**11.1: M1/D1 – Analyse and evaluate how the representation of digital graphics and animation in digital format impact on their usability and accuracy**

**Usability:** Compatibility, Presentation, File size

**Accuracy:** Representative of the original, Differences in colour depth, dpi, Degradation in quality

**GIF**

Print

* Usability – used by 2d printers but not 3d printers.
* Accuracy – low dpi can make lower quality.

Smart Phone

* Usability – works on modern phones but may not be compatible with older models.
* Accuracy – depends on screen size / resolution.

Television:

* Usability – depends on the manufacturer of the tv and if it is a smart tv or not.
* Accuracy – depending on the size of the tv it may fit perfectly or be stretched to fill the screen and look very bad.

**OBJ**

Print

* Usability – used by 3d printers. They are a 3d file format so they can’t be used on anything else.
* Accuracy – to print at a high quality a high polygon count would be needed so that the curves look more realistic.

Smart Phone

* Usability – if there is an app on the phone which can display 2d models it can be displayed, otherwise it will be incompatible. you can hook up external devices like a mouse and keyboard.
* Accuracy – you can use cad on this but without external devices it will be hard to use and slow, it is very limited as cad is intended to be used on a pc.

Television:

* Usability – you do not use them on a tv, you use a monitor.
* Accuracy – tv’s have a set resolution and do not have enough pixels to properly represent the 3d images and will look pixelated.

**MPG**

Print

* Usability – cannot be printed out or presented as it is a video type file format, if it is printed out it will only be a single frame and not a video as it is intended to be, because of this the file size will be as small as a jpg file. Jpg files can be used to make a flipbook though.
* Accuracy – it cannot properly represent the video as it will either not work or will be shown as a single frame (jpg or jpeg), there will be little to no difference in colour depth, depending on the resolution of the video file it could be a maximum of 720x480 if it is mpeg-2, there will be no degradation in quality as the picture will be the same unless the printer is of bad quality.

Smart Phone

* Usability – can be shown as a video saved or streamed from an app.
* Accuracy – the quality depends on how much the video was compressed, there is no difference in colour depth. It also depends on colour depth.

Television:

* Usability – can only be played on TV’s that can play video files like smart TV’s, if the file is burnt onto a disc it can be played through a DVD player.
* Accuracy – there may be a bit of upscaling for smaller resolution files but the quality would stay the same. it can be compressed but if the compression is lossy there may be a drop in video quality.