

Computer Science

Age-Related Assessment Criteria

	Year 5	Year 6	Year 7	Year 8
Unit 1	<p>Pupils will explain the qualities of a suitable picture;</p> <p>Pupils will explain what a pixel is and its importance in picture quality;</p> <p>Pupils will take and import digital pictures and successfully manipulate them using some basic tools;</p> <p>Pupils will create a guidebook with suitable images in them.</p>	<p>Pupils will be able to illustrate how digital image quality is affected by pixels;</p> <p>Pupils will be able to take and import digital pictures and successfully manipulate them using some basic tools;</p> <p>Pupils will be able to use online software to make a geo-trail and attach images to the chosen area;</p> <p>Pupils will be able to record a commentary to support my geo-trail and analyse features of a mapping application.</p>	<p>Pupils will identify different hardware components that form a computer system;</p> <p>Pupils will categorise hardware components into input, output and storage devices;</p> <p>Pupils will state whether a component is internal or external and create a poster explaining about a piece of hardware.</p>	<p>Pupils will describe how computer networks work including the internet;</p> <p>Pupils will know three different network topologies and state possible uses for each type and design a simple network layout;</p> <p>They will decrypt messages using different cyphers and compare the use of peer-to-peer and client-server networks.</p>
Unit 2	<p>Pupils are able to analyse what useful features there are in physical environments;</p> <p>Pupils are able to create a plan for what a model could look like;</p> <p>Pupils are able to explain how to use modelling software and what some of the tools do;</p> <p>Pupils are able to create a 3-D model that contains suitable features and has some components that have been imported.</p>	<p>Pupils can describe what a computer simulation is and what is realistic/unrealistic about them;</p> <p>Pupils can understand what a constant and variable are in computer simulation;</p> <p>Pupils can develop a spreadsheet model for a given scenario;</p> <p>Pupils can use multiple formulae in a spreadsheet model and carry out calculations using functions.</p>	<p>Pupils will understand the differences between data types and situation that should be used;</p> <p>Pupils will use validity in a digital questionnaire;</p> <p>Pupils will convert 8-bit binary numbers into their denary equivalent and convert from denary to binary;</p> <p>Pupils will use run-length coding to create a monochrome picture and develop a 2-byte monochrome bitmap image using binary conversion.</p>	<p>Pupils will create a database table with several fields that use different data types;</p> <p>Pupils will create a basic input form for data entry and add features to make it more user friendly;</p> <p>Pupils will query the database to find information using more than one criterion and create a basic report with suitable headings and own customisations.</p>
Unit 3	<p>Pupils will research new/future technologies and supply details about them;</p> <p>Pupils will design a 6 scene storyboard with pictures and captions outlining what an advert could look like;</p> <p>Pupils will create scenes in a suitable software ready to be exported in a different file format;</p> <p>Pupils will import files created in one program to another program;</p> <p>Pupils will record narration and store in a suitable format that can be imported;</p> <p>Pupils will export a completed product that can be viewed on multiple devices.</p>	<p>Pupils will plan a flowchart to solve an advanced problem;</p> <p>Pupils will create a flowchart to solve a problem using a linear sequence for a real life scenario that takes account of timing;</p> <p>Pupils will create a flowchart to solve a problem using a branching sequence to automate a real life scenario;</p> <p>They will also utilise multiple sub-routines and invoke them from main routines to create a fully working solution to a problem that is required to work in a set sequence.</p>	<p>Pupils will understand the term algorithm;</p> <p>Pupils will plan a solution for an algorithm;</p> <p>Pupils will devise a solution for an algorithm using flowchart software and utilise sub-routines in controlling parts of a system.</p>	<p>Pupils will be able to run simple Python programs in interactive and script mode;</p> <p>Pupils will describe what an algorithm is and make reference to key algorithms such as sorting and search;</p> <p>Pupils will write programs using different types of data and distinguish between syntax and logic errors and able to find and correct both types of error.</p>

Unit 4	<p>Pupils will be able to plan a flowchart to solve a problem;</p> <p>Pupils will solve a problem using a linear sequence;</p> <p>Pupils will solve a problem using a simple branching sequence;</p> <p>They will use a range of inputs and outputs to create a suitable programmable solution for a mimic of a real life scenario (in one routine or multiple routines).</p>	<p>Pupils will identify what the terms HTML and CSS stand for in web development;</p> <p>Pupils will describe how the internet works;</p> <p>Pupils will design a webpage to fit a given criteria and create a simple webpage using HTML.</p>	<p>Pupils will be able to plan multiple choice questions for an interactive quiz;</p> <p>Pupils will be able to identify human computer interfaces and describe their uses;</p> <p>Pupils will be able to plan a possible new type of human computer interface;</p> <p>They will also create a fully interactive quiz using suitable interfacing method that operates in the correct sequence.</p>	<p>Pupils will be able to give examples of how computer models are used in the real world;</p> <p>Pupils will format, construct and manipulate a simple spreadsheet model using formulae;</p> <p>Pupils will use a range of functions on a spreadsheet model and use conditional formatting.</p>
Unit 5	<p>Pupils will be able to repeat instructions to create complex shapes;</p> <p>Pupils will be able to design a background for a game;</p> <p>Pupils will be able to create a sprite that has multiple costumes;</p> <p>Pupils will be able to assemble a block of script to animate a sprite;</p> <p>Pupils will be able to develop a sequence of instructions that enable gameplay and construct a simple continuous game with a clear aim.</p>	<p>Pupils will be able to list features of arcade computer games;</p> <p>Pupils will analyse what features are required to make games successful;</p> <p>Pupils will be able to design suitable backgrounds to recreate a classic computer game and repeat instructions to create a computer game that utilises iteration and selection;</p> <p>They will also develop variables to enhance gameplay and create a fully working game complete with instructions and a clear ending.</p>	<p>Pupils will be able to categorise different computer games by genre;</p> <p>Pupils will be able to analyse what features are required to make games successful within their genre's;</p> <p>Pupils will be able to design graphical features within their game to customise it;</p> <p>Pupils will be able to repeat instructions to create a computer game that utilise iteration, selection and randomisation;</p> <p>They will also create a fully working complex game complete with instructions and a clear ending.</p>	<p>Pupils will identify and use screen objects in their own GameMaker game;</p> <p>Pupils will relate computational abstractions and simple programming code to on-screen actions;</p> <p>Pupils will carry out simple tests to debug their projects;</p> <p>They will develop a fully playable game with multiple characters, obstacles and play base.</p>