# Unit 2.1 Algorithms; Lesson 6 – Producing Algorithms

## Activity 2; Low

Write a pseudocode algorithm for each of the problems below:

1. The program asks the user to enter the number of hours they have been working for. The system must output:

* the number of minutes they have been working
* the number of seconds they have been working

|  |
| --- |
| **Help:** The user will need to input the number of hours.  The number of minutes is calculated using: number of hours multiplied by 60  The number of seconds is calculated using: number of minutes multiplied by 60  Do not forget to output the result |

1. The program asks for a user's age, and their favourite number. The system must output:

* the two numbers added together
* the two numbers multiplied together

|  |
| --- |
| **Help:** What needs to be input?  How are you going to produce your output?  Output the answers? |

1. The program asks the user to enter two numbers. Output the largest of these two numbers.

|  |
| --- |
| **Help:** What needs to be input?  How can you work out which number is largest?  Output the result |

## Activity 2; Medium

Think in terms of input, process, output.

What needs to be input?

What do you do with it?

What is output?

Write a pseudocode algorithm for each of the problems below:

1. The program that asks the user to enter the number of letters in the alphabet. Output whether they got it correct, or incorrect.

|  |
| --- |
|  |

1. The program asks the user to enter a number. The program then outputs the 12 times table for that number, e.g. if they enter 5 it displays 5, 10, 15 etc.

|  |
| --- |
|  |

1. The program asks the user for 2 numbers and a symbol (+, -, /, \* or ^). The program then outputs the calculation based on the symbol, e.g. if 2, 3 and + were entered it would output 2 + 3 = 5.

|  |
| --- |
|  |

## Activity 2; High

Write a pseudocode algorithm for each of the problems below:

1. The amount of water in a fish tank, in litres, is calculated using the formulae:

**(height x width x depth) / 1000**

The program must take the height, width and depth as input and output a suitable message e.g. The tank holds 221.6 litres of water.

|  |
| --- |
|  |

1. The program takes a number as input, and then outputs this many # symbols.

|  |
| --- |
|  |

1. A program asks the user to input a whole number. If the user enters an invalid input (e.g. a decimal number) then it tells them their input is invalid and asks for the input again.

|  |
| --- |
|  |

**The use of MOD can help determine if a number is a whole number – think about it...**

**OCR Resources**: *the small print*OCR’s resources are provided to support the teaching of OCR specifications, but in no way constitute an endorsed teaching method that is required by the Board, and the decision to use them lies with the individual teacher. Whilst every effort is made to ensure the accuracy of the content, OCR cannot be held responsible for any errors or omissions within these resources.   
© OCR 2016 - This resource may be freely copied and distributed, as long as the OCR logo and this message remain intact and OCR is acknowledged as the originator of this work.

OCR acknowledges the use of the following content:

Please get in touch if you want to discuss the accessibility of resources we offer to support delivery of our qualifications: [resources.feedback@ocr.org.uk](mailto:resources.feedback@ocr.org.uk)