**Design and Technology – Progression Map**

The document below has been designed to show how we will cover all of the relevant Design & Technology knowledge and skills across Holy Family.

# Design & Technology Progression in EYFS

The EYFS framework is structured very differently to the national curriculum as it is organised across seven areas of learning rather than subject areas. The aim of this document is to help subject leaders to understand how the skills taught across EYFS feed into national curriculum subjects. The table below outlines the most relevant statements taken from the Early Learning Goals in the EYFS statutory framework and the Development Matters age ranges for Three and Four-Year-Olds and Reception to match the programme of study for DT.

The most relevant statements for DT are taken from the following areas of learning:

- Physical Development
- Expressive Arts and Design

| Design and Technology Progression EYFS | | | |
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| **Three and Four Year Olds** | Personal, Social and Emotional Development | | • Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them. |
| | Physical Development | | • Use large-muscle movements to wave flags and streamers, paint and mark making.<br>• Choose the right resources to carry out their own plan for example glue, paint, tissue paper.<br>• Use one-handed tools and equipment, for example, making snips in paper with scissors |
| | Understanding the world | | • Explore how things work. |
| **Reception** | Expressive Arts and Design | | • Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings.<br>• Explore different materials freely, in order to develop their ideas about how to use them and what to make.<br>• Develop their own ideas and then decide which materials to use to express them.<br>• Create closed shapes with continuous lines, and begin to use these shapes to represent objects. |
| | Physical Development | | • Progress towards a more fluent style of moving, with developing control and grace.<br>• Develop their small motor skills so that they can use a range of tools competently, safely and confidently.<br>• Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor. |
| | Expressive Arts and Design | | • Explore, use and refine a variety of artistic effects to express their ideas and feelings.<br>• Return to and build on their previous learning, refining ideas and developing their ability to represent them.<br>• Create collaboratively, sharing ideas, resources and skills. |
| **ELG** | Physical Development | Fine Motor Skills | • Use a range of small tools, including scissors, paintbrushes and cutlery. |
| | Expressive Arts and Design | Creating with Materials | • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.<br>• Share their creations, explaining the process they have used |

# Design & Technology Progression in Key stage 1 and Key Stage 2

In Key Stage 1 and Key Stage 2 we follow a 2 week Cycle ensuring 3 topics of DT are taught annually.

| DT National Curriculum strands | Content | Key Stage 1 | | Lower Key Stage 2 | | Upper Key Stage 2 | |
|---|---|---|---|---|---|---|---|
| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| ***Design*** | **Structures** | • Learning the importance of clear design criteria<br>• Including individual preferences and requirements in a design | | • Designing a castle with key features to appeal to a specific person/purpose<br>• Drawing and labelling a castle design using 2D shapes, labelling the 3D shapes that will create the features, materials needed and colours | • Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect<br>• Building frame structures designed to support weight | | • Designing a stable structure that is able to support weight<br>• Creating frame structure with focus on triangulation |
| | **Mechanisms** | • Explaining how to adapt mechanisms, using bridges or guides to control the movement<br>• Designing a moving story book for a given audience<br>• Designing a vehicle that | • Creating a class design criteria for a moving monster<br>• Designing a moving monster for a specific audience in accordance with a design criteria<br>• Selecting a suitable linkage | • Designing a toy which uses a pneumatic system<br>• Developing design criteria from a design brief<br>• Generating ideas using thumbnail sketches and | | • Designing a popup book which uses a mixture of structures and mechanisms<br>• Naming each mechanism, input and output accurately | |

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| | | • includes wheels, axles and axle holders, which will allow the wheels to move<br>• Creating clearly labelled drawings which illustrate movement | • system to produce the desired motions<br>• Designing a wheel<br>• Selecting appropriate materials based on their properties | • exploded diagrams<br>• Learning that different types of drawings are used in design to explain ideas clearly | | • Storyboarding ideas for a book | |
| | **Electrical Systems** | N/A | N/A | | • Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas | | • Designing an electronic Christmas decoration with a simple electrical control circuit<br>• Creating a labelled design showing positive and negative parts in relation to the LED and the battery<br>• Generating ideas through sketching and discussion<br>• Modelling ideas through prototypes |
| | **Cooking and Nutrition** | N/A | • Designing a healthy wrap based on a food combination | • Creating a healthy and nutritious recipe for a savoury | | • Adapting a traditional recipe, understanding | • Writing a recipe, explaining the key steps, |

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| | | | which work well together | tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish | | that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients<br>• Writing an amended method for a recipe to incorporate the relevant changes to ingredients<br>• Designing appealing packaging to reflect a recipe | method and ingredients<br>• Including facts and drawings from research undertaken |
| | **Textiles** | | • Using a template to create a design for a puppet | | • Writing design criteria for a product, articulating decisions made<br>• Designing a personalised Book sleeve | • Designing a stuffed toy considering the main component shapes required and creating an appropriate template<br>• Considering proportions of individual components | |

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| DT National Curriculum strands | Content | Key Stage 1 | | Lower Key Stage 2 | | Upper Key Stage 2 | |
|---|---|---|---|---|---|---|---|
| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| ***Make*** | **Structures** | • Making stable structures from card, tape and glue<br>• Following instructions to cut and assemble the supporting structure of a windmill<br>• Making functioning turbines and axles which are assembled into a main supporting structure | | • Constructing a range of 3D geometric shapes using nets<br>• Creating special features for individual designs<br>• Making facades from a range of recycled materials | • Creating a range of different shaped frame structures<br>• Making a variety of free standing frame structures of different shapes and sizes<br>• Selecting appropriate materials to build a strong structure and for the cladding<br>• Reinforcing corners to strengthen a structure<br>• Creating a design in accordance with a plan<br>• Learning to create different textural effects with materials | | • Building a range of play apparatus structures drawing upon new and prior knowledge of structures<br>• Measuring, marking and cutting wood to create a range of structures<br>• Using a range of materials to reinforce and add decoration to structures |
| | **Mechanisms** | • Following a design to create | • Making linkages using card for | • Creating a pneumatic | | • Following a design brief to | |

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| | | moving models that use levers and sliders<br>• Adapting mechanisms | levers and split pins for pivots<br>• Experimenting with linkages adjusting the widths, lengths and thicknesses of card used<br>• Cutting and assembling components neatly<br>• Selecting materials according to their characteristics<br>• Following a design brief | system to create a desired motion<br>• Building secure housing for a pneumatic system<br>• Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy<br>• Selecting materials due to their functional and aesthetic characteristics<br>• Manipulating materials to create different effects by cutting, creasing, folding, weaving | | make a pop up book, neatly and with focus on accuracy<br>• Making mechanisms and/ or structures using sliders, pivots and folds to produce movement<br>• Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result | |
| | **Electrical Systems** | | | | • Making a torch with a working electrical circuit and switch<br>• Using appropriate equipment to | | • Making a working circuit<br>• Creating an electronic light-up decoration, referring to a design criteria |

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| | | | | | cut and attach materials<br>• Assembling a torch according to the design and success criteria | | • Mapping out where different components of the circuit will go |
| | **Cooking and Nutrition** | • Chopping fruit and vegetables safely to make a smoothie<br>• Identifying if a food is a fruit or a vegetable<br>• Learning where and how fruits and vegetables grow | • Slicing food safely using the bridge or claw grip<br>• Constructing a wrap that meets a design brief | • Knowing how to prepare themselves and a work space to cook safely in, learning the basic rules to avoid food contamination<br>• Following the instructions within a recipe | | • Cutting and preparing vegetables safely<br>• Using equipment safely, including knives, hot pans and hobs<br>• Knowing how to avoid cross-contamination<br>• Following a step by step method carefully to make a recipe | • Following a recipe, including using the correct quantities of each ingredient<br>• Adapting a recipe based on research<br>• Working to a given timescale<br>• Working safely and hygienically with independence |
| | **Textiles** | | • Selecting fabrics for sewing and cutting neatly with scissors<br>• Using joining methods to decorate a puppet<br>• Sequencing steps for construction | | • Making and testing a paper template with accuracy and in keeping with the design criteria<br>• Measuring, marking and cutting fabric using a paper template | • Creating a 3D stuffed toy from a 2D design<br>• Measuring, marking and cutting fabric accurately and independently<br>• Creating strong and secure blanket stitches | |

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| | | | • Decorating puppet using fabric glue or running stitch | | • Selecting a stitch style to join fabric, working neatly sewing small neat stitches<br>• Incorporating fastening to a design | when joining fabric<br>• Using applique to attach pieces of fabric decoration | |

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# Design and Technology – Progression Map

| DT National Curriculum strands | Content | Key Stage 1 | | Lower Key Stage 2 | | Upper Key Stage 2 | |
|---|---|---|---|---|---|---|---|
| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| ***Evaluation*** | **Structures** | • Evaluating a windmill according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't<br>• Suggest points for improvements | | • Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design<br>• Suggesting points for modification of the individual designs | • Evaluating structures made by the class<br>• Describing what characteristics of a design and construction made it the most effective<br>• Considering effective and ineffective designs | | • Improving a design plan based on peer evaluation<br>• Testing and adapting a design to improve it as it is developed<br>• Identifying what makes a successful structure |
| | **Mechanisms** | • Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed<br>• Reviewing the success of a product by testing it with its | • Evaluating own designs against design criteria<br>• Using peer feedback to modify a final design<br>• Evaluating different designs<br>• Testing and adapting a design | • Using the views of others to improve designs<br>• Testing and modifying the outcome, suggesting improvements | | • Evaluating the work of others and receiving feedback on own work<br>• Suggesting points for improvement | |

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| | | intended audience<br>• Testing mechanisms, identifying what stops wheels from turning, knowing that a wheel needs an axle in order to move | | | | | |
| | **Electrical Systems** | N/A | N/A | | • Learning to give constructive criticism on own work and the work of others<br>• Evaluating electrical products<br>• Testing and evaluating the success of a final product and taking inspiration from the work of peers | | • Evaluating a completed product against the original design sheet and looking at modifications that could be made to improve the reliability or aesthetics of it or to incorporate another type of electronic device, eg: buzzer |
| | **Food** | • Tasting and evaluating different food combinations | • Describing the taste, texture and smell of fruit and vegetables | • Establishing and using design criteria to help test and review dishes | | • Evaluating and comparing a range of products<br>• Suggesting modifications | • Evaluating a recipe, considering: taste, smell, texture and |

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| | | • Describing appearance, smell and taste<br>• Suggesting information to be included on packaging | • Taste testing food combinations and final products<br>• Describing the information that should be included on a label<br>• Evaluating which grip was most effective | • Describing the benefits of seasonal fruits and vegetables and the impact on the environment<br>• Suggesting points for improvement when making a seasonal tart | | • Identifying the nutritional differences between different products and recipes<br>• Identifying and describing healthy benefits of food groups | origin of the food group<br>• Taste testing and scoring final products<br>• Suggesting and writing up points of improvements in productions<br>• Evaluating health and safety in production to minimise cross contamination |
| | **Textiles** | | • Troubleshooting scenarios posed by teacher<br>• Evaluating the quality of the stitching on others' work<br>• Discussing as a class, the success of their stitching against the success criteria<br>• Identifying aspects of their peers' work that they particularly like and why | | • Testing and evaluating an end product against the original design criteria<br>• Deciding how many of the criteria should be met for the product to be considered successful<br>• Suggesting modifications for improvement | • Testing and evaluating an end product and giving point for further improvements | |

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| DT National Curriculum strands | Content | Key Stage 1 | | Lower Key Stage 2 | | Upper Key Stage 2 | |
|---|---|---|---|---|---|---|---|
| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| ***Technical Knowledge*** | **Structures** | • Describing the purpose of structures, including windmills<br>• Learning how to turn 2D nets into 3D structures<br>• Learning that the shape of materials can be changed to improve the strength and stiffness of structures<br>• Understanding that cylinders are a strong type of structure that are often used for windmills and lighthouses<br>• Understanding that windmill turbines use wind to turn and make the | | • Identifying features of a castle<br>• Identifying suitable materials to be selected and used for a castle, considering weight, compression, tension<br>• Extending the knowledge of wide and flat based objects are more stable<br>• Understanding the terminology of strut, tie, span, beam<br>• Understanding the difference between frame and shell structure | • Learning what pavilions are and their purpose<br>• Building on prior knowledge of net structures and broadening knowledge of frame structures<br>• Learning that architects consider light, shadow and patterns when designing<br>• Implementing frame and shell structure knowledge<br>• Considering effective and ineffective designs | | • • Exploring how to create a strong beam<br>• Identifying arch and beam bridges and understanding the terms: compression and tension<br>• Identifying stronger and weaker structures<br>• Finding different ways to reinforce structures<br>• Understanding how triangles can be used to reinforce bridges<br>• Articulating the difference between beam, arch, truss and suspension bridges |

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| | | machines inside work<br>• Understanding that axles are used in structures and mechanisms to make parts turn in a circle<br>• Developing awareness of different structures for different purposes | | | | | • Knowing that structures can be strengthened by manipulating materials and shapes |
| | **Mechanisms** | • Learning that levers and sliders are mechanisms and can make things move<br>• Identifying whether a mechanism<br>• Is a lever or slider and determining what movement the mechanism will make<br>• Using the vocabulary: up, down, left, right, vertical and horizontal to | • Learning that mechanisms are a collection of moving parts that work together in a machine<br>• Learning that there is an input and output in a mechanism<br>• Identifying mechanisms in everyday objects<br>• Learning that a lever is something that turns on a pivot<br>• Learning that a linkage is a | • Understanding how pneumatic systems work<br>• Learning that mechanisms are a system of parts that work together to create motion<br>• Understanding that pneumatic systems can be used as part of a mechanism<br>• Learning that pneumatic systems force air over a distance to create movement | | • Knowing that an input is the motion used to start a mechanism<br>• Knowing that output is the motion that happens as a result of starting the input<br>• Knowing that mechanisms control movement<br>• Describing mechanisms that can be used to change one | |

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| | | describe movement<br>• Identifying what mechanism makes a toy or vehicle roll forwards<br>• Learning that for a wheel to move it must be attached to an axle | system of levers that are connected by pivots<br>• Exploring wheel mechanisms<br>• Learning how axels help wheels to move a vehicle | | | kind of motion into another | |
| | **Electrical Systems** | N/A | N/A | | • Learning how electrical items work<br>• Identifying electrical products<br>• Learning what electrical conductors and insulators are<br>• Understanding that a battery contains stored electricity and can be used to power products<br>• Identifying the features of a torch<br>• Understanding how a torch works | | • Learning the key components used to create a functioning circuit<br>• Learning that graphite is a conductor and can be used as part of a circuit<br>• Learning the difference between series and parallel circuits<br>• Understanding that breaks in a circuit will stop it from working |

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| | | | | | • Articulating the positives and negatives about different torches | | |
| | **Food** | • Understanding the difference between fruits and vegetables<br>• Describing and grouping fruits by texture and taste | • Understanding what makes a balanced diet<br>• Knowing where to find the nutritional information on packaging<br>• Knowing the five food groups | • Learning that climate affects food growth<br>• Working with cooking equipment safely and hygienically<br>• Learning that imported foods travel from far away and this can negatively impact the environment<br>• Learning that vegetables and fruit grow in certain seasons<br>• Learning that each fruit and vegetable gives us nutritional benefits<br>• Learning to use, store and clean a knife safely | | • Understanding where food comes from - learning that beef is from cattle and how beef is reared and processed<br>• Understanding what constitutes a balanced diet<br>• Learning to adapt a recipe to make it healthier<br>• Comparing two adapted recipes using a nutritional calculator and then identifying the healthier option | • Learning how to research a recipe by ingredient<br>• Recording the relevant ingredients and equipment needed for a recipe<br>• Understanding the combinations of food that will complement one another<br>• Understanding where food comes from, describing the process of 'Farm to Fork' for a given ingredient |
| | **Textiles** | | • Joining items using fabric glue or stitching | | • Threading needles with greater independence | • Learning to sew blanket stitch to join fabric | |

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| | | | • Identifying benefits of these techniques<br>• Threading a needle<br>• Sewing running stitch, with evenly spaced, neat, even stitches to join fabric<br>• Neatly pinning and cutting fabric using a template | | • Tying knots with greater independence<br>• Understanding the need to count the thread on a piece of even weave fabric in each direction to create uniform size and appearance<br>• Understanding that fabrics can be layered for affect<br>• Understanding that there are different types of fastenings and what they are<br>• Articulating the benefits and disadvantages of different fastening types | • Applying blanket stitch so the space between the stitches are even and regular<br>• Threading needles independently | |