

Key Stage 3 Computer Science

Year 8 Homework Booklet 1



Student name:

Class:



| Week | Task title | Summary | Pages | Date due |
|------|------------------------|---|-------|----------|
| 1 | Alan Turing Fact File | Create a fact file about Alan Turing. | 2 | |
| 2 | Computational Thinking | Demonstrating your knowledge and understanding of computational thinking. | 3-4 | |
| 3 | Flowcharts | Demonstrating your knowledge and understanding of flowcharts. | 5-7 | |

Homework should be submitted every three weeks on your Google Classroom or written out and handed in to your teacher on the date it is due. Any issues with the homework must be addressed with your teacher before the due date.

For further help and support, please email your teacher:

Mr Cook – a.cook@benjaminbritten.school

Mrs Miles – a.miles@benjaminbritten.school

Mr Sweetman – adrian.sweetman@benjaminbritten.school

Week One – Alan Turing Fact File

Create an information page about Alan Turing. Explain who he is, where he grew up and why he is famous in the world of computing.

Week Two – Computational Thinking

1. What is an algorithm?

2. What is decomposition?

3. What is pattern recognition?

4. What is abstraction?

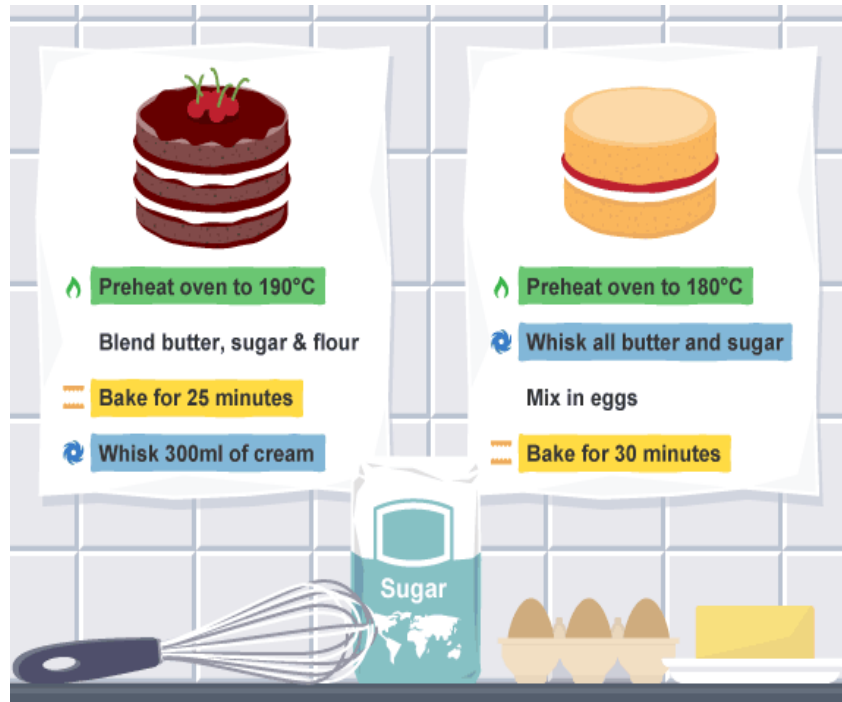
5. Solve the crime with decomposition:

Look at the picture carefully. A crime has been committed, a diamond has been stolen. How could this complex problem of the committed crime be solved by breaking down into simpler problems that can be examined individually, in detail. Fill in the white boxes.



6. Pattern recognition

To find patterns in problems we look for things that are the same (or very similar) in each problem. There are two different methods for baking the cakes in the picture.



Can you recognise any similar patterns? Write your answers below.



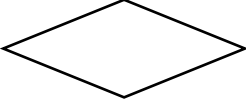
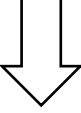
Complete the questions on the google form:

https://docs.google.com/forms/d/e/1FAIpQLSdDqRBJHSITsdZFvJB-v627zq3gupBPiS9IRCXwuQ3cSQxeGw/viewform?usp=sf_link

Week Three – Flowcharts

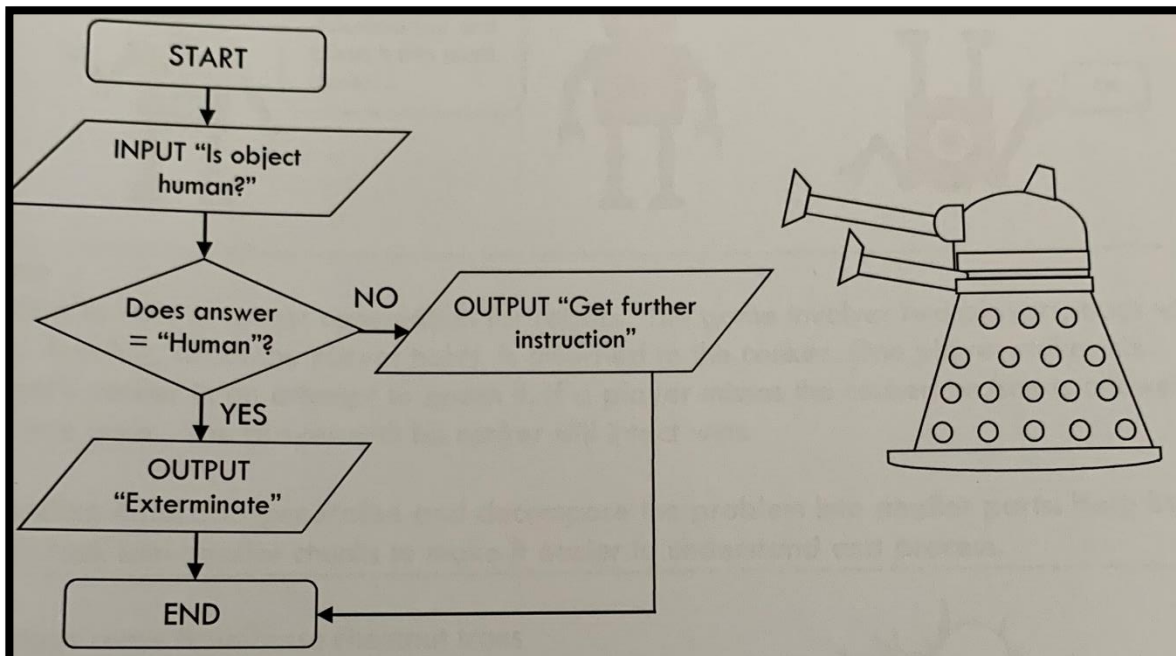
Flow charts are used to represent algorithms. A flow chart is made up of different shapes, each representing a specific instruction (i.e. a decision or an input/output). A flow chart represents a number of steps in logical order.

1. Work out which shape represents which instruction below:

| | | | |
|---|---|--|---|
|  |  |  |  |
| a. | b. | c. | d. |

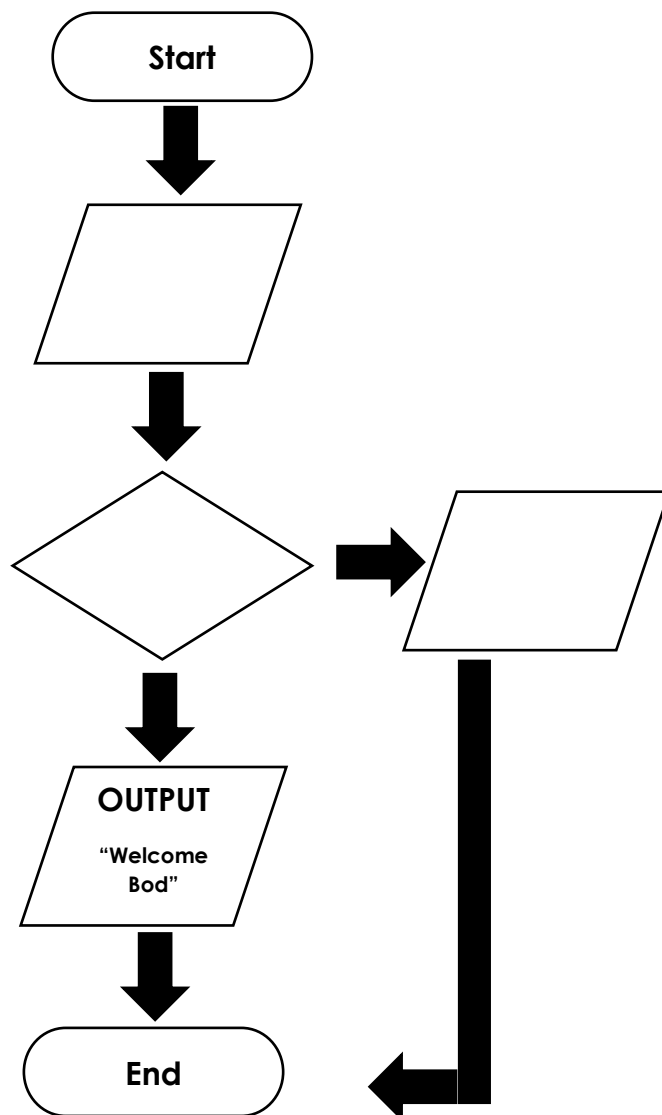
| Enter your answer below (a, b, c, etc.): | | |
|--|---------------------|--|
| 1. | A decision | |
| 2. | A connector | |
| 3. | Start and end | |
| 4. | An input and output | |

Example: A Dalek is programmed to respond when meeting a human. The Dalek blow is known as Fluffy to his friends. As he doesn't have any friends, he's mostly known as Dalek. A simple algorithm, represented as a flow chart, for 'Fluffy' may look like the one below.

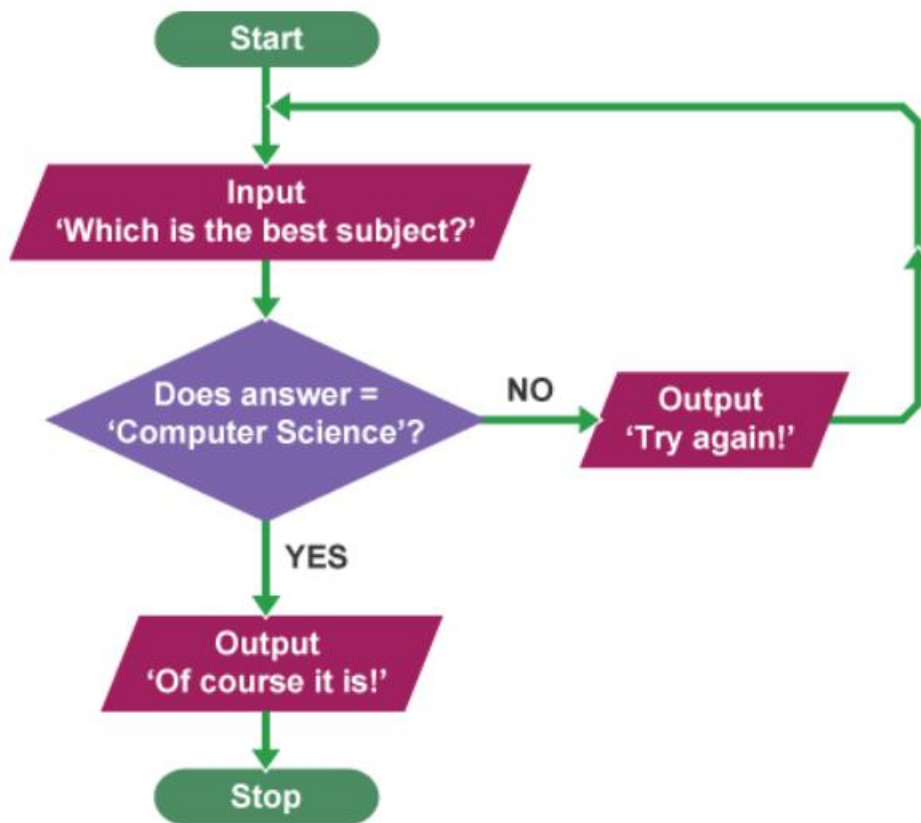


Bod has created a program which asks for a password (his password is Bod1) to access his Facebook page. There are two steps missing from the code.

1) Add the missing steps in the relevant flow chart shapes:



Read the flowchart:



Explain what the flowchart represents.

Create a poster that explains shows the different symbols used to create a flowchart and state their use.