

About Texturing

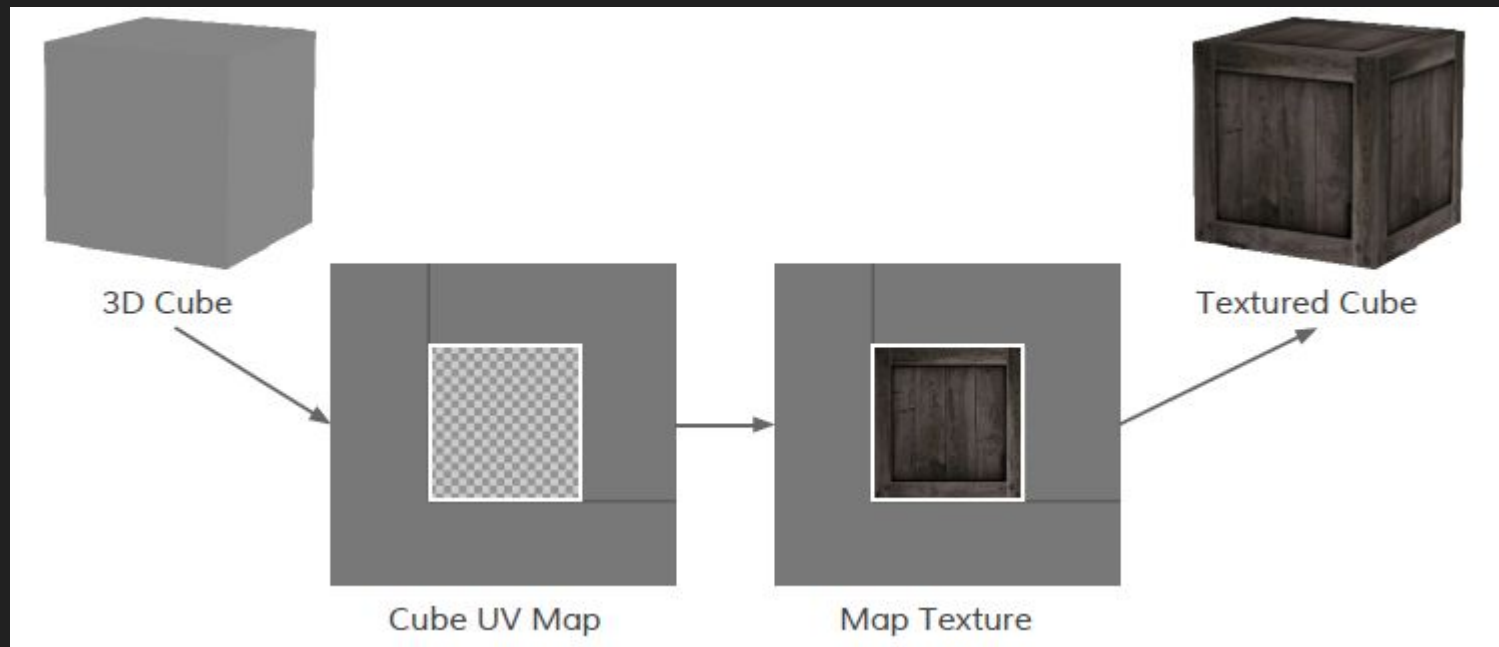
COMP2007

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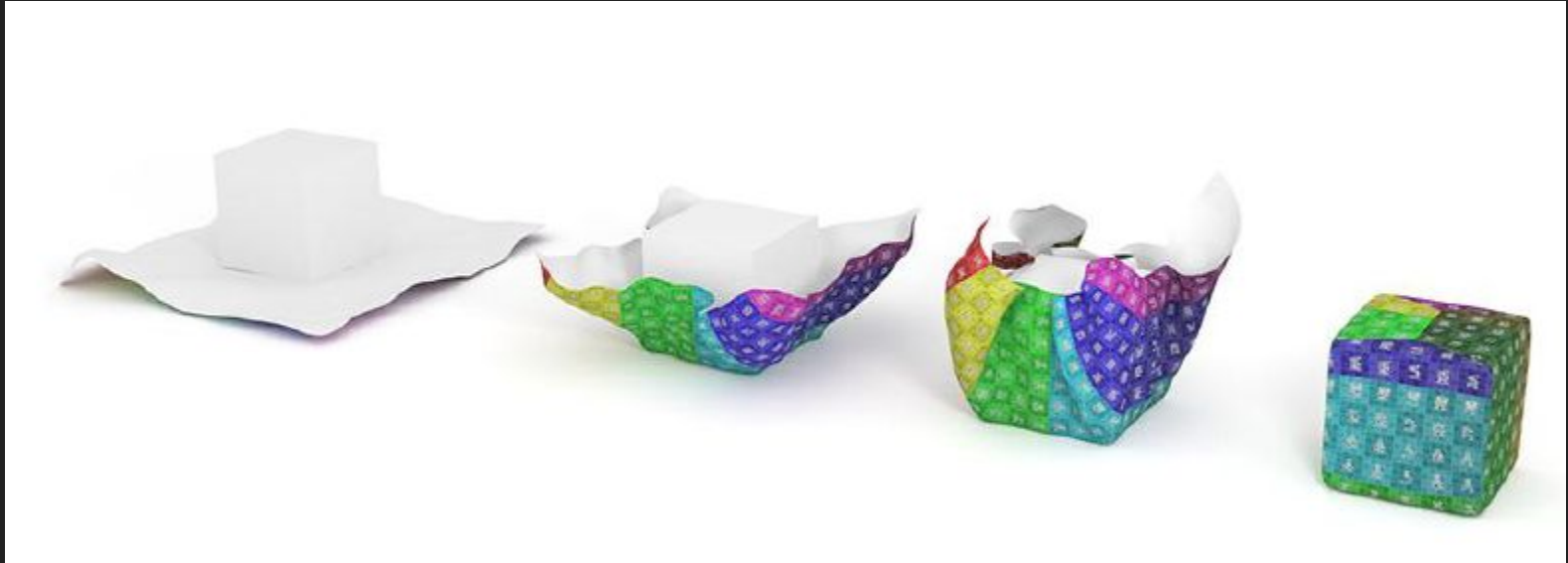


UV Mapping Workflow



UV Mapping Workflow

This canvas can then be coloured with a texture map and wrapped back around the object



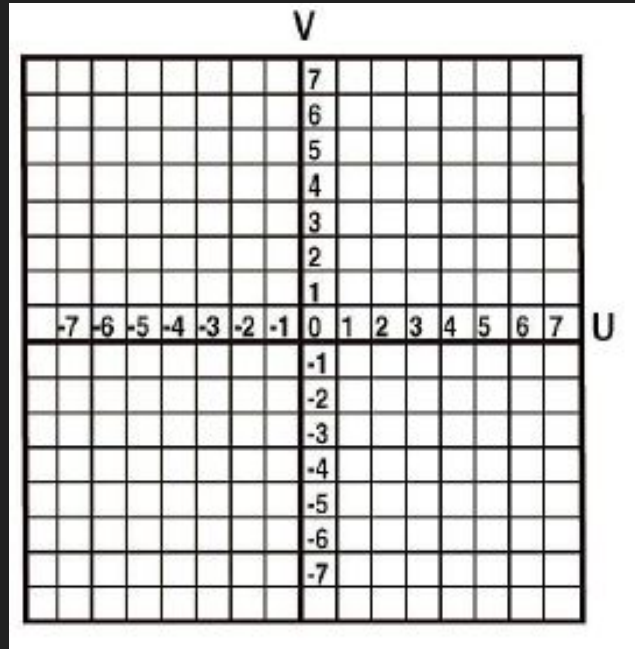
Coordinates

“UVW”, in mapping world, is a coordinate system like “XYZ”

$$U = X$$

$$V = Y$$

$$W = Z$$



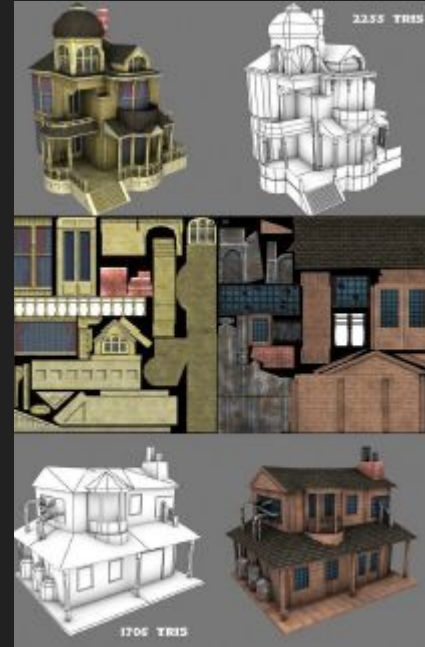
When do you UV map?

After Modelling!

If you change the model after you arrange the UV map you will cause destruction and/or distortion to your UV map!

What is the goal of UV mapping?

To create a “canvas” that will guide your textures

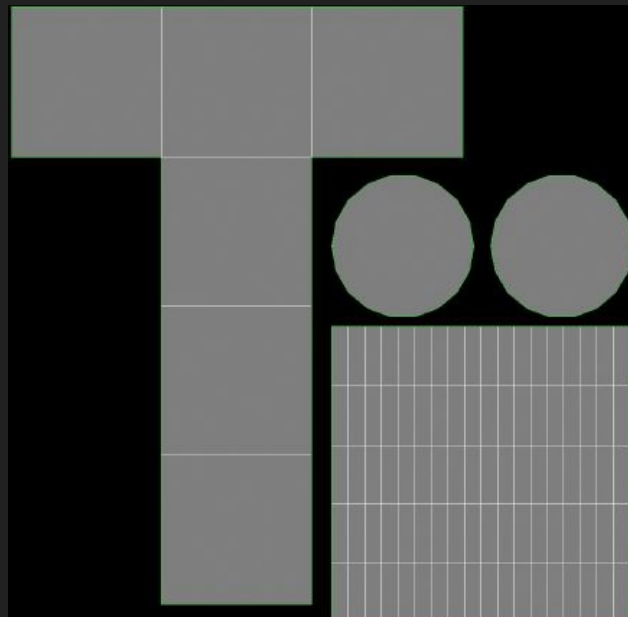


GREEN LINES

- UV Island boundaries

WHITE LINES

- Edges of polygons within Islands



BLACK AREA

- No man's land,
• not being used for
• texture

GREY AREA

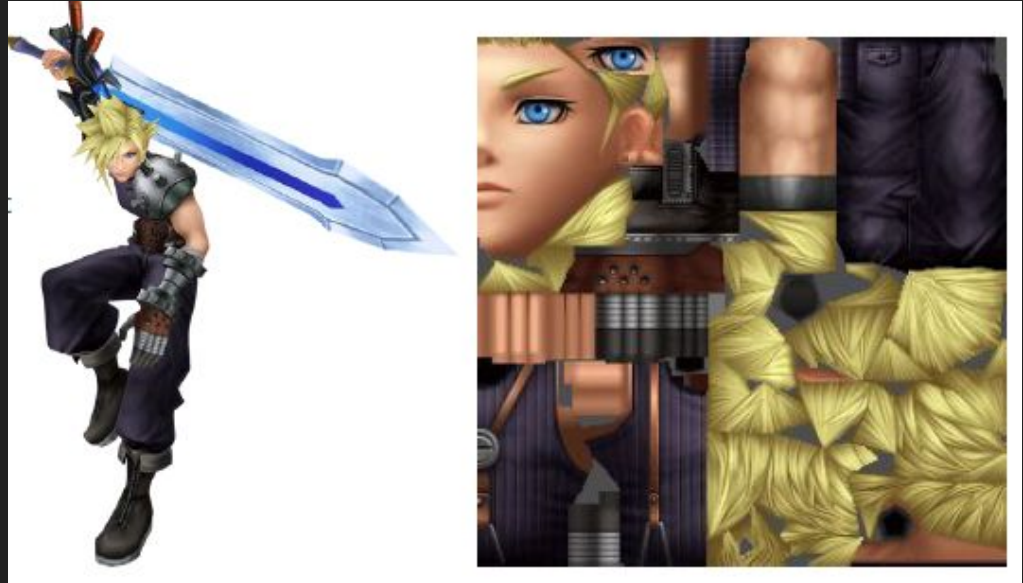
- Area being used

UV packing

SPACE VS RESOLUTION

When packing the UV's, the level of detail required for each part of the model must be considered.

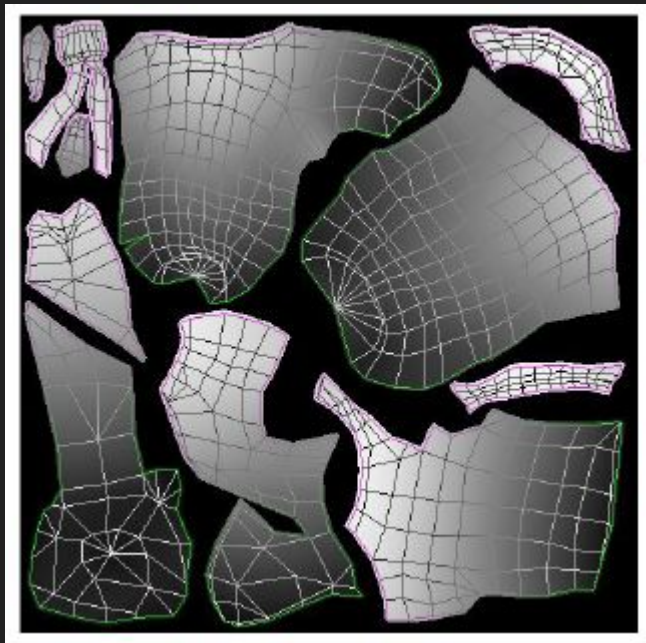
More detail requires more space



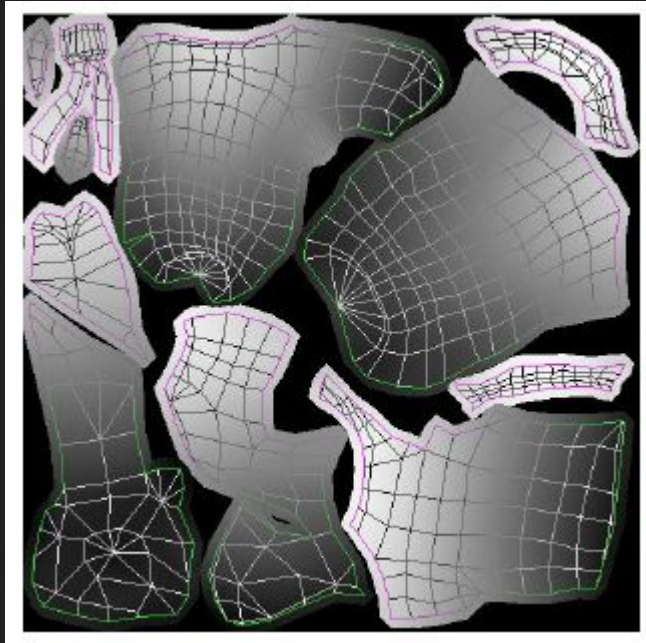
Edge padding

Overlap a texture beyond the edge of the face - this stops “bleeding” on a model

No padding



Padding



Colour Channels

A COLOUR image can have four channels

- Red
- Green
- Blue
- Alpha

A GRAYSCALE image will have one channel

- Greyscale

Red



Green



Blue



Combined

Colour Channels

EACH CHANNEL IS DATA

In a grayscale bitmap image, each pixel can have a value between 0 and 255

- Black = 0
- White = 255
- Shades of Grey = 1- 254

However, when using this data, this scale (0-255) it is normally converted to values between 0 and 1

A texture can be used for much more than just colour, each channel can be a source for data that can drive many outputs.

Transparency

The degree of transparency is on a scale from 0 - 1:

- “0” being fully transparent
- “1” being fully opaque



Transparency

Can be expensive on CPU/GPU

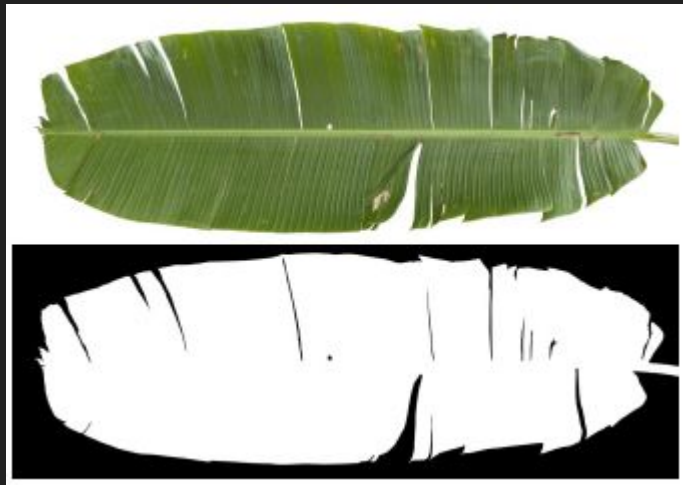
- Alpha effects come in many different forms which have different resource costs
- Use sparingly on Mobile
 - Modern devices are pretty fast though

Controlling Transparency

For .JPG files

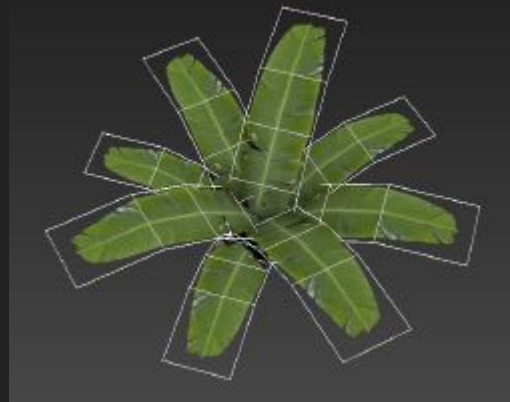
- Create an alpha source via texture or by value.
- Black is transparent, white is opaque
- The source location will change depending on program

.PNG image files have built-in transparency!



Where is transparency used?

Foliage



Where is transparency used?

Fencing & Windows



Where is transparency used?

Decals

