



Inventions

Year 4 | Summer 1

CURRICULUM SPOTLIGHT: D&T, Computing and Science

ENQUIRY

How can we invent or innovate using technology?

OUTCOMES

STEM Coding and Design Project Exhibition

VOCABULARY

Computing: Algorithms, instructions, logical reasoning, errors, debugging, input, output, predictions, block coding, sequential algorithm, digital devices, sequencing, repetition, metaverse, cyber space, technology, online, offline, social media, fake news, misinformation, application, programming, code, python, binary, console

D&T: Pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, movement, controlled, shell structure, corrugating, ribbing, laminating, 3D, net, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong

ENGLISH KEY TEXTS

Werewolf club rules!
The Land of Roar
The Barnabus Project

RESOURCES

Little bits STEAM kit, Pulleys, cotton reels, card, string, straws, doweling, lollipop sticks, plastecine, sellotape, masking tape, elastic bands, Blu tack, scissors, glue, split pins

CORE CURRICULUM LEARNING OUTCOMES

English	Mathematics	Science	Physical Education
Spelling <ul style="list-style-type: none"> Phonemes: ee, ie, er, k, l Grammar Use the present perfect form of verbs in contrast to the past tense	Fractions <ul style="list-style-type: none"> Fractions review – finding fractions of amounts Improper fractions and mixed numbers Multiplying fractions by whole numbers	Electricity <ul style="list-style-type: none"> Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. Recognise some common conductors and insulators	Physical <ul style="list-style-type: none"> Agility- reaction and response Static balance- floor work Tennis
PSHCE	Spanish	Computing	Design and Technology
PSHCE <ul style="list-style-type: none"> Managing safety and risks 	School The classroom	Computer Science <i>Substantive knowledge</i> <ul style="list-style-type: none"> Computers work by following a set of clear instructions. These instructions are called algorithms. Logical reasoning is used to explain how algorithms work and to detect and correct errors in algorithms and programs. Understand that changing an algorithm/ instructions will change the output. Predictions can be made about the impact. There are different types of programming language. We are using block coding Know the metaverse is an immersive virtual world facilitated by virtual and augmented reality. Explore ethical and consequential issues surrounding interacting in a metaverse <i>Disciplinary focus</i> <ul style="list-style-type: none"> Create, describe and debug algorithms, explaining actions using logical reasoning. Code a program to achieve a sequential algorithm (creating an algorithm with more than one step). Create programs to accomplish specific goals. Using an increased number of digital devices (IPad) and use sequencing and repetition. Use logical reasoning to identify and resolve problems. 	Design <i>Disciplinary focus</i> -Designing Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose Generate, develop, model and communicate their ideas through discussion, annotated sketches and prototypes Making Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining) accurately Select from and use a wider range of materials and components, including construction materials, ingredients, according to their functional properties and aesthetic qualities Cut materials accurately and safely by selecting appropriate tools. Measure and mark out to the nearest millimetre. Select appropriate joining techniques Evaluating and improving Investigate and analyse a range of existing products Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work <i>Substantive knowledge</i> Understand how key events and individuals in DT have helped shape the world. Mechanics Choose suitable techniques to construct products or to repair items. Create products using wheels, axles and winder mechanisms. Structures Apply their understanding of how to strengthen, stiffen and reinforce more complex structures Strengthen materials using suitable techniques. Programming Apply their understanding of computing to programme and control their products
Philosophy, Religion and Ethics			
Christianity Substantive knowledge <ul style="list-style-type: none"> Baptism and its significance for Christians Holy Communion and its origins How different Christians worship Understanding that ‘church’ is less about the physical building and more about the people – the community of believers. Philosophy: What makes a place ‘special?’ Evaluation: Assess the importance of churches for Christians Personal reflection: Children to reflect on their own special places 			

