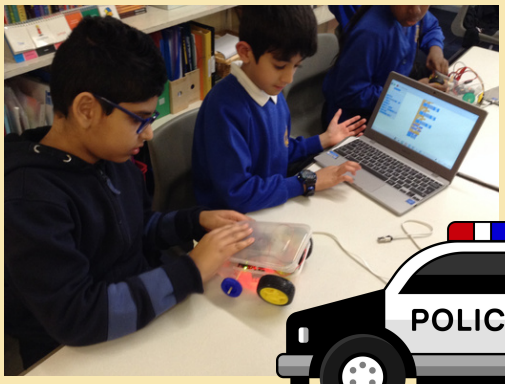
CAROLINE HASLETT KNOWLEDGE ORGANISER

COMPUTING

YEAR 4 AUTUMN 2
SELECTION IN PHYSICAL COMPUTING

VOCABULARY

Condition-controlled loop	A condition-controlled loop is a form of repetition in which a set of commands stop being carried out when a condition is met. The condition could be anything from when the 'score' in a game reaches a certain value to when a key on a keyboard has been pressed.
Conditions	Conditions are statements that need to be met for a set of actions to be carried out. They can be used in algorithms and programs to control the flow of actions.
count-controlled loop	A count-controlled loop is a form of repetition in which a set of commands are carried out a specific number of times.
Infinite loop	An infinite loop is a loop that commands the set of instructions to repeat forever. When an infinite loop is used in a program, there is no way of ending the program, as the commands within the loop will be repeated endlessly.
repetition	Repetition is used in programming to give the same instruction or set of instructions several times. Repetition uses loops as the means to give these instructions.
selection	Selection is "part of a program where, if a condition is met, then a set of commands are run". Selection is implemented in programming using if...then... statements. Selection is used to control the flow of actions in algorithms and programs by checking if a condition has been met.



SKILLS

- to explore the concept of selection in programming through the use of the Crumble programming environment.
- to be introduced to a microcontroller (Crumble controller)
- To learn how to connect and program it a micro-controllers components (including output devices — LEDs and motors).
- To be introduced to conditions as a means of controlling the flow of actions in a program.
- To make use of their knowledge of repetition and conditions when introduced to the concept of selection (through the 'if...then...' structure) and write algorithms and programs that utilise this concept.
- To design and make a working model of a police car that will demonstrate their understanding of how the microcontroller
- To apply the stages of programming design.

KEY FACTS

When physical computing is undertaken, programs are written that control real-world objects, like LEDs and motors, using a computer.

There are two types of loops: infinite and count-controlled.

Infinite loops should only be used when writing a program that is intended to run forever.

Count-controlled loops should only be used when it is known how many times a set of commands needs to be repeated.

When a condition is met, it is referred to as 'true' and when it is not met, it is referred to as 'false'.