



# Orton Wistow Primary School – Curriculum Plan







Subject: Computing





Year : 5

Term : Autumn

Vocabulary	Knowledge What children will know	Understanding What children will understand	Skills What children will be able to do																		
Define the word and include etymology if useful.	<table border="1"> <tr> <th data-bbox="667 565 779 597">Learning</th> <th data-bbox="779 565 942 597">Teaching</th> <th data-bbox="942 565 1096 597">Assessment</th> </tr> <tr> <td data-bbox="667 597 779 625">Remembering</td> <td data-bbox="779 597 942 625">Telling</td> <td data-bbox="942 597 1096 625">Testing</td> </tr> </table>	Learning	Teaching	Assessment	Remembering	Telling	Testing	<table border="1"> <tr> <th data-bbox="1113 565 1257 597">Learning</th> <th data-bbox="1257 565 1413 597">Teaching</th> <th data-bbox="1413 565 1566 597">Assessment</th> </tr> <tr> <td data-bbox="1113 597 1257 625">Practising</td> <td data-bbox="1257 597 1413 625">Coaching</td> <td data-bbox="1413 597 1566 625">Observing</td> </tr> </table>	Learning	Teaching	Assessment	Practising	Coaching	Observing	<table border="1"> <tr> <th data-bbox="1583 565 1728 597">Learning</th> <th data-bbox="1728 565 1883 597">Teaching</th> <th data-bbox="1883 565 2037 597">Assessment</th> </tr> <tr> <td data-bbox="1583 597 1728 625">Reflecting</td> <td data-bbox="1728 597 1883 625">Facilitating</td> <td data-bbox="1883 597 2037 625">Evaluating</td> </tr> </table>	Learning	Teaching	Assessment	Reflecting	Facilitating	Evaluating
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Computer Science-2Code																					
<p><b>Action</b> - Types of commands, which are run on an object. They could be used to move an object or change a property.</p> <p><b>Alert</b> - This is a type of output. It shows a pop-up of text on the screen.</p> <p>Algorithm - a precise step by step set of instructions used to solve a problem or achieve an objective.</p> <p><b>Bug</b> - A problem in a computer program that stops it working the way it was designed.</p> <p><b>Code Design</b> – Design what a program will look like and what it will do.</p> <p>Command - A single instruction in a computer program.</p> <p><b>Control</b> - These commands determine whether parts of the program will run, how often and sometimes, when.</p> <p>Debug/Debugging - Looking for any problems in the code, fixing and testing them.</p> <p><b>Design Mode</b> - Used to create the look of a 2Code computer program when it is run.</p> <p><b>Event</b> – Something that causes a block of code to be run.</p> <p>Get Input - This puts the text that a user types into the computer’s temporary memory to be used to control the program flow.</p> <p><b>If</b> - A conditional command. This tests a statement. If the condition is true, then the commands inside the block will be run.</p>	<ul style="list-style-type: none"> <li>Children will know that programs can be designed to simulate a physical system (traffic lights for example)</li> <li>Children will know that a variable can be used for numbers or letters</li> <li>Children will know how to make a counter appear on the screen (print to screen function)</li> <li>Children will know how to make a playable and competitive game using the blocks they have learnt</li> <li>Children will know that the game will include variables, if/else statements and repeats to achieve the desired effect</li> <li>Children will know that codes can be written which allow links to other websites.</li> </ul>	<ul style="list-style-type: none"> <li>Children will understand which features of a situation are important to include in a code when creating one to simulate a physical system.</li> <li>Children understand that a game is ‘playable’ when the code allows it to work in the desired way and the user can enjoy the experience.</li> <li>Children will understand that a game is competitive when there is a goal or target for the player to achieve</li> <li>Children will understand that any button on a website that takes the user to another web page has code sitting behind it that tells the device where to go (this includes the web address)</li> </ul>	<ul style="list-style-type: none"> <li>Children can use sketching to design a program and reflect upon their design.</li> <li>Children can create code that conforms to their design.</li> <li>Children can select the relevant features of a situation to incorporate into their simulation by using decomposition and abstraction.</li> <li>Children can explain what a variable is in programming.</li> <li>Children can set/change the variable values appropriately.</li> <li>Children know some ways that text variables can be used in coding.</li> <li>Children can create a game that has a timer, score pad, variables and loops using the if/else statements</li> <li>Children can use their coding schools to write a code that links to another purple mash page.</li> </ul>																		

									
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<p><b>If/Else</b> - A conditional command. This tests a statement. If the condition is true, then the commands inside the 'if block' will be run. If the condition is not met, then the commands inside the 'else block' are run. Input - Information going into the computer. Can include moving or clicking the mouse, using the keyboard, swiping and tilting the device.  <b>Output</b> - Information that comes out of the computer e.g. sound.  <b>Object</b> - An element in a computer program that can be changed using actions or properties. In 2Code, buttons, characters and vehicles are types of objects.  <b>Repeat</b> - This command can be used to make a block of commands run a set number of times or forever.  <b>Sequence</b> - This is when a computer program runs commands in order. In 2Code this can also include "repeat" or a timer.  <b>Selection</b> - This is a conditional/decision command. When selection is used, a program will choose a different outcome depending on a condition.  <b>Simulation</b> - A model that represents a real or imaginary situation.  <b>Timer</b> - Use this command to run a block of commands after a timed delay or at regular intervals.  <b>Variable</b> - A named area in computer memory. A variable has a name and a value. The program can change this variable value.</p>									
	<small>Remembering</small>	<small>Telling</small>	<small>Testing</small>	<small>Practising</small>	<small>Coaching</small>	<small>Observing</small>	<small>Reflecting</small>	<small>Facilitating</small>	<small>Evaluating</small>



			
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Define the word and include etymology if useful.	Learning    Teaching    Assessment	Learning    Teaching    Assessment	Learning    Teaching    Assessment
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Information Technology			
<p><b>CAD</b> – Computer aided Design – A CAD computer program or app allows you to design a 3D object or environment in 2D and visualise it in 3D on the screen from many angles. Modelling - The activity of making models.</p> <p><b>3D</b> – Something that has three dimensions; height, width and depth. Viewpoint - A person's opinion or point of view.</p> <p><b>Polygon</b> - An object with at least three straight sides and angles, and typically five or more.</p> <p><b>2D</b> – Something that has only two dimensions; height and width.</p> <p><b>Net</b> - A pattern that you can cut and fold to make a model of a solid shape. <b>3D Printing</b> - The action or process of making a physical object from a three dimensional digital model, typically by laying down many thin layers of a material in succession.</p> <p><b>Points</b> - An exact position or location on a 2D surface.</p> <p><b>Template</b> - Something that serves as a model for others to copy.</p>	<ul style="list-style-type: none"> <li>Children know what the 2Design and Make tool is for.</li> <li>Children know that there are different ways to view an object (Net, Points and 3D)</li> <li>Children will know that the designs can be printed, cut and shaped into the 3D model.</li> <li>Children will know that CAD is used to design 3D objects in a 2D environment</li> </ul>	<ul style="list-style-type: none"> <li>Children will understand that Cad is the most accurate and widely used tool for Architectural plans for buildings; designing layouts for interiors; designing objects such as packaging and designing mechanical components; designing shoes and clothing.</li> <li>Children will understand that an accurate design on a 2D system for a 3D product helps to save time and money and can result in a product best suited to its purpose.</li> </ul>	<ul style="list-style-type: none"> <li>Children will be able to adapt a vehicle model by moving the points to alter the shape of the vehicle while still maintaining its form.</li> <li>Children will explore how to edit the polygon 3D models to design a 3D model for a purpose.</li> <li>Children will refine one of their designs to prepare it for printing.</li> <li>Children will be able to print their design as a 2D net and then create a 3D model.</li> </ul>



## Orton Wistow Primary School – Curriculum Plan



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## Vocabulary

Define the word and include etymology if useful.



## Knowledge

What children will know

Learning	Teaching	Assessment
Remembering	Telling	Testing



## Understanding

What children will understand

Learning	Teaching	Assessment
Practising	Coaching	Observing



## Skills

What children will be able to do

Learning	Teaching	Assessment
Reflecting	Facilitating	Evaluating

## Investigating Inputs (Barefoot)

**Inputs** – Devices connected to a computer  
**Programming** – Designing code (algorithms) to solve a problem/create a specific outcome on a computer system  
**Variables** – Data values that can change  
**Collaborating** – working together

- Children will know examples of input devices (mouse/keyboard etc)
- Children will know that a computer program can make use of inputs (keyboard to control a sprite)

- Children will understand that an input device will make something happen, e.g. an XBOX controller button can make a sprite jump.
- Children will understand that certain variables can be connected to specific inputs (microphone to a volume variable)

- Children will be able to use scratch to design a code that makes use of inputs such as a keyboard.

## Investigating Outputs (Barefoot)





**Outputs** – data or information sent from a computer system to the outside world via devices such as a screen, speakers, a printer or control devices like motors, lights and buzzers.  
**Programming** – Designing code (algorithms) to solve a problem/create a specific outcome on a computer system  
**Tinkering** – purposeful exploration through trial and improvement  
**Computer Systems** - comprises of hardware and software, along with any peripheral device required to operate it.

- Children will know common uses of output devices in school and beyond (speakers/monitors/projectors)
- Children will know that a computer program can change what happens on the output device.
- Children will know that specific motion blocks in scratch can be used to turn a motor ('motor on' 'motor off'...)

- Children will understand the concept of 'tinkering' and how this way of learning promotes trial and improvement (linking with having a growth mindset and learning from our mistakes)
- Children will understand how the inputs and computer system work together to use the outputs for a specific requirement (xbox controller plus xbox = game play on the screen)

- Children will be able to write a program that controls an output device.
- Children will be able to identify other options to try, starting to recognise what effect each will have.



											
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				<b>Network Hunt</b> (Barefoot)				<b>Computer networks</b> - a collection of computer systems and other devices that are connected together to 'talk' to each other by exchanging data.	<ul style="list-style-type: none"> <li>Children will know that all the computers in the school are connected together, creating a network</li> </ul>	<ul style="list-style-type: none"> <li>Children will understand that all the devices on a network have a specific purpose and removing any of them has an effect on the whole network.</li> </ul>	<ul style="list-style-type: none"> <li>Children will be able to name and explain the purpose of certain devices on a computer network</li> </ul>
<b>Modelling the Internet Activity</b> (Barefoot)	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<b>Internet services</b> – WWW is one example. Others include email, online gaming and audio/video calls <b>Abstraction</b> – the idea of simplifying things, avoiding worrying about too much detail	<ul style="list-style-type: none"> <li>Children will know that the WWW is just one internet service available for use because of the internet.</li> <li>Children will know that several devices are used to access a single page on the WWW (client (eg laptop), DNS, Router, Server)</li> </ul>	<ul style="list-style-type: none"> <li>Children will begin to understand (in abstracted terms) how devices link together to allow the client to view a webpage</li> </ul>	<ul style="list-style-type: none"> <li>Children will be able to explain what the internet is and how it is different from the WWW.</li> <li>Children will be able to explain how the internet provides access to the WWW.</li> </ul>				
<b>Introduction to HTML</b> (Barefoot)				<b>HTML</b> - Hypertext Markup Language, a standardized system for tagging text files to achieve font, colour, graphic, and hyperlink effects on World Wide Web pages. <b>Debugging</b> – the process of finding mistakes in computer code and fixing them	<ul style="list-style-type: none"> <li>Children will know that web pages are written in a computer code called HTML</li> <li>Children will know there are different HTML tags, used to design/change the appearance of a page</li> </ul>	<ul style="list-style-type: none"> <li>Children will understand that HTML tells the web browser how to structure and display the page</li> <li>Children will understand that changing the HTML tags will change the look of the webpage (not always for the better)</li> </ul>	<ul style="list-style-type: none"> <li>Children will be able to use basic HTML tags</li> <li>Children will be able to remix webpages using Mozilla x-ray goggles</li> </ul>				