

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

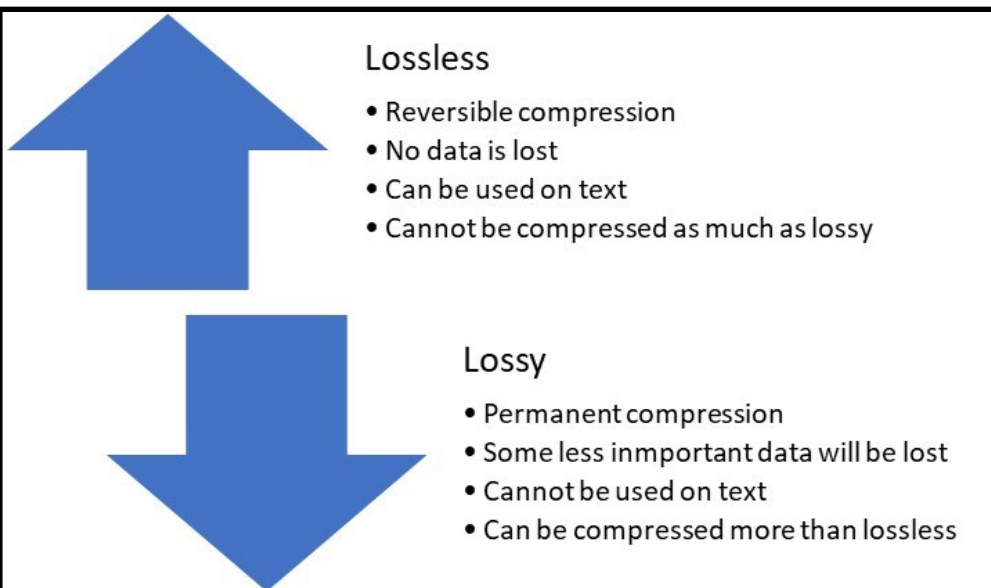
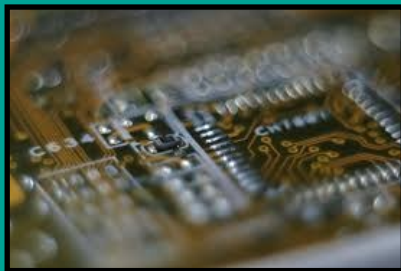
- Need for compression
- Types of compression:
 - Lossy
 - Lossless

Key terms

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

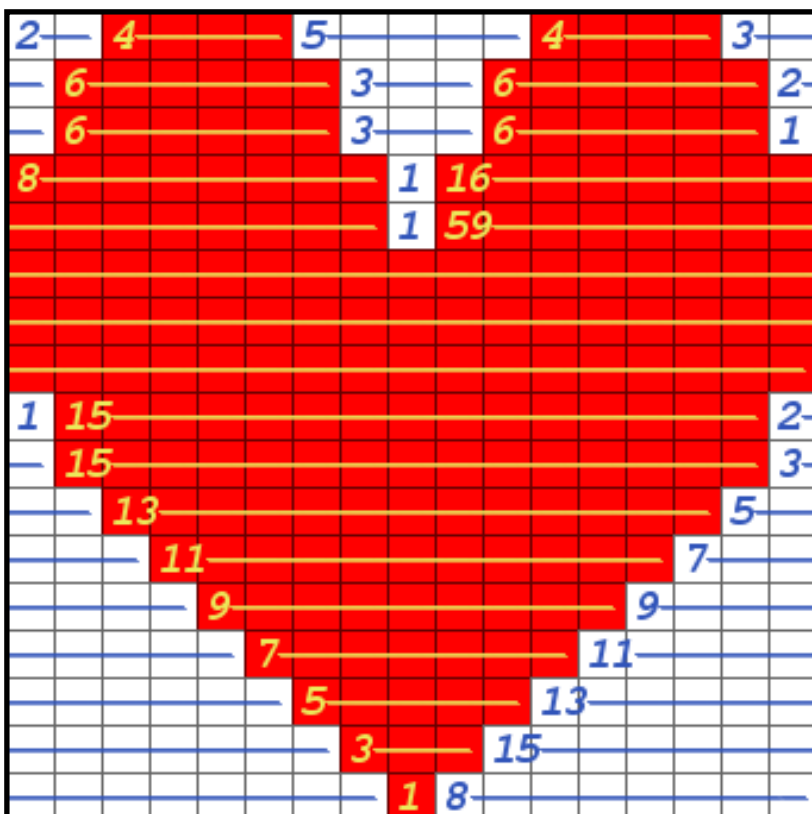
Why computers use binary

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



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

