

BEFORE WE BEGIN – YOUR PROJECTOR AND WHERE TO PROJECT

Your main choice is whether to project onto museum objects / paintings or onto plain surfaces (i.e. walls).

A few projection questions to consider before we begin...

- What are you projecting onto?
- What colour is the projection surface?
- What is the resolution of the projector?

WHAT IS THE BEST BACKGROUND COLOUR TO PROJECT ONTO?

It's somewhat strange that we think of projection screens as being white – as that is what you'll find in most offices and schools. The problem being that it's not possible to project black – projectors can only add light. Black is really the absence of projection. This means that in areas that we want a really dark black colour we're not projecting anything at all – so the result is the wall / museum object stays its original colour. This is why it's hard to get dark colours in rooms with ambient light.

You can spend a long time reading the debates about whether white, grey or even black projection screens are the best to go for.

The brightest for the viewer is a combination of:

- The projector brightness
- The projection surface colour
- How well the projection surface reflects light (we call this screen gain)
- The ambient light in the room
- Where the viewer is positioned

What this means is that we don't necessarily have to find big areas of white in the gallery to project on – actually darker areas often work better. If you're able to paint your own walls for projection – and interested in reading further then I would recommend mixing your own 'Black Widow' paint – it's what I've used at home and am very happy with it 😊 It's generally accepted as the best budget DIY projection surface.

USE A DARK SPACE!

There's a reason that cinemas are very dark rooms – it's so that the projector doesn't have to fight with the ambient light. Take a torch and shine it onto a cinema screen and you'll replace the onscreen action with a bright white circle.

It's also the same reason that impressive architectural projection mapping of large buildings always takes place at night. Even the brightest projectors fail when competing with the Sun!

Whatever you make will be more impressive if the projection is more visible – so find a dark place if possible.

YOUR PROJECTOR

Projectors have a native resolution: this is what they are projecting out at. They can accept higher resolution inputs but the image will be scaled to this lower output resolution. Generally having a lower resolution projector this isn't too much of an issue unless you're showing lots of detail – e.g. small text.

To put things into perspective until recently digital projection in cinema was 2K (a very similar resolution to FullHD) – so probably the same number of pixels on your phone screen and just think about how enormous cinema screens can be. Unless you're an AV expert you probably never noticed – projection is quite forgiving.

You'll see a lot of new projectors on Amazon / Ebay for under £100 that have words like FullHD (so 1920 x 1080 pixels) but on digging deeper are actually projecting at something very low (e.g. 800x400).

Below is the Elephas 1080p 180" which gets almost universal 5* reviews. I'm not sure how they are allowed to advertise like this – but there is no way that image is real – daytime outdoor cinema projection!

If anyone wants to buy one of these and let me know how they get on I'd be interested to know. Instead of using these new budget Amazon / eBay offerings you might do better to with older, higher-end projectors from the second-hand market. Generally, you'll have less Lamp life but you'll probably still have several thousand hours left. There are companies that clear out big batches of school projectors that would have been very high-end at the time but are now available for under £100.



SO WHICH PROJECTOR?

To start with I'd just use whatever you can borrow – as buying a projector can be a bit of a minefield!

There are lots of measurements to compare projectors – to keep things simple I'm going to focus on native resolution and brightness (lumens). If the projector talks about Lux instead of Lumens then that's probably a sign that it's worth avoiding!

Lumens wise I'd choose something above 3K. Top commercial projectors used in cinemas and for projection mapping will be 20-40K and many decent projectors using in galleries will be 10K+. You can search eBay for second-hand projectors with high lumens and decent resolutions. Often projectors are bought for projects as it's cheaper / easier than renting them and then let go second hand on ebay for low prices.

As mentioned above the native resolution is the real output resolution of the projector. These are often written as VGA, XGA, WUXGA. You can look these up on Wikipedia – but if your budget is tight XGA will probably be fine. XGA equates to 1024x768 pixels this is a 4:3 aspect ratio.

The top names in larger projector world are Barco and Christie. Panasonic and Epson are also higher rated brands at the high end. Sony, JVC and NEC also make good high-end projectors. Remember at the top-end you'll be buying the lenses separate from the projector body! Keep an eye on eBay and you might find a bargain!

This aspect ratio is useful to know as you'll want to build your PowerPoint in the same aspect.

By default, newer versions of PowerPoint will target 16:9 aspect ratio (most monitors and laptop screens are this) whereas older versions will target 4:3. It doesn't really matter though as you can change this easily.

On the ribbon – choose the 'Design' tab and head over to the left.

