Bishop Ellis Catholic Voluntary Academy

Design and Technology Intent

At Bishop Ellis Catholic Primary School we aim to provide a high-quality design and technology that is inspiring, rigorous and practical. Our children will be given opportunities to use their creativity and imagination to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. As part of our design and ftechnology curriculum children will be exposed to a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. We expect that our children learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they will develop a critical understanding of its impact on daily life and the wider world.

Our curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical know-how needed to perform everyday tasks confidently and to contribute positively in an increasingly technological world
- build and apply knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users.
- evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

As part of their work with food, children will be taught how to cook and apply the principles of nutrition and healthy eating. We intend children to know that being able to cook is a crucial life skill that enables us to feed themselves and others affordably and well, now and in the future.

At key stage one and two, core knowledge of designing, making, evaluating alongside the technical knowledge and vocabulary of design and technology is mapped out carefully to ensure that the curriculum provides a framework for what children will retain in their long term memory.

BISHOP ELLIS DESIGN TECHNOLOGY CURRICULUM PLAN

CYCLE A						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST 2
Reception		Junk Modelling-.		Cooking - follow a recipe for a result		Structures - Explore using different construction/art materials to build a bridge for the GBM to get across the river (as pre JB)
Year 1 (not cycled)		Mechanisms: Making a story book		Structures: constructing a windmill		Textiles: Puppets
Year 2		Structures - Baby bear's chair *		Textiles - create a pouch		Mechanisms - build a bus axels & wheel
Year 3 and Year - 3/4		Mechanisms - slingshot car		Electrical systems		Digital - Electronic charm
Year 4/5 (not cycled)	TBC					
Year 5 and Year 6		Digital 3D cad		Cooking - come dine with me.		Structures - playgrounds.

CYCLE B						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST 2
Reception		Junk Modelling-.		Cooking - follow a recipe for an end result		Structures - Explore using different construction/art materials to build a bridge for the GBM to get across the river(moved as JB)
Year 1(not cycled)		Mechanisms: Making a story book		Structures: constructing a windmill		Textiles: Puppets
Year 2		Structures – Baby bear's chair		Mechanisms - levers and sliders Making a moving monster		Food and Nutrition - fruit and vegetables (smoothie)
Year 3 & 3/4		Cooking (Y3)eating seasonally		Structures - Design a stable building (castles)Y3		Textiles - fastenings Book Sleeve(Y4)
Year 4/5 (not Cycled)		Cooking and Nutrition: Biscuits(Y4)		Textiles: Stuffed toy (Y5)		Mechanical systems: Pneumatic toys
Year 5 and 6		Mechanical systems - pop up books(Y5)		Textiles – Waistcoat (6)		Electrical systems: buzzer toys(Y6)

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EYFS						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST 2
MAIN TEXT		Rama and Sita Nativity		Oliver's Vegetables	Gingerbread Man	
UNIT OF WORK and KEY CONCEPTS		Structure Temple design and build. To begin to understand that some places are special to members of their community. To freely explore materials to design and develop their own ideas. Design, make and wrap a toy. Explore different materials freely, to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures.		Cooking To know how to use a knife safely to chop up vegetables. To know how to follow a recipe for an end result Develop confidence competence, precision and accuracy when using small equipment, PD Develop social phrases Use new vocabulary in different contexts.	. Explore using different construction/art materials to build a bridge for the GBM to get across the river. a range of materials for children to construct with. Encourage them to think about and discuss what they want to make. Discuss problems and how they might be solved as they arise. Reflect with children on how they have achieved their aims. Teach children different techniques for joining materials, such as how to use adhesive tape and different sorts of glue	Structure

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YEAR 1 GROUP. CYCLE A and B (not cycled)						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST 2
MAIN TEXT	**Beegu** Character descriptions Instructions	**Dogger** Stories Letters Shape poems	**Lost and Found** Poetry Reports	**Goldilocks** Stories Setting descriptions Explanations	**Meerkat Mail** Stories Persuasive texts	**Naughty Bus** Recount Writing Poetry
Unit of work and key concepts		Mechanisms- story book **To know:** **A mechanism is the parts of an object that move together.** **A slider mechanism moves an object from side to side or up and down.** **A slider mechanism has a slider, slots, guides and an object.** **Bridges and guides are bits of card that purposefully restrict the movement of the slider.**		Structures- windmills. To understand that the shape of materials can be changed to improve the strength and stiffness of structures. To understand that cylinders are a strong type of structure (and, therefore, they are the main shape used for windmills and lighthouses). To understand that axles are used in structures and mechanisms to make parts turn in a circle. To begin to understand that different structures are used for different purposes. To know that a structure is something that has been made and put together		Textiles- Puppets **To know that 'joining technique' means connecting two pieces of material together.** **To know that there are various temporary methods of joining fabric by using staples, glue or pins.** **To understand that different techniques for joining materials can be used for different purposes.** **To understand that a template (or fabric pattern) is used to cut out the same shape multiple times.** **To know that drawing a design idea is useful to see how an idea will look.**

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YEAR 2 GROUP. CYCLE A						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST 2
MAIN TEXT	**Beegu** Character descriptions Instructions	**I am Rosa Parks** **Goldilocks** Stories Traditional tales Letters	**Little Evie and the Wild Wood** Poetry Explanations	**Major Glad, Major Dizzy** Stories Setting descriptions Poems	**The Owl who was Afraid of the Dark** Stories Persuasive texts	**Naughty Bus** Recount Writing Poetry
Unit of work and key concepts		Structures Make a chair for baby bear. To make a structure according to design criteria I can remember that chairs are structures and need to be strong, stiff and stable. To know how to create joints and structures from paper/card and tape. To know that shapes and structures with wide, flat bases or legs are the most stable. To understand that the shape of a structure affects its strength. To know that materials can be manipulated to improve strength and stiffness.		Textiles- To know that sewing is a method of joining fabric. To know that different stitches can be used when sewing. To understand the importance of tying a knot after sewing the final stitch. To know that a thimble can be used to protect my fingers when sewing. Know how to decorate a pouch using fabric glue or running stitch. Know how to thread a needle. Know how to sew a running stitch, with evenly spaced, neat, even stitches to join fabric.		Mechanisms- Build a bus To know that wheels need to be round to rotate and move. To understand that for a wheel to move it must be attached to a rotating axle. To know that an axle moves within an axle holder which is fixed to the vehicle or toy. To know that the frame of a vehicle (chassis) needs to be balanced.. To know how axles help wheels to move a vehicle To know how to evaluate different designs. To know how to design and label a working wheel

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YEAR 2 GROUP CYCLE B						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST 2
MAIN TEXT	**Toby and the Great Fire of London** Stories Character description Instructions	**Dogger** Stories Night before Christmas Setting description	**Lost and Found** Non-chronological reports Poetry	**The Last Tree** Explanation text Diary entries	**Handa's Surprise** **Lila and the Secret of the Rain.** Story writing Biography	**Wild.** Persuasive writing Traditional tales
Unit of work and key concepts		Structures Make a chair for baby bear. To make a structure according to design criteria I can remember that chairs are structures and need to be strong, stiff and stable. To know how to create joints and structures from paper/card and tape. To know that shapes and structures with wide, flat bases or legs are the most stable. To understand that the shape of a structure affects its strength. To know that materials can be manipulated to improve strength and stiffness.		Mechanisms- moving toy Use own ideas to design something and describe how their own idea works Design a product which moves Explain to someone else how they want to make their product and make a simple plan before making Making Use own ideas to make something Make a product which moves Choose appropriate resources and tools Evaluating Describe how something works Explain what works well and not so well in the model they have made.		Food & Nutrition I know how to prepare fruit and vegetables I can use a knife to cut safely I know how to use a blender I can make a smoothie To understand the difference between fruits and vegetables. To understand that some foods typically known as vegetables are actually fruits (e.g. cucumber). To know that a blender is a machine which mixes ingredients together into a smooth liquid. To know that a fruit has seeds and a vegetable does not. To know that fruits grow on trees or vines.

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YEAR 3 and Year -¾ GROUP.CYCLE A						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST2
MAIN TEXT	**Journey to the centre of the Earth** **The Street beneath my feet** Character descriptions Setting descriptions Explanation texts	**The day the crayons quit** **Escape from Pompeii** **Julius Caesar by** **A. Matthews (adapted Shakespeare play)** Letters, Diaries, Newspaper reports. Playscripts	**Greek Myths- Marcia Williams** **Who let the God's out** Myths and legends Tourist brochure	**Falling out of the sky (Poetry Anthology)** Poetry Character descriptions	**How to wash a wooly mammoth** Instructions Information texts Setting descriptions	**The sound collector by Roger McGough** (Poem) Biographies
Unit of work and key concepts.		Mechanisms- slingshot car. I can assemble the panels of the body to the chassis correctly I can remember that smaller shapes create less air resistance and can move faster through the air I can evaluate the speed of my design based on the understanding that some cars are faster than others as a result of: • Body shape • Stored energy in the elastic band • Accuracy of the angle in the chassis and axle		Electrical systems. To understand that an electrical system is a group of parts (components) that work together to transport electricity around a circuit. To understand common features of an electric product (switch, battery or plug, dials, buttons etc.) To list examples of common electric products (kettle, remote control etc.) To understand that an electric product uses an electrical system to work (function). To know the name and appearance of a bulb, battery, battery holder and crocodile wire to build simple circuits.		Digital I can identify the key features of a pouch I can develop design ideas for a technology pouch I can use a template when cutting and assembling the pouch To understand that in programming a 'loop' is code that repeats something again and again until stopped. To know that a Micro:bit is a pocket-sized, codeable computer. Know how to write a program to control (button press) and/or monitor (sense light) that will initiate a flashing LED algorithm.

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YEAR 3 and -3/4 GROUP CYCLE B						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST 2
MAIN TEXT	The Buildings that made London- David Long, Josie Shenay	Giant – Kate Scott	**Secrets of the Sun King** Setting descriptions Newspaper reports	**Cinderella of the Nile** **Until I met Dudley** Explanation texts	**The Promise – Nicola Davies** **I am the seed that grew the tree – Poetry anthology** Setting descriptions Instructions	**Orion and the dark- Emma Yarlett.** **My Shadow – Robert Louis Stevenson** Playscripts Information texts
Unit of work and key concepts.		Food- seasonal I know how to prepare a kitchen to cook in I know how to prepare myself in order to start cooking I know the basic rules of food contamination I can use, store and clean a knife safely I can follow a recipe to make a tart. To know that not all fruits and vegetables can be grown in the UK. To know that climate affects food growth. To know that vegetables and fruit grow in certain seasons. To know that cooking instructions are known as a 'recipe'. To know that imported food is food that has been brought into the country.		Structures- castles To understand that wide and flat based objects are more stable. To understand the importance of strength and stiffness in structures. To know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse – and their purpose. To know that a façade is the front of a structure. To understand that a castle needed to be strong and stable to withstand enemy attack.		Textiles. fastening

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YEAR 4/5 GROUP. One cycle 2024-2025						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST 2
MAIN TEXT	**The secrets of the night train by Slyvia Bishop**	**Journey to Jo'berg by Beverley Naidoo** **Romeo and Juliet adaptation by Andrew Matthews**	**The Jamie Drake Equation by Christopher Edge**	**Oliver Twist adaptation by Gill Tavner** **The Listeners by Walter De La Mare**	**Brightstorm by Vashti Hardy**	**Brightstorm by Vashti Hardy** **The Highwayman by Alfred Noyes**
Unit of work and key concepts.		Cooking and nutrition- Biscuit Evaluating and comparing a range of products. Following a baking recipe. Understanding safety and hygiene rules. Identifying a target audience. Designing a biscuit within a given budget. Suggesting modifications. Adapting a recipe. Conducting market research. Evaluating an adapted recipe.		Textiles- stuffed toys. Designing a stuffed toy considering the main component shapes required and creating an appropriate template. Considering the proportions of individual components. Creating a 3D stuffed toy from a 2D design. Measuring, marking and cutting fabric accurately and independently. Creating strong and secure blanket stitches when joining fabric. Threading needles independently. Using appliqué to attach pieces of fabric decoration. Sewing blanket stitch to join fabric. Applying blanket stitch so the spaces between the stitches are even and regular. Testing and evaluating an end product and giving points for further improvements.		Mechanical systems- Pneumatic toys Designing a toy that uses a pneumatic system. Developing design criteria from a design brief. Generating ideas using thumbnail sketches and exploded diagrams. Learning that different types of drawings are used in design to explain ideas clearly. Creating a pneumatic system to create a desired motion. Building secure housing for a pneumatic system. Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy. Selecting materials due to their functional and aesthetic characteristics. Show a

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YEAR 5 and 6 GROUP Cycle A						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST 2
MAIN TEXT	**Kensuke's Kingdom** Setting description Character description Narrative story	**Pig Heart Boy** Persuasive writing Biography **Polar Express** Poems Descriptive writing	**Tale from Arabian Nights** Non-chronological report Discussion texts	**The Man Who walked between 2 Towers- Mordecai Gerstein The Lost Words** Narrative texts Explanation texts	**Holes** Newspaper Letters	**Macbeth** Poems Playscripts
Unit of work and key concepts.		Digital World: Navigating the World identify key industries that utilise 3D CAD modelling and explain why. place and manoeuvre 3D objects, using computer-aided design. change the properties of, or combine one or more 3D objects, using computer-aided design to produce a 3D CAD model. To understand that sensors can be useful in products as they mean the product can function without human input. To know that designers write design briefs and develop design criteria to enable them to fulfil a client's request. To know that 'multifunctional' means an object or product has more than		Cooking; Come dine with me. Writing a recipe, explaining the key steps, method and ingredients. Including facts and drawings from research undertaken. Following a recipe, including using the correct quantities of each ingredient. Adapting a recipe based on research. Working to a given timescale. Working safely and hygienically with independence. Evaluating a recipe, considering: taste, smell, texture and origin of the food group. Taste testing and scoring final products. Suggesting and writing up points of improvements in productions. Evaluating health and safety in production to minimise cross contamina**tion.**		Structure -Playgrounds Designing a playground featuring a variety of different structures, giving consideration to how the structures will be used. Considering effective and ineffective designs. Building a range of play apparatus structures drawing upon new and prior knowledge of structures. Measuring, marking and cutting wood to create a range of structures. Using a range of materials to reinforce and add decoration to structures. Improving a design plan based on peer evaluation. Testing and adapting a design to improve it as it is developed. Identifying what makes a successful structure.

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YEAR 5 and 6 GROUP. CYCLE B						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST 2
MAIN TEXT	**Thief** Persuasive texts Explanation texts	**War Horse** Character description Setting description Narratives **Beowulf** Newspapers Balanced arguments	**The Silver Sword** **WW2 poetry** Character and setting description integrating dialogue Poetry Biography	**Treason** Narrative Non-chronological reports	**The Tempest** **The Lighthouse** Play Scripts (monologues) Poetry	**The Nowhere Emporium** Discussion text Magazine article Formal letter
Unit of work and key concepts.		Mechanical systems. Pop up books. I know an input is the motion used to start a mechanism I know an output is the motion that happens as a result of starting the input I know that structures use the movement of the pages to work I know that mechanisms control movement I can design a book made up of a front cover and four pages and include a mixture of structures and mechanisms within it		Textiles waist coat I can design a waistcoat in accordance with a specification and design criteria to fit a specific theme. I can mark and cut fabric accurately, in accordance with a design. I can sew a strong running stitch, making small, neat stitches and following the edge. I can tie strong knots. I understand that it is important to design clothing with the client/target customer in mind. I know that using a template (or clothing pattern) helps to accurately mark out a design on fabric. I understand the importance of consistently sized stitches.		Electrical systems. I can design a steady hand game, identifying and naming the components required. I can draw a design from different perspectives. I can model ideas through prototypes. I can construct a stable base for a game. I can accurately cut, fold and assemble a net. I can make and test a circuit. I know that 'form' means the shape and appearance of an object. To know the difference between 'form' and 'function'. I understand that 'fit for purpose' means that a product works how it should and is easy to use. work very well.