Research on colours:

1.HSV colour wheels

HSV is divided into three categories Hue, saturation and Value.

Hue is the primary colour without modifying the colour, hence having a pure hue colour. Saturation is where you use a hue colour and tone on the colour, for example the colour red when you tone up the saturation at it's maximum the colour becomes grey, saturation can be also be called Chroma. Value is referring to the light and dark of a colour an example from figure picture no.1, when you increase the value of the colour it will start to darken the colour a bit until when you reach the maximum where the colour's value is pure black.

People who work as designers will usually use the HSV colour wheel for when selecting or a printer or an ink that is due to people would like to prefer to relate on more colours rather than the RGB colours also not mention that HSV produces more high-quality image.

Figure 1:
https://30daysweater.com/color-theory-for-knitters-color-wheel/

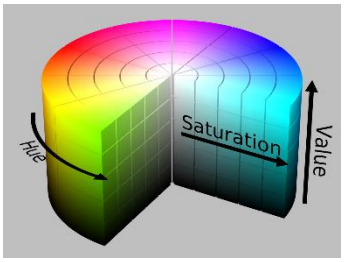

Figure 2:
http://warrenmars.com/visual_art/theory/colour_wheel/colour_wheel.htm

2. ICC profiles

ICC profile is used to ensure that the output that you have taken like for example a picture from a camera and it will try to match that picture into an input device.

When you have an ICC profile you will have the gamut colour and colorimetric characteristic. The gamut colour can be mostly be seen on monitors, the reason is because monitors have RGB signals while printers do not have gamut colours due to printers rely to CYMK inks. The use for an ICC profile is to make the colour vision précised to a given device because when you do not have a profile the colour reproduction will start making the image with less or more flaws.

The ICC profile starts of when you need to print something you need to print on a calibrated printer once then if you have photoshop the colour management of photoshop will begin reading the ICC profiles of that calibrated printer you're using so it would know which RGB values that it needs to send the given values to its characterized printer.

Figure 3: https://www.mimakieurope.com/icc-profiles/

3.Screen pixels

Screen pixels is where you have a lot of pixels near each other where it creates a screen.

In every pixel it contains a sub pixel where in the subpixel it has the RGB values an example of creating a pixel is when you mix the red, green and blue together and it forms a white pixel. Screen pixels can be found in digital cameras and on computer monitors. Screen pixels can also be seen on screen resolution. Screen resolution are how many pixels you have vertically and horizontally for example 1920 x 1080 means you have 1920 pixels horizontally and 1080 pixels vertically. A pixel also has density.

Pixel density is how much pixel per inch displayed on a screen it can be also called in short PPI. The more pixel density you have the more detailed and bigger the picture is however the bigger the screen resolution is the less optimal view distance you'll have.

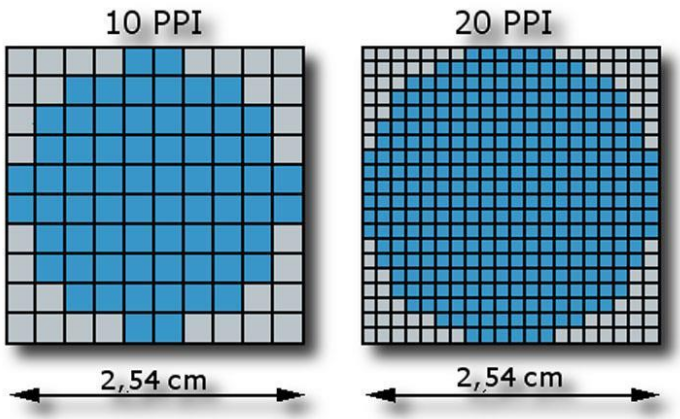

Figure 4: https://arunnersstory.com/2017/02/25/color-mode/

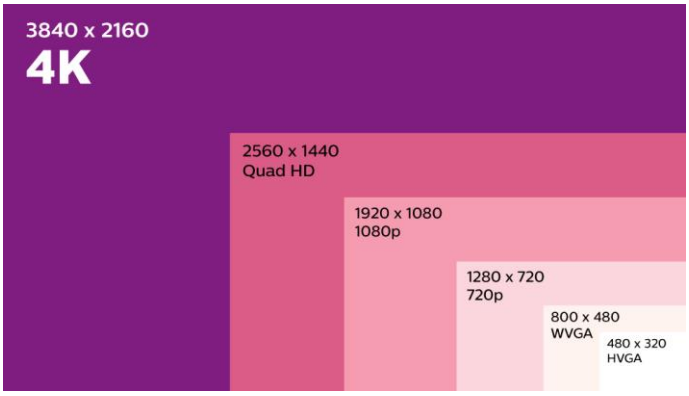

Figure 5: https://www.mmdinnovationhub.com/ultra-high-definition-uhd-vs-quad-high-definition-qhd/

4. RGB VS CYMK

RGB and CYMK colours are both different from each other and both are used for different purposes.

The colours RGB colours are red, green and blue when combing them together it creates a white screen and they are addictive colours. The RGB is commonly used on computer monitors or on a video camera. The colours for the CYMK are Cyan, Yellow, Magenta and key which means black and they are subtractive colours, this are commonly used for printers.

When using computer monitor the RGB is a sub pixel which then it would create a pixel for instance when mixing the colour red and green it creates the colour yellow pixel. On the other hand, the CYMK uses dots which in each dot contains CYMK colours only.

When printing a CYMK document file that you have worked on the picture's colour might be different from what you have printed on the reason is due to that computer monitors have RGB colours.

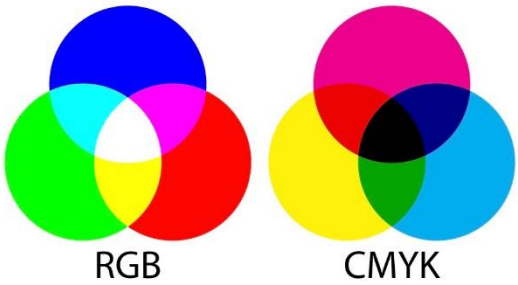

Figure 7: https://arunnersstory.com/2017/02/25/color-mode/

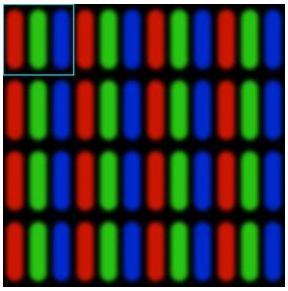

Figure 5: https://geometrian.com/programming/reference/subpixelzoo/index.php

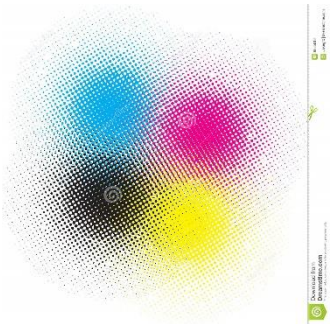

Figure 8: https://4vector.com/free-vector/cmyk-color-theme-vector-1616

5. Pantone colours

Pantone colours are made by a company called Pantone and the website offers high printed quality book prints of pantone colours. When you are trying to buy a pantone colour, they are quite expensive to buy.

When going to the pantone website they have a system called Pantone Matching system or PMS in short. The PMS is used for graphic arts where you can select numbers of colour based on your preferences. There are variety of pantone colours based on what type of designer you are such as graphic designer, packaging designer, fashion designer and more. As a graphic designer there two categories that the pantone website that can offer you which are the printing process and the non-printing process.

The printing process is where it can offer you pantone colours that focuses for CYMK pantone colours. The non-printing one is divided into two categories for pantone colours, the first category is for working digital stuff like for when making apps or for making a web design the pantone colours can be found on the app called pantone studio and the other one is the plastic one which focuses by trying to matching a brand colour or material to plastic.

Figure 9:
https://www.pantone.com/products/graphics/formula-guide

Figure 10:
https://www.pantone.com/products/graphics/formula-guide

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