

What is Binary?

The computer language that is used to represent all data and instructions within a computer.

It has a Base of 2 – either 1 or 0 (on or off)

What is Denary?

Denary is the number base we use in Math.

It has a Base of 10 (0, 1, 2, 3, 4, 5, 6, 7, 8, 9)

Binary Addition Rules:

$$0 + 0 = 0$$

$$1 + 0 = 1$$

$$0 + 1 = 1$$

$$1 + 1 = 0 \text{ (carry the 1)}$$

$$1 + 1 + 1 = 1 \text{ (carry the 1)}$$

Units of Measurement:

Bit – 1 or 0 (one binary digit)

Nibble – 4 bits

Byte – 8 bits

1,000 bytes – kB

1,000 kb – MB

1,000 MB – GB

1,000 GB - TB

Pixel is short for picture element.

A pixel is a single point within a bitmap image.

Bitmap Image: a map of bits made up of pixels.

Bitmap images can be represented using binary (on or off – black or white) which then can be converted into binary code

Convert Binary into Denary:

1. Insert the Binary value into the conversion tool (right to left):

128	64	32	16	8	4	2	1
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2. Count the values that have been turned on (with a 1 underneath them)

3. Their total equals the Denary equivalent.

Converting Denary into Binary:

1. Start from the left, find the first number on the conversion tool that can go into the denary number and take it away.

2. Repeat this until the Denary number equals 0 and fill any remaining parts of the conversion table with 0's.

3. This is then your Denary number converted to Binary.