

2-BIT

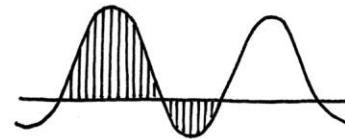
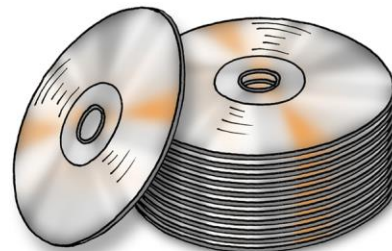


4-BIT

GraspIT

DATA REPRESENTATION

PP



Units

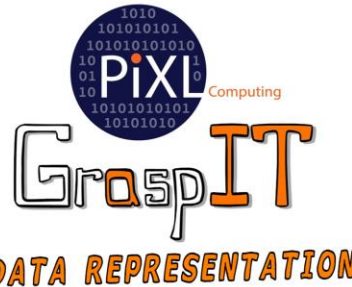
- Explain why different units of data such as PB, GB, MB exist.
- Make a list of each of the different units of data which exist and give examples of their data size i.e. 4.7GB = 1 DVD.
- Determine why in an era of supercomputing small units of data such as kilobytes are still used.
- Specify the amount of storage space required to store a 3MB audio file.

Numbers

- Show how you would add two 8-bit binary integers together.
- Outline each of the stages involved in converting a binary number to hexadecimal and vice versa.
- State a situation where a binary shift (left or right) might need to be used.
- Outline how to convert the denary value of 124 into hexadecimal.

Characters

- Determine what the ASCII abbreviation stands for.
- State how many characters the ASCII and Unicode character sets contain.
- Describe the purpose of Unicode and explain its advantages and disadvantages.
- State the letter value "65" represents in the ASCII table.



Images

- Compare and contrast the difference between a bitmap and a vector image.
- Specify some of the different types of metadata that can be contained within an image file.
- Determine how the colour depth of a digitalised image can be measured.
- State the number of available colours per pixel in a 24-bit image.

Sound

- Describe the benefits and drawbacks of sampling an analogue sound at a high sampling rate.
- Specify what bit depth is and explain why DVDs normally have a higher bit depth than CDs.
- Show how to calculate the bit rate of an audio file.
- Specify the two binary values a 16-bit audio sample can be encompassed between.

Compression

- Specify with an example of when lossless file compression would be appropriate to use on an image.
- Determine why lossy file compression doesn't allow an image to be restored to its original state.
- Specify with an example what a zip file is.
- State two benefits of a social networking site using the lossy file compression technique when users upload their images.