AQA Computer Science GCSE
3.3.7 Representing Sound

Flashcards

How is sound represented in a computer?

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

What is the sampling rate?

What is the sampling rate?

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

What is sampling resolution?

What is sampling resolution?

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

What is the formula for calculating the file size of a sound recording (in bits)?

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File size = sample rate × sample resolution × duration

How do you convert sound file size from bits to bytes?

How do you convert sound file size from bits to bytes?

Divide by 8

What is the effect of increasing the sampling rate?

What is the effect of increasing the sampling rate?

Improves audio quality but also increases file size

What is the effect of increasing the sampling resolution?

What is the effect of increasing the sampling resolution?

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

A mono audio file has a sampling rate of 44,100 Hz, sample resolution of 16 bits, and duration of 10 seconds. What is its file size in bytes?

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File size = sample rate × sample resolution × duration

File size = 44,100 × 16 × 10 = 7,056,000 bits / 8 = 882,000 bytes

What does "Hz" stand for in sampling rate?

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Hertz - the number of samples per second.