



Computing Curriculum and Knowledge Map

YEAR 6

Lent 2 – Data Information Flat-File Databases – Information Technology

- To use a form to record information and compare paper and computer-based databases. (KNO)
- To describe how grouping and then sorting data allows us to answer questions and explain that tools can be used to select specific data. (REM)
- To explain that computer programs can be used to compare data visually and apply my knowledge of a database to ask and answer real-world questions. (KNO)

Lent 1 – Programming A Selection in Physical Computing – Computer Science

- To control a simple circuit connected to a computer, write a program that includes count-controlled loops and explain that a loop can stop when a condition is met e.g. number of times. (KNO)
- To demonstrate that a loop can be used to repeatedly check whether a condition has been met. (KNO)
- To design a physical project that includes selection and create a controllable system that includes selection. (REM)

Pentecost 1 – Creating Media Vector Drawing – Information Technology

- To describe how drawing tools can be used to produce different outcomes. (REM)
- To create a vector drawing by combining shapes, use tools to achieve a desired effect and demonstrate that vector drawings consist of layers. (KNO)
- To group objects to make them easier to work with and evaluate my vector drawing. Suggest any changes needed. (KNO)

Pentecost 2 – Programming B Selection in Quizzes – Computer Science

- To explain how selection is used in computer programs and relate that a conditional statement connects a condition to an outcome. (KNO)
- To suggest how selection directs the flow of a program and design a program which uses selection. (KNO)
- To create a program which uses selection and evaluate my program. (REM)

Advent 1 – Computing Systems and Networks Internet Communication – Digital Literacy

- To identify how to use a search engine and explain how search engines select results. (KNO)
- To explain how search results are ranked and recognise why the order of results is important, and to whom. Justify your answer. (REA)
- To recognise how we communicate using technology and investigate different methods of online communication. (REA)

Advent 2 – Creating Media Webpage Creation – Information Technology

- To review an existing website and investigate its structure. (REA)
- To plan the features of a web page, investigate the ownership and use of images (copyright). (REA)
- Can identify reasons for the need to preview pages, can outline the need for a navigation path and recognise the implications of linking to content owned by other people. (KNO)

Lent 1 – Programming A Variables in Games – Computer Science

- Can define a 'variable' as something that is changeable, suggest why a variable is used in a program and can investigate how to improve a game by using variables. (REA)
- Can research and design a project that builds on a given example. (REA)
- Can use my design to create a project and evaluate my project, suggesting any improvements that could be made. (KNO)

Lent 2 – Data Information Introduction to Spreadsheets – Information Technology

- Can identify questions which can be answered using data and explain that objects can be described using data. (KNO)
- Can explain that formulae can be used to produce calculated data and apply formulae to data, including duplicating. (KNO)
- Can create a spreadsheet to plan an event and select suitable values to present data. (REA)

Pentecost 1 – Creating Media 3D Modelling – Information Technology

- Can use a computer to create and manipulate three-dimensional (3D) digital objects.
- Can compare working digitally with 2D and 3D graphics and construct a digital 3D model of a physical object. (KNO)
- Can prove that physical objects can be broken down into a collection of 3D shapes, design a digital model by combining 3D objects and develop and improve a digital 3D model. (REA)

Pentecost 2 – Programming B Sensing Movement – Computer Science

- To create a program to run on a controllable device and explain that selection can control the flow of a program. (KNO)
- To update a variable with a user input and can use conditional statements to compare a variable to a value. (KNO)
- To research and design a project that uses inputs and outputs on a controllable device and create a program to use inputs and outputs on a controllable device. (REA)

Key Stage 3

- Children will revisit these concepts and learn how to use this knowledge to solve problems using computer technology.
- Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems.
- Understand simple Boolean logic (for example, AND, OR and NOT) and its use in programming.

YEAR 5

Lent 2 – Data Information Data Logging – Information Technology

- To explain that data gathered over time can be used to answer questions and use a digital device to collect data automatically. (KNO)
- To demonstrate that a data logger collects 'data points' from sensors over time. (KNO)
- To use data collected over a long duration to find information, and select the data needed to answer questions and use collected data to answer questions. (REA)

Pentecost 1 – Creating Media Photo Editing – Information Technology

- To explain that digital images can be changed and change the composition of an image. Describe how images can be changed for different uses. (KNO)
- To make good choices when selecting different tools, justifying your answer. (REA)
- To recognise that not all images are real and investigate how changes can improve an image. (REA)

Pentecost 2 – Programming B Repetition in Games – Computer Science

- To develop the use of count-controlled loops in a different programming environment.
- To explain that in programming there are infinite loops and count-controlled loops and develop a design which includes two or more loops which run at the same time. (KNO)
- To modify an infinite loop in a given program, propose and create a project that includes repetition. (REA)

Advent 1 – Computing Systems and Networks Sharing Information – Digital Literacy

- To explain that computers can be connected together to form systems and recognise the role of computer systems in our lives. (KNO)
- To recognise how information is transferred over the internet and can suggest how sharing information online lets people in different places work together. (KNO)
- To contribute to a shared project online and describe different ways of working together online. (REM)

Advent 2 – Creating Media Video Editing – Information Technology

- To recognise video as moving pictures, which can include audio and list digital devices that can record video. (REM)
- To capture video using a digital device and summarise the features of an effective video. (KNO)
- To demonstrate how video can be improved through reordering and editing and consider the impact of the choices made when making and sharing a video. (KNO)

Lent 1 – Programming A Selection in Physical Computing – Computer Science

- To control a simple circuit connected to a computer, write a program that includes count-controlled loops and explain that a loop can stop when a condition is met e.g. number of times. (KNO)
- To demonstrate that a loop can be used to repeatedly check whether a condition has been met. (KNO)
- To design a physical project that includes selection and create a controllable system that includes selection. (REM)

YEAR 4

Lent 2 – Data Information Branching Databases – Information Technology

- To create questions with yes/no answers and identify the object attributes needed to collect relevant data. (REM)
- To create a branching database and identify objects using a branching database. (REM)
- To explain why it is helpful for a database to be well structured and compare the information in a pictogram with a branching database. (KNO)

Pentecost 1 – Creating Media Desktop Publishing – Information Technology

- To describe how text and images convey information and layout can be edited. (REM)
- To choose appropriate page settings and can add content to a desktop publishing publication.
- To give some reasons how different layouts can suit different purposes and consider the benefits of desktop publishing. (KNO)

Pentecost 2 – Programming B Events and Actions in Programs – Computer Science

- To explain how a sprite moves in an existing project and create a program to move a sprite in four directions. (REM)
- To adapt a program to a new context and develop it by adding features.
- To design and create a maze-based challenge and identify and fix bugs in a program. (REM)

Advent 1 – Computing Systems and Networks The Internet – Digital Literacy

- To explain how networks physically connect to other networks and that these networked devices make up the internet.
- To outline how websites can be shared via the World Wide Web and identify how content can be added and accessed on the World Wide Web. (KNO)
- To recognise how the content of the WWW is created by people and propose some of the consequences of unreliable content. (REA)

Advent 2 – Creating Media Audio Editing – Information Technology

- To demonstrate that sound can be digitally recorded and use a digital device to record sound. (KNO)
- To explain that a digital recording is stored as a file and that audio can be changed through editing. (KNO)
- To prove that different types of audio can be combined and played together and evaluate editing choices made. (REA)

Lent 1 – Programming A Repetition in Shapes – Computer Science

- To demonstrate that accuracy in programming is important and can create a program in a text-based language. (KNO)
- To explain what 'repeat' means and modify a count-controlled loop to produce a given outcome. (KNO)
- To decompose a program into parts. Research and create a program that uses count-controlled loops to produce a given outcome. (REA)

YEAR 3

Lent 2 – Data Information Grouping Data – Information Technology

- To label objects and identify objects that can be counted. (REM)
- To describe objects in different ways and count objects with the same properties. (REM)
- To compare groups of objects and answer questions about a group. (KNO)

Pentecost 1 – Creating Media Digital Writing – Information Technology

- To know how to use a computer to write and to add and move text. (REM)
- To identify that the look of text can be changed on a computer and make careful choices when changing text. (KNO)
- Can explain why I used the tools I chose and can compare writing on a computer with writing on paper. (KNO)

Pentecost 2 – Programming B Programming Animations – Computer Science

- To identify a command for a given purpose and show that a series of commands can be joined together. (KNO)
- To identify the effect of changing a value and explain that each sprite has its own instructions. (KNO)
- To design the parts of a project and use my algorithm to create a program. (KNO)

Advent 1 – Computing Systems and Networks Information Technology Around Us – Digital Literacy

- To recognise the uses and features of information technology and identify information technology in the home. (KNO)
- To identify information technology beyond school and explain how information technology benefits us. (KNO)
- To show how to use information technology safely and recognise that choices are made when using information technology. (KNO)

Advent 2 – Creating Media Digital Photography – Information Technology

- To identify what devices can be used to take photographs and can use a digital device to take a photograph. (KNO)
- To summarise what makes a good photograph. (REA)
- To show that images can be changed and can use tools to change an image. (KNO)

Lent 1 – Programming A Robot Algorithms – Computer Science

- To describe a series of instructions as a sequence and discuss what happens when we change the order of instructions. (REA)
- To use logical reasoning to suggest the outcome of a program (series of commands) and explain that programming projects can have code and artwork. (REA)
- To design an algorithm and create and debug a program that I have written. (KNO)

Pentecost 1 – Creating Media Making Music – Information Technology

- To identify that there are patterns in music. (KNO)
- To discover how music is made from a series of notes. (REA)
- To create music for a purpose and review and refine my computer work. (KNO)

Pentecost 2 – Programming B Programming Quizzes – Computer Science

- To explain that a sequence of commands has a start and has an outcome. (KNO)
- To create a program using a given design and change a given design. (KNO)
- To create a program using my own design and can suggest how my project can be improved. (REA)

Lent 2 – Data Information Pictograms – Information Technology

- To recognise that we can count and compare objects using tally charts and know that objects can be represented as pictures. (KNO)
- To create a pictogram, select objects by attribute and make comparisons. (KNO)
- To explain how we can present information using a computer. (KNO)

YEAR 2

Lent 2 – Data Information Grouping Data – Information Technology

- To label objects and identify objects that can be counted. (REM)
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Lent 1 – Programming A Robot Algorithms – Computer Science

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YEAR 1

Lent 2 – Data Information Grouping Data – Information Technology

- To label objects and identify objects that can be counted. (REM)
- To describe objects in different ways and count objects with the same properties. (REM)
- To compare groups of objects and answer questions about a group. (KNO)

Lent 1 – Programming A Moving a Robot – Computer Science

- To combine four direction commands to make a sequence.
- To explain what a given command will do and act out the given word. (KNO)
- To plan a simple program and find more than one solution to a problem. (REM)

Advent 2 – Creating Media Digital Painting – Information Technology

- To describe what different tools do – including brushes, shapes and line tools. (REM)
- To make careful choices when painting a digital picture and explain why I chose the tools I used. (KNO)
- To use a computer on my own to paint a picture and compare this to a picture on paper. (KNO)

Advent 1 – Computing Systems and Networks Technology Around Us – Digital Literacy

- To identify technology in the classroom and around us in school and create rules for using technology responsibly. (KNO)
- To identify a computer and its main parts and use a mouse in different ways. (KNO)
- To know how to use a keyboard to type and edit text. (REM)

Through enhanced provision, children have the opportunity to explore a range of technology in their environment including, IWB, iPads (including cameras), role play phones, remote controls, Beebots.

Computational Thinking is also embedded within our activities and curriculum.