Bolton Schools ICT

Knowledge Mat - Computer Science – Year 2 - program

National Curriculum Links: KS1 Computing

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs

CS2.1 I can tell you what a **program** is
CS2.2 I can tell you what an event is
CS2.3 I know programs need an event to begin
CS2.4 I can give and follow instructions, which include direction and turning command – several in order

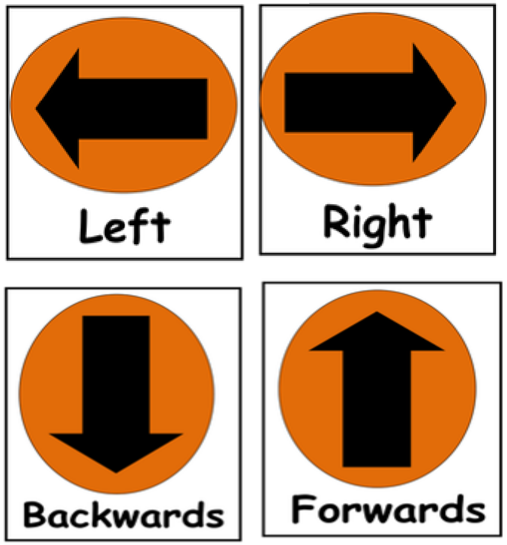
CS2.5 I know that computers need precise instructions
CS2.6 I can plan use logical reasoning to predict outcomes
CS2.7 I can create a program that contains several commands for a device or software programme
CS2.8 I can debug a program independently that has caused an unexpected outcome
CS2.9 I can use different events to start my programs – timing / on click / on button press

Computer Science Vocabulary

computer science	BBC Bitesize Computing KS1 Computer scientists design new software, solve computing problems and develop different ways to use technology.
computational thinking	involves looking at a problem and working out a way a computer might be able to help you solve it.
algorithm	a set of instructions in everyday language, e.g 'get ready for school', 'go out to play'
program	a precise set of instructions for a computer
decompose	breaking a program down into smaller steps
debugging/ deglitching	Identifying and correcting mistakes when the program doesn't work as expected
abstraction	being able to focus on the problem and ignoring detail, focus on program before look and feel e.g. colour, size, background
Input / output	data or information that a computer receives in or displays out
unplugged	computer science without using the computer
event blocks	all programs need an event which acts like a start button
mathematical language	Directional language- backward, left, right, angles, clockwise / Anti-clockwise

What is the difference between an algorithm and a program?

Important:
Always plan your program
Then test your program
If the out-come was not what you predicted
Debug
Re test



When planning your program you need to think about:
Where do I want my program to start?
What do I want my BeeBot / sprite to do?
How many sprites do you need?
Does my BeeBot/sprite need to pause, change direction?
Input program / test / debug

Use EVENT commands to start your program

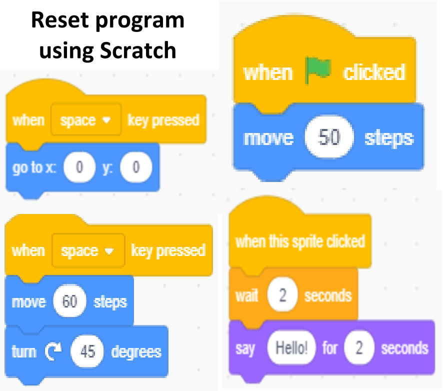
SPRITE

Choose background

Add new Sprite

Introduction to Scratch

Reset program using Scratch



```
when space key pressed
go to x: 0 y: 0

when space key pressed
move 60 steps
turn ↻ 45 degrees

when ⚑ clicked
move 50 steps

when this sprite clicked
wait 2 seconds
say Hello! for 2 seconds
```