Year 1 Create Simple Programs Part 2 Knowledge Organiser

Key words and prior learning from Year 1 Simple Algorithms and Programs Part 1

Algorithm – a set of instructions written in plain English – NOT computer code, that a programmer writes to create instructions that will carry out a specific task.
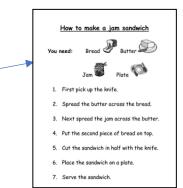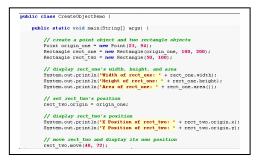
Debug – find the mistake.

Program – instructions written in a language that a standard computer or device understands which is not a language a human would ever use to communicate with another human.
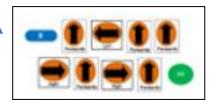
Physical device – something that can be touched can be touched and programmed to move around a playmat e.g. BeeBot

Route-based program – uses simple directional commands forwards, backwards, left and right to control movement.

Encode – turn instructions into code for programming.

Who uses skills like these?

- Programmers that update Sat Nav systems

- Programmers that create location services and GPS systems

How to make a jam sandwich

You need: Bread   Butter

Jam   Plate

1. First pick up the knife.
2. Spread the butter across the bread.
3. Next spread the jam across the butter.
4. Put the second piece of bread on top.
5. Cut the sandwich in half with the knife.
6. Place the sandwich on a plate.
7. Serve the sandwich.

```
public class CreateObjectDemo {

    public static void main(String[] args) {

        // create a point object and two rectangle objects
        Point origin_one = new Point(23, 94);
        Rectangle rect_one = new Rectangle(origin_one, 100, 200);
        Rectangle rect_two = new Rectangle(50, 100);

        // display rect_one's width, height, and area
        System.out.println("Width of rect_one: " + rect_one.width);
        System.out.println("Height of rect_one: " + rect_one.height);
        System.out.println("Area of rect_one: " + rect_one.area());

        // set rect_two's position
        rect_two.origin = origin_one;

        // display rect_two's position
        System.out.println("X Position of rect_two: " + rect_two.origin.x);
        System.out.println("Y Position of rect_two: " + rect_two.origin.y);

        // move rect_two and display its new position
        rect_two.move(40, 72);
```

Key Learning	Self-Assessment		
	WT	A	WA
I understand the importance of sequence when giving instructions			
I can use logical thinking to predict the outcome of an algorithm and a route-based program for a screen turtle			
I can create a simple route-based program for a screen turtle			
I can debug my simple route-based program for a screen turtle			
I know that there is more than one way to solve a problem, but some are more efficient than others			
I can use logical thinking to evaluate my algorithm and route-based program to improve the outcome			

New key words we will use in Year 1 Create Simple Programs Part 2

Sequence – a particular order in which related things follow each other.

Programmer – a person who writes computer programs.

On-screen turtle – acts as a pen on screen that you use for drawing on a virtual canvas.

Predict – say or estimate what you think will happen or will be the consequence of something.

Logical thinking – use what we know and apply it to what might happen to make sense of it all.