William Penn
Curriculum Map – DT

	Autumn	Spring	Summer
Cycle A			
Year R	**Fantastic Fairytales**	**Amazing Animals**	**Helpful Heroes**
Year 1/2	**Community Heroes**	**Shiver and Sizzle**	**Oh I do like to be beside….**
Year 3/4	**Raging Rivers and Marvellous Mountains**	**The Roman Empire**	**Groovy Greeks**
Year 5/6	**We'll Meet Again (WWII links with Coolham airfield and Battle of Britain)**	**Rulers of the Rainforest (Ancient Mayan Civilization and rainforests)**	**Vikings (Life and Legend)**
Cycle B			
Year R	**Fantastic Fairytales**	**Amazing Animals**	**Helpful Heroes**
Year 1/2	**Who Lives Here?**	**Spring Has Sprung**	**Back in Time for…**
Year 3/4	**Ancient Ancestors (Stone Age to Iron Age)**	**We're Sailing down the Nile (Ancient Egypt)**	**Our World**
Year 5/6	**Wonders of the Universe**	**Super Settlers (Anglo Saxons and Scots)**	**Friends And Heroes (Quakerism and Democracy) A local History Study**

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	**Fantastic Fairytales** 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 techer directed learning and continuous provision – child initiated. For further details, refer to EYFS DT overview.	**Amazing Animals**	**Helpful Heroes**
Year 1/2	**Community Heroes** **Fire Engines**	**Shiver and Sizzle** **Perfect Pizza**	**Oh I do like to be beside….** **Puppets**
Year 3/4	**Raging Rivers and Marvellous Mountains** **Story Books**	**The Roman Empire** **British Inventors**	**Groovy Greeks** **Seasonal Food**
Year 5/6	**We'll Meet Again** **(WWII links with Coolham airfield and Battle of Britain)** **Air Raid Shelters**	**Rulers of the Rainforest** **(Ancient Mayan Civilization and Rainforests)** **Creating an Aztec Meal**	**Vikings (Life and Legend)** **Birdhouse Builders**
Cycle B			
Year R	**Fantastic Fairytales** 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 techer directed learning and continuous provision – child initiated. For further details, refer to EYFS DT overview.	**Amazing Animals**	**Helpful Heroes**
Year 1/2	**Who Lives Here?** **Build a Castle**	**Spring Has Sprung** **Moving Minibeasts**	**Back in Time for…** **Eat more Fruit and Veg!**
Year 3/4	**Ancient Ancestors (Stone Age to Iron Age)** **Seasonal Stockings**	**We're Sailing down the Nile** **(Ancient Egypt)** **Programming and Electrical Systems**	**Our World** **Making Greenhouses**
Year 5/6	**Wonders of the Universe** **Fashion and Textiles**	**Super Settlers (Anglo Saxons and Scots)** **Programming Pioneers**	**Friends And Heroes** **(Quakerism and Democracy)** **A local History Study** **Chinese Inventions**

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

Key Stage 1:

Year 1/2 Cycle A	Community Heroes	Shiver and Sizzle	Oh I do like to be beside….
	Fire Engines **Focus: Mechanical Systems**	**Perfect Pizza** **Focus: Cooking and Nutrition**	**Puppets** **Focus: Textiles**
	By the end of this unit: **Children will know:** • **What the main features of a fire engine are and what their functions are** • **What wheels axles and chassis are** • There are two different ways of attaching wheels to axles **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 chasis, axles and a body • Use a variety of materials and tools safely and effectively **Key vocabulary: design, evaluate, function, wheel, axles, chassis**	**By the end of this unit:** **Children will know:** • **The different parts of a pizza** • **Some different food groups** • **Begin to know the difference between healthy and unhealthy** • **How to make a 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 a puppet is and how they are used** • **How to use a running stitch and/or an over stitch** **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 stept to make it** • **Choose appropriate materials and tools** **Key vocabulary: sew, puppet, fabric, needle, thread, attach, stitch ,design, evaluate**

Year 1/2 Cycle B	Who Lives Here?	Spring Has Sprung	Back in Time for…
	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 a drawbridge is** • **How they work** **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 about their product** **Key vocabulary: drawbridge, stronger, design, purpose**	**By the end of this unit:** **Children will know:** • **What a sliding mechanism is** • **What a lever is** • **What pivot means** • **The life cycle of a butterfly** **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, pivot, design, evaluate**	**By the end of this unit:** **Children will know:** • **About a variety of fruit and vegetables** • **That fruit and vegetables are part of a healthy diet** **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 or a smoothie • Idetify the ingredients and tools needed **Key vocabulary: pictogram, data, design, evaluate**

Key Stage 2:

Year 3/4 Cycle A	**Raging Rivers and Marvellous Mountains**	**The Roman Empire**	**Groovy Greeks**
	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:** • **What a lever and linkage system is** **Children will be able to:** • Recognise products that 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 Alexander Graham Bell was and that he invented the telephone • Know who Tim Berners-Lee was. • Know that W B Wilkinson invented concrete • How the inventions effected peoples' 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 seasonal food is** • Why certain foods are available all year round in Britain • That some seasonal fruits are suited to the climate and weather conditions in Britain • How fruit may be processed and/or preserved • Why vegetables form an important part of a healthy diet • Why vegetables form an important part of a healthy diet • A variety of food products that come from animals • Know some reasons why some meat is not in season all-year-round • Some ways in which fish are caught or reared and processed in Britain • Some of the nutrients in fish • S ome reasons why some foods are only in season for a short time **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 (Stone Age to Iron Age)**	**We're Sailing down the Nile (Ancient Egypt)**	**Our World**
	Seasonal Stockings **Focus: Textiles**	**Light up signs** **Focus: Programming and Electrical Systems**	**Mini Greenhouses** **Focus: Strable Structures**
	By the end of this unit: **Children will know:** • Different sewing stitches? • How to thread a needle and secure a knot?	**By the end of this unit:** **Children will know:** • How to construct a circuit with an LED • How to write or edit programs to control an LED	**By the end of this unit:** **Children will know:** • What a greenhouse is used for? • Know how a greenhouse helps plants to grow

Year 5/6 Cycle A	We'll Meet Again (WWII links with Coolham airfield and Battle of Britain)	Rulers of the Rainforest (Ancient Mayan Civilization and Rainforests)	Vikings (Life and Legend)
	Anderson Shelters **Focus: Stable Structures**	**Aztec Food** **Focus: Food and Nutrition**	**Birdhouse Builders** **Focus: Stable Structures**
	By the end of this unit: **Children will know:** • **What an Anderson Shelter is** • **What shelters were used for during WW2** • **What the main features of a useful shelter were** **Children will be able to:** • **Understand why some shelters were built underground in gardens and some were made from a kit and used indoors** • **Design, make and evaluate their own shelter** • **Choose materials based on their strength to make their design** **Key vocabulary: shelter, structure, Anderson, Morrison, air raid, bombing**	**By the end of this unit:** **Children will know:** • What the Aztecs used to eat and why • How to cook a simple dish **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**	**By the end of this unit:** **Children will know:** • What a birdhouse is • Why people construct them • That different birds require different bird house features • What exploded and 3-D diagrams are used for • Why evaluating designs and products is important **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 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	**Wonders of the Universe**	**Super Settlers (Anglo Saxons and Scots)**	**Friends And Heroes (Quakerism and Democracy) A local History Study**
	Fashion and Textiles Focus: Textiles	**Super Settlers (Anglo Saxons and Scots) Focus: Programming and Electrical Systems**	**Chinese Inventions Focus: Inventions and Achievements**
	By the end of this unit: **Children will know:** • Ways in which materials are joined in some items made using textiles • The main stages in the production of cotton cloth • Design criteria are used by fashion designers to develop designs • How to thread a needle by themselves **Children will be able to:** • 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	**By the end of this unit:** **Children will know:** • Begin to know how embedded systems monitor and control products **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	**By the end of this unit:** **Children will know:** • Some significant inventions • A way in which the invention of paper, or the moveable-type press changed the world • An ancient use of gunpowder or compasses **Children will be able to:** • Describe the process of making paper • Evaluate a product's advantages and disadvantages • 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

	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**	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, syatems, debug, prototype, algorithm**	to fit a design • Evaluate a prototype's success • Write and follow design criteria • Solve problems durin the making process • Evaluate the effectiveness of their product **Key vocabulary: transmission, advantage, disadvantage, invention**