

KS2 - Computing - Programming Basics

All medium term plans represent an aspirational curriculum. Teachers and support staff may need to adapt the learning according to the class needs. This may include filling gaps in basic learning, preparation for the main curriculum and/or to build relationships between the staff and students.

Key Stage/Year	KS2 - Stables
Approximate Number of Lessons and Term	Autumn Half Term 2 - 16 lessons
Qualification/Exam (if applicable)	N/A

Consideration of prior learning	Students have been taught for 1 half term so far and have had the chance to demonstrate their level of ability and knowledge through the use of a wide range of programs and through discussion of terminology.
How will learners' knowledge, skills and understanding be checked at the start of the unit?	Students are assessed continually while working, alongside the assessments from previous work, and challenge is adapted dynamically.

How will learners' knowledge, skills and understanding be checked at the end of the unit?	Students are assessed continually while working. A Kahoot Quiz will be used at the end of the unit.
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Learning Outcome	Approx. No. of Lessons	Potential Activities	Behaviour/Safety/Personal Development/SMSC Opportunities
<p>Programming Robots</p> <ul style="list-style-type: none"> - I can match a command to an outcome - I can predict the outcome of a command on a device - I can run a command on a device - I can compare forwards and backwards movements - I can predict the outcome of a sequence involving forwards and backwards commands - I can start a sequence from the same place - I can compare left and right turns - I can experiment with turn and move commands to move a robot - I can choose the order of commands in a sequence - I can debug my program 	1-4	<p>Choice of several programmable robots and activities eg navigate out of a maze. Can be open ended with pupils designing their own programs or using pre-written/partly pre-written sequences for pupils to copy/finish. Board game also available. Pupils to rotate around the several robots to build transferable skills.</p>	<p>Using equipment safely. Use creativity. Work with others on tasks.</p>

<ul style="list-style-type: none"> - I can explain what my program should do - I can predict the outcome of a sequence involving up to four commands 			
<p>Writing Algorithms</p> <ul style="list-style-type: none"> - I can use an algorithm to program a sequence on a floor robot - I can create an algorithm to meet my goal - I can explain what my algorithm should achieve - I can use my algorithm to create a program - I can test and debug each part of the program 	1-4	Pupils to be set a challenge or puzzle and asked to pre-write an algorithm before then programming the robot to complete it.	Using equipment safely. Use creativity. Work with others on tasks.
<p>Programming Animations</p> <ul style="list-style-type: none"> - I can use commands to move a sprite - I can run my program - I can say what happens when I change a value - I can add blocks to each of my sprites - I can add and delete a sprite - I can choose appropriate 	2-4	Pupils use block coding in Scratch Jnr or Scratch to create an animation.	Using equipment safely. Use creativity. (SMSC opportunities here are open due to choice of theme for the animations)

<p>artwork for my project</p> <ul style="list-style-type: none"> - I can create an algorithm for each sprite - I can decide how each sprite will move - I can add programming blocks based on my algorithm - I can test the programs I have created 			
<p>Programming Quizzes</p> <ul style="list-style-type: none"> - I can decide which blocks to use to meet a design - I can tell the actions of a sprite in an algorithm - I can choose backgrounds and characters for a design - I can create a program based on a design - I can create an algorithm - I can compare my project to my design - I can debug - I can improve my project by adding features 	4-6	<p>Pupils are shown a quiz example in Scratch Jnr with an accompanying algorithm and design, they experiment with altering the design and then create their own design, algorithm and program, they then evaluate and improve their design. Pupils can then play each others quizzes and give peer feedback.</p>	<p>Using equipment safely. Use creativity. Peer feedback. (SMSC opportunities here are open due to choice of theme for the quizzes)</p>

Possible Adaptations for Higher and Lower Achievers	Choice of activities, complexity of challenges set, expectation of outcomes.
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How will the knowledge, skills and understanding imparted in this topic support them with future learning/qualifications or development?	This unit covers KS1/2 programming concepts linked to the NC, it will prepare learners for future programming units in the sequenced curriculum and expose them to a wider range of devices to improve their transferable ICT skills.
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