

Subject	Computing
Term	Cycle 1
Duration (approx.)	9 lessons
Module	Intermediate Python Programming

Spelling-Punctuation-Grammar How will you promote high standards within this module?

Correct syntax needed for coding to work.

Link forward: where next for the learning?

Direct link to the skills needed for the programming assessment in the GCSE qualification. In Year 9, students will learn about how all computer files have to be saved as binary data—links can be made between how programs run and how the CPU processes this as binary.

Skills and concepts to be developed and assessed (linking to identified AOs)

- Re-cap of Introduction to Python unit from Year 8.
- Using FOR loops and WHILE loops and being able to recognize when each is best used.
- Using lists to store more than one piece of data in a program.
- Reading from and writing to files to store information for later use.
- Using functions to be able to make code more efficient when repeated instructions are needed.
- Using comments to manage code and make it easy to understand for others.

Factual knowledge to be taught and assessed (including subject specific vocabulary)

Key programming terms: for loop, while loop, list, functions.

Formative Assessment/key piece of work prior to end of unit:

Check mid-point coding to progress to ensure common errors and misconceptions are identified.

Summative Assessment

Coded solutions to a range of challenges of increasing complexity.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

Pupils completed an Introduction to Python unit in Year 8. The skills learnt in this unit will be re-visited and then used continually in all new coding tasks.

Subject	Computing
Term	Cycle 2
Duration (approx.)	9 lessons
Module	Cyber Security

Spelling-Punctuation-Grammar How will you promote high standards within this module?

Use spell checker tool in software to keep high standards.
Key words practiced in lessons.

Link forward: where next for the learning?

This unit links directly to the Systems Security unit at GCSE.
The topic can also be referred to going forward in any future discussions of cyber security, either for themselves or in relation to news stories.

Skills and concepts to be developed and assessed (linking to identified AOs)

- Understanding the cyber world we live in and the biggest risks to individuals and organisations.
- Being able to identify types of cyber threats and how these can become reality.
- Knowing a range of job roles and personnel who work in the cyber security industry.
- Understanding different types of hacking and hackers.
- How encryption works, the history of encryption and using ciphers to crack codes.
- Utilising documentation skills to present results of research.

Factual knowledge to be taught and assessed (including subject specific vocabulary)

See above.

Formative Assessment/key piece of work prior to end of unit:

Check of mid-point documentation progress to ensure notes are thorough and meaningful.

Summative Assessment

Online test to check understanding of key knowledge and terms.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

Links can be made to previous Digital Lives lessons where pupils have looked at how much information they store online and how to keep their data private.

Subject	Computing
Term	Cycle 2
Duration (approx.)	7 lessons
Module	Data Representation

Spelling-Punctuation-Grammar
How will you promote high standards within this module?

Key words practiced in lessons.

Link forward: where next for the learning?

This unit links directly to the Data Representation unit at GCSE.

Skills and concepts to be developed and assessed (linking to identified AOs)

- What is binary and why do computers only understand it.
- How to convert decimal numbers to binary and back again.
- How to convert decimal numbers to hexadecimal and back again.
- What is ASCII and other character sets.
- How are images stored on a computer as binary.
- How is music stored on a computer as binary.

Factual knowledge to be taught and assessed (including subject specific vocabulary)

See above.

Formative Assessment/key piece of work prior to end of unit:

Check of mid-point homework to carry out conversions.

Summative Assessment

Paper-based test to check understanding of key knowledge and ability to be able to carry out conversions.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

This unit builds on the introduction to binary part of the computer systems unit in Year 7. There is an opportunity for pupils to re-call how to carry out binary to decimal conversions and then use this knowledge to gain an understanding of how other types of data are stored on computers.

Subject	Computing
Term	Cycle 3
Duration (approx.)	12 lessons
Module	App Development

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

This is a standalone unit in many ways. However, the importance of planning, testing and evaluating is taught in relation to programming projects throughout KS3 and the software and coding skills are an extension of other online and block coding tools used before.

Skills and concepts to be developed and assessed (linking to identified AOs)

- How to plan purpose, audience, content and navigation for a digital product (smartphone app).
- How to use an online app development tool.
- How to use inbuilt app events to make elements of the app link and work appropriately.
- How to use Blockly coding tools to add extra programmed functionality to the app.
- Test and evaluate the finished product for how well it works and its suitability for the planned purpose and audience.

**Spelling-Punctuation-Grammar
How will you promote high standards within this module?**

Error checking carefully in app – to stress the importance of professionalism in any digital products published.

Link forward: where next for the learning?

Planning, testing and evaluation process is used in the coursework in GCSE.

Factual knowledge to be taught and assessed (including subject specific vocabulary)

See above.

Formative Assessment/key piece of work prior to end of unit:

Check of quality of finished plan.

Summative Assessment

Assessment of final app, quality of plan and evaluation.