English Martyrs' CATHOLIC VOLUNTARY ACADEMY

UKS2 Computing Curriculum and Knowledge Map

St Ralph Sherwin Catholic Multi Academy Trust

Elements of KS3

Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems. Understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem. Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or function.

Programming B – Sensing

Create a program to run off a controlled device and change a variable using selection
Explain how the program uses inputs and outputs
Draw conclusions about your project by testing and debugging the code

Data and Information – Introduction to Spreadsheets

Create a spreadsheet using formulas
Explain how to create and use formulas on spreadsheets
Summarise a suitable way to present data

Creating Media – 3D modelling

Create a 3D model on a computer
Summarise how to accurately adjust 3D shapes for a given purpose
Draw conclusions on how to modify a 3D model

Programming A – Variables in Games

Describe why a variable is used in gaming
Give an overview of how to improve a game using variables
Draw conclusions on a project by evaluating it to consider improvements

Common Good

Creating Media – Web page creation

Create a webpage
Explain the need for navigation paths on a webpage
Summarise implications of using and linking content to a webpage that is owned by other people

Participation

Programming B – Selection in Quizzes

Describe how a conditional statement connects a condition to an outcome
Create an algorithm using conditions for another user
Present information about how the algorithm met the given task.

Year 6

Computing Systems and Networks – Communication and Collaboration

Describe how sharing information online can help people work together.
Give an overview of how we communication using technology.
Summarise different methods of online communications.

Stewardship

Creating media – Introduction to Vector Graphs

Create a vector drawing
Describe how a vector drawing works
Summarise the skills you have learnt using vector drawings and compare to freehand paint drawings.

Data and information – Flat-file database

Create a paper-based and digital database.
Describe how to group data to answer questions about it
Explain the benefits of using a computer to organise data.

Creating media – Video Production

Create a video using a storyboard.
Describe how to capture, edit, and manipulate a video.
What impact did editing and reshooting the video have?

Participation

Programming A – Selection in physical computing

Create a program using crumble controllers through written algorithms
Create repeated counter-controlled loops with an input as a condition.
Give an overview of the intended outcome and test and debug the program.

Common Good

Computing systems and networks – Systems and Searching

Describe how computers are systems and the tole they have in our lives.
Describe how to use a search engine and how the results can be ranked.
Is every search engine a reliable source?

Stewardship

Year 5

LKS2

English Martyrs' CATHOLIC VOLUNTARY ACADEMY

LKS2 Computing Curriculum and Knowledge Map

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UKS2

Programming B – Repetition in Games
Create a design that includes count-controlled and infinite loops
Explain how a project works that has repetition with designs and algorithms for a sprite
Summarise the project and refine the algorithm

Data and Information – Data Logging
Describe the use of a data logger
Give an overview of how computers can help us analyse data
Investigate if a planned process for data loggers will work

Creating Media – Photo Editing
Describe how to use many tools to edit
What impact did editing have on an image?
Propose an editing guide for others to use when editing images

Programming A – Repetition in Shapes
Describe and modify a count-controlled loop to produce a given outcome
Compare the difference in a program through decomposition and repetition.
Recommend through evaluation debugging tips.

Common Good

Creating Media – Audio Production
Create an audio recording
Explain how to review and edit audio recordings
Draw conclusions on the effectiveness use of audio

Participation

Programming B - Events and actions in programs
Create a program that moves a sprite in many directions.
Describe the program by adding features (pen blocks)
Give an overview of testing and modifying the program.

Year 4

Computing Systems and Networks – The Internet
Describe network devices and how they connect
Summarise the content of the World Wide Web
Draw conclusions about the information found online

Stewardship

Creating media – Desktop publishing
Describe how text and images can be used to communicate messages
Create a magazine using a template within Desktop Publishing Software
Compare work on Desktop publishing Software with work made by hand

Data and information – Branching databases
Create a branching database using data collected from yes/no questions
Describe why a database needs to be well structured
Present information found with a partner to test an identification tool

Creating media - Stop-frame animation
Create a stop-frame animation
Describe how onion skinning helps an animation work consistently
Identify ways to make a stop-frame animation better by adding media

Participation

Programming A - Sequencing sounds
Describe how to move a sprite using commands represented as blocks
List the order of a sequence of commands to control a sprite
Give an overview of implementing an algorithm as code

Common Good

Computing systems and networks – Connecting computers
Name the inputs, outputs, and processors of digital device
Describe a network switch, server, and wireless access point in a network.
Give an overview of physical components of a network.

Year 3

Stewardship

KS1

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KS1 Computing Curriculum and Knowledge Map

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LKS2

Programming B – Programming Quizzes
Create an algorithm for a program with a given design
Give an overview of how precise instructions move a sprite and predict the outcome.
Propose improvements by debugging the program.

Data and Information – Pictograms
Create a pictogram
Summarise data collected on a computer
Compile data in different ways

Creating Media – Digital Music
Create a musical pattern using a computer.
Explain how to refine a musical pattern on a computer
Draw conclusions of how reviewing your work and improve it.

Programming A – Robot Algorithms
Create an algorithm to program a robot.
What impact did it have when the algorithm did not go to plan?
Select an algorithm and break it into chunks.

Common Good

Creating Media – Digital Photography
Describe what makes a good photograph and identify improvements.
Compare and contrast taking photographs with different sources of light and tools.
Draw conclusions on the quality of photographs and recognise they can be changed.

Participation

Programming B – Programming animations
Create a series of commands using programming tools
Describe the different parts of an algorithm
Explain how to create a program for a sprite and test it

Year 2

Computing Systems and Networks – IT around us
Describe technology around you and in the world.
Give an overview of how technology helps us
True or false... Rules for using information technology can keep us safe?

Stewardship

Creating Media – Digital Writing
Create a word document using a keyboard and tools within word processor.
Describe changes that can be made to text in word processor.
Compare the difference between writing on paper and a laptop.

Data and Information – Grouping Data
Label and group objects
Organise information in different ways
Compare and record information

Creating Media – Digital Painting
Create a painting using different shapes and tools.
Describe how to paint using a computer.
Compare and contrast the difference between using paper and a laptop to paint.

Participation

Programming A – moving a robot
List commands to make a sequenced algorithm
Create a sequenced program and debug where needed
Identify the similarities and difference programmes with the same outcomes (several possibilities)

Common Good

Technology Around us
Name technology around us in the classroom.
Describe parts of a computer and what it is used for.
Present information about using different parts of a computer and how technology helps us in our daily lives.

Stewardship

Year 1

Reception Non-Statutory