Textures - Hand Painted

Getting started with hand painting your textures.
An introduction into the basics.

Revision: 001

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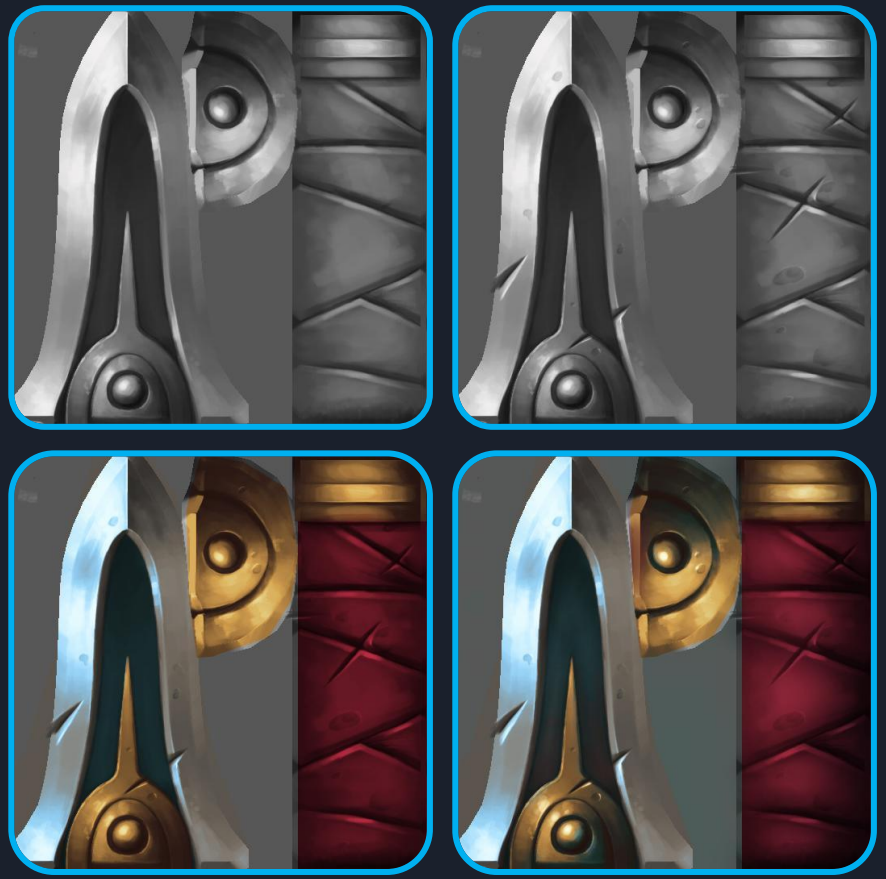
Hand painted Textures|Contents



This lesson will cover the following:

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Hand painted Textures| What are they?

1

2

3

In a traditional sense, hand painted textures are those created without any additional textures beyond the “Diffuse” or colour texture.

Given their low tech requirements, hand painted textures are commonly used in mobile game environments or games with a stylised or nostalgia art style

1. Hand painted wood by Ulrick Wery
2. Hand painted Grass by Antonio Neves
3. Hand painted “Paladin” character by Shem Dawson

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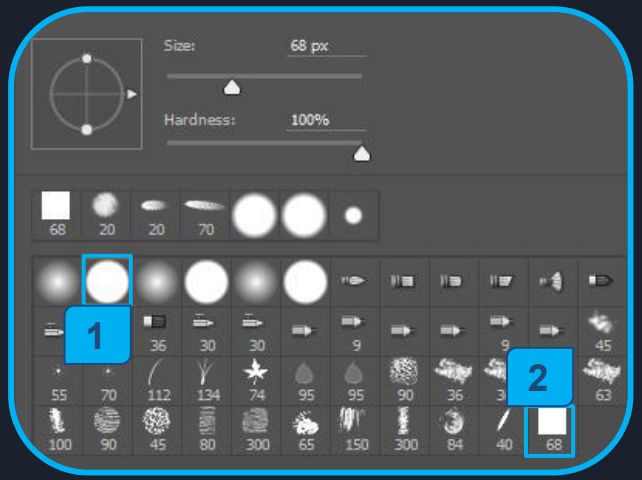
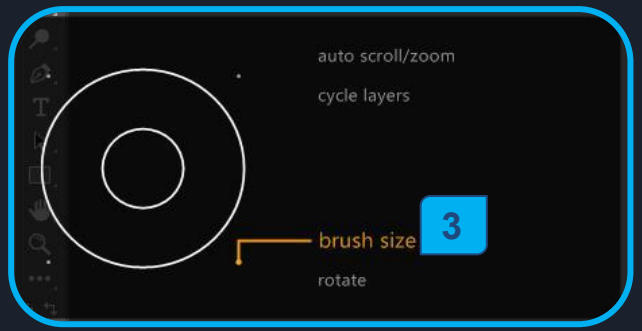
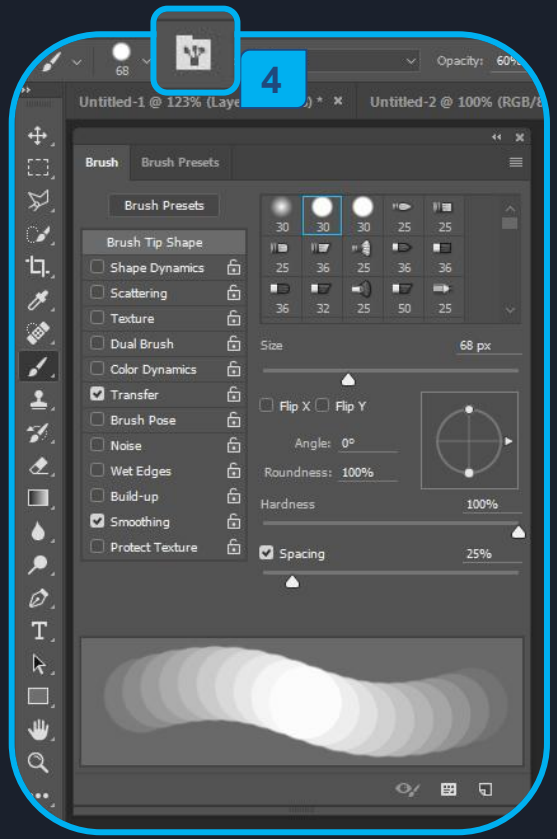
Hand painted Textures| Brushes

Hand painting Brushes (Setting up a brush for hand painting)







There are NO concrete rules when it comes to Brush settings. It comes down to what a user is comfortable with and what allows them to achieve the result they're after.

However, two brushes commonly utilised are the

1. **Hard Round**
2. **Hard Square**

These brushes are available as a resource download

3. Using the Wacom radial dial to adjust brush size while drawing is also highly recommended. Click the radial button to rotate to brush size

4. The Brush palette settings are located here and allow for brush customisation

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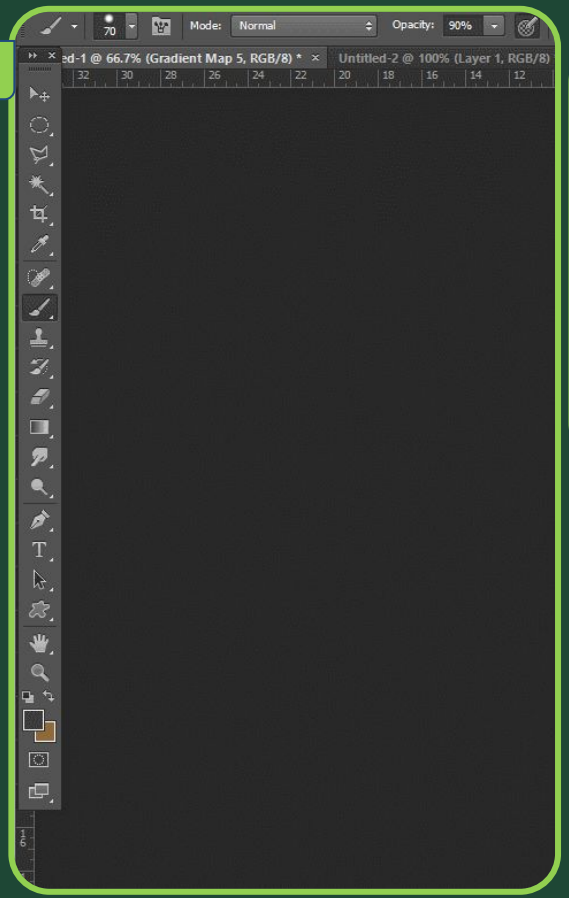
Hand painted Textures| Brush Customisation

1



2

3

The brush settings panel allow you to edit specific properties of each brush.

1. The brush settings panel will allow you to set several settings to be controlled by the Pen Pressure. Here the settings makes the brush taper off as pressure decreases.
2. Basic brush settings can be found under the Brush Tip Shape menu option. Hardness will soften or harden the edge of your brush while spacing affects the “smoothness” of your brush.
3. Here, an example of lighter pen pressure affecting both the opacity and the size.

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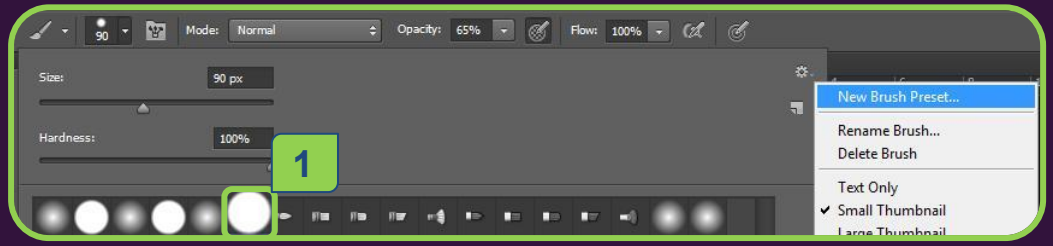
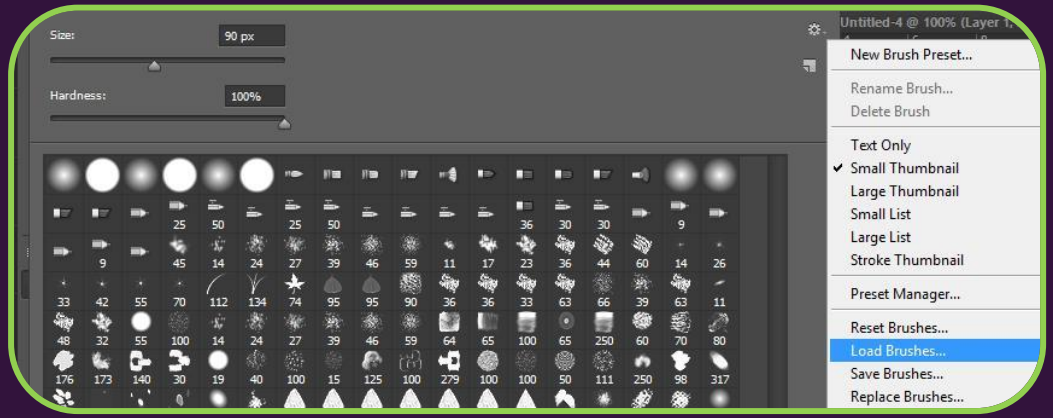
Hand painted Textures | Create and Load a Brush



Using the example from the previous slides, create a custom Brush you feel comfortable with.

1. To clone an existing brush you can create a new Brush Preset from an existing brush



As part of this short exercise you should also load the brushes provided as part of this exercise.

You have 10 minutes

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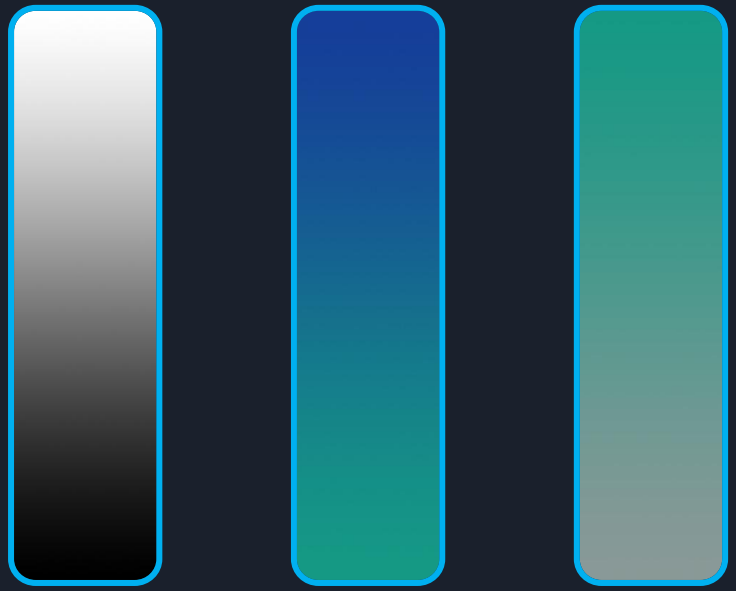
Hand painted Textures|Getting started

The 3 Pillars (understanding colour concepts)

When hand painting a texture there are three important concepts to keep in mind.



Value Hue Saturation

Understanding the basics of colour theory are important to a successful hand painted texture.

Without additional textures such as Metallic, Roughness, Specular or Gloss your Diffuse must sell the material you are trying to recreate.

Balancing all three concepts will help create interesting and believable materials.

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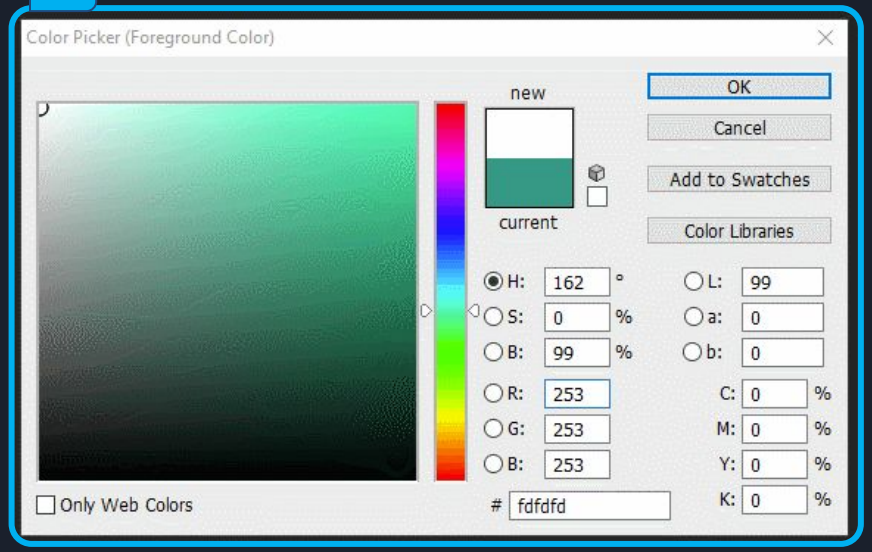
Hand painted Textures| Value

Value (Value refers to the lightness or darkness of a colour)

1



Value is a measurement of the brightness of a colour, indicating the amount of light reflected

In Photoshop, Value or "Brightness" is represented by the B Value on the HSB fields or the K Value on the CMYK fields

The brighter a colour is, the higher its "value".

An example of Value shifting in Photoshop's Colour Picker Tool. Here you can see the B and K values moving from 0-100%

In traditional Colour theory terms, adding a higher value or white to a colour creates a "tint" while adding a lower value or black creates a "shade"

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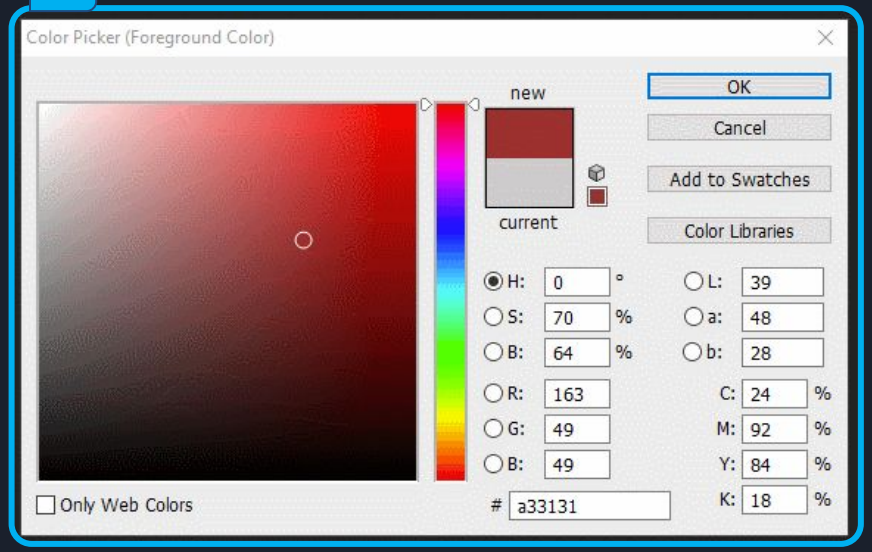
Hand painted Textures| Hue

Hue (Hue refers to a pure colour)

1



Hues are the twelve purest and brightest elements most commonly seen in a colour wheel

In Photoshop, Hue is represented by the H Value on the HSB fields

Hue refers to a pure colour. By that we mean one without a tint or shade

1. An example of Hue Shifting in the Photoshop Colour Picker tool. Here you can see the H Value changing while the Saturation and Brightness remain static.

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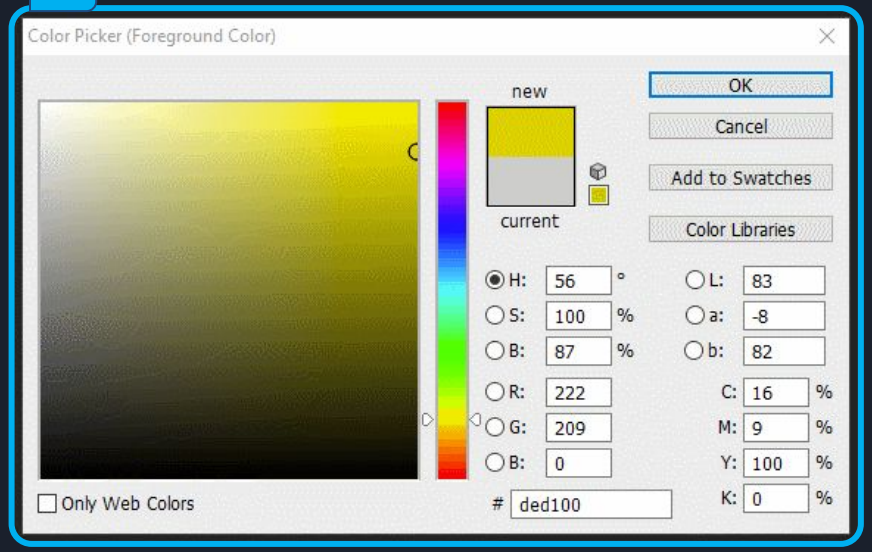
Hand painted Textures| Saturation

Saturation (The intensity of a colour)

1



Saturation defines the brilliance and intensity of a colour.

In Photoshop, Saturation is represented by the S in the HSB fields.

Saturation defines a range from pure colour (100% saturated) to grey (0%). A bright and vivid texture is said to be “highly saturated” while a greyscale texture is “de-saturated”

1. An example of Saturation Shifting in the Photoshop Colour Picker tool. Here you can see the S Value changing while the Saturation and Brightness remain static.

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Hand painted Textures| Blending

In a new Photoshop Document, practice blending the 3 different basics of painting a texture

Value (Blend Black to White)
Hue (Blend two different colours together)
Saturation (Blend a colour with Grey)

For this exercise use one of Photoshop's standard Hard Round Brushes or your own new brush.

You have 10 minutes.

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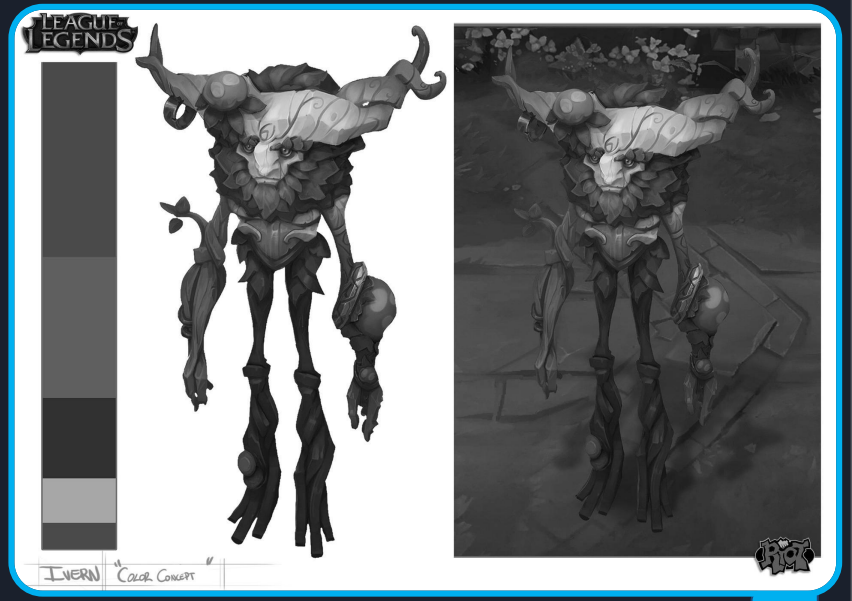
Hand painted Textures| Gradients

Gradients (directing attention to important points)

1



2

Using a value gradient also helps direct the players eye. Gradient maps can be achieved via “baking” and are covered in later modules

1. **In this example from Valve, Dota 2 characters use a value gradient to direct the player’s attention to the top of the model.**

2. **This example of Ivern from Riot’s League of Legends by Daniel Orive shows not only a value gradient from top to bottom but also value separation. Contrasting high and low values helps to create visual interest and direct the eye.**

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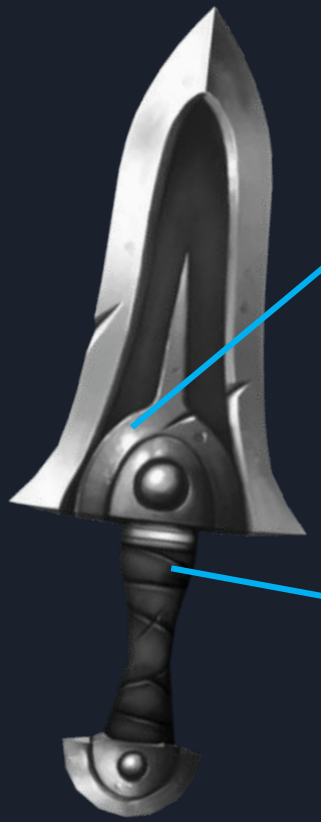
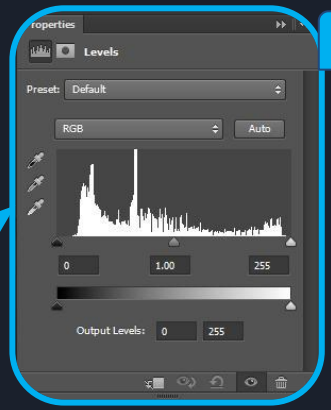
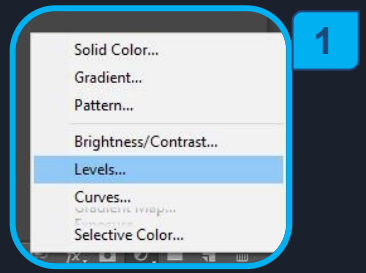
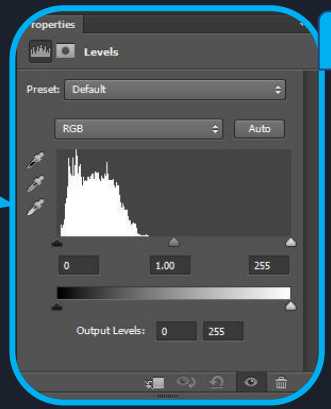
Hand painted Textures|Value Painting

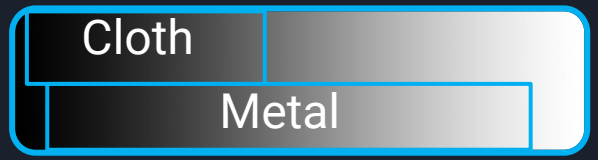
Painting in Grayscale (Understanding Value shifts in materials)











Now that we understand how important value shifts are to readability, let's look at painting those values manually...

1. With the example of the hand painted dagger, we can use a Levels Adjustment Layer in Photoshop to see how the range of values used defines a material

2. Here you can see the output of the Levels on the metallic parts of the Dagger. A high range of values is represented. A highly specular surface will have a larger range as it reflects more light.

3. Conversely the cloth is not a specular surface. The value ranges are much tighter on the graph

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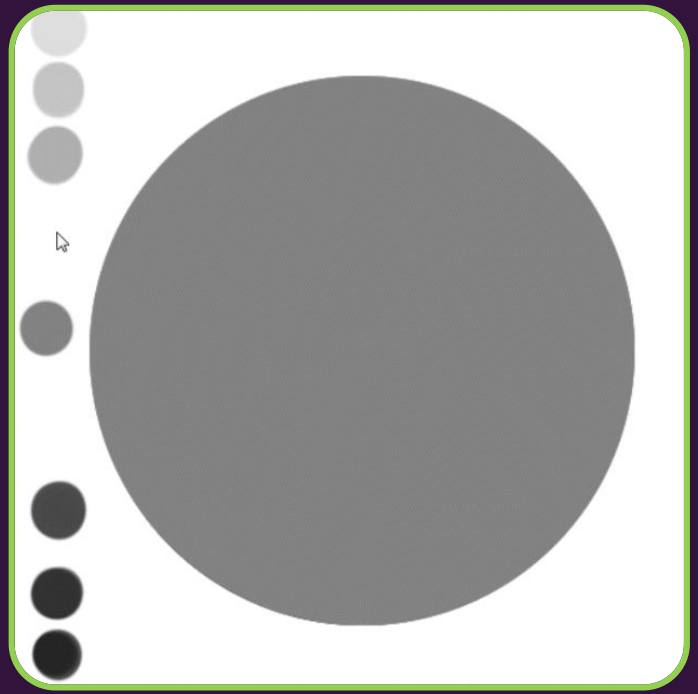
Hand painted Textures|Value Exercise



For this exercise you will practice painting a 3D object using only grayscale values. In a new document in Photoshop, use the marquee selection tool create a circle selection

For this exercise, imagine a light source coming from approximately 45 degrees above the sphere. Consider what material your sphere is made of. Is it shiny? Does it have a sharp or broad highlight?

You have 30 minutes

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Hand painted Textures| Light Source

Light Sources (adding interest and focal points to a texture)

Without additional textures the Diffuse must accurately show how the light would react to the material within the texture.

1. This example of a hand painted dagger shows a directional light source. Highlights on the gold pieces also show the direction of the light.

2. The cracks on the sword have been highlighted on one side as light would hit them. Conversely they are dark on the other side as less light is reflected.

Accurate light sources help to simulate the effect or a normal map, faking depth to a texture.

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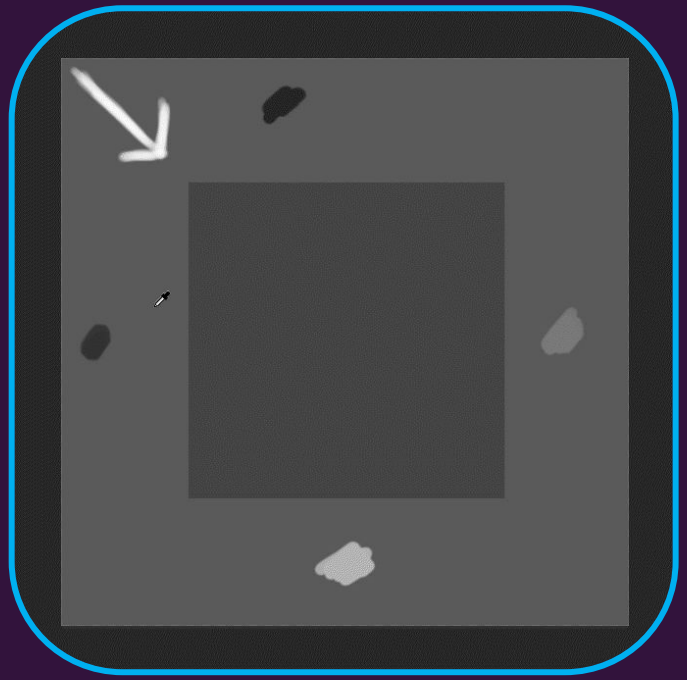
Hand painted Textures|Light Source Exercise



In Photoshop create a new document and paint, using only grayscale, the impression of an extrusion inwards and a slight bevel as seen in the example. Make sure to note and reference your light source angle. Your shape does not need to be square.

Once done your next task is to add a scratch or cut to the image, keeping the same light source angle. Examples of adding damage are also shown

You have 30 minutes.

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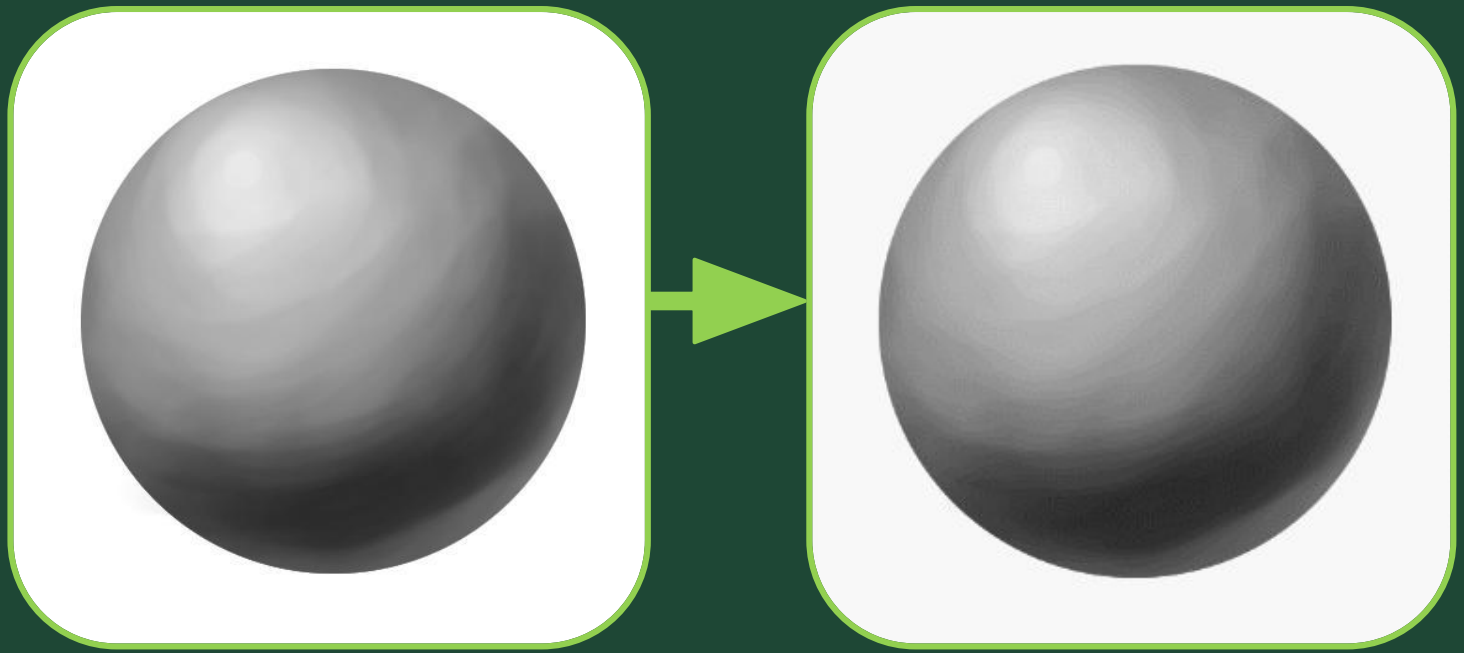
Hand painted Textures| Gradient Maps



A Gradient Map “colourises” a grey scale image based on the values represented in the selected area.

Using a Gradient Map following laying down accurate values for your material is a good way for beginning artists to create hand painted textures without the concern of mixing hues/shades/tints etc.

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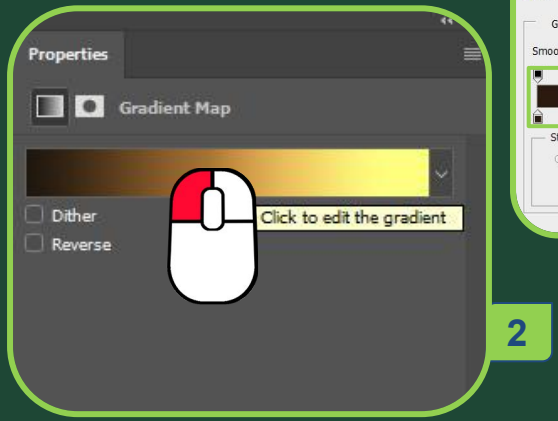
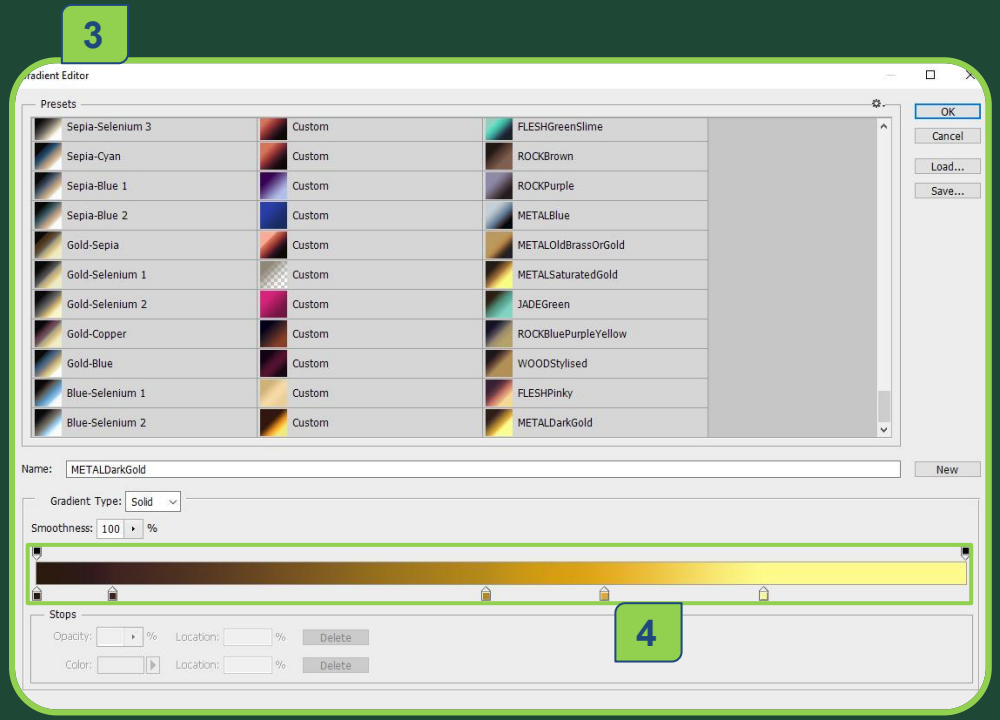
Hand painted Textures| Gradient Maps





A Gradient Map is applied using an adjustment layer in Photoshop.

1. Navigate to the Adjustment Masks menu in Photoshop and select Gradient Map…
2. Clicking on the Gradient will allow you to edit or select from other gradient maps.
3. In the Gradient Editor you can choose from other gradients or create new ones.
4. This slider allows you to specify which colours will replace which black and white values.

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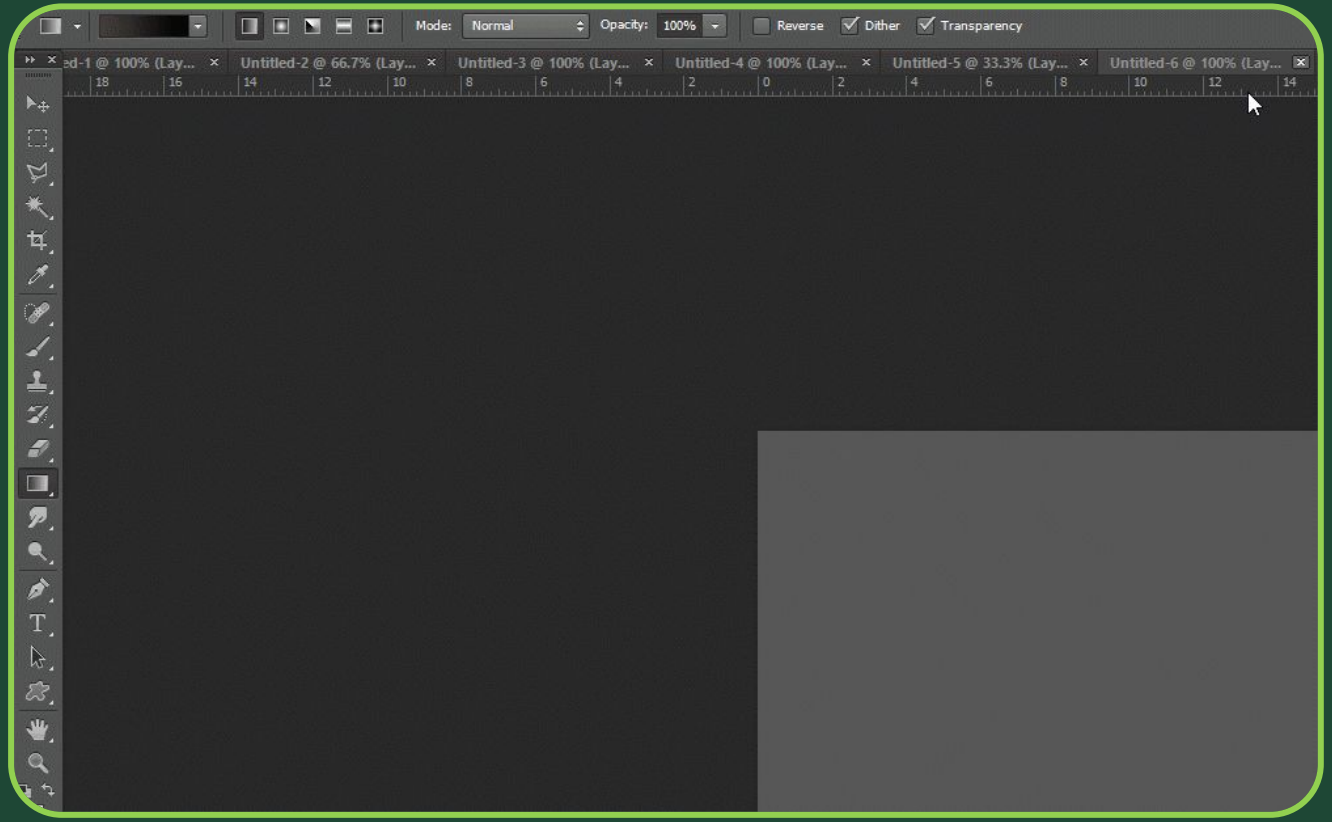
Hand painted Textures| Load Gradient Maps



As part of this module some Gradient Maps have been provided. In order to use this you will need to load them into Photoshop.

1. Click on the Gradient Tool
2. In the toolbar, click the current gradient to access the available Gradient Maps
3. Click on the small Settings icon in the top right
4. Navigate down to Load Gradients…
5. Locate the Gradient Maps file SampleGradientMaps.grd from this module and load it into Photoshop

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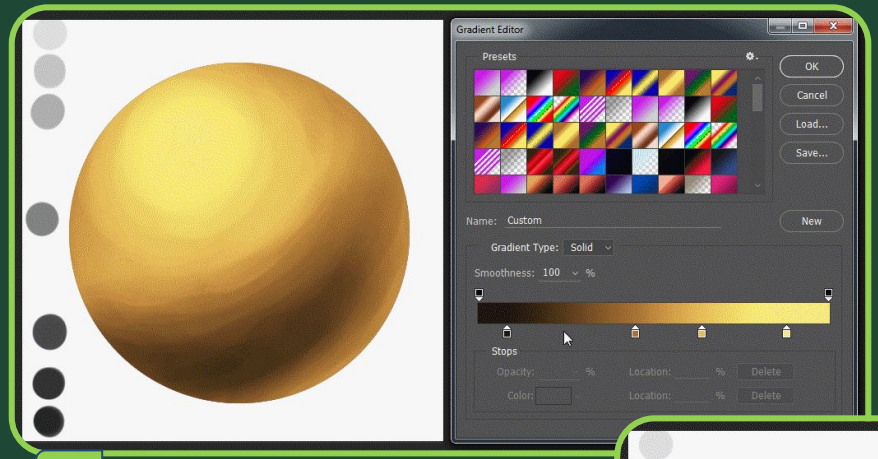
Hand painted Textures|Gradient Map

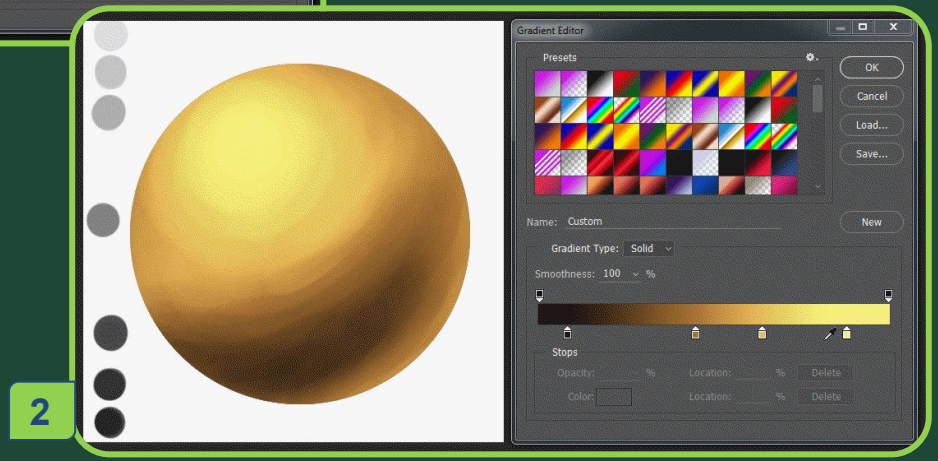


1

Left click to create a colour node.

Double click a node to edit its colours

Click and drag to move a node. Drag a node off the graph to remove it



2

Gradient Maps can be edited to include new colour transitions as opposed to the traditional 2 value gradient. Creating your own Gradient Maps is a great way to keep a library of interesting materials.

1. **New nodes will be created using the foreground colour.**
2. **Left click and drag a node on the graph to reposition it. This translates its colour to the corresponding Black to White value. Double clicking a node allows you to edit its colour.**

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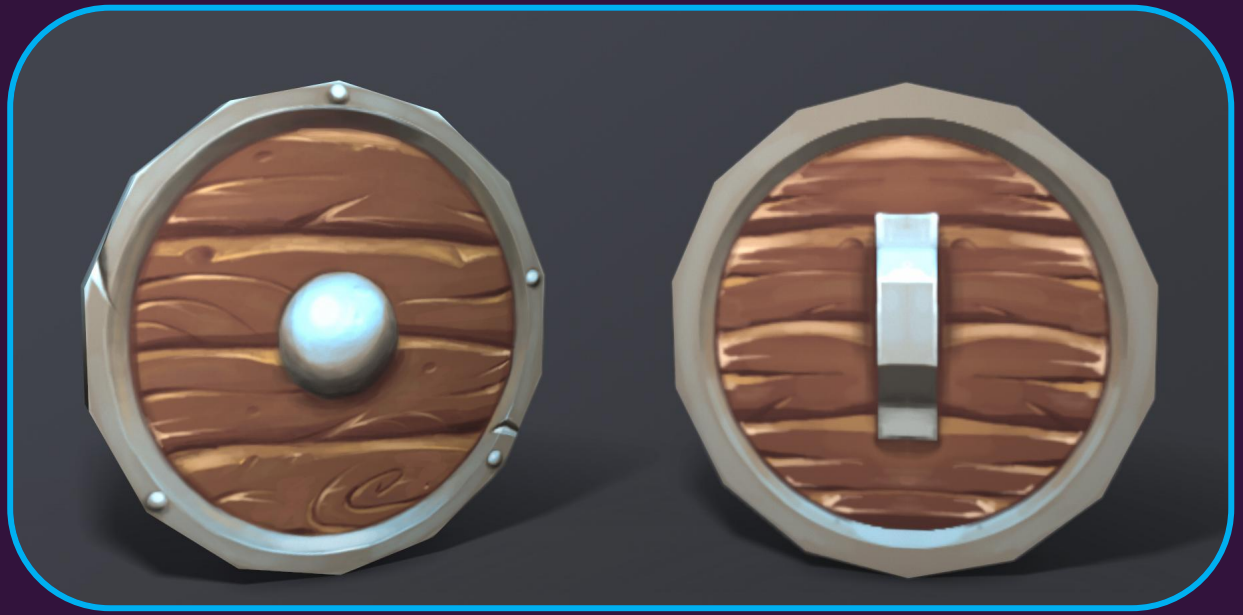
Handpainted Textures| Simple Shield



Using the resources provided with this module. Use the hand painted techniques covered to texture a simple wooden shield.

Begin by painting in values using the UV's as a guide. There are TWO different materials in this model so use accurate value ranges.

When the values are finalised use some of the provided Gradient Maps to colourise the texture

Do a final clean up pass to fix any errors.

For this exercise you have **TWO** hours

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