Computer Science (Programing)

Curriculum Statements for Early Years - Recognise that a range of technology is used in places such as homes and schools - Select and use technology for particular purpose
Curriculum Statements for KS1 - Understand what algorithms are, how they are implemented as programs on digital devices, and that programmes execute by following precise and unambiguous instructions - Create and debug simple programs - Use logical reasoning to predict the behaviour of simple programs - Recognise common uses of information technology beyond school
KS2 Curriculum Statements - Design, write and debug programmes that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts - Use sequences, selection and repetition in programmes; work with variables and various forms of input and output - Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programmes

Year R - Computing Curriculum **: Computer Science (Computer programming**)
Children's progression statements for Early Years - I can use simple software to make something happen - I can make choices about the buttons and icons I press, touch or click on

Year 1- Computing Curriculum **: Computer Science (Computer programming**)
Children's progression statements for Year 1 - I can give instructions to my friend and follow their instructions - I can describe what happens when I press buttons on a robot - I can press the buttons in the correct order to make my robot do what I want - I can describe what actions I will need to do to make something happen, and begin to use the word algorithm - I can begin to predict what will happen for a short sequence of instructions - I can begin to use software/apps to create movement and patterns on a screen - I can use the word debug when I correct mistakes

Year 2 - Computing Curriculum **: Computer Science (Computer programming**)

Children's progression statements for Year 2

- I can give instructions to my friend using; forward, backwards and turn and physically follow their instructions to move in a shape
- I can tell you the order I need to do things to make something happen and talk about this as an algorithm
- I can look at my friends programme and tell you what will happen
- I can use programming software to make objects move
- I can watch a programme, execute and spot where it goes wrong so I can debug it

Year 3 - Computing Curriculum **: Computer Science (Computer programming)**

Children's progression statements for Year 3

- I can explain what a computer is
- I can break a problem up into smaller parts
- I can put programming commands into a sequence to achieve a specific outcome
- I keep testing my programme and can recognise when I need to debug it
- I can set up conditional events with 'if statements'
- I can set up a sequence or animation
- I can describe the algorithm that I will need for a simple task

- I can detect a problem in an algorithm that may result in unsuccessful programming

Year 4 - Computing Curriculum **: Computer Science (Computer programming)**

Children's progression statements for Year 4

- I can explain what a program is, and apply this to applications
- I can use an efficient procedure to simplify a programme
- I can use a sensor to detect a change which can select an action within my programme
- I can use logical thinking to solve an open ended problem by breaking it up into smaller parts
- I know that I need to keep testing my programme while I am putting it together
- I can use a variety of tools to create a programme
- I can recognise an error in a programme and debug it
- I can recognise that an algorithm will help me to sequence more complex programmes
- I can recognise that using an algorithms will help to solve problems in other learning e.g. Maths, science and Design Technology

Year 5 - Computing Curriculum **: Computer Science (Computer programming)**

Children's progression statements for Year 5

- I can explain how our school network accesses the internet
- I can use a variable to increase programming possibilities
- I can change an input to a programme to achieve a different output

- I can use 'if' and 'then' commands to select an action
- I can talk about how a computer model can provide information about a physical system
- I can use logical reasoning to detect and debug programmes
- I can use logical thinking, imagination and creativity to extend a program
- I can decompose a problem to design an algorithm for a specific outcome and use this to write a programme for a device or on screen activity
- I can refine a procedure using repeat commands to improve a programme

Year 6 - Computing Curriculum **: Computer Science (Computer programming)**

Children's progression statements for Year 6

- I can explain what the global internet and the world wide web are
- I can deconstruct a problem into smaller steps recognising similarities to solutions used before
- I can explain each of the steps in my algorithm (for a device or on screen activity)
- I can evaluate the effectiveness and efficiency of my algorithm while I continually test the programming of that algorithm
- I can recognise when I need to use a variable to achieve a required output
- I can use variable operators to stop a programme
- I can use different inputs including sensors to control a device or an on-screen action and predict what will happen.