



Element 1 – Closed test on Algorithms and Programs (Coding)

Where is coding?

Coding is everywhere in the modern world and learning the basics of programming, creating algorithms and debugging at primary school can lead to a vast selection of different careers: A film animator, building robots for science/medical needs, programming light shows at concerts and events, website designer, game or App developer, building cars with self-drive functions, creating programming for theme park rides and rollercoasters and many, many more. This is why it is crucial to test out algorithms, debug and code with confidence.

What KEY VOCABULARY do we use in coding?

In Year 6, you will use these key vocabulary terms below:

Action - Types of commands, which are run on an object. They could be used to move an object or change a property.

Alert - This is a type of output. It shows a pop-up of text on the screen.

Algorithm - a precise step by step set of instructions used to solve a problem or achieve an objective. Flowchart

Bug - A problem in a computer program that stops it working the way it was designed.

Code Design – Design what a program will look like and what it will do.

Command - A single instruction in a computer program.

Control - These commands determine whether parts of the program will run, how often and sometimes, when.

Debug/Debugging - Looking for any problems in the code, fixing and testing them.

Event – Something that causes a block of code to be run.

Function – A type of procedure or routine.

Get Input - This puts the text that a user types into the computer's temporary memory to be used to control the program flow.

If - A conditional command. This tests a statement. If the condition is true, then the commands inside the block will be run.



If/Else - A conditional command. This tests a statement. If the condition is true, then the commands inside the 'if block' will be run. If the condition is not met, then the commands inside the 'else block' are run.

Input - Information going into the computer. Can include moving or clicking the mouse, using the keyboard, swiping and tilting the device.

Output - Information that comes out of the computer e.g. sound.

Object - An element in a computer program that can be changed using actions or properties. In 2Code, buttons, characters and vehicles are types of objects.

Repeat - This command can be used to make a block of commands run a set number of times or forever.

Sequence - This is when a computer program runs commands in order. In 2Code this can also include "repeat" or a timer.

Selection - This is a conditional/decision command. When selection is used, a program will choose a different outcome depending on a condition.

Simulation - A model that represents a real or imaginary situation.

Tabs - Allows you to move between blocks of code on different pages

Timer - Use this command to run a block of commands after a timed delay or at regular intervals.

Variable - A named area in computer memory. A variable has a name

Questions:

1. Name 3 jobs you could do as a coder.
 2. Why do algorithms and programming need to be checked before being use properly?
 3. What does the term 'sequence' mean in coding?
 4. Name 2 examples of 'objects' in a computer program.
 5. What does 'debugging' mean?
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Element 2:

Can you use one of the 'Free Code' options on Purple Mash, complete it and save it/hand it in for your teacher to check?

OR,

Use a different coding program, such as Scratch, to show you can program and debug without given instructions.