



# Year Yew Tree Primary School

## COMPUTING CURRICULUM OVERVIEW

### RESPONSIBILITY:

We are responsible for what we do – if it's to be, it's up to me! We are prepared, organised and recognise consequences of our actions on ourselves and others.

### RESPECT:

We are respectful by treating others how we wish to be treated – using manners, being thoughtful, kind and celebrating diversity

### COURAGE:

We are brave and we take chances. We develop resilience to keep going even when things are tough. We face our fears and we are not afraid to make mistakes.

### AMBITION:

We believe we can achieve in anything that we put our mind to. We aim high, love learning, have a positive 'can do' attitude and aim to be the best!






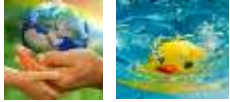


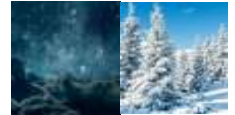


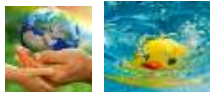
### PRIDE:













We are proud of who we are and where we are from. We believe in our abilities and celebrate our success. We are a family at Yew Tree!

Intent	Curriculum Aim	To offer a broad, balanced & inclusive curriculum which acts as a starting point to stimulate awe, wonder & curiosity and which encompasses 'Learning Without Limits' so that children are empowered and able to achieve their full potential.	<b>What does this mean for Computing</b> <ul style="list-style-type: none"> <li>• High quality computing in our curriculum is designed to equip pupils to use computational thinking and creativity to understand and change the world.</li> <li>• The core of our computing curriculum is computer science, in which pupils are taught the principles of information and computation, how digital systems work and how to put this knowledge to use through programming.</li> <li>• Pupils will build on their computing knowledge and understanding to use information technology to create programs, systems and a range of content.</li> <li>• Our pupils will become digitally literate able to use, and express themselves and develop their ideas through, information and communication technology</li> <li>• We aim to ensure all pupils can understand and apply the basic fundamental principles and concepts of computer science.</li> <li>• Pupils will be able to analyse problems in computational terms, and will be given repeated practical experience of writing computer programs in order to solve such problems.</li> </ul>
	Curriculum Objectives	<ul style="list-style-type: none"> <li>• To develop the child as a responsible and confident citizen who is prepared to live in an ever-changing and diverse world.</li> <li>• To develop the child as an individual who embraces challenge and makes the most of every opportunity to learn.</li> <li>• To develop the child as a life-long learner who has a range of skills, which ensure a high level of achievement.</li> </ul>	



# Yew Tree Primary School Computing Key Knowledge Overview

Term Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	TOPIC 1	TOPIC 2	TOPIC 3	TOPIC 4	TOPIC 5	TOPIC 6
<b>YN</b> Cycle A	<b>Me and My Community and Exploring Autumn</b> 	<b>Once Upon a Time and Sparkle and Shine</b> 	<b>Starry Night and Winter Wonderland</b> 	<b>Dangerous Dinosaurs and Puddles and Rainbows</b> 	<b>Sunshine and Flowers and Shadows and Reflections</b> 	<b>Big Wide World and Splash</b> 
<p>Notice things that people do on digital devices, such as playing games and communicating with others (Communication and language)            Use a variety of digital technology, such as smartphones and tablets.            Begin to talk about what they would do if they saw something online that makes them sad, scared or worried (PSED).            Input simple instructions, with support, into floor robots and other technological toys .            Operate technological toys, including floor robots.            Be aware of a range of computing hardware (Communication and Language).            Use a variety of digital technology, such as technological toys and mobile devices.</p>						
<b>YR</b> Cycle A	<b>Me and My Community and Exploring Autumn</b> 	<b>Once Upon a Time and Sparkle and Shine</b> 	<b>Starry Night and Winter Wonderland</b> 	<b>Dangerous Dinosaurs and Puddles and Rainbows</b> 	<b>Sunshine and Flowers and Shadows and Reflections</b> 	<b>Big Wide World and Splash</b> 
<p>Explain that digital technology is used in the home and at school for communication (Communication and Language)            Ask to use digital devices to create work in a safe and responsible way            Describe what they would do if they saw something online that made them sad, scared or worried. They should tell an adult straight away (PSED).            Input simple instructions to make technological toys operate, including floor robots and onscreen sprites (Communication and Language).            Use age-appropriate software independently to create images and record sounds and videos (Communication and Language).            Recognise that digital work can be saved, shared and accessed from other device.</p>						

<p><b>YN</b> Cycle B</p>	<p><b>Let's Explore</b></p> 	<p><b>Marvellous machines</b></p> 	<p><b>Long Ago</b></p> 	<p><b>Ready Steady grow</b></p> 	<p><b>Animal Safari</b></p> 	<p><b>On the Beach</b></p> 
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<p><b>Y1</b></p>	<p><b>Just Paint and Write – Pt 1 – All about me</b> Information Technology</p> <p>Children will create a number of drawings and text files, save them and then use them in a jit5 “Write” and “paint” software to produce pieces of work entitled ‘All about me’</p> <p><b>Key Skills</b></p> <ul style="list-style-type: none"> <li>- Use a range of tools within paint - change the brush size, colour, and texture to draw pictures.</li> </ul>	<p><b>Collect Photographs and Paint Pictures – Pt 2</b> Information Technology</p> <p>By the end of this topic, children will create a digital portfolio using Photographs, JiT5 ‘Write’, ‘Paint’ and ‘Mix’ tools.</p> <p><b>Key Skills</b></p> <ul style="list-style-type: none"> <li>- With increasing independence, type on the keyboard and begin to use simple tools to change the appearance</li> </ul>	<p><b>Simple Algorithms and Programs Part 1</b> Computer Science</p> <p>Demonstrate logical thinking to support algorithmic thinking, prediction and debugging.</p> <p>Encode algorithms to a program to control a floor turtle. Activity types are unplugged and physical computing.</p> <p><b>Key Skills</b></p>	<p><b>Gathering Data and Creating Charts</b> Information Technology</p> <p>Children will be using JiT5 Chart and Pictogram to develop an understanding of data from a chart and present work in Mix.</p> <p>Children will be able create their own graphs and charts using data they have gathered.</p> <p><b>Key Skills</b></p>	<p><b>Create Simple Programs Part 2</b> Computer Science</p> <p>By the end of this topic, children will use logical thinking to evaluate algorithms and route-based programs in JiT5 Turtle to improve outcomes.</p> <p><b>Key Skills</b></p> <ul style="list-style-type: none"> <li>- To give precise instructions and follow instructions given to</li> </ul>	

	<p>Know how to clear a mistake. Save as a paint file, an image, and stamp</p> <ul style="list-style-type: none"> <li>- Become familiar with typing on a keyboard and begin to use simple tools to change the appearance of the text. Upload an image as a background</li> <li>- Independently use paint tools, including adding relevant stamps, to build up a picture</li> <li>- Know how to add a text stamp and customise the text before adding to the paint file</li> <li>- With increasing independence, type on the keyboard and begin to use simple tools to change the appearance of the text. Upload an image as a background</li> </ul>	<p>of the text. Upload an image as a background</p> <ul style="list-style-type: none"> <li>- Know what makes a good photograph composition and how to use a digital camera to take a photograph. Compose and capture own photographs</li> <li>- Independently use a range of tools within paint – change the brush size, colour and texture to draw pictures. Know how to clear a mistake</li> <li>- Know that photographs can be changed after taking them using image editing tools to change the colour effect and overall appearance of an image</li> <li>- Create a compilation of work and explain the tools used to create each piece of work</li> </ul>	<ul style="list-style-type: none"> <li>- To understand, write and execute an algorithm, debugging where necessary</li> <li>- To understand what sequence means and to follow an algorithm in order</li> <li>- Understand how to control a floor-based robot, write an algorithm and convert to code using route-based programming</li> <li>- Use logical thinking to predict the position of a floor robot whilst creating a route-based program that achieves a specific outcome. During execution, debug code where necessary</li> </ul>	<ul style="list-style-type: none"> <li>- Know what the term data means and how we can collect data and present it in the form of a tally chart and pictogram</li> <li>- Collect data to create a tally chart. Use the chart to create a pictogram and explain what the pictogram shows by interpreting the data</li> <li>- Gather data and present as a pictogram. Know that data can be represented in other ways than using a tally chart or pictogram. Use the pictogram to create a block chart</li> </ul>	<p>achieve a specific outcome</p> <ul style="list-style-type: none"> <li>- Use logical thinking to predict the position of a floor robot whilst creating a route-based program that achieves a specific outcome. During execution, debug code where necessary</li> <li>- Create and debug simple programs to control an onscreen sprite using route-based programming to achieve a specific outcome</li> <li>- Create and debug simple programs to control an onscreen sprite using route-based programming to achieve a specific outcome. Use logical thinking to evaluate and improve the program</li> </ul>
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**Digital Literacy (Project Evolve)**

Children will be learning about becoming good online citizens. They will cover 2 areas of digital literacy throughout the year:

- Privacy and Security
- Copyright and Ownership
- Other skills will be covered through PSHE lessons

In addition, basic computer skills; including logging in/out and using a keyboard will begin to be developed throughout In addition, basic computer skills; including logging in/out and using a keyboard will begin to be developed throughout this topic.

**Key Skills**

- Explain how passwords are used to protect information, accounts and devices

	<ul style="list-style-type: none"> <li>Understand what is meant by personal information and explain why it is important to speak to an adult before sharing personal information online <ul style="list-style-type: none"> <li>Explain why work created using technology belongs to the individual <ul style="list-style-type: none"> <li>Save work under a suitable name</li> </ul> </li> </ul> </li> <li>Understand that work created by others does not belong to them even if they save a copy</li> </ul>				
<p><b>Y2</b></p>	<p><b>Ways to Present Information</b> Information Technology</p> <p>By the end of this topic, pupils will learn how digital images can be used to create posters. They will also learn about people that use these skills in their jobs such as graphic designers and those that work in marketing.</p> <p>Children will be designing assets using JiT5 'Paint', 'Write' and 'Animate' tools.</p> <p><b>Key Skills</b></p> <ul style="list-style-type: none"> <li>Search for appropriate images online and use paint tools to create additional features to design a digital picture that tells/explains a specific story or process</li> <li>Use digital pictures created as backgrounds for writing. Use the mouse cursor to select text then use text editing tools to change the appearance of the text</li> <li>Know that animation is another method to present information. Create multiple frames that contain images with</li> </ul>	<p><b>Collecting, Organising and Presenting Data</b> Information Technology</p> <p>Develop a better understanding of interpreting data from a chart – using JiT 'Chart' and 'Pictogram' tools. Gather opinions using the j2vote software and present the findings.</p> <p><b>Key Skills</b></p> <ul style="list-style-type: none"> <li>Know what a multiple-choice question is and why they are a good way of collecting data from lots of people. Answer multiple-choice questions for the purpose of collecting data</li> <li>Know that there are other ways to gather data by asking questions that are not multiple-choice by using yes/no questions. Design multiple-choice questions and yes/no questions to gather data</li> <li>To create charts from information in tally tables and interpret the data from the chart</li> <li>Know what characteristics are and</li> </ul>	<p><b>Sequencing Simple Algorithms and Programs</b> Computer Science</p> <p>Sequences are the main logical structure of algorithms or programs. Children will predict and investigate route-based programs to answer numerous challenges. Some of the tasks will require the children to modify route-based programs and make their own route-based programs.</p> <p><b>Key Skills</b></p> <ul style="list-style-type: none"> <li>Provide clear and precise verbal instructions in a sequence for another person to listen carefully to and follow to complete a given task. Begin to use logical reasoning to predict outcomes to design a program to control movement</li> <li>Use logical reasoning to follow a program and identify what the outcome will be and compare the prediction to the program outcome</li> </ul>	<p><b>Create a Topic Based e-book</b> Information Technology</p> <p>By the end of this topic, pupils will have created their own e-book based on the current topic.</p> <p>Children will be able use JiT tools to create an e-book in JiT Mix tool – include a mixture of text, painting and photos within a variety of page layouts.</p> <p><b>Key Skills</b></p> <ul style="list-style-type: none"> <li>Make appropriate choices on the layout and presentation of a title page. Include an image – either digital photo or a drawing and add text</li> <li>Use digital pictures as backgrounds for writing. Use the mouse cursor to select text then use text editing tools to change the appearance of the text</li> <li>Use paint and write programs to design and create content, making use of the various tools to produce paint files, stamps and write files.</li> </ul>	<p><b>Art of Animation</b> Information Technology</p> <p>By the end of this topic, children will be able design animations that present information.</p> <p>Design animations that present information about oceans. Each lesson assets will be drawn using JiT5 'Paint' as well as adding backgrounds and shared images to combine and create an effective animation.</p> <p><b>Key Skills</b></p> <ul style="list-style-type: none"> <li>Upload an image from shared files to a paint file and use the fill tool to add colour to certain areas of the image. Save as a paint file and as an image</li> <li>Upload image saved to animate, duplicate frames and add ABC.. stamps to particular frames, using them as labels to identify the continents and oceans, making sure that the frames last long enough for the information to be read before moving on</li> </ul>

	<p>each image being slightly different from the previous one</p>	<p>how to use them to sort groups of objects by using yes/no questions. Use a branching database to answer questions</p> <ul style="list-style-type: none"> <li>- Understand that mistakes can be made when collecting and organising data. If the mistakes are not found it makes the data unreliable</li> </ul>	<ul style="list-style-type: none"> <li>- Using logical reasoning to predict outcomes, identify specific instructions within a program that need to be changed and replace with new instructions that will achieve the required outcome</li> <li>- Create algorithms and programs using a set number of commands to achieve specific outcomes</li> <li>- Follow a program in reverse to predict the starting position from a given finish position</li> </ul>	<p>Combine work in a digital portfolio</p>	<p>to the next labelled frame</p> <ul style="list-style-type: none"> <li>- Create a paint project and use a variety of tools to create a scene and save as a paint file and an image</li> <li>- Create individual paint projects and use a variety of tools to create objects related to the scene and save each one as a paint file and a stamp</li> <li>- Create an animation using onion skinning as the technique when working on the next frame to show movement. Upload the image of the scene as a background, stamps created in Paint and stamps saved in shared files to tell a story</li> </ul>
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**Digital Literacy  
(Project Evolve)**

Children will be learning about becoming good online citizens. They will cover 3 areas of digital literacy throughout the year:

- Privacy and Security
- Copyright and ownership
- Managing Online Information

In addition, basic computer skills; including logging in/out and using a keyboard will continue to be developed throughout this topic.

**Key Skills**

- Know who to ask before sharing things online
- Understand how online information can be seen by others
  - Use simple keywords in a search engine
- Understand why some information I find online may not be true
  - Recognise the importance of passwords
- Other skills will be covered through PSHE lessons

**Y3**

**Organising, Creating and Presenting**  
Information Technology

Use 3 types of multi-media: text, image and animation to create, organise and present content effectively, considering layout choices and appropriate presentation styles depending on purpose

**Key Skills**

- Know how to add text, borders, and images, making appropriate choices regarding position, size, colour and theme
- Know how to present work clearly and for appeal/interest. Use tools to layer and arrange images and text that can be clearly read/seen
- Take photographs and mask the background to make the image transparent. Upload and layer onto other images
- Create an animation using onion skinning technique and save as a GIF. Embed the GIF into another document

**QR Codes**  
Information Technology

Children will be exploring what QR codes are and how they are created.

By the end of this topic, children will record sound files and create QR codes to allow others to access and listen to the sound files.

**Key Skills**

- Create QR codes using a QR code generator. Understand how the QR code links to the location of where the information is stored
- Scan QR Codes to access information easily. Understand that each QR code is unique and can only link to one location/information source
- Record an audio file and create a QR code to share its location with others
- Create QR codes that link to different media e.g. websites, audio files, notes to provide easily accessible information

**Write a Program Part 1 – block-based sequence**  
Computer Science

This unit will look at debugging sequences of code. Use j2Code tool 'Visual' to create a scene with two characters having a conversation/telling a joke.

**Key Skills**

- Decompose a task into smaller parts and give precise instructions in sequence to complete a task
- Know how to use block-based programming, using Motion blocks, to move a sprite forward and backwards
- Read and follow a block-based program to identify and correct errors that prevent the desired outcome from being achieved
- Use Look blocks in sequence using block-based programming and specify a time to display the look before changing to another look block command
- Use delay commands from the Control blocks to structure the

**Create a Branching Database and Interrogating Simple Databases**  
Information Technology.

Understand what a database is and how frequently we use them in life. Use JiT Branch to create and use a branching database, focusing on questions to ask to uniquely identify objects/people. Use j2Data to interrogate a simple database. Create a j2e5 file to evidence screen captures of the searches and to reflect on learning.

**Key Skills**

- Know what characteristics are and how to use them to sort groups of objects by using yes/no questions. Use a branching database to answer questions
- Know that yes/no questions need to be ordered carefully when grouping objects to create the structure for a branching database
- Know the term 'database' and how they are used to store and organise data using key characteristics

**Write a Program Part 2 – Drawing Shapes**  
Computer Science

Complete some 'unplugged activities' (activities without a computer) to improve concepts of debugging, logical reasoning. Use j2Code tool 'Visual'. Create the code in Visual to draw simple shapes and patterns. Introduce pupils to repetition in code.

**Key Skills**

- Use logical reasoning to follow and give precise instructions, including identifying errors and correcting them
- Use sequencing to create algorithms and identify patterns when drawing a simple polygon. Make the algorithm more efficient by using repetition where patterns have been identified.
- Use sequencing to create algorithms and identify patterns when drawing a more complex polygon. Make the algorithm more efficient by using repetition where patterns have been identified.

			<p>sequence to achieve the desired timing outcomes</p> <ul style="list-style-type: none"> <li>- Identify inputs and outputs within a program. Use inputs to trigger events within the code</li> </ul>	<ul style="list-style-type: none"> <li>- Use tools within a database to order and answer questions about the data using simple searches</li> <li>- Develop search techniques to match data from more than one field using 'AND' and 'OR' to refine results</li> <li>- Know that a database may contain errors and can affect search results</li> </ul>	<ul style="list-style-type: none"> <li>- Encode algorithm to block-based programming</li> <li>- Use coding blocks that draw single polygons and embed these within a nested loop to extend the use of repetition to draw repeated shape patterns</li> </ul>
	<p><b>Digital Literacy (Project Evolve)</b></p> <p>Children will be learning about becoming good online citizens. They will cover 3 areas of digital literacy throughout the year:</p> <ul style="list-style-type: none"> <li>- Self-Image and Identity</li> <li>- Privacy and Security</li> <li>- Copyright and ownership</li> </ul> <p><b>Key Skills</b></p> <ul style="list-style-type: none"> <li>- Describe simple strategies for creating and keeping passwords private</li> <li>- Give reasons why someone should only share information with people they choose and can trust <ul style="list-style-type: none"> <li>- Explain why copying someone's work from the internet without permission isn't fair <ul style="list-style-type: none"> <li>- Other skills will be covered through PSHE lessons</li> </ul> </li> </ul> </li> </ul>				
<b>Y4</b>	<p><b>Multi-media Fact File Information Technology</b></p> <p>Create a researched based fact file based upon a topic being studied. Plan and create fact files pages that are hyperlinked from the home page include a range of multimedia – images, sounds, images and video</p>	<p><b>What is Computer Technology? Computer Science</b></p> <p>Looks at computers to understand what a computer is made up of, how the components all work together to provide access to the technology we use today.</p> <p><b>Key Skills</b></p>	<p><b>Scratch Programming from Algorithms to Code Computer Science</b></p> <p>This unit will use Scratch 3. Pupils will use various inputs and output to make this move, change size or play sounds. They will also learn how to use 'broadcast' as a conditional input.</p> <p><b>Key Skills</b></p>	<p><b>Creating and Interrogating Simple Databases Information Technology</b></p> <p>Discuss how information is collected and organised for use in a database. Design a database, considering audience and purpose. Interrogate data contained within a database</p>	<p><b>On the Move with Programming Computer Science</b></p> <p>Using Scratch 3 to introduce movement blocks to animate sprites, changing backgrounds and using conditional statements If..Then.. Reinforcing sequence, repetition, and selection in programming.</p>

	<p style="text-align: center;"><b><u>Key Skills</u></b></p> <ul style="list-style-type: none"> <li>- Know how to present information on a page using text and images. Plan a non-linear presentation, making appropriate choices for layout and content to present the information clearly. Be aware of copyright issues surrounding the use of images online</li> <li>- Know and use different ways of presenting information to make the content more engaging and accessible through the use of sound files and embedded videos</li> <li>- Create multiple pages for their presentation and use hyperlinks to link them together as detailed in their planning to create a non-linear presentation</li> </ul>	<ul style="list-style-type: none"> <li>- To understand what a computer is and to know the difference between hardware and software, and to differentiate between input and output devices</li> <li>- To understand what the main parts of a computer are called and what their function is</li> <li>- Know where and how internal components of a computer, such as the CPU, RAM and hard drive are located and how they work together to process and store data</li> <li>- Know how data is stored and processed as binary digits in the form of bytes by the CPU and RAM. Use ASCII Code to decode bytes</li> <li>- Know how simple binary image data is stored and processed by the CPU and RAM, and displayed on screen in the form of pixels</li> <li>- Know that coloured images have more data per pixel than black and white images and they are saved as larger data files</li> </ul>	<ul style="list-style-type: none"> <li>- Edit a sprites costume using the drawing tools and create a program using block-based coding to change the costumes of the sprite using the Looks command blocks and a loop and delay from the Control command blocks</li> <li>- Programme several sprites that each have a different Event block that controls the start of each program. Include a variety of Looks and Motion command blocks to change the appearance and position of each of the sprites, using Control command blocks to delay between changes where necessary</li> <li>- Programme several sprites that each have a variety of Looks and Music command blocks to change the appearance and audio played for each sprite. Include two forms of repetition from the Control command blocks- a count-controlled loop and a continuous loop to control the number of iterations that occur</li> <li>- To use broadcasting as a method to direct the timing of events within code to trigger a script to run</li> </ul>	<p>using the sort and search functions.</p> <p style="text-align: center;"><b><u>Key Skills</u></b></p> <ul style="list-style-type: none"> <li>- To locate data organised in a paper-based record card database, identifying fields and data to answer specific questions</li> <li>- Design a questionnaire using a range of data types and open and closed questions to gather useful data that is fit for purpose to solve a given problem</li> <li>- Use an electronic database to look at how data can be recorded. Enter data to create records under appropriate field names</li> <li>- Use an electronic database to examine how data can be viewed, sorted and searched for</li> <li>- Create and use charts to visually compare data and answer questions about it</li> </ul>	<p style="text-align: center;"><b><u>Key Skills</u></b></p> <ul style="list-style-type: none"> <li>- Control a sprite to move on the stage. Adding code so a sprite will go to an exact position on the stage</li> <li>- Control a sprite to move with the mouse pointer</li> <li>- Control a sprite to move using the arrow keys, changing costumes and the direction that the sprite faces to improve the aesthetics of movement</li> <li>- Know that when selection/conditional statements if...then...are used a decision is made based on inputs received that determine which output is achieved</li> <li>- Design and create a simple maze game that includes controlling the movement of a sprite with the mouse or arrows keys, using selection to detect maze walls/objects that trigger another event</li> </ul>
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**Digital Literacy  
(Project Evolve)**

Children will be learning about becoming good online citizens.  
They will cover 5 areas of digital literacy throughout the year:

- Privacy and Security
- Copyright and ownership
- Online Relationships
- Online Reputation
- Managing Online Information

**Key Skills**

Describe how you can have safe and fun experiences in different online social environments

Know how to find out information about others by searching online

Analyse information to make a judgement about its accuracy

Describe strategies for keeping personal information private

Explain what is meant by fake news

- Other skills will be covered through PSHE lessons

**Y5**

**Infographics**  
Information Technology

Develop an understanding of what makes infographics a popular choice to present and share information. Develop an understanding of colour, styling, enhanced editing tools and the use of charts/graphs/tables to effectively present information.

They will research and select key information to present as an infographic in J2e5

**Key Skills**

- Know that an infographic is a creative way of presenting key information through text, images, tables, charts, and graphs

**Computers for  
Communication and  
Collaboration**  
Computer Science

Children will learn how computers are used for communication and collaboration. The changes of technology over time will be explored and the people that influenced these changes.

**Key Skills**

- Know that the Internet is required to send an email and explain how email software works and what information is required to successfully send an email

**Programming Making Games  
(12 Lessons)**  
Computer Science

Develop logical thinking and coding using Scratch 3 to make a range of computer games.

**Key Skills**

- Use sequence, repetition, and selection to link and control the movement of one sprite with another when conditions are met using sensing blocks related to sprites or colours as an input
- Use sequence, repetition, and multiple selection blocks to control the movement of a sprite when conditions are met using a variety of keyboard keys as inputs to control a sprite
- Use sequence, repetition, and selection. Create own variables and include them within a program to keep track of a score
- Use sequence, repetition, and selection. Include the use of operators to allow for a

**Creating and Using  
Spreadsheets**  
Information Technology

Use and create spreadsheets to support solving mathematical problems, use simple formulae to carry out calculations and answering what if type questions. Present information in the form of graphs where required.

**Key Skills**

- Organise data into columns and rows to create own data sets and apply formulae using cell references that include a range of cells to calculate data
- Use a spreadsheet to answer questions and identify that changing inputs will change the output of a calculation where formula is used

	<ul style="list-style-type: none"> <li>- Know how colour can be used to enhance ways of presenting information, making careful choices regarding legibility and the intended effect on mood and associations</li> <li>- Make choices about the style of text and images to use. Understand about copyright issues on images and abide by licences</li> <li>- Organise and present information in the style of an infographic.</li> </ul>	<ul style="list-style-type: none"> <li>- Know that the Internet is required to send instant or direct messages and explain how they are different to other lines of communication such as email</li> <li>- Know that a wiki is designed for collaboration and can be edited by all users. Explain why being discerning in evaluating the content of a wiki is required when using it as a source of information</li> </ul>	<p>range of values to be included under the selection/conditional blocks</p> <ul style="list-style-type: none"> <li>- Use sequence, repetition, and selection to create procedures and sub procedures. Use procedures effectively, as part of abstraction, to help simplify complex code</li> </ul>	<ul style="list-style-type: none"> <li>- Create a spreadsheet by organising data into columns and rows using appropriate headings and create simple formulae using the four basic maths operations (+, -, x and ÷) using cell references where appropriate to calculate the data to model and answer questions</li> <li>- Create a spreadsheet by organising data into columns and rows using appropriate headings and create formulae, including minimum, maximum and average, using cell references to calculate the data</li> <li>- Design a spreadsheet to model a real-life problem using appropriate formulae using cell references to calculate data. Create graphs to display data to evaluate results in comparison to the problem being modelled</li> </ul>
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**Digital Literacy**  
(Project Evolve)

Children will be learning about becoming good online citizens. They will cover 3 areas of digital literacy throughout the year:

- Privacy and security
- Managing Online Information
- Copyright and ownership

**Key Skills**

- Know when and why you should be 'sceptical' when using online technology
  - Explain what is meant by the term 'stereotype'
- Explain what a strong password is and demonstrate how to create one
  - Explain what app permissions are and give some examples
  - Other skills will be covered through PSHE lessons

**Y6**

**The Internet and the World Wide Web**  
Computer Science

Understand what the internet is and discuss the services it provides. Focus in on the world wide web as a service and how data and information travels around the network. Consider how search engines help to find information and how to improve search techniques when looking for information online.

**Key Skills**

- To create a drawing and text that explains what the Internet and WWW are
- Know what is involved in the process of requesting information from the Internet, how it is received by relevant components and returned to the user's device
- Know how data is broken into packets to travel from one location to another on the Internet when requested
- Know how search engines work to index web pages and rank results returned to the user

**Understanding Big Data**  
Information Technology

Children will find out what big data is, the impact on privacy and security of data, and how data is used by others in both authorised and unauthorised ways.

**Key Skills**

- Understand how our data can be actively and passively collected, stored, and used by others when we connect to the Internet
- Know that data can't be collected by companies without prior consent from the user. Understand the importance of terms and conditions and a user's 'choice' to allow data to be collected, stored, and shared
- Know how data can be accessed and used without user consent or knowledge through hacking. Understand that hacking is a criminal offence and ethical hacking is not
- Know that a cookie is used by websites to remember you, your preferences, and your habits online

**Game Design**  
Computer Science

Using Scratch 3 to effectively plan, design, and build complex code that uses pseudocode, cloning and conditional operators (Boolean).

**Key Skills**

- To know what Boolean Logic is and demonstrate how to use it with If Then Else blocks
- Use selection/conditional statements if...then...else. Include variables and operators to control conditions
- Create own variables and use cloning to make a copy of a sprite and its script which runs independently of the original. Include broadcasting to control events
- Use sequence, repetition, and selection to design a program to create a game that matches a design brief. Create a user manual for others to follow

**Artificial Intelligence and Machine Learning**  
Information Technology

Explore real world applications that use Artificial Intelligence (AI) and Machine Learning (ML) and reflect on its potential for the future of different industries and job roles that may not yet exist. Students will learn how to create their own Smart Classroom

**Key skills**

- Know how to be discerning in evaluating digital content showing an awareness of misinformation and disinformation
- Know how artificial intelligence and machine learning works using big data to learn from
- Understand artificial intelligence and machine learning and how it benefits others
- Using IBM Watson train a Smart Assistant to switch devices on/off e.g. a lamp and a fan using AI and ML

**Analyse and Interpret Data Using Spreadsheets**  
Information Technology

Create spreadsheets that are fit for purpose and support the user in finding the answers to problems by modelling real life situations. Consider layout options to improve the user experience and create complex formula, that uses brackets, to carry out two step calculations.

**Key Skills**

- Create formulae using cell references, including a range of cells to produce calculated data
- Create formulae using the four basic maths functions (+, -, x, ÷) and cell addresses where appropriate, using brackets to order mathematical operations
- Apply appropriate number and text formats to cells. Remove and add data to a spreadsheet and adjust formulae where required. Use the spreadsheet model to answer questions that model real-life events
- Create a spreadsheet by organising data into

	<ul style="list-style-type: none"> <li>- Know how to effectively use search terms and read the anatomy of a web address to find more accurate and relevant sources of information on the web</li> </ul>				<p>columns and rows using appropriate headings and create simple formulae using the four basic maths operations (+, -, x and ÷) using cell references where appropriate to calculate the data to model and answer questions</p> <ul style="list-style-type: none"> <li>- Add data to a pre-populated spreadsheet and use formulae, using cell addresses and cell ranges where appropriate to model real-life scenarios and answer questions</li> </ul>
	<p style="text-align: center;"><b>Digital Literacy</b> (Project Evolve)</p> <p style="text-align: center;">Objectives 2, 4, 5 and 6 are covered within Big data unit</p> <p style="text-align: center;">Children will be learning about becoming good online citizens. Throughout the year they will look at 1 area of digital literacy:</p> <ul style="list-style-type: none"> <li>- Copyright and ownership</li> </ul> <p style="text-align: center;"><b>Key Skills</b></p> <ul style="list-style-type: none"> <li>- Demonstrate the use of search tools to find and access online content which can be reused by others.</li> <li>- Demonstrate how to make references to and acknowledge sources I have used from the internet. <ul style="list-style-type: none"> <li>- Other skills will be covered through PSHE lessons</li> </ul> </li> </ul>				