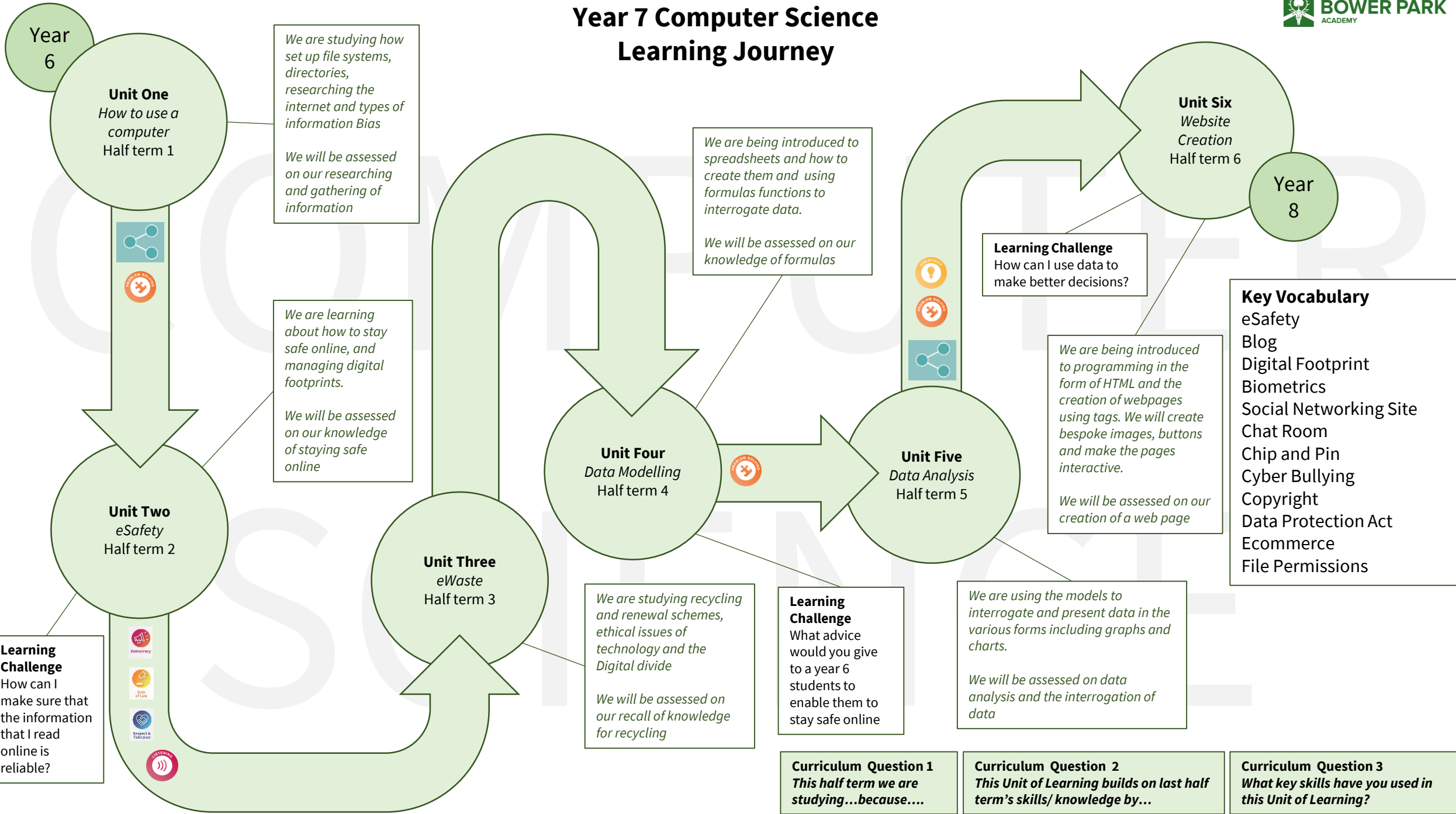
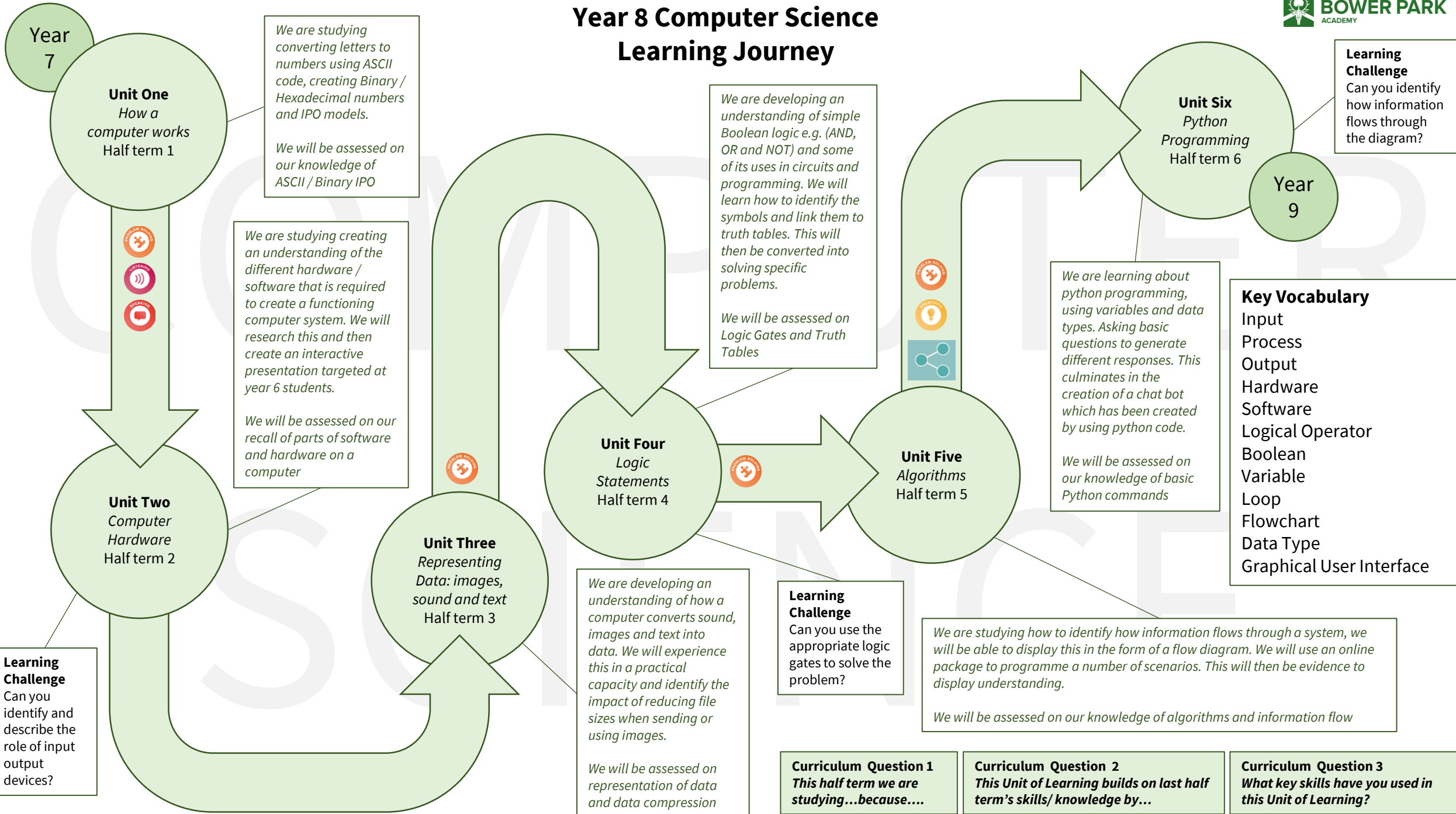


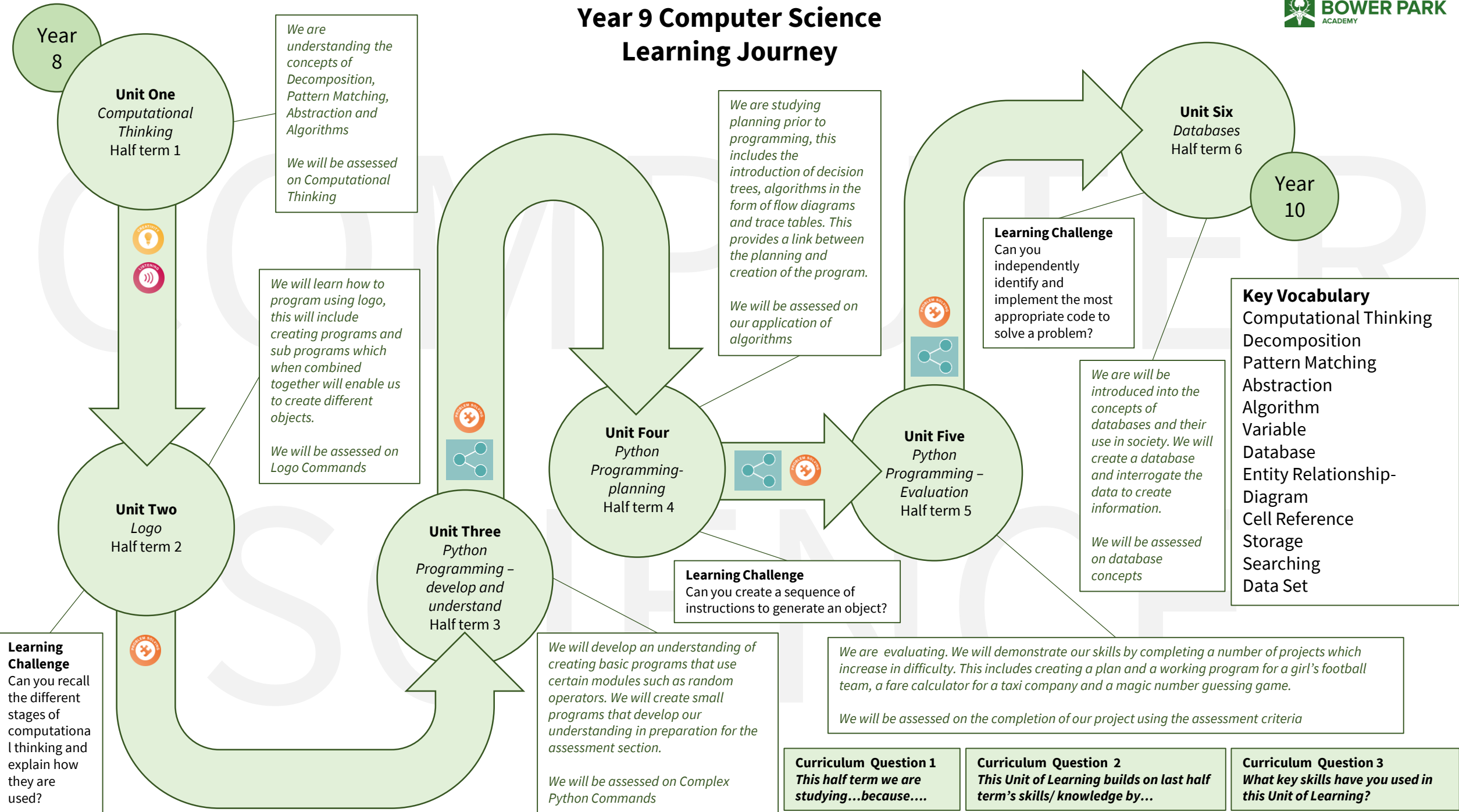
Year 7 Computer Science Learning Journey



Year 8 Computer Science Learning Journey



Year 9 Computer Science Learning Journey



Year 8

Unit One
Computational Thinking
Half term 1

We are understanding the concepts of Decomposition, Pattern Matching, Abstraction and Algorithms

We will be assessed on Computational Thinking

We will learn how to program using logo, this will include creating programs and sub programs which when combined together will enable us to create different objects.

We will be assessed on Logo Commands

Unit Two
Logo
Half term 2

Learning Challenge
Can you recall the different stages of computational thinking and explain how they are used?

Unit Three
Python Programming - develop and understand
Half term 3

We will develop an understanding of creating basic programs that use certain modules such as random operators. We will create small programs that develop our understanding in preparation for the assessment section.

We will be assessed on Complex Python Commands

Unit Four
Python Programming - planning
Half term 4

We are studying planning prior to programming, this includes the introduction of decision trees, algorithms in the form of flow diagrams and trace tables. This provides a link between the planning and creation of the program.

We will be assessed on our application of algorithms

Learning Challenge
Can you create a sequence of instructions to generate an object?

Unit Five
Python Programming - Evaluation
Half term 5

We are evaluating. We will demonstrate our skills by completing a number of projects which increase in difficulty. This includes creating a plan and a working program for a girl's football team, a fare calculator for a taxi company and a magic number guessing game.

We will be assessed on the completion of our project using the assessment criteria

Curriculum Question 1
This half term we are studying...because....

Curriculum Question 2
This Unit of Learning builds on last half term's skills/ knowledge by...

Curriculum Question 3
What key skills have you used in this Unit of Learning?

Unit Six
Databases
Half term 6

Year 10

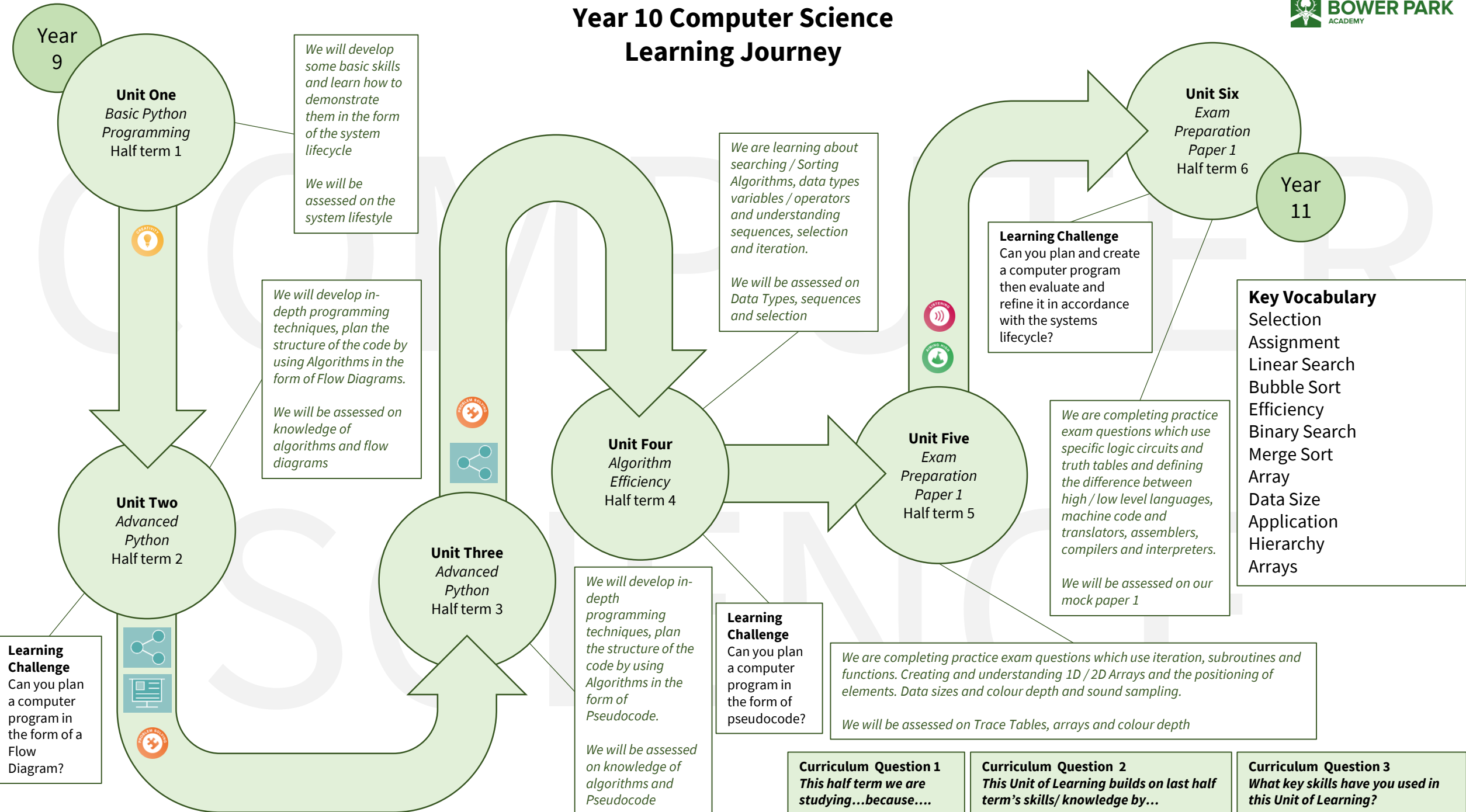
Learning Challenge
Can you independently identify and implement the most appropriate code to solve a problem?

We will be introduced into the concepts of databases and their use in society. We will create a database and interrogate the data to create information.

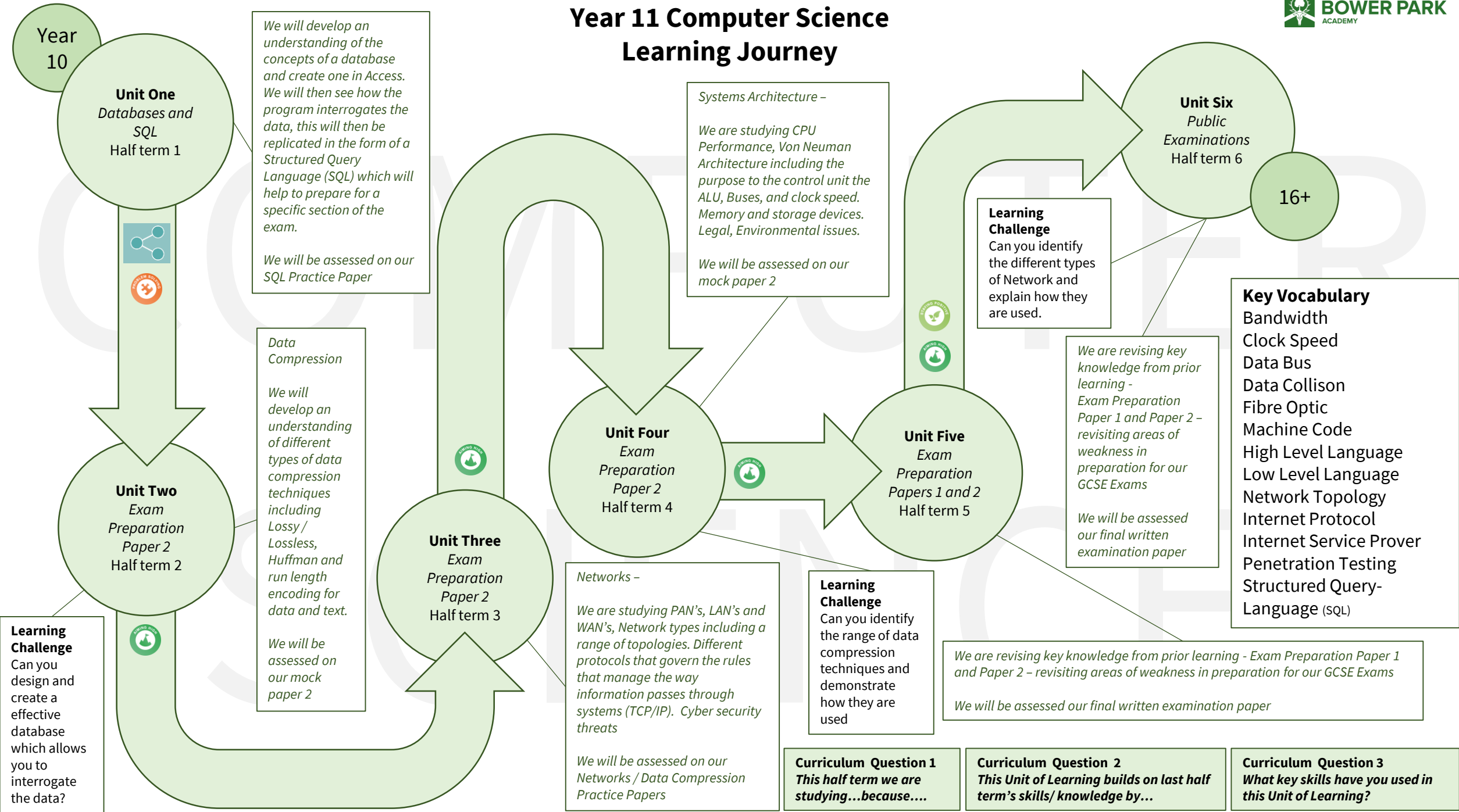
We will be assessed on database concepts

Key Vocabulary
Computational Thinking
Decomposition
Pattern Matching
Abstraction
Algorithm
Variable
Database
Entity Relationship-Diagram
Cell Reference
Storage
Searching
Data Set

Year 10 Computer Science Learning Journey



Year 11 Computer Science Learning Journey



Year 10

Unit One
Databases and SQL
Half term 1

We will develop an understanding of the concepts of a database and create one in Access. We will then see how the program interrogates the data, this will then be replicated in the form of a Structured Query Language (SQL) which will help to prepare for a specific section of the exam.

We will be assessed on our SQL Practice Paper



Unit Two
Exam Preparation Paper 2
Half term 2

Data Compression

We will develop an understanding of different types of data compression techniques including Lossy / Lossless, Huffman and run length encoding for data and text.

We will be assessed on our mock paper 2

Learning Challenge
Can you design and create a effective database which allows you to interrogate the data?

Unit Three
Exam Preparation Paper 2
Half term 3

Networks –

We are studying PAN's, LAN's and WAN's, Network types including a range of topologies. Different protocols that govern the rules that manage the way information passes through systems (TCP/IP). Cyber security threats

We will be assessed on our Networks / Data Compression Practice Papers

Unit Four
Exam Preparation Paper 2
Half term 4

Systems Architecture –

We are studying CPU Performance, Von Neuman Architecture including the purpose to the control unit the ALU, Buses, and clock speed. Memory and storage devices. Legal, Environmental issues.

We will be assessed on our mock paper 2

Learning Challenge
Can you identify the range of data compression techniques and demonstrate how they are used

Unit Five
Exam Preparation Papers 1 and 2
Half term 5

Learning Challenge
Can you identify the different types of Network and explain how they are used.

We are revising key knowledge from prior learning - Exam Preparation Paper 1 and Paper 2 - revisiting areas of weakness in preparation for our GCSE Exams

We will be assessed our final written examination paper

We are revising key knowledge from prior learning - Exam Preparation Paper 1 and Paper 2 - revisiting areas of weakness in preparation for our GCSE Exams

We will be assessed our final written examination paper

Unit Six
Public Examinations
Half term 6

16+

Key Vocabulary

- Bandwidth
- Clock Speed
- Data Bus
- Data Collison
- Fibre Optic
- Machine Code
- High Level Language
- Low Level Language
- Network Topology
- Internet Protocol
- Internet Service Prover
- Penetration Testing
- Structured Query- Language (SQL)

Curriculum Question 1
This half term we are studying...because....

Curriculum Question 2
This Unit of Learning builds on last half term's skills/ knowledge by...

Curriculum Question 3
What key skills have you used in this Unit of Learning?