and design.

Making

- 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.
- Use finishing techniques to strengthen and improve the appearance of their products using a range of equipment including ICT.
- Make a prototype before making a final version
- Carry out finishing techniques (including lights) to enhance the appearance and function of their product

Evaluating

- Suggest alternative plans; outlining the positive features and drawbacks
- Evaluate appearance and function against original criteria
- Begin to evaluate their product personally and seek evaluation from others.

Technical Knowledge

- Suggest alternative plans; outlining the positive features and drawbacks
- Evaluate appearance and function against original criteria

Long-term overview for Design Technology

YEAR 6

Create a vehicle capable of moving over different terrain which incorporates more than one mechanical system

Know enough about a way a vehicle works

Create initial design taking account of how different mechanical systems work

Take time to ensure that the mechanical systems are working well and stand up to continuous use

Make a vehicle, that incorporates more than one mechanical system, and show it working

Evaluate the vehicle against original ideas and seek views of others about its success

Designing

- When researching, be competent in discriminating as to what would be and would not be helpful for their intended product.
- Use market research of existing products to inform their design
- Follow and refine original plans, justifying it in a convincing way
- Draw detailed 3D designs using exploded diagrams or cross sectional drawing where appropriate to display finer details
- Know how much products cost and make choices accordingly.

Making

- Confidently select appropriate tools, materials, components and techniques and use them efficiently.
- Explain why a specific tool is best for a specific action
- Make modifications as they go along and explain their reasons.
- Construct products using permanent joining techniques.
- Use mechanical systems such as levers, pulleys and gears competently to create movement in their products.
- Use finishing techniques to strengthen and improve the appearance of their products using a range of equipment including ICT.

Evaluating

- Test and evaluate designed products with specified audience where possible
- Evaluate product against clear criteria
- Evaluate their work both during and at the end of the assignment.
- Record their evaluations using drawing with labels.

Technical Knowledge

- Know which IT product would further enhance a specific product
- Use knowledge to improve a made product by strengthening, stiffening or reinforcing
- Know when a product they have made is improved by either the use of pulleys, levers or gears.

Long-term overview for Design Technology

YEAR 6

Create a 3 D model of a structure, for example an Anderson Shelter or a Priest Hole.

Know why the structures had to be built and the characteristics of each one.

Create initial design taking account of both structure and design of the fabric used

Create a stable structure capable of withstanding strong winds etc.

Create a camouflaged design for the fabric part of the shelter

Evaluate the shelter taking account of both structure and camouflaged textile

Designing

- When researching, be competent in discriminating as to what would be and would not be helpful for their intended product.
- Follow and refine original plans, justifying it in a convincing way
- Draw detailed 3D designs using exploded diagrams or cross sectional drawing where appropriate to display finer details
- Show that culture and society is considered in plans and design specification.

Making

- Confidently select appropriate tools, materials, components and techniques and use them efficiently.
- Explain why a specific tool is best for a specific action
- Make modifications as they go along and explain their reasons.
- Construct products using permanent joining techniques.
- Use finishing techniques to strengthen and improve the appearance of their products using a range of equipment.
- Pin, sew and stitch materials together to create a product

Evaluating

- Test and evaluate designed products with specified audience where possible
- Evaluate product against clear criteria
- Evaluate their work both during and at the end of the assignment.
- Record their evaluations using drawing with labels.

Technical Knowledge

- Use knowledge to improve a made product by strengthening, stiffening or reinforcing
- Use a range of sewing techniques to improve the product made

Long-term overview for Design Technology

YEAR 6

Create a traffic light system that involves the use of IT

Know how a traffic light system works

Create initial design taking account of what is available to them, including IT

Create a prototype to check that their ideas works

Make a traffic like system that follows the traditional system used in this country

Evaluate the traffic light system, taking account of what was difficult to achieve

Designing

- Competently research how traffic light system works.
- Research and use ICT where appropriate
- Design, with a range of initial ideas, after collecting information from investigating existing products
- Produce a detailed, step-by-step plan
- Start to appreciate how much the product costs to make.

Making

- Confidently select appropriate tools, materials, components and techniques and use them efficiently.
- Know how to use any tool (including IT) correctly and safely
- Explain why a specific tool is best for a specific action
- Make modifications as they go along and explain their reasons.
- Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products.

Evaluating

- Test and evaluate designed products with specified audience where possible
- Evaluate product against clear criteria
- Evaluate their work both during and at the end of the assignment.
- Record their evaluations using drawing with labels.

Technical Knowledge

- Know which IT product would further enhance a specific product
- Use electrical systems correctly and accurately to enhance a given product

KS1 DT: I Can Checklist

Put a tick next to each sentence when you are able to do it.

Name:

Class:

Design:

I can design products that are useful and look good.

I can think of ideas and explain them in different ways, including drawing and talking about them.

Make:

I can choose the right tools to make something with.

I can select the right kind of materials based on what the materials are like.

Evaluate:

I can explore products, say how good they are and explain how they could be better.

I can explain how good my own product is and explain ways I could make it better.

Technology:

I can build structures and explore how they can be made stronger, stiffer and steadier.

I can explore and use things like levers, sliders, wheels and axles in things I make.

Cooking:

I can make food by thinking about a healthy diet.

I know where different food comes from.

D. T Assessment Sheet – KS 1 (P1) Year: 2022/23 Class:	Emerging	Expected	Exceeding
Design			
When designing and making, pupils should be taught to:			
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			
When designing and making, pupils should be taught to:			
<ul style="list-style-type: none"> select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] 			
<ul style="list-style-type: none"> select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. 			
Evaluate			
When designing and making, pupils should be taught to:			
<ul style="list-style-type: none"> explore and evaluate a range of existing products 			
<ul style="list-style-type: none"> evaluate their ideas and products against design criteria. 			
Technical Knowledge			
When designing and making, pupils should be taught to:			
<ul style="list-style-type: none"> build structures, exploring how they can be made stronger, stiffer and more stable 			
<ul style="list-style-type: none"> explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. 			

D.T Assessment Sheet – KS 1 (P2) Year:2022/23 Class:	Emerging	Expected	Exceeding
Cooking and Nutrition			
As part of their work with food, pupils should be taught to:			
• use the basic principles of a healthy and varied diet to prepare dishes			
• understand where food comes from.			

KS2 DT: I Can Checklist For Pupils**Name:****Class:****Side 1****Put a tick next to each sentence when you are able to do it.****Design**

I can research and design a range of interesting, useful and appealing products that are aimed at certain people or groups.

I can develop and communicate my ideas through discussion.

I can develop and communicate my ideas through sketches.

I can develop and communicate my ideas through diagrams.

I can develop and communicate my ideas through models.

I can develop and communicate my ideas through patterns

I can develop and communicate my ideas through computer-aided design.

Make

I can select from and use tools and equipment to perform tasks (for example cutting, shaping, joining and finishing).

I can select from and use a wider range of materials, including construction materials, textiles and ingredients, according to how useful and attractive they are.

KS2 DT: I Can Checklist for pupils Put a tick next to each sentence when you are able to do it.	Name:	Class:	Side 2
Evaluate			
I can build structures and explore how they can be made stronger, stiffer and steadier.			
I can explore and use things like gears, pulleys, cams, levers and linkages in my product.			
I understand and can use electrical systems, such as series circuits incorporating switches, bulbs, buzzers and motors in my product.			
I can use computing to program, monitor and control my product.			
Cooking			
I can make food by thinking about a healthy balanced diet.			
I understand that certain foods grow in certain seasons.			
I know where and how a variety of ingredients are grown, reared, caught and processed.			
I can prepare and cook a variety of dishes using a range of cooking techniques.			

D.T Assessment Sheet – KS 2 (Page 1) Year 2022/23 Class:	Emerging	Expected	Exceeding
<u>Design</u>			
When designing and making, pupils should be taught to:			
<ul style="list-style-type: none"> 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 			
<ul style="list-style-type: none"> generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. 			
<u>Make</u>			
When designing and making, pupils should be taught to:			
<ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately 			
<ul style="list-style-type: none"> 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. 			
<u>Evaluate</u>			
When designing and making, pupils should be taught to:			
<ul style="list-style-type: none"> investigate and analyse a range of existing products 			
<ul style="list-style-type: none"> evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 			

D.T Assessment Sheet – KS 2 (Page 2) Year:2022/23 Class:		Emerging	Expecting	Exceeding
<ul style="list-style-type: none"> understand how key events and individuals in design and technology have helped shape the world. 				
<u>Technical Knowledge</u>				
When designing and making, pupils should be taught to:				
<ul style="list-style-type: none"> apply their understanding of how to strengthen, stiffen and reinforce more complex structures 				
<ul style="list-style-type: none"> understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] 				
<ul style="list-style-type: none"> understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] 				
<ul style="list-style-type: none"> apply their understanding of computing to program, monitor and control their products. 				
<u>Cooking and Nutrition</u>				
As part of their work with food, pupils should be taught to:				
<ul style="list-style-type: none"> understand and apply the principles of a healthy and varied diet 				
<ul style="list-style-type: none"> prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques views of others to improve their work 				
<ul style="list-style-type: none"> understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. shape the world. 				