



William Penn Curriculum Map – Design and Technology

	Autumn		Spring		Summer	
Cycle A						
Year R	How to?	Who Lives in Fairy Tales?	Who Made these Footprints?	What's in our Garden?	What Makes a Hero?	How Have we Grown this Year?
Year 1/2	Once Upon a Rhyme	Fire, Fire! (Great Fire of London)	From Arctic to Africa	Pop Art	Postcards from the Past (Victorians)	Make, Move and Perform Puppets
Year 3/4	Raging Rivers	Rocks, Soils and Fossils	The Roman Empire	Volcanoes	Vikings (Life and Legend)	Good Vibrations
Year 5/6	We'll Meet Again (WW2)	Light	Heads Will Roll (Tudors)	Counties of the UK	Ancient Mayan Civilization	Rainforests and Sustainability
Cycle B						
Year R	How to?	Who Lives in Fairy Tales?	Who Made these Footprints?	What's in our Garden?	What Makes a Hero?	How Have we Grown this Year?
Year 1/2	Who Lives Here?	Maps, Moats and Mighty Castles	Wacky Weather	Spring has Sprung (Plants)	Back in Time for... (Decades)	Down in the Jungle
Year 3/4	Ancient Ancestors	Changing State	We're Sailing Down the Nile (Ancient Egypt)	Opposites Attract (Magnets)	Titanic	Plants
Year 5/6	Across the Universe (Space)	Frosty Relations (Cold War)	'Toil and Trouble' (Macbeth)	Crime and Punishment	Friends and Heroes (Quakerism And Democracy)	The Final Year

02/10/2026

Subject Coverage Overview

Skills/Themes	Mechanical Systems	Cooking and Nutrition	Stable Structures
	Textiles	Programming and Electrical Systems	Inventions and Achievements

	Autumn	Spring	Summer
Cycle A			
Year R	Throughout the year, pupils in YrR will experience and be taught the foundation knowledge and skills relating to design technology. This will be delivered through a combination of teacher directed learning and continuous provision – child initiated. For further details, refer to EYFS DT overview.		
Year 1/2	Fire Engines	Perfect Pizza	Puppets
Year 3/4	Story Books	British Inventors	Seasonal Food
Year 5/6	Air Raid Shelters	Creating an Aztec Meal	Birdhouse Builders
Cycle B			
Year R	Throughout the year, pupils in YrR will experience and be taught the foundation knowledge and skills relating to design technology. This will be delivered through a combination of teacher directed learning and continuous provision – child initiated. For further details, refer to EYFS DT overview.		
Year 1/2	Build a Castle	Moving Minibeasts	Eat more Fruit and Veg!
Year 3/4	Seasonal Stockings	Programming and Electrical Systems	Making Greenhouses
Year 5/6	Fashion and Textiles	Chinese Inventions	Programming Pioneers

EYFS Expectations – Expressive Arts & Design – Creating with materials & Being imaginative & expressive - DT overview					
Playing & Exploring - Engagement		Active Learning - Motivation		Creating & Thinking Critically - Thinking	
- Finding out & exploring - Playing with what they know - Being willing to ‘have a go’		- Being involved & concentrating - Keep on trying - Enjoying achieving what they set out to do		- Having their own ideas (creative thinking) - Making links (building theories) - Working with ideas (critical thinking)	
ELG					
- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function - Share their creations, explaining the process they have used - Make use of props and materials when role-playing characters in narratives and stories					
Focus	Designing	Making	Evaluating	Technical skills	Food technology
Reception	• Develop own ideas through experimentation with diverse materials to express & communicate their discoveries & understanding • Create collaboratively sharing ideas, resources & skills	• Use increasing knowledge & understanding of tools & materials to explore their interests & enquiries & develop their thinking • Create representations both imaginary & real-life ideas, events, people & objects	• Express & communicates working theories, feelings & understandings • Responds imaginatively to art works & objects • Return to & build on previous learning, refining ideas & developing their ability to represent them • Discuss problems & how they might be solved	• Use different techniques for joining materials • Use tools independently, with care & precision	• Look closely at similarities, differences, patterns & change • Know & talk about the different factors that support their overall health & well-being
Year R	Fantastic Fairytales		Amazing Animals		Helpful Heroes
EYFS framework	Pupils will know: • How can I make a puppet for a show? • How can I select colours for a Christmas card? • How can I make salt dough? Children will be able to: • Join materials together • Colour identification • Drawing with accuracy • Refine ideas and designs • Develop storylines in pretend play		Pupils will know: • What do I need to create paper chains? • How to create a Chinese drum? • What joining techniques can I use? Children will be able to: • Colour mixing with intent • Joining materials together • Create collaboratively • Develop storylines in pretend play		Pupils will know: • What colours can I make with paint? • What joining techniques can I use to make it stronger? Children will be able to: • Select tools for a purpose • Primary colours • Explore and use materials • Explore and use tools • Joining materials together

Links to Year 1	To use a range of materials creatively to design and make products To use drawing, painting and sculpture to develop and share their ideas, experiences and imagination To develop a wide range of art and design techniques To develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form and space Give well-structured narratives for different purposes, including for participating in performances, role play Participate in performances and role play
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Key Stage 1:

Year 1/2 Cycle A	Once Upon a Rhyme / Fire! Fire!	From Arctic to Africa / Pop Art	Postcards from the Past / Make, Move and Perform Puppets
	Fire Engines Focus: Mechanical Systems	Perfect Pizza Focus: Cooking and Nutrition	Puppets Focus: Textiles
	By the end of this unit: Children will know: • What are the main features of a fire engine and what are their functions? • What are wheels, axles and chassis? • How can you create and decorate the body of a fire engine? • How can you design a fire engine? • How can you make a fire engine based on your design? • How can you evaluate your product? Children will be able to: • Experiment with a range of materials and techniques to combine wheels, axles and chassis • Identify different ways of combining materials to create the body of a fire engine • Explore ways of making different parts of a fire engine, such as the ladder • Make decisions about appropriate materials and tools to use for different tasks • Design, make and evaluate a fire engine with wheels, a chassis, axles and a body	By the end of this unit: Children will know: • What are the favourite pizzas in class? • What else have you eaten that is bread-based? • What are the different pizza toppings and how can they be categorised? • How can you design a healthy pizza? • How can you make a healthy pizza? Children will be able to: • Give reasons for their favourite • Name and describe different types of bread • Describe a variety of pizza toppings • Design and make a healthy pizza – identifying the ingredients and tools needed • Follow a plan • Evaluate their product Key vocabulary: healthy, unhealthy, fats, sugars, carbohydrates, protein, fruit and vegetables, design, evaluate	By the end of this unit: Children will know: • What is a puppet and how they are used? • How do you make a finger puppet? • How do you sew? • How will you design a puppet? • How do you make a puppet from your design? • How can you evaluate your product? Children will be able to: • Recognise and describe different types of puppet • Use a template to cut appropriate sizes of fabric • Develop ideas • Evaluate what went well and what they could improve • Use a needle and thread to attach other materials such as buttons • Work safely with sharp tools • Design a glove puppet and follow the steps to make it • Choose appropriate materials and tools Key vocabulary: sew, puppet, fabric, needle,

	Use a variety of materials and tools safely and effectively Key vocabulary: design, evaluate, function, wheel, axles, chassis		thread, attach, stitch ,design, evaluate
Year 1/2 Cycle B	Who Lives Here? / Maps, Moats and Mighty Castles	Wacky Weather / Spring Has Sprung	Back in Time for... / Down in the Jungle
	Build a Castle with a Drawbridge Focus: Stable Structures	Moving Minibeasts Focus: Mechanical Systems	Eat More Fruit And Veg! Focus: Cooking and Nutrition
	By the end of this unit: Children will know: - What is a stable structure? - How can you plan and design a stable structure? - How do you choose the materials you need? - What is a design plan and how can you follow it? - How do you evaluate your product? Children will be able to: - Evaluate existing products - Communicate their ideas through talking and drawing - Compare existing products - Design a functional product - Think about the purpose of the end product - Investigate the properties and characteristics of materials - Explore how materials can be made stronger and stiffer - Select appropriate materials based on the purpose of their product - Follow a design plan - Manipulate materials - Use technical language when talking	By the end of this unit: Children will know: - How do sliding mechanism's work? - What are levers and pivots used for? - How do you make a wheel mechanism? - How can you design a picture with a moving mechanism? - How can you make a minibeast themed moving picture? - How can you evaluate your product? Children will be able to: - Explain how a sliding mechanism works - Evaluate their work and suggest improvements - Join components to make a lever and pivot mechanism and explain how it works - Cut and join components to create a wheel mechanism - Design and make their own moving picture and explain how it works - Follow a design - Work safely with tools Key vocabulary: mechanism, sliding, lever,	By the end of this unit: Children will know: - What is a pictogram? How can we create one about our favourite fruit? - What are fruit and vegetables like? - How do you handle and prepare fruits and vegetables? - How do you create a recipe including fruit and vegetables? Children will be able to: - Identify and describe familiar fruits and vegetables - Gather data about the most popular fruits and vegetables - Present data in a pictogram? - Draw, label and describe a variety of fruits and vegetables - Identify different parts of fruits and vegetables, such as the skin, flesh and seeds - Work safely with sharp objects such as knives and graters - Identify ways of working hygienically with food - Follow health and safety procedures when preparing food - Design, make and evaluate a salad

	about their product Key vocabulary: drawbridge, stronger, design, purpose	pivot, design, evaluate	or a smoothie • Identify the ingredients and tools needed Key vocabulary: pictogram, data, design, evaluate
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Year 3/4 Cycle A	Raging Rivers / Rocks Soils and Fossils	The Roman Empire / Volcanoes	Vikings (Life and Legend) / Good Vibrations
	Story Books Focus: Mechanical Systems	British Inventors Focus: Inventions and Achievements	Seasonal Food Focus: Food and Nutrition
	By the end of this unit: Children will know: - Which products have a lever and linkage system? - What different types of moving mechanisms can you make? - What different fonts and graphic techniques can you use? - How do you plan and design a storybook? - How do you make a moving story book using a design? - How can you evaluate your product? Children will be able to: - What products contain lever and linkage systems? - Explain why a particular mechanism has been used for a particular purpose - Use technical vocabulary to describe lever and linkage systems - Cut and shape materials with some precision to make their mechanisms work - Join and combine materials and components in a variety of ways - Mark out and measure accurately - Be aware that different fonts and graphic techniques need to be suited to their purpose - Experiment to create a range of different fonts and graphic techniques and chose the appropriate one - Explain which designs they like best/least and why - Create a design for a particular purpose - Choose suitable mechanisms to create moving parts in their storybook - Design, make and evaluate a story book Key vocabulary: design, evaluate, measure lever, linkage, font, graphic technique	By the end of this unit: Children will know: - Who invented the telephone? - Who invented the World Wide Web? - Who invented concrete and how does it work? - Who invented the Mackintosh? - What impact have inventions had on our lives? Children will be able to: - Reflect on how the invention of the telephone changed the way people lived? - Identify ways in which the telephone has changed to meet people's needs - Evaluate a product's performance. - Distinguish between the World Wide Web and the internet? - Reflect on how an invention has changed the world - Define the word reinforced - suggest ways to reinforce a material - Pick out features of a material that make it suitable for a purpose - Think of design criteria to suit a purpose - Evaluate the success of a product based on a set of design criteria - Design a new creation intended to solve an everyday problem Key vocabulary: Reinforced, invention, internet, material, product, design, evaluate	By the end of this unit: Children will know: - What is seasonal food? - How are seasonal foods grown and processed in Britain? - Why are vegetables an important part of a healthy diet? - How does seasonally produced meat form part of a healthy diet? - How are fish caught or reared, processed and used in healthy meals? - What do you know about eating seasonal food as part of a healthy varied diet? Children will be able to: - Bake cakes safely and hygienically - Follow instructions for a recipe using seasonal fruit or jam - Prepare a healthy meal using seasonal vegetables - Prepare a healthy, savoury meal using meat, fish or a vegetarian alternative Key vocabulary: seasonal, hygiene, healthy

Year 3/4 Cycle B	Ancient Ancestors / Changing State	We're Sailing down the Nile (Ancient Egypt) / Opposites Attract	Titanic / Plants
	Seasonal Stockings Focus: Textiles	Light up signs Focus: Programming and Electrical Systems	Mini Greenhouses Focus: Stable Structures
	By the end of this unit: Children will know: • What is a Christmas stocking? • How can you join fabric using stitching? • How can you decorate a Christmas stocking? • What design will you use for your Christmas Stocking? • How can you use sewing skills to make a Christmas Stocking? • What is the evaluation of your product? Children will be able to: • Discuss and assess the functionality of a variety of Christmas stockings • Discuss and assess the visual appeal of a variety of different Christmas stockings • Compare and contrast different Christmas stockings • Use stitching for decorative purposes • Sew a button/bead/sequin/ribbon onto fabric accurately • Create a design for a product • Identify which parts of the making process they may find challenging • Work safely and sensibly with a range of materials and tools	By the end of this unit: Children will know: • What is an illuminated sign? • What are LEDs and how are they used? • How can you develop decorative illuminated signs? • What tools and materials will you need to make your sign? • How can you make a working circuit? • How do computers control lights? Children will be able to: • Suggest reasons why it is helpful to illuminate signs • Identify distinguishing features of a variety of illuminated signs • Identify ways in which very simple circuits for illuminated signage might be constructed • Identify potential audiences and purposes for a product design • Make practical considerations about how to fit essential components in/on a product • Consider tools and techniques they may need to use when constructing a product of their own design • Identify ways in which their existing designs could be adapted for the materials available	By the end of this unit: Children will know: • What are greenhouses used for? • How do you make a stable structure? • What materials will you need to make a mini greenhouse? • How can you design a mini greenhouse? • How will you make a mini greenhouse? • What is your evaluation of your product? Children will be able to: • Analyse and discuss different types of greenhouses • Understand the term 'stable • Discuss how to make a structure more/less stable • Identify suitable materials for a mini greenhouse • Explain why these materials are suitable • Discuss ways of joining these two materials together • Apply their knowledge of stable structures and suitable materials when designing a mini greenhouse • Follow specific design criteria • Identify possible challenging parts of their design/help others to find solutions • Amend their design to improve a product/give suggestions to others as solutions to problems • Work safely and sensibly with a range of materials and tools

	- Identify what has been successful with their design - Identify any improvements that could be made to the design Key vocabulary: fabric, sew, stitch, knot, materials	- Select appropriate tools and materials for construction of their design - Identify ways in which they can work safely while constructing their design - Decide on an appropriate way to fit electrical components inside their designs Key vocabulary: circuit, LED, component, illuminate	Key vocabulary: structure, stable, greenhouse
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Year 5/6 Cycle A	We'll Meet Again (WWII) / Light	Heads Will Roll / Counties of the UK	Ancient Mayan Civilization / Rainforests and Sustainability
	WW2 themed meal Focus: Cooking and Nutrition	Birdhouse Builders Focus: Stable Structures	Aztec Food Focus: Food and Nutrition
	By the end of this unit: Children will know: - When did food rationing begin and why? - What ingredients did they use? Why? - How and why did ration books vary? - Who was Lord Woolton and did people like him? Why/why not? - Why do you think people were healthier during the war? - How were people encouraged to help during food shortages? - How to plan, create and evaluate a WW2 themed meal - About kitchen safety including food hygiene safety. Children will be able to: - Understand why food was rationed - Think about ingredients that were used and why in WW2 - How to follow their chosen recipe - Talk about kitchen safety including food hygiene safety. - Design, make and evaluate a WW2	By the end of this unit: Children will know: - What do bird houses look like and why? - What materials are they made from? - How do you draw a diagram? - What are woodwork skills? - How can you practise them? - How do you design a birdhouse for a specific bird? - How do you follow a plan to make a birdhouse? - How can you evaluate your birdhouse? Children will be able to: - Describe the materials and features bird houses have - Draw 3-D diagrams and exploded diagrams - Explain what tools and equipment are needed to make objects with wood - Follow instructions to practise	By the end of this unit: Children will know: - What was the Aztec diet like? - How can I design an Aztec meal? - How do you follow recipes? - How would you evaluate your dish and make improvements? Children will be able to: - Follow a recipe to prepare and cook - Measure and mix ingredients correctly - Make informed decisions about the type of ingredients to use - Design, make and evaluate a menu for an Aztec meal Key vocabulary: menu, Aztec, seasonal, climate

	themed meal. Key vocabulary: hygiene, rations, kitchen safety, healthier, recipe.	woodwork skills • Understand the importance of safety precautions when working with wood and tools • Design a bird house to suit a specific bird • Follow a plan to make a bird house • Make amendments to plans to make construction easier • Choose appropriate materials to make specific features. • Use retail ideas to promote their bird house to a prospective buyer Key vocabulary: 3D, amendments, retail, buyer, purpose	
Year 5/6 Cycle B	Across the Universe / Frosty Relations	Toil and Trouble / Crime and Punishment	Friends And Heroes / The Final Year
	Fashion and Textiles Focus: Textiles	Chinese Inventions Focus: Inventions and Achievements	Programming Pioneers Focus: Programming and Electrical Systems
	By the end of this unit: Children will know: • How do you analyse items made using textiles? • How are textiles joined and decorated? • How do you design an item using textiles and drawing pattern pieces? • How do you use pattern pieces to measure, mark and cut fabric? • How can you join pieces by hand sewing? • How do you sew hems on an item adding design details? Children will be able to:	By the end of this unit: Children will know: • What are the 4 great inventions of China that shaped the world? • What are water-powered machines? • How do you build a prototype kite? • How can you design a kit based on a design criteria? • How will you make and evaluate your kite? Children will be able to: • Describe the process of making paper • Evaluate a product's advantages and disadvantages	By the end of this unit: Children will know: • How are computers used in a variety of products? • How can you develop a product with an embedded computer system? • How can you create a system to control doors, a room or both? • How can you develop product ideas and write programs? • How can you model and communicate ideas using a prototype? • How can you evaluate and improve your ideas?

	• Identify the materials used in the manufacture of some items made using textiles • Identify different sewing stitches on items made using textiles • Distinguish between functional and decorative sewing stitches on items made using textiles • Identify potential uses for different sewing stitches • Design an item made using textiles according to design criteria • Draw pattern pieces, adding details such as seam allowances • Use pattern pieces to mark fabric for cutting and sewing • Cut fabric according to a pattern • Add design details to a product according to their own design • Tie threads to ensure seams do not unravel • Use simple stitches to sew hems on an item made using textiles • Evaluate their own work • Add detail to an item made using textiles to improve it Key vocabulary: pattern pieces, design criteria, seam allowances, functional, decorative	• Follow a simple method for constructing a product • Explain what a machine is • Describe how a transmission of gears move in comparison to each other • Take a simple design and modify it to suit their needs • Identify different properties of a selection of materials • Select desirable properties of materials to fit a design • Evaluate a prototype's success • Write and follow design criteria • Solve problems during the making process • Evaluate the effectiveness of their product Key vocabulary: transmission, advantage, disadvantage, invention	Children will be able to: • Communicate and develop their ideas by discussing, annotating diagrams and writing instruction • Begin to explain how computer scientists have helped shape the world • Develop prototypes of a computer-controlled electrical system • Incorporate one or more different electrical components in their system • Improve their prototype designs by 'debugging' their software and/or hardware • Suggest ways in which a given product idea might be developed and improved • Debug a defective algorithm for a given product idea? • develop a design brief for a product • Make prototype models to communicate their ideas • Control their prototypes using electronic components and computers • Identify ways in which their DT and programming skills have developed, and ways in which they could further develop their learning Key vocabulary: software, hardware, components, systems, debug, prototype, algorithm
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