

Computer Science

Outcomes	Programming	Selection and Iteration	Functions and Arrays	Database Systems	Using Databases
Basic	Can understand the concept of a variable and with a model to refer to can create variables to store numbers and perform simple calculations.	Can adapt an existing simple if statement to perform a different task. Can adapt an existing program for one type of loop (while or for) to perform an existing task.	Can understand the purpose of a function Can understand the idea of selecting an item from a list based on an input.	Understands the concept of a database, and its function in the storage and retrieval of data.	Can write a basic query using one criterion when given a framework to copy/adapt. Can create appropriate field names and assign correct data type to each.
Adequate	Can create variables with common data types (input function) with a model to refer to, and apply depending on task. Usually uses sensible names for variables albeit not using a convention.	Can adapt an existing nested if statement to perform a different task. Can adapt an existing program for both types of loop (while or for) to perform an existing task.	Can adapt premade functions to perform tasks different to the original. Understands the purpose of a function. Can adapt existing arrays that return one type of data from one type of input e.g. returns a word from a number.	Understands the concept of a database for storing data, as well as the methods for retrieving data e.g. filters, queries etc.	Can independently write basic queries. Can create appropriate field names and assign correct data type to each. Can understand the need for and concept of validation
Secure	Can create variables with common data types (input function) with a model to refer to, and apply depending on task. Can use global variables when needed to get a program to function. Usually sticks to a sensible naming convention.	Can independently create a nested if statement to perform a task. Can independently write both while and for loop, and understand the difference between them.	Can independently define own functions to perform a variety of tasks. Understands the purpose of a function. Can adapt existing arrays that return different types of data from different types of input e.g. returns a word from a number, returns a telephone number from typing in a name.	Understands the concept of a database for storing data, as well as the methods for retrieving data e.g. filters, queries etc. Understands that a database is better than a spreadsheet for storing and retrieving data.	Can independently write basic queries. Can create appropriate field names and assign correct data type to each. Can write validation rules independently. Understands why tables need to be linked together to avoid replication of data.
Advanced	Can independently create variables with common data types (input function), and apply depending on task. Can understand concept of and apply local and global variables and apply. Consistently uses a sensible naming convention.	As well as the above, can understand the concept of putting if statements inside loops well enough to be able to adapt an existing program to fulfil a different task.	Can independently define own functions, including ones which have values passed into them, to perform a variety of tasks. Understands the purpose of a function. Can independently create arrays that return different types of data from different types of input e.g. returns a word from a number, returns a telephone number from typing in a name. Can combine several of these together.	As above plus Understands the difference between filters and queries, and can discuss the relative advantages and disadvantages of each. Can discuss advantages of a database for storage and retrieval over a spreadsheet/table etc.	As above plus Can create one too many relationships and is beginning to explore the concept of many to many relationships.
Excelling	Can independently create variables with a variety of appropriate data types (input function), depending on task. Can understand concept of and apply local and global variables. Consistently uses a sensible naming convention.	As well as the above, be able to independently combine loops and if statements to perform a variety of different tasks, using different operators e.g. modulus operator.	Can independently define own functions, including ones which have values passed into them, to perform a variety of tasks. Understands the purpose of a function. Can independently create arrays that return different types of data from different types of input e.g. returns a word from a number, returns a telephone number from typing in a name. Can combine several of these together.	As above plus Can discuss the role of a database in organisations.	As above plus Can recognise when to apply each type of relationship and can do so independent