Computing

St Thomas and St Anne's CE Primary School

Long Term Rolling Programme

Our curriculum is designed to equip all children with the knowledge, including skills, that will enable them to be successful and creative in their future lives. Our curriculum is underpinned by the basic principles that:

1. Learning is change to long-term memory
2. Our aim is to ensure that our pupils experience a wide breadth of study and that they have a long-term memory of an ambitious body of procedural and semantic knowledge.

Our school curriculum has been developed using the Teach Computing and Barefoot resources and the Chris Quigley Essentials Curriculum.

Our rolling programme has been adopted to cater for our mixed age class structure. This will be reviewed regularly depending on the overall school structure as our class groups often change from year to year. Some key decisions have been:

- Nursery and Reception to follow the EYFS resources on Barefoot Computing.
- Some units in Y3/4 have been covered in previous years at a basic Milestone 2 level. As part of this academic year, the children in these year groups will be covering the same topics but at an advancing or deep Milestone 2 level instead.
- Y1-6 – Programming units have been kept within the same year as they progress from each other.

We plan for a weekly lesson of computing as a discrete subject to ensure children know and understand more. There is flexibility in how and when our lessons are taught in order to help our pupils develop and retain the information within their long-term memory.

The Threshold concepts (key areas of learning that the children will revisit across the programme of study) are progressive and we use these to assess the children's learning in computing. These are:

Code

This concept involves developing an understanding of instructions, logic and sequences.

Connect

This concept involves developing an understanding of how to safely connect with others.

Communicate

This concept involves using apps to communicate one's ideas.

Collect

This concept involves developing an understanding of databases and their uses.

Long Term Plan

Long Term Plan for Computing **(2024/5 – Year B)** Fir - https://www.barefootcomputing.org/earlyyears Elm, Ash and Oak - Curriculum teaching resources (teachcomputing.org)							
Unit Summaries and LTP		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Threshold Concepts		Code	Communicate	Code	Collect	Code	Collect
Fir – Nursery/ Reception		**Barefoot Resources - Awesome Autumn** Explore patterns in Garlands Galore, create a leaf labyrinth and make Pumpkin Soup using computational thinking skills.	**Barefoot Resources - Boats Ahoy** Different uses of boats, floating and sinking predictions, creating a good boat through exploring designs and role play.	**Barefoot Resources – Springtime** Make a Rabbit run, create Junk scarecrows and explore sequencing whilst planting seeds.	**Barefoot Resources – Super Space** Creating algorithms to direct a rocket through space and spotting patterns in pictures of aliens.	**Barefoot Resources - People who help us** Create patterns on a police car, guide a delivery person to their destination and design a uniform for a firefighter.	**Barefoot Resources - Summer Fun** Children explore their surroundings and get creative, take a journey and make a map, and discover seaside tangrams.
Unit Summaries and LTP		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
		Computing systems and networks	Creating Media	Programming A	Data and Information	Creating Media	Programming B
Threshold Concepts		Connect	Communicate	Code	Collect	Communicate	Code
Elm – Y1/2	Year A	**Technology around us (1.1)** Recognising technology in school and using it responsibly.	**Digital painting (1.2)** Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally.	**Moving a robot (1.3)** Writing short algorithms and programs for floor robots, and predicting program outcomes.	**Grouping data (1.4)** Exploring object labels, then using them to sort and group objects by properties.	**Grouping data (1.5)** Exploring object labels, then using them to sort and group objects by properties.	**Grouping data (1.6)** Exploring object labels, then using them to sort and group objects by properties.
	Year B	**Y2s - Information technology around us (2.1)** Identifying IT and how its responsible use improves our world in school and beyond.	**Digital photography (2.2)** Capturing and changing digital photographs for different purposes	**Robot algorithms (2.3)** Creating and debugging programs, and using logical reasoning to make predictions.	**Pictograms (2.4)** Collecting data in tally charts and using attributes to organise and present data on a computer.	**Y2s -Making music (2.5)** Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.	**Programming quizzes (2.6)** Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.

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Threshold Concepts		Connect	Communicate	Code	Collect	Communicate	Code
Ash – 3/4	Year A	**The internet (4.1)** Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.	**Audio editing (4.2)** Capturing and editing audio to produce a podcast, ensuring that copyright is considered	**Sequencing sounds (3.3)** Creating sequences in a block-based programming language to make music.	**Branching databases (3.4)** Use yes/no questions to gain an understanding of what attributes are and how to use them to sort groups of objects. Create on-screen branching databases..	**Photo editing (4.5)** Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.	**Repetition in shapes (4.3)** Using a text-based programming language to explore count-controlled loops when drawing shapes.
	Year B	**Connecting computers (3.1)** Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks.	**Stop-frame animation (3.2)** Capturing and editing digital still images to produce a stop-frame animation that tells a story	**Repetition in games (4.6)** Using repetition in programming to explore count-controlled and infinite loops when modifying existing and creating new animations and games.	**Data logging (4.4)** Recognising how and why data is collected over time, before using data loggers to carry out an investigation	**Desktop publishing (3.5)** Creating documents by modifying text, images, and page layouts for a specified purpose	**Events and actions in programs (3.6)** Writing algorithms and programs that use a range of events to trigger sequences of actions.
Oak – Y5/6	Year A	**Internet communication (6.1)** Recognising how the WWW can be used to communicate and be searched to find information	**Webpage creation (6.2)** Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation.	**Variables in games (6.3)** Exploring variables when designing and coding a game.	**Introduction to spreadsheets (6.4)** Answering questions by using spreadsheets to organise and calculate data.	**3D modelling (6.5)** Planning, developing, and evaluating 3D computer models of physical objects.	**Sensing (6.6)** Designing and coding a project that captures inputs from a physical device
	Year B	**Sharing information (5.1)** Identifying and exploring how information is shared between digital systems.	**Video editing (5.2)** Planning, capturing, and editing video to produce a short film.	**Selection in physical computing (5.3)** Exploring conditions and selection using a programmable microcontroller.	**Flat-file databases (5.4)** Using a database to order data and create charts to answer questions	**Vector drawing (5.5)** Creating images in a drawing program by using layers and groups of objects.	**Selection in quizzes (5.6)** Exploring selection in programming to design and code an interactive quiz.