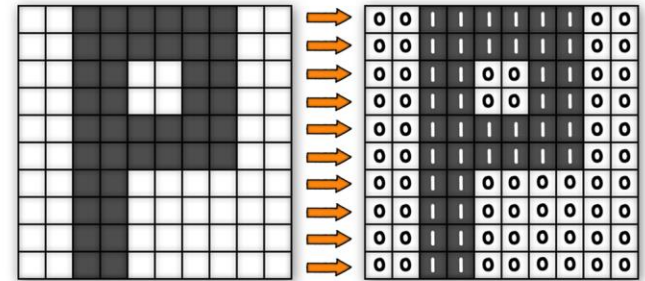
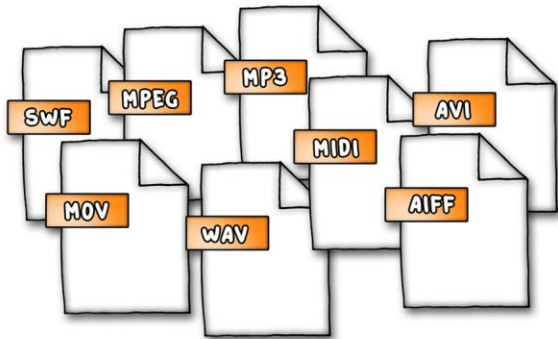
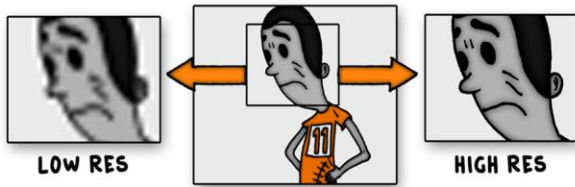
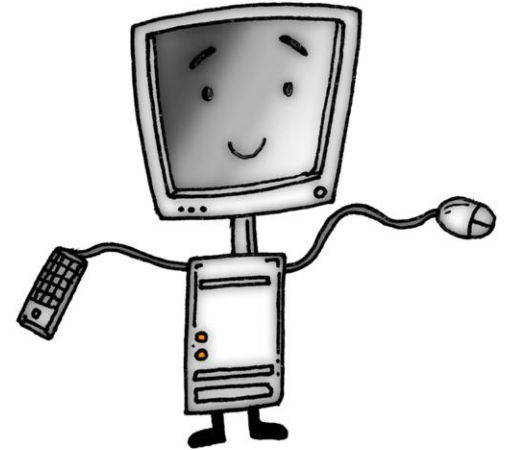


# ThinkIT

DATA REPRESENTATION



## Units

- List each of the different units of data which exist and arrange them in order of their size
- State the abbreviations used within different units of data i.e. MB = megabyte
- Explain why data needs to be converted into a binary format
- **Specify the amount of storage space required to store the word “Friday” in a word document**

## Numbers

- Explain the difference between denary, binary and hexadecimal values
- List each of the stages involved in converting a denary number to binary and vice versa
- Produce a table of denary numbers from 0-15 which lists their equivalent binary and hexadecimal values
- **Outline how to convert the binary value of 1011 0111 into denary**

## Characters

- Discuss why binary codes are used to represent characters within a computer system
- Explain what the term character set means
- Outline the benefits and drawbacks of the ASCII and Unicode character sets
- **State how many bytes are needed to store the extended ASCII character “B” in a text document**



# ThinkIT

## DATA REPRESENTATION

## Images

- List some of the common image file formats which exist
- Explain how an image is represented by pixels in a binary format
- Outline some of the different ways in which colour depth and resolution can affect the overall quality of an image
- **State the number of colours available in an image if it has a 6-bit colour depth**

## Sound

- Outline each of the different stages involved in digitalising an analogue sound
- Explain the three factors which can influence the quality of a digitalised sound
- List some of the common audio file formats which exist
- **A common sample rate for a piece of music is 44,100 samples per second, simplify this number into kilohertz**

## Compression

- List some of the typical file formats which are associated with lossy and lossless file compression techniques
- Explain some of the reasons as to why a file might need to be compressed
- Compare and contrast the difference between the lossy and lossless file compression techniques
- **If an image is compressed via the lossy compression technique from 824kb in size to 76kb, illustrate with an example how the two images will be different from each other**