

Types of Image File – Bitmap and Vector files

Two Types of Image File

Digital graphics use computers. They are usually produced in graphics packages such as Photoshop.

The type of file that the graphic is produced as is important. Different file types can be used for different types of products or for different purposes.

There are two primary types of graphic file:

- Bitmap images (also called raster images)
- Vector images

1. Bitmap (or raster) images

Bitmap, or **raster**, images use individual dots to build up the image. These dots are square and are called **pixels**. If you open an image and zoom in far enough you'll see the individual pixels.

Each pixel is a dot of one colour. The dots form a grid (like a map) to build up the image.

If you use a small image at a larger size than it was designed to be used the image becomes blurry. We say that the image is **pixelated** – the grid of pixels starts to become visible and the smoothness of the image is lost.

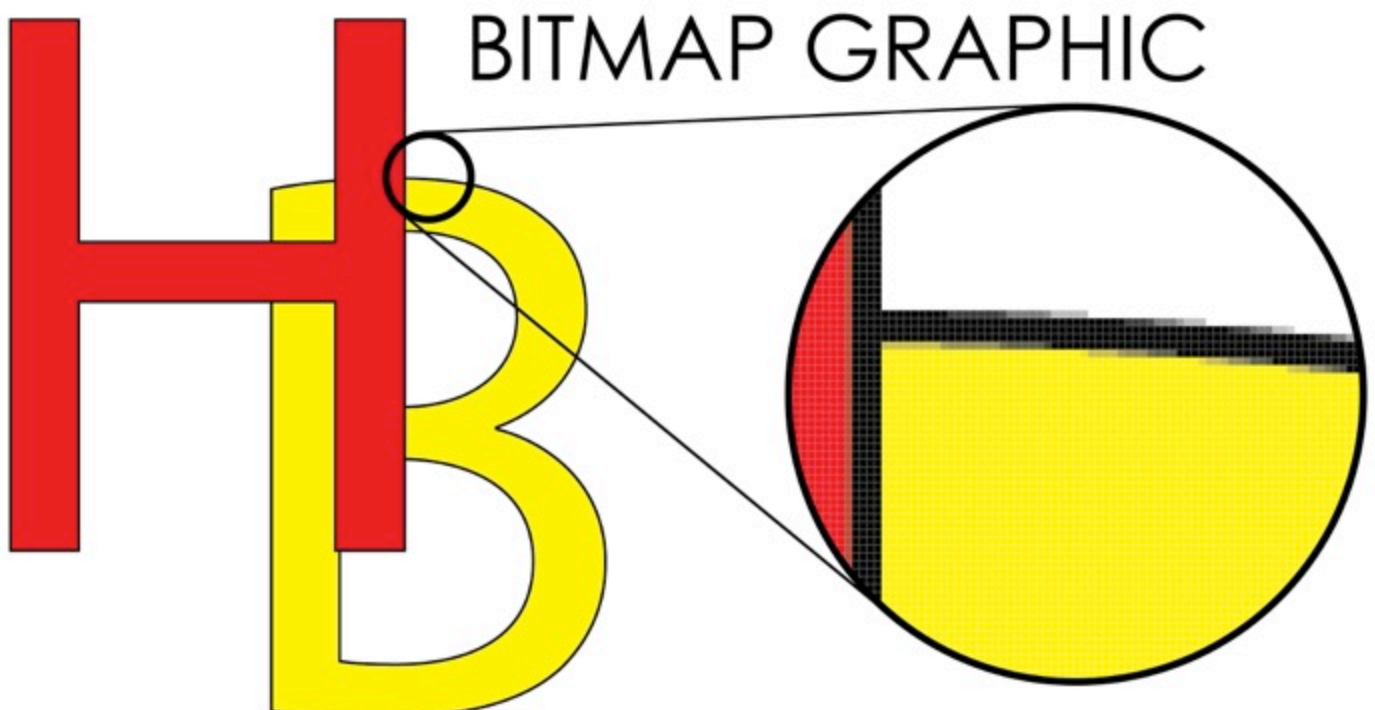
It's impossible to make bitmap graphics bigger than they were first made at and keep the same quality of image. You can't just add pixels to the image.

Most of the images you will deal with will be bitmap images.

You will need to show that your understanding of the two types of image file in LO1

It's might be easier to call these a Raster image – there is a specific file type called a BMP

You can find out a bit more about the differences between Bitmap and Vector images at tinyurl.com/ydcg3adk



2. Vector graphics

Vector graphics use **mathematical equations** to build up shapes. They work really well for anything involving basic shapes or curves that can be turned into an equation. They don't work well for photographs.

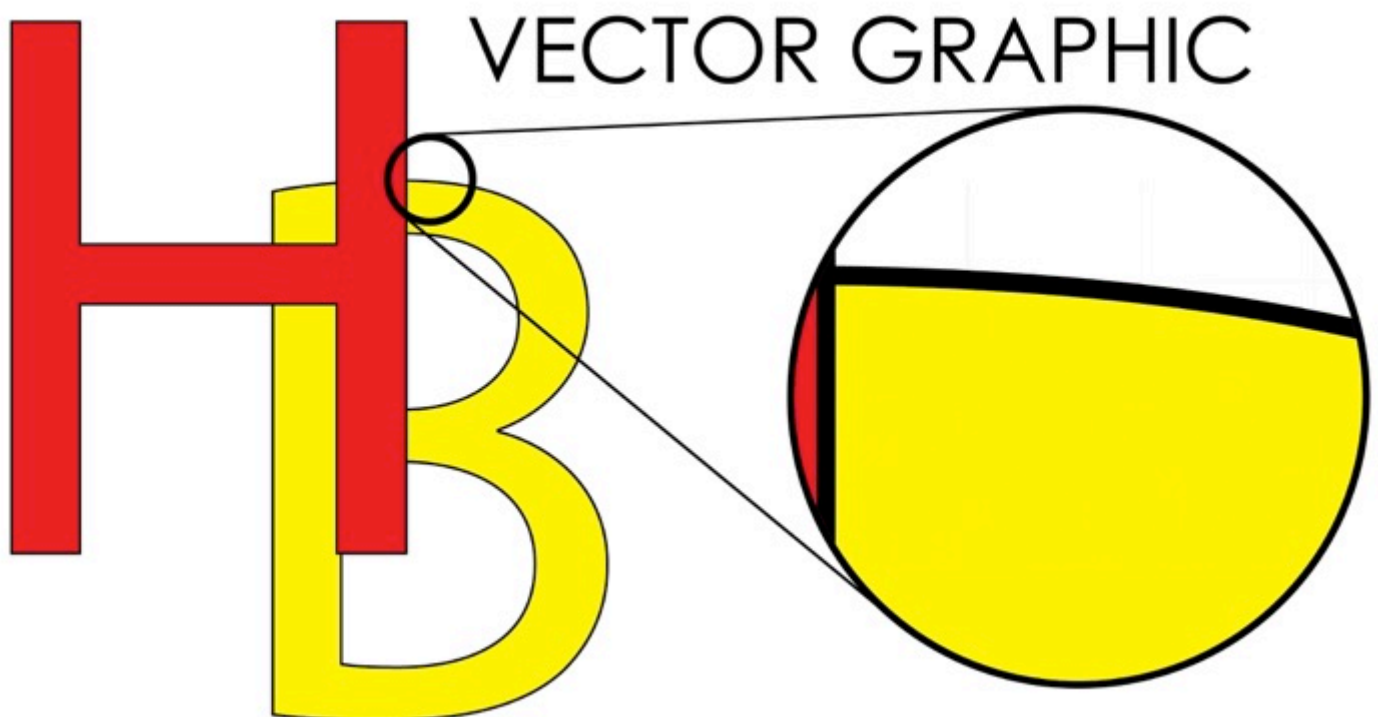
Because they are made up of formulae, vector graphics can be **resized** as large as required. This is a major advantage of a vector graphic. They can be **scaled up** as large as needed because the mathematical formulae can simply use larger numbers. They can also be re-coloured more easily because of the ways in which coloured pixels are shaded at the edges of bitmap graphics.

Vector graphics are particularly appropriate for simple logos using shapes or font characters. By making the logo as a vector graphic you can use it at whatever size needed.

Vector graphics will often need to be changed into a bitmap format when they are actually being used. So, adding a vector graphic to a Photoshop file requires it to be **rasterised** – turned into a bitmap. That's OK, so long as you do it at the size you need to use it at you don't lose any quality.

Vector graphics are really helpful for anything that is basically a series of shapes or lines.

The file size of vector graphics will often be smaller than a bitmap of the same image



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