Blender

Game Engine

Normal Maps

When making games it is extremely important to use a low polygon (faces) count. Because the more polygons you have in your game, the slower the computer will run.

Game makers use a special type of texture mapping to make flat surfaces appear to have lumps and bumps. This is called normal mapping.

Normal mapping technology

Normal maps are mostly blue with slight red and green colouration.

This is because the image has been changed to coordinates, X, Y, Z.

In Blender (and any other 3D modelling program) the Z axis is blue, the X axis is red and the Y axis is green.

Normal maps are the original image with a blue light shining from the top down, a red light shining from the left and right and a green light shining from the back and front. These lights pick up the computerised heights in the image (lighter parts are higher than darker parts).

normal map

texture with normal map
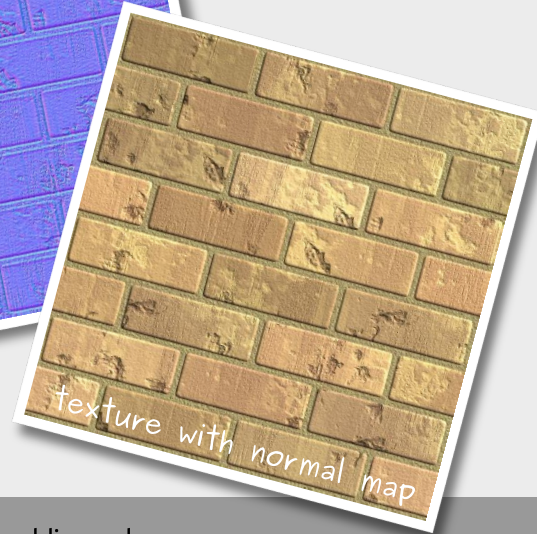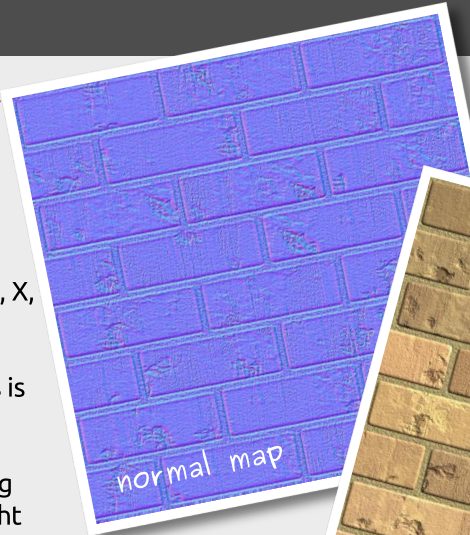
Normal maps are created to give depth to a texture, without adding polygons.
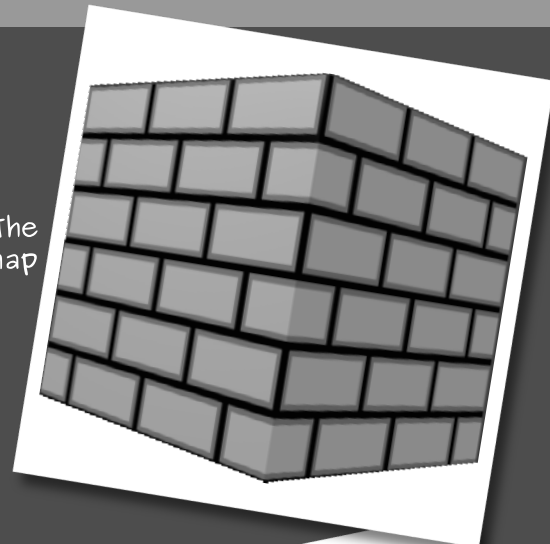

A basic texture
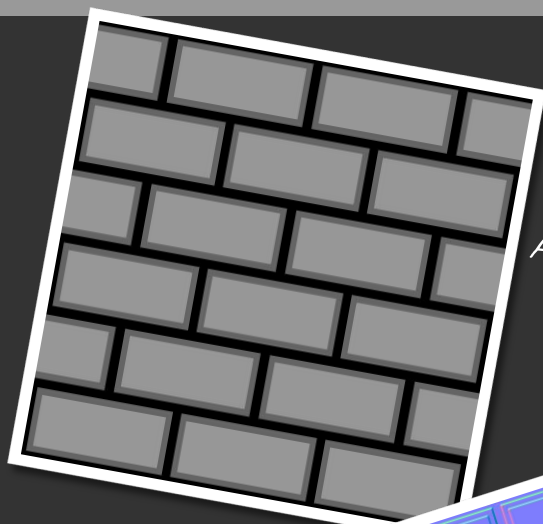
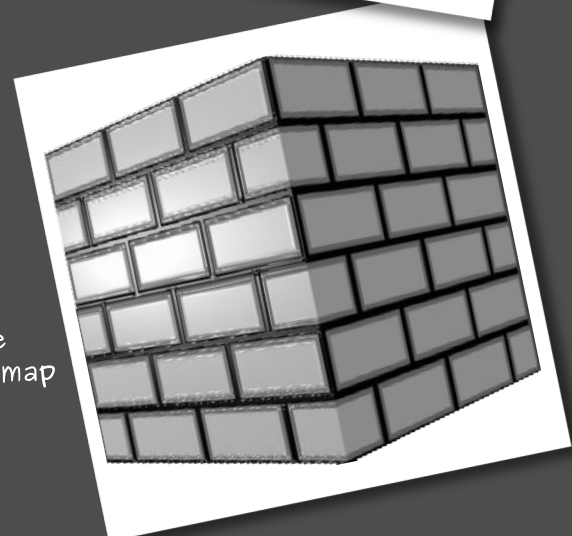without the normal map
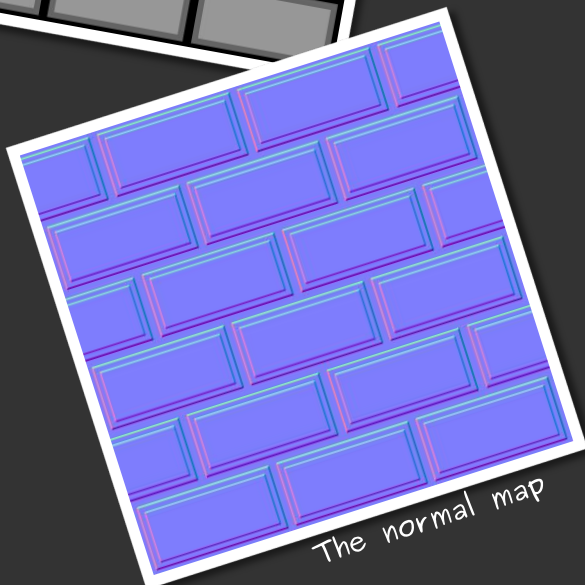
The normal map

with the normal map

Making Normal Maps

You will need to download and install Gimp from **http://www.gimp.org/**

You will also need to download and install the Gimp Normal Map from **http://code.google.com/p/gimp-normalmap/downloads/list**

Make sure that you follow the installation instructions within the zipped folder.
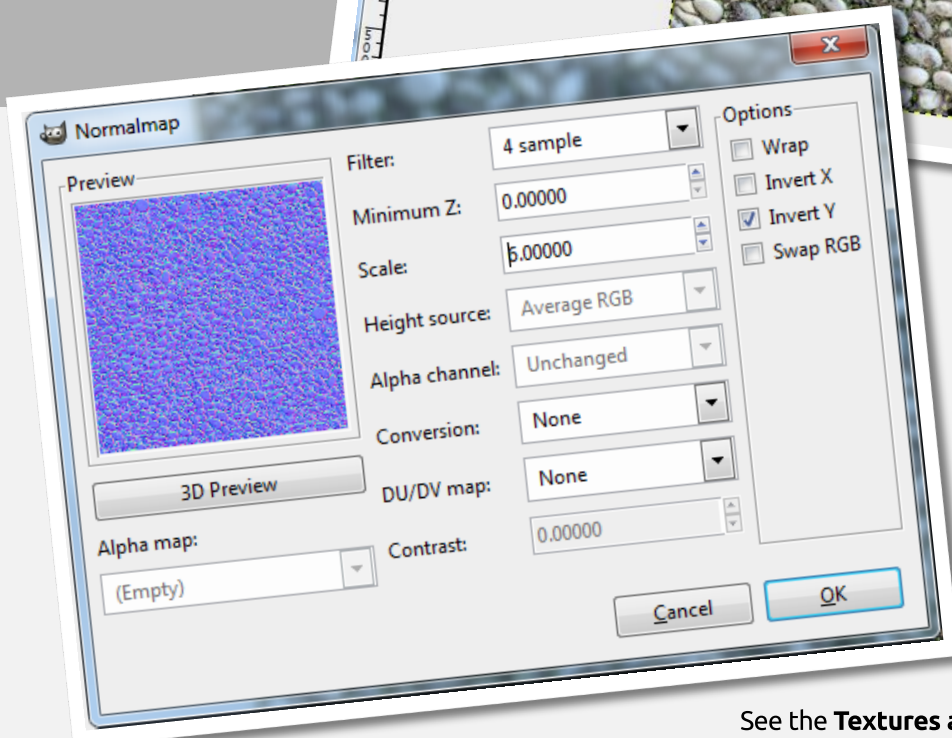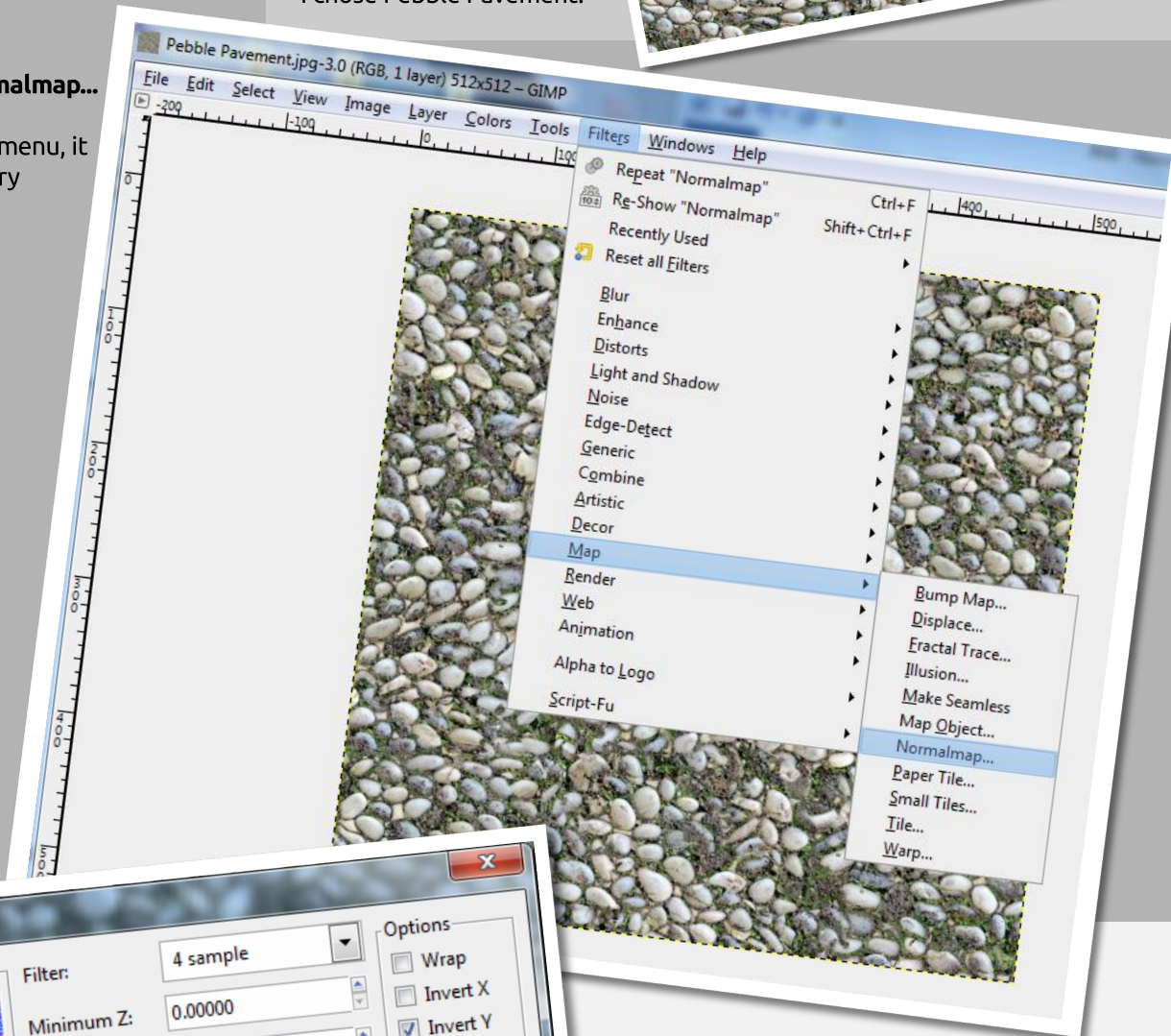
Step 1:

Open Gimp.

Open a texture. File>Open.

I chose Pebble Pavement.

Step 2:

Choose **Filters>Map>Normalmap...**

If Normalmap is not in the menu, it wasn't installed properly, try installing it again.

Step 3:

Put the scale up and you will see the blue image change.

When you are happy with the look of your normal map, press the OK button.

Save the new image **File>Save As...** FileName-normal.jpg

See the **Textures and Materials** tutorial to apply the normal map.