CAIE Computer Science IGCSE

1.2 Text, sound and images

Flashcards

What is a character set?

What is a character set?

A collection of characters and their corresponding binary codes.

Name two character sets.

Name two character sets.

ASCII and Unicode.

What types of characters are in ASCII?

What types of characters are in ASCII?

English letters, numbers, punctuation, and control codes

What is Unicode?

What is Unicode?

A modern character set that supports characters from many languages and symbols (including emojis).

How is Unicode different from ASCII?

How is Unicode different from ASCII?

Unicode can represent more characters by using more bits per character, while ASCII is limited to 128 characters.

Which encoding standard is more suitable for global applications?

Which encoding standard is more suitable for global applications?

Unicode as it is able to represent non-english characters.

What is a pixel?

What is a pixel?

Short for “picture element” - a single point in an image.

How are images represented in a computer?

How are images represented in a computer?

As a series of pixels, with each pixel's colour value stored in binary.

What is colour depth?

What is colour depth?

The number of bits used to represent each pixel.

How many unique colours can be represented by 1-bit colour depth?

How many colours can 1-bit colour depth represent?

2^1 = 2 colours (typically black and white)

How many unique colours can be represented by 8-bit colour depth?

How many unique colours can be represented by 8-bit colour depth?

$2^8 = 256$ colours

What happens to an image's file size if colour depth increases?

What happens to an image's file size if colour depth increases?

File size increases, as more bits per pixel = more data.

What happens to an image's quality if colour depth increases?

What happens to an image's quality if colour depth increases?

Quality improves, as a wider range of colours can be represented.

What is resolution?

What is resolution?

Resolution is the number of pixels within an image. It can be found by multiplying the image width in pixels by the image height in pixels.

How is sound represented in a computer?

How is sound represented in a computer?

By sampling: measuring the analogue wave's amplitude at regular intervals and storing it in binary.

What is the sample rate?

What is the sample rate?

The number of samples taken per second, measured in Hertz (Hz).

What is sound bit depth?

What is sound bit depth?

The number of bits used to store each sample - determining how accurate and precise each sample is.

What is the effect of increasing the sample rate?

What is the effect of increasing the sample rate?

Improves audio quality but also increases file size.

What is the effect of increasing the bit depth?

What is the effect of increasing the bit depth?

Provides more accurate sound (better quality), but increases file size.