Unit Overview – Binary

Completion date: Easter

Target grade for tests

You will learn about:
How computers store information and data.
The Binary number system.
Data Compression

You will be able to
Explain how text, images and audio are stored by a computer.
Convert between denary and binary and do simple binary addition.
Explain basic algorithms to sort and search data.

TERM 2

Topic Overview

1. **Data Representation – Number Bases and Binary Conversion.**
2. **Data Representation – images**
3. **Data Representation – characters**
4. **Boolean Logic**
5. **Binary Addition**
6. **Data Structures**
7. **Data Compression – RLE**
8. **Data Compression – Huffman**
9. **Assessment Point**

Key Words

- **Binary:** the method used by computers to store data (both programs and raw data) at the most basic level using just 1's and 0's
- **Hexadecimal:** base 16**,** used to easily represent binary that is easy for humans to read.
- **Representation:** how different artefacts (images, audio, text etc) can be held (represented) just using binary.
- **Boolean (Logic):** the method of calculating and applying conditions that only have true and false answers.
- **Data Structures:** methods of storing data in organised containers, such as variables, arrays or databases.
- **Data Compression:** mathematical calculations and processes that reduce the size of data to make it faster to transfer and use less storage space.

Suggested reading or support available

www.Codecademy.com
https://www.jetbrains.com/pycharm-edu/
https://www.**python**.org/
http://www.tutorialspoint.com/python/

Cross curricular

Literacy: The ability to describe a process in a clear logical manner.

Numeracy: Binary number system, Boolean logic.