



# 1.2 Units of Storage and Compression

## Knowledge Organiser

### Key learning

#### Units

- Bit, nibble, byte, kilobyte, megabyte, gigabyte, terabyte, petabyte
- How data needs to be converted into a binary format to be processed by a computer

#### Compression

- Need for compression
- Types of compression:
  - Lossy
  - Lossless

#### Why computers use binary

- Computers consist of many transistors
- Each transistor can only be on or off
- This can be used to represent 1 or 0



#### Lossless

- Reversible compression
- No data is lost
- Can be used on text
- Cannot be compressed as much as lossy

#### Lossy

- Permanent compression
- Some less important data will be lost
- Cannot be used on text
- Can be compressed more than lossless

### Key terms

<b>Bit</b>	The smallest unit of data storage consisting of a single 1 or 0. This can be represented by a single transistor.
<b>Nibble</b>	A group of four bits (half a byte).
<b>Byte</b>	A group of 8 bits.
<b>Compression</b>	Reducing the file size to make it faster to send and take up less storage space.
<b>Lossy</b>	A method of compressing a file by permanently removing some data.
<b>Lossless</b>	A method of compressing a file keeping all of the data.

#### Bit

- Smallest unit of storage made of a single 1 or 0

#### Nibble

- A group of 4 bits

#### Byte

- A group of 8 bits

#### Kilobyte

- 1 000 Bytes or 8 000 bits

#### Megabyte

- 1 000 Kilobytes or 1 000 000 Bytes

#### Gigabyte

- 1 000 Megabytes or 1 000 000 Kilobytes

#### Terabyte

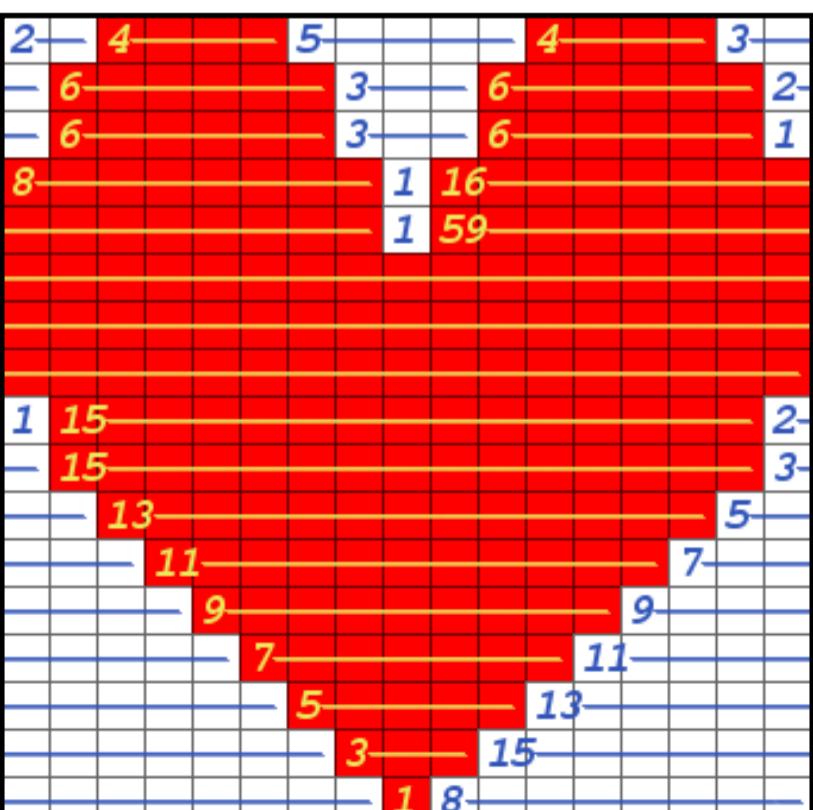
- 1 000 Gigabytes or 1 000 000 Megabytes

#### Petabyte

- 1 000 Terabytes or 1 000 000 Terabytes

### Lossless compression

### Lossy compression



Some pixels have been removed in this image.

