

# Computing – Y8



## I PRACTISE

1. I can convert between binary and denary values (up to 8 bits).
2. I can convert colour representation of an image into binary
3. I can build simple games using blocks in MakeCode Arcade, including player movement and scoring.
4. I can use basic loops in Python Turtle.
5. I can use flowcharts to help me plan a programming code.



## I LINK

1. I can relate binary conversions to how computers store images and sounds.
2. I can link how binary is used within computer systems for everyday use.
3. I can link programming skills between MakeCode Arcade and Python Turtle, identifying common structures.
4. I can explain how variables and loops work in both block-based and text-based programming.
5. I can use flowcharts and pseudocode to plan programs before coding them.



## I ANALYSE



1. I can explain how changes in resolution or sample rate affect file size and quality.
2. I can break down a MakeCode game into events, conditions, and outcomes.
3. I can trace and debug Python code by reading line-by-line.
4. I can spot syntax or logic errors in Python Turtle and fix them using print statements and comments.
5. I can distinguish the different shapes used for a flowchart.



## I EVALUATE

1. I can justify the design of my MakeCode game (e.g. difficulty, scoring logic).
2. I can explain how my Python Turtle code meets the user's needs.
3. I can improve a program based on teacher or peer feedback.
4. I can compare the efficiency of different binary-to-denary methods.
5. I can justify the need for the use of flowcharts.

## I READ

Data Representation: <https://www.bbc.co.uk/bitesize/topics/zxnfr82>

Makecode Arcade: <https://arcade.makecode.com/tutorials>

Python Turtle: <https://www.datacamp.com/tutorial/turtle-graphics>

## I LEARN

1. MakeCode Arcade: Game design using sprites, events, scoring and loops.
2. Binary and Denary: Conversion, bit patterns, binary addition.
3. Data Representation: Image size calculation, sound samples, compression basics.
4. Python Turtle Programming: Inputs, outputs, variables, selection, iteration.
5. Computer Hardware, Software and Logic: Logic Gates, Flowcharts, pseudocode, Input output devices, CPU, RAM, OS