Computing – Digital Literacy (DL), Information Technology (IT), Computer Science (CS) and E-Safety (ES)

Curriculum Road Map Year EYFS

Nursery 2-3 Year Olds - Building Blocks

Children will explore cause and effect toys. Children will explore technology equipment within their play and develop their listening and attention skills. They will begin to learn how to follow simple instructions.

Building Blocks
Children build upon basic cause and effect and apply this for a desired effect.

Nursery 3-4 Year Olds - Building Blocks

Children will follow 2 step instructions.
Children will continue to use technology in their play for a desired effect. They will learn to use (with support) basic software programmable toys, such as bee-bots. This will include introducing the children to directional language.

What skills will we continue to build upon?
Children will build upon their communication skills in order to follow instructions

Why do we follow on with this unit?
Simple coding skills will be extended in the next term

Year R - Building Blocks

Children will learn how to use a simple app, iPad/interactive whiteboard within the classroom and explain how they can make them work. They will begin to use associated language e.g. app/log on/password. Children will navigate their way to an app and use the functions accordingly. Children will develop their fine motor skills to be able to use a range of tools for computing equipment safely, competently and confidently.

What skills will we continue to build upon?
To develop children's understanding of what a computer can do.

Computing – Digital Literacy (DL), Information Technology (IT), Computer Science (CS) and E-Safety (ES)
Curriculum Road Map Year 1

Autumn

E-Safety (ES)

We believe that e-safety should be part of daily discussions in classrooms and addressed whenever technology is used for a tool for teaching and learning. E Safety issues are embedded and flagged throughout our schemes of work and lesson plans. The unit explores key aspects of e-safety and digital citizenship to prime pupils to engage in smart and safe technology use and online behaviour.

Why do we follow on with this unit?
To introduce the computing scheme with the children having a knowledge of how to be safe on the internet.

What skills will we continue to build upon?
The children can apply these skills to their computing learning and practise being safe on the internet.

Spring

I Write – (CS, DL), I Draw (DL, IT), I Model (DL, IT), I Data (CS, IT)

In these units we want children to build up their skills with software that they may have not used yet. children will show an understanding that computers follow instructions in different ways. Children will have a good introduction to technology and how that technology works. Children will write sentences using a program and they will learn how to draw on a computing program. Children will have an introduction to modelling and an introduction to databases.

Why do we follow on with this unit?
To develop children's knowledge of how a computer works and how to navigate a computing software.

What skills will we continue to build upon?
To develop children's understanding of what a computer can do.

Summer

-I Algorithm (CS, DL), I Program Unit 1+2 (CS, IT)

Children will have an introduction to coding and programming and begin to use different programs to set out instructions and read those instructions while predicting an outcome. Children will show a good understanding about how a computer understands instructions. The children will be introduced to software such as Scratch which will be used across the year groups.

Computing – Digital Literacy (DL), Information Technology (IT), Computer Science (CS) and E-Safety (ES)

Curriculum Road Map Year 2

Autumn

E-Safety (ES)

We believe that e-safety should be part of daily discussions in classrooms and addressed whenever technology is used for a tool for teaching and learning. E Safety issues are embedded and flagged throughout our schemes of work and lesson plans. The unit explores key aspects of e-safety and digital citizenship to prime pupils to engage in smart and safe technology use and online behaviour.

Why do we follow on with this unit?
To introduce the computing scheme with the children having a knowledge of how to be safe on the internet.

Spring

I Search (DL, CS, IT), I Do Mail (DL, IT), I Program Unit 1 (DL, CS)

The children will have an introduction to email and learn the skills associated with sending and receiving emails. Another skill they will learn is about how we find things on the internet as well as retrieving information from the internet. They will receive an introduction to coding and programming set by our I program unit. They will be introduced to Scratch which is an informative App used for coding.

What skills will we continue to build upon?
The children can apply these skills to their computing learning and practise being safe on the internet.

Why do we follow on with this unit?
The children will build upon their knowledge of coding and follow on to the next unit. They will continue to build subject knowledge of the internet.

Summer

I Animate (DL, IT) and I Program Unit 2 (DL, IT)

The children will be introduced to stop frame animation which will show a different way in which computing can be used to create a short film. Children will have ownership of what they create. The I Program unit will build upon children's prior knowledge of coding and apply this to new software. Children will continue to develop their understanding of coding, algorithms and programming.

What skills will we continue to build upon?
To develop the children's skills on coding and apply them to other software.

Computing – Digital Literacy (DL), Information Technology (IT), Computer Science (CS) and E-Safety (ES)
Curriculum Road Map Year 3

Autumn

E-Safety (ES)

We believe that e-safety should be part of daily discussions in classrooms and addressed whenever technology is used for a tool for teaching and learning. E Safety issues are embedded and flagged throughout our schemes of work and lesson plans. The unit explores key aspects of e-safety and digital citizenship to prime pupils to engage in smart and safe technology use and online behaviour.

Why do we follow on with this unit?
To introduce the computing scheme with the children having a knowledge of how to be safe on the internet.

What skills will we continue to build upon?
The children can apply these skills to their computing learning and practise being safe on the internet.

Spring

I Connect (DL, CS, IT), I Network (CS) and I Data (IT)

Children will understand that many computers are connected. (example of school's computers) Children will build upon prior knowledge of the internet. Children will learn how to find and retrieve information from the internet (Search engines). Children will have an introduction to networking and knowing key parts of a computer. Children will understand advantages of a computer database. Children will demonstrate knowledge skills and understanding from this unit.

Summer

I Program Unit 1 (DL, CS) and I Simulate (CS, IT)

Children will learn about basic coding and how to program an animation that executes a sequence of statements. Children will program a sequence of instructions to create an effect. Children will show an understanding of algorithms and programs. Children will understand that computer simulations are guided by rules. Children will understand that simulations can help us understand difficult situations.

Why do we follow on with this unit?
Children will demonstrate a understanding of how a computer works and apply this to the new units of work.

What skills will we continue to build upon?
Children will build upon their knowledge of computers and learn new skills.

Computing – Digital Literacy (DL), Information Technology (IT), Computer Science (CS) and E-Safety (ES)
Curriculum Road Map Year 4

Autumn

E-Safety (ES)

We believe that e-safety should be part of daily discussions in classrooms and addressed whenever technology is used for a tool for teaching and learning. E Safety issues are embedded and flagged throughout our schemes of work and lesson plans. The unit explores key aspects of e-safety and digital citizenship to prime pupils to engage in smart and safe technology use and online behaviour.

Why do we follow on with this unit?
To introduce the computing scheme with the children having a knowledge of how to be safe on the internet.

What skills will we continue to build upon?
The children can apply these skills to their computing learning and practise being safe on the internet.

Spring

I Mail (IT, ES) and I Program Unit 1 (DL, CS)

Children will understand new ways to communicate and how we can communicate. Children will learn how to send and reply to emails. Children will learn these basic skills in order to apply them to later adult life. Children will understand how to program a sequence of instructions in programming language. Children will understand how to give commands and actions and how this will affect the software. Children will demonstrate an awareness of how to program an object.

Summer

I Program 3 + 4 (CS), I Data (IT) and I Animate (IT, DL)

Children will learn different ways in which to use coding and apply this to other areas of computing (Lightbot and Scratch). Children will continue to build their knowledge on coding and extend their learning further. Children will have an introduction to databases and understand that information can be stored as numbers, text and choices. Children will understand how to search a database for answers. Children will understand what an animation is and how to create an animation. Children will learn to storyboard and create their own animation.

Why do we follow on with this unit?
Children will build on knowledge through the I Program Units and continue to develop skills relating to coding. Children will also build upon knowledge of data and how it is represented on a computer.

What skills will we continue to build upon?
Children will build skills in relation to coding by applying coding skills to different software.

Computing – Digital Literacy (DL), Information Technology (IT), Computer Science (CS) and E-Safety (ES)

Curriculum Road Map Year 5 & 6

Autumn

E-Safety (ES)

We believe that e-safety should be part of daily discussions in classrooms and addressed whenever technology is used for a tool for teaching and learning. E Safety issues are embedded and flagged throughout our schemes of work and lesson plans. The unit explores key aspects of e-safety and digital citizenship to prime pupils to engage in smart and safe technology use and online behaviour.

Why do we follow on with this unit?
To introduce the computing scheme with the children having a knowledge of how to be safe on the internet

What skills will we continue to build upon?
The children can apply these skills to their computing learning and practise being safe on the internet.

Spring

I Draw (IT) and I Program Unit 1 (CS, DL)

Children will use digital tools to create images. Children will also use vector images that are made up of shapes and lines. Children will understand that vector images are constructed of layers and experiment with this. At the end of the unit, they will design and create vector images and evaluate and make improvements. Children will understand that computer programs contain graphics. They will use x and y coordinates and turns measured in degrees. Children will use conditional if statements. Children will understand that some variables can only be true or false(Boolean). Children will understand that programs can do different things if the boolean variable is true. Children will also use variables in programs.

Summer

I Model (IT), I Web (DL, CS, IT), I Crypto (CS, IT) and I Program Unit 2 (CS, DL)

Children will understand the difference between 2D and 3D shapes. They will also become familiar with basic 3D modeling tools. Children will understand that graphical models can easily be changed and use features of graphical modeling software to develop a 3D model. The children will evaluate and improve the 3D model. Children will understand that the world wide web is one of the services offered on the web. They will also know that websites are written in HTML code. Children will read basic HTML code and finally understand how HTML provides structure for web content. Children will understand that messages can be sent and received secretly. Children will learn to encrypt and decrypt simple messages. Children will understand that messages can be sent electronically over distances and understand that data can be transmitted as binary. Children will understand the algorithm of a simple shift cipher and use frequency analysis to decipher encrypted text. Finally, children will understand the importance of cryptography historically and today**.**

Why do we follow on with this unit?
Children will continue to explore computer programs containing graphics. Following on from using digital tools they children will use these skills in Imodel.

What skills will we continue to build upon?
Children will continue to build upon coding skills and apply these skills to new software.