

## Subject: Computer Science Representing Sound and Images.

### Task 4

You need to remember these formulas so spend some time reading/watching these links.

[Sound - Data representation - OCR - GCSE Computer Science Revision - OCR - BBC Bitesize](#)

#### Sound File Size

To find the size of a sound file, you multiply the sampling rate by the sample resolution and the length of the sound recording in seconds: **sound file size (in bits) = sampling rate x sample resolution x seconds**

This means that the size of a sound file will increase if the sampling rate, sample resolution, or duration of the recording increases.

The number of bits used per pixel is called the colour depth. The greater the colour depth, the more colours are available for an image.

[Representing sound — Isaac Computer Science](#)

#### Image Resolution

The **image resolution** is the size of a bitmapped graphic in pixels. It is calculated by multiplying the width (in pixels) by the height (in pixels) of an image.

To find the size of an image file, you multiply the resolution of the image by the colour depth: **image file size (in bits) = width (in pixels) x height (in pixels) x colour depth**

This means that the size of an image file will increase if either the colour depth or the image resolution increases.

When an image has a width of 8 pixels and a height of 8 pixels, with a colour depth of 4 bits, the calculation is:

- Calculate total bits:  $8 \times 8 \times 4 = 256$  bits

[Bitmapped graphics — Isaac Computer Science](#)