# Computing Learning Journey Year 8

## Autumn Term

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | |
|---|---|---|---|---|---|---|---|---|---|
| **Topic** | **Python programming – Part I** | | | | | | | | HALF TERM |
| **Challenge Objective and Content (for all learners)** | • To understand the use of python as a coding language and why it is a popular programming language – real world applications of python<br>• To be able to input and output data using python<br>• To be able to understand the importance of sequencing and selection in python<br>• To be able to use selection and sequencing to make simple python programs | | | | | | | | |
| **Inspire Opportunities** | More complex coding challenges, introduction of Iteration, functions and procedures. | | | | | | | | |
| **Assessment Opportunities** | Formative assessment: Through teacher observation, questioning and marked activities<br>Summative assessment: End of Unit assessment | | | | | | | | |

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | |
|---|---|---|---|---|---|---|---|
| **Topic** | **Inside the Computer** | | | | | | CHRISTMAS |
| **Challenge Objective and Content (for all learners)** | • Describe the function of the computer hardware components<br>• Deconstruction of Computer hardware<br>• Describe how the components work together to execute programs<br>• Be able to identify different hardware components<br>• To understand the basic functions of the CPU | | | | | | |
| **Inspire Opportunities** | Reconstruction of the computer systems after deconstruction, further research and questions on the Von Neumann architecture, the CPU and its specific components. | | | | | | |
| **Assessment Opportunities** | Formative assessment: Through teacher observation, questioning and marked activities<br>Summative assessment: End of Unit assessment | | | | | | |

# Computing Learning Journey Year 8

## Spring Term

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | |
|---|---|---|---|---|---|---|---|
| **Topic** | **Data Representation & Logic** | | | | | | HALF TERM |
| **Challenge Objective and Content (for all learners)** | • To be able to add two binary numbers together<br>• To be able to understand another number system used in Computer Science - Hexadecimal<br>• Describe how hardware is built out of logic circuits (AND, OR and NOT)<br>• Be able to complete truth tables for AND OR and NOT logic gates<br>• To understand how images are represented digitally | | | | | | |
| **Inspire Opportunities** | Be able to build more complicated diagrams using logic gates, be able to extend truth table knowledge to more extensive truth tables with increasing number of inputs, being able to use AND, OR, NOT in code. | | | | | | |
| **Assessment Opportunities** | Formative assessment: Through teacher observation, questioning and marked activities<br>Summative assessment: End of Unit assessment | | | | | | |

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | |
|---|---|---|---|---|---|---|
| **Topic** | **Networks and Security** | | | | | EASTER |
| **Challenge Objective and Content (for all learners)** | • To be able to identify network topologies and their advantages/disadvantages<br>• To be able to identify the hardware used when creating networks<br>• To be able to identify and describe the dangers of networks including malware types and how they are spread and prevented<br>• To be able to identify what big data is and how it is used. | | | | | |
| **Inspire Opportunities** | | | | | | |
| **Assessment Opportunities** | Formative assessment: Through teacher observation, questioning and marked activities<br>Summative assessment: End of Unit assessment | | | | | |

# Computing Learning Journey Year 8

## Summer Term

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | |
|---|---|---|---|---|---|---|---|
| **Topic** | **The impacts of Technology on our Wider World** | | | | | | HALF TERM |
| **Challenge Objective and Content (for all learners)** | • Be able to explain the five main categories of Technological impact.<br>• Be able to explain the implications of technology on society including<br>• Explore one of these impact categories in detail.<br>• To understand the impact of E-Waste . | | | | | | |
| **Inspire Opportunities** | Be able to understand and discuss potential ethical and unethical implications of technology on wider society | | | | | | |
| **Assessment Opportunities** | Formative assessment: Through teacher observation, questioning and marked activities<br>Summative assessment: End of Unit assessment through a presentation delivered by the students to their classes. | | | | | | |

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | |
|---|---|---|---|---|---|---|---|
| **Topic** | **Website Development** | | | | | | SUMMER |
| **Challenge Objective and Content (for all learners)** | • To be able to create a website that discusses the impact of Technology on society.<br>• To understand what the software development cycle is and how to use it effectively.<br>• To review and evaluate a finished product. | | | | | | |
| **Inspire Opportunities** | The use of Bootstrap and HTML to add to the website design. | | | | | | |
| **Assessment Opportunities** | Formative assessment: Through teacher observation, questioning and marked activities – reflection point halfway through the website<br>Summative assessment: Teacher assessment of practical task | | | | | | |