



Respect, Believe, Achieve

# Year 6

## Programming in Scratch

Computer Science



### Key Words

<b>inputs</b>	An example of an input are the keyboard arrow keys, which could be programmed to move a sprite.
<b>operators</b>	Add sums to a program, such as more than, less than or equal to.
<b>sensing</b>	A sensing block is triggered when a sprite touches another sprite or a colour.
<b>variables</b>	Something that changes in a program, such as score or the speed of a car sprite. They can also be random to make the game more unpredictable
<b>broadcasts</b>	Send messages from one sprite to another.

### What do I already know?

- Know that sprites can be controlled in different ways using keyboard or touch screen inputs.
- Know that sprites can be programmed to sense other sprites or colours then make decisions. (Eg if a ball sprite touches the colour of a goal it scores a point.)
- Know how to program variables, including random variables that can be used to make a game unpredictable.

# Our Learning Steps

## 1. Scratch slalom skiing

Program inputs, selection (conditions), loops and random variables (operators) for unpredictability.



## 2. Scratch space invaders

Program inputs, selection (conditions), loops and random variables (operators) for unpredictability.



## 3. Scratch tennis

Program inputs, selection (conditions), sensing, random variables, operators for direction and data variables for scoring.



## 4. Scratch paint

Use inputs, conditions (selection), loops, sensing, costume changes and broadcasts.



## 5. Scratch phone/tablet

Work with multiple sprites to send broadcast messages between them.



## 6. Scratch unplugged

Complete unplugged activities to consolidate learning.

4. Below is code for a sprite that when the green flag is pressed, it drops from the top of the screen down the screen by -5, then if it touches the bottom edge it goes back to the top to a random position between x: -200 to 200 and y: 150. There are 3 errors, can you highlight them and write what they should be?

```
when green flag clicked
  forever loop
    change x by -5
  if touching bottom edge then
    go to x: pick random -200 to 200 y: 150
```