

Programmers use abstraction to model the real world.

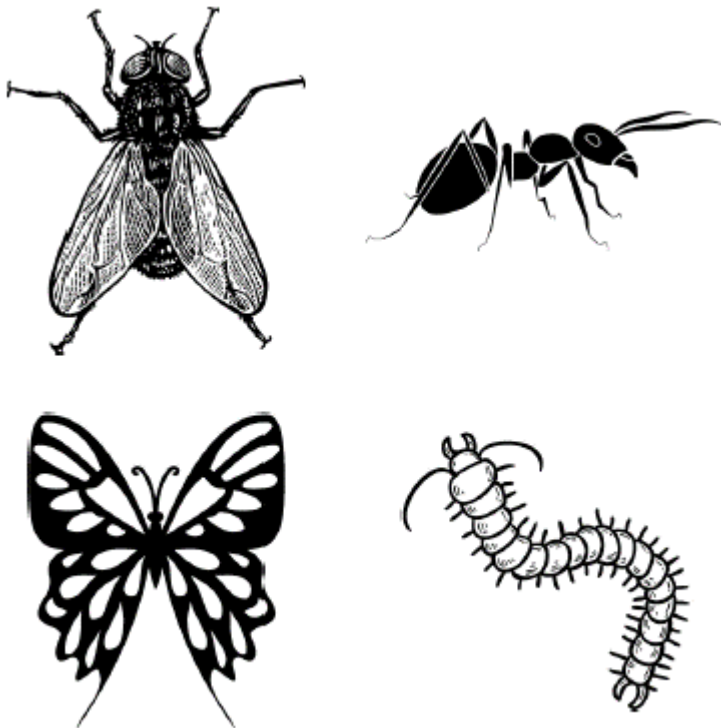
Define the term 'abstraction'.

(2)

Define the term 'decomposition'.

(1)

Here are four images of creatures that will be used in a computer game.



Before coding the game, a programmer applies abstraction.

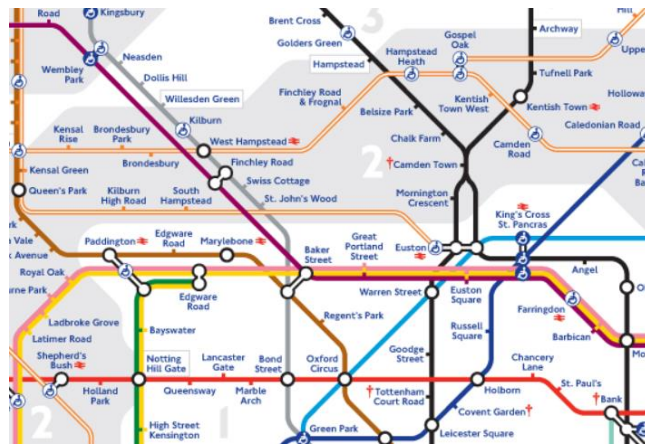
One feature of creatures is their colour.

State **two other** features of the creatures that the programmer could include when creating a general model for a creature.

(2)

ANSWERS

1. Abstraction is removing or hiding unnecessary details in order to focus on solving the problem at hand. A famous example is the Tube map which solves the problem of helping people work out how to get from one station to another but hides the actual distances and real geography.



In programming, abstraction can be used when creating an algorithm or within a program – by using sub programs. In-built sub-programs, such as `print()` and library modules, such as `turtle`, hide the code that makes them work.

2. Decomposition is breaking down a large problem into smaller problems to make the large problem easier to solve. In programming, user-defined sub-programs can be used to solve smaller problems.
3. Eg. Number of legs, whether they have wings or not,