

Fantastic Glass 1.1 Transparent Solids

User Manual



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1. About

Fantastic Glass is a set of tools developed by [Fantastic Development](http://www.fantasticdevelopment.co.uk) for creating and managing realistic and abstract objects with transparent volumes.

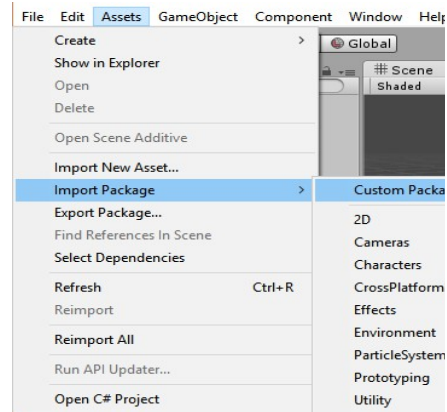
As well as including presets that demonstrate a diverse array of different types of materials, the parameters available allow for an incredibly varied range of realistic and abstract objects.

The following documentation aims to clearly explain how to use Fantastic Glass and provide resources for further learning as well as means of contacting Fantastic Development in the case of any issues.

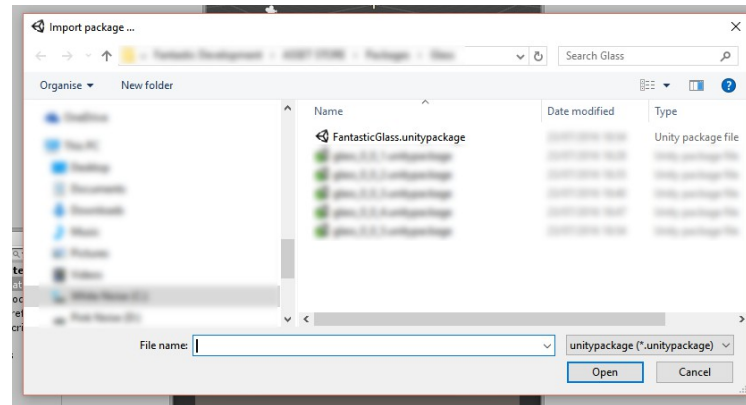
2. Installation

To install Fantastic Glass, import the Asset Package into your project:

1. In Unity Editor, select **Assets > Import Package > Custom Package...**



2. Select the Fantastic Glass package you wish to import



3. Import all assets from the package you require (Recommended: **All**) by selecting **Import**.



4. Done! You should now have the latest Fantastic Glass assets in your project and be ready to finalise the installation with the Setup stage (**Section 3. Setup**).

3. Setup

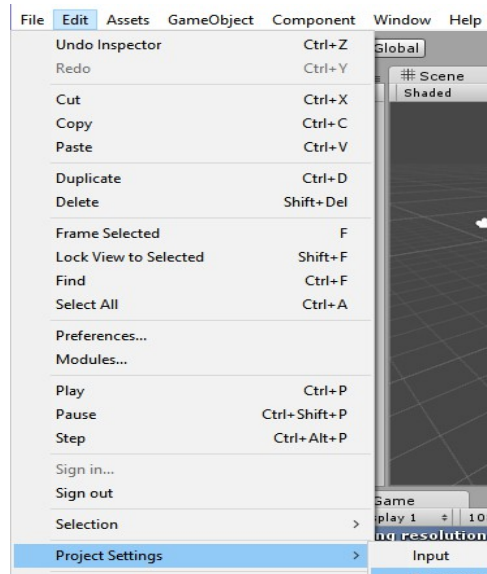
To complete the setup of Fantastic Glass, simply follow the next two short sets of instructions: [3.1 Layers](#), and [3.2 Resolution](#).

3.1 Layers

The following steps will guide you through creating the following Layers, if they do not yet exist:

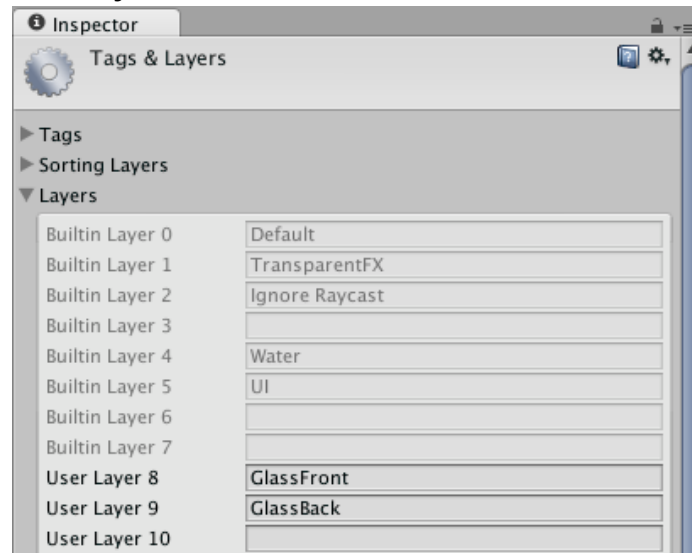
- **GlassFront**
- **GlassBack**

1. Select **Edit > Project Settings > Tags and Layers**



2. Add the tags into two separate empty layer slots.

NOTE: the names must be entered exactly.




3. Done! You are now ready to see Glass objects in Play mode. Follow the rest of the instructions in the next section to complete the setup.

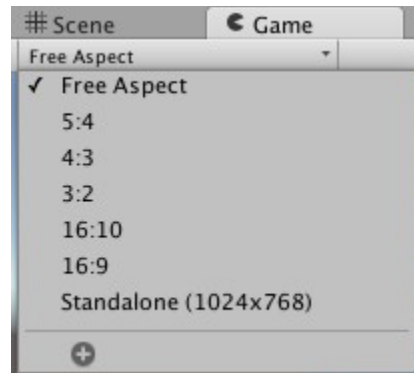
3.2 Resolution / Aspect

To avoid the depth textures not matching up to the objects on screen, you must create a view profile that matches your screen's resolution. Here is an example showing what to do if your screen is 1920x1080 (1080p):

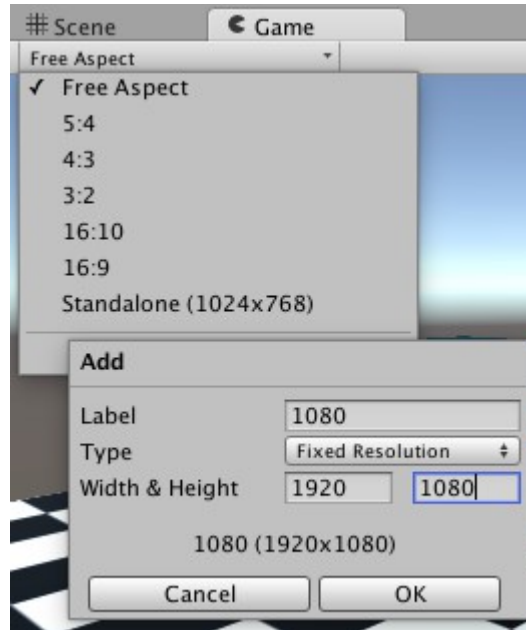
1. Open the drop-down menu.



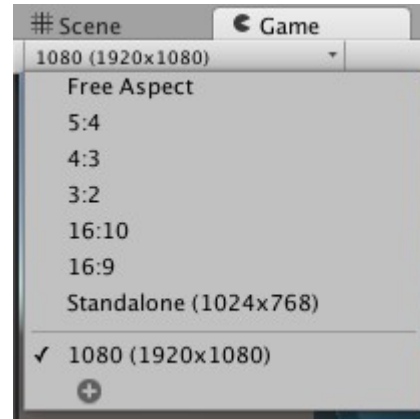
2. Click the  button to open the 'Add' dialogue.



3. Fill in the width and height of your monitor and give the profile a name.



4. Done! Your new profile should be automatically selected.

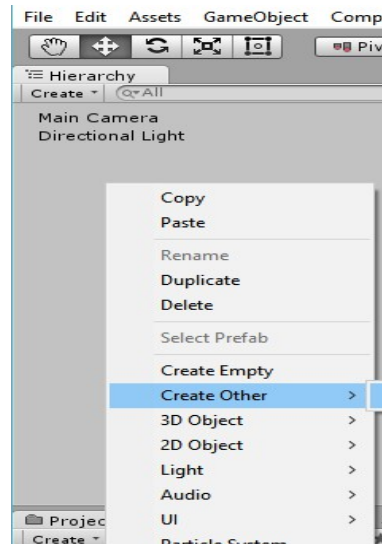


4. Usage

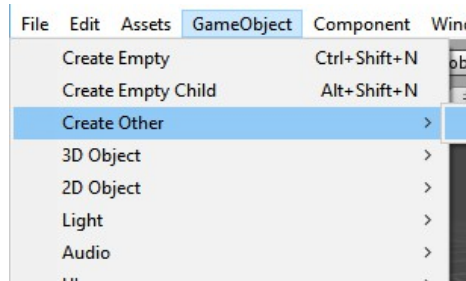
The following sections will show you how to use Fantastic Glass, focusing on creating new Glass objects and turning existing Game Objects into Glass Objects.

4.1 Creating new Glass objects

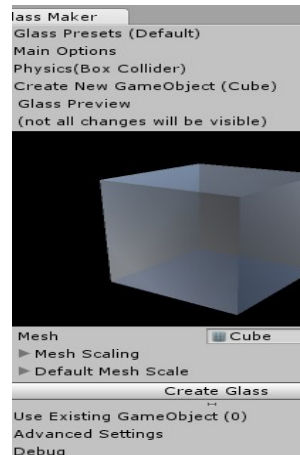
1. Right-click on a blank area in the Hierarchy window and choose **Create Other > Glass...**



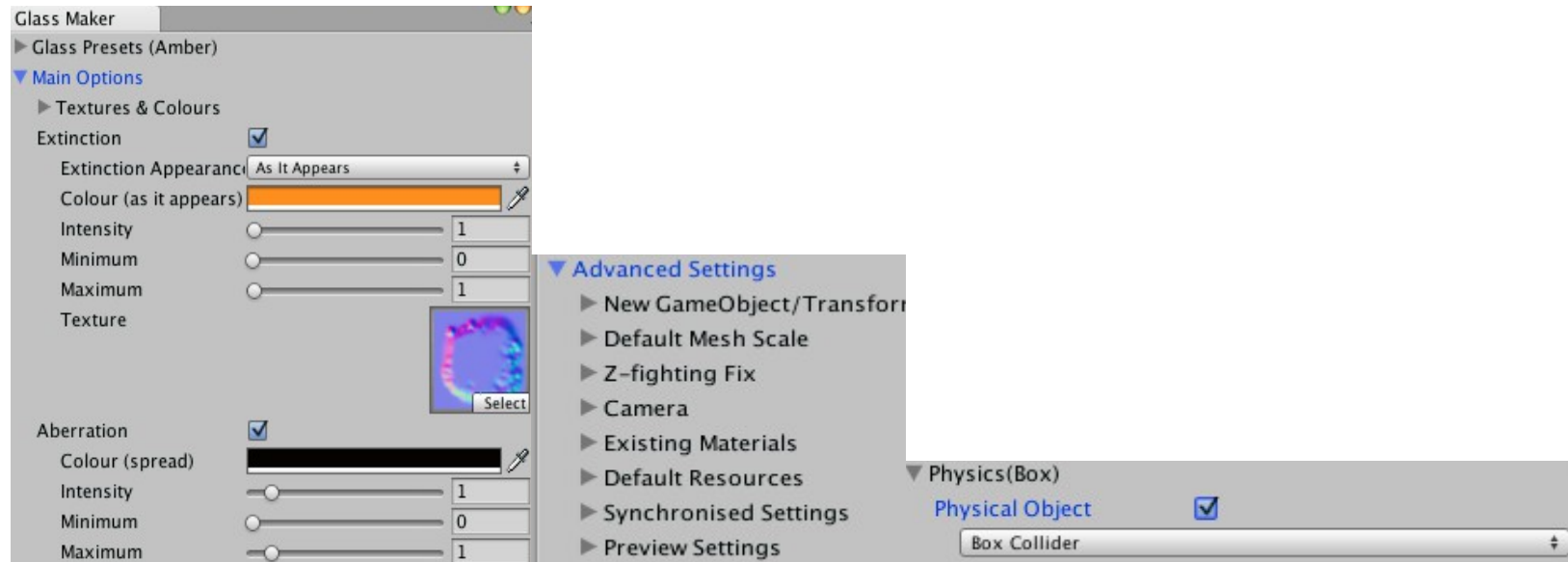
OR choose the menu option **GameObject > Create Other > Glass...**



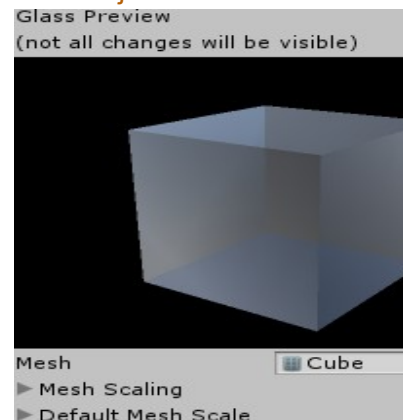
The Glass Maker window will now appear, showing the Create New GameObject section.



2. Set your options in the Glass Maker. These can be found under the togglable sections such as **Main Options**, **Physics**, and **Advanced Settings** (details in Section 5):



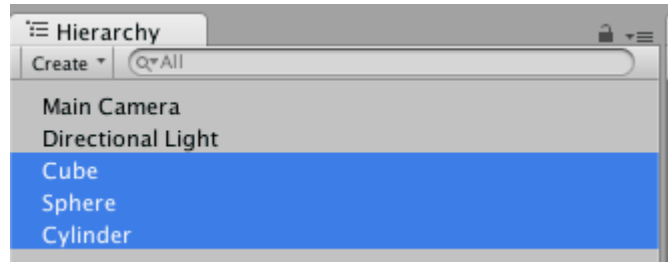
3. Click the **Create Glass** button in the **Create New Object**.



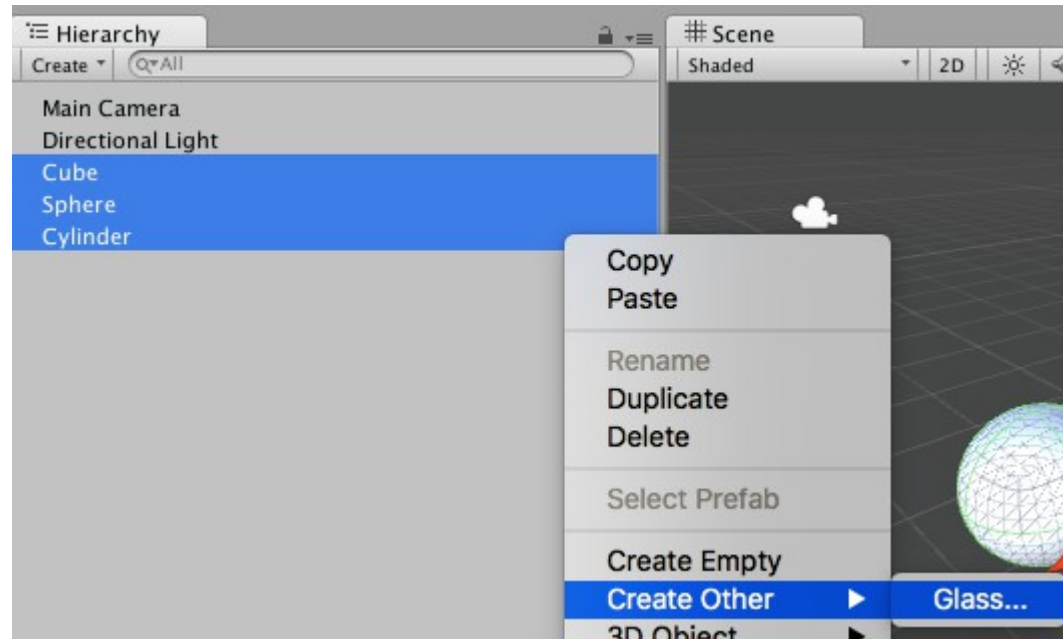
4. Done! You can now close this window if your are finished, press Create Glass again to create another Glass object with the same settings, or change the settings and create a different new Glass object.

4.2 Turning existing objects into Glass

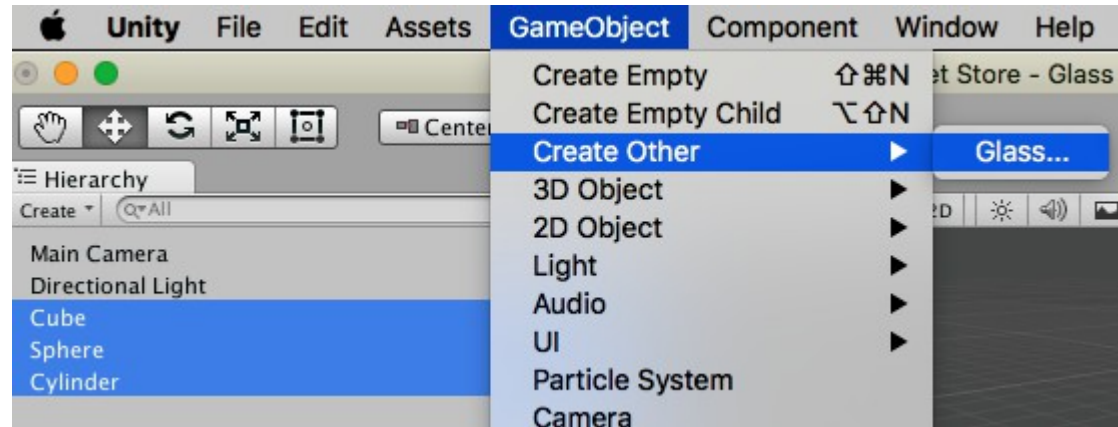
1. Select all of the objects you wish to turn into the same type of Glass.



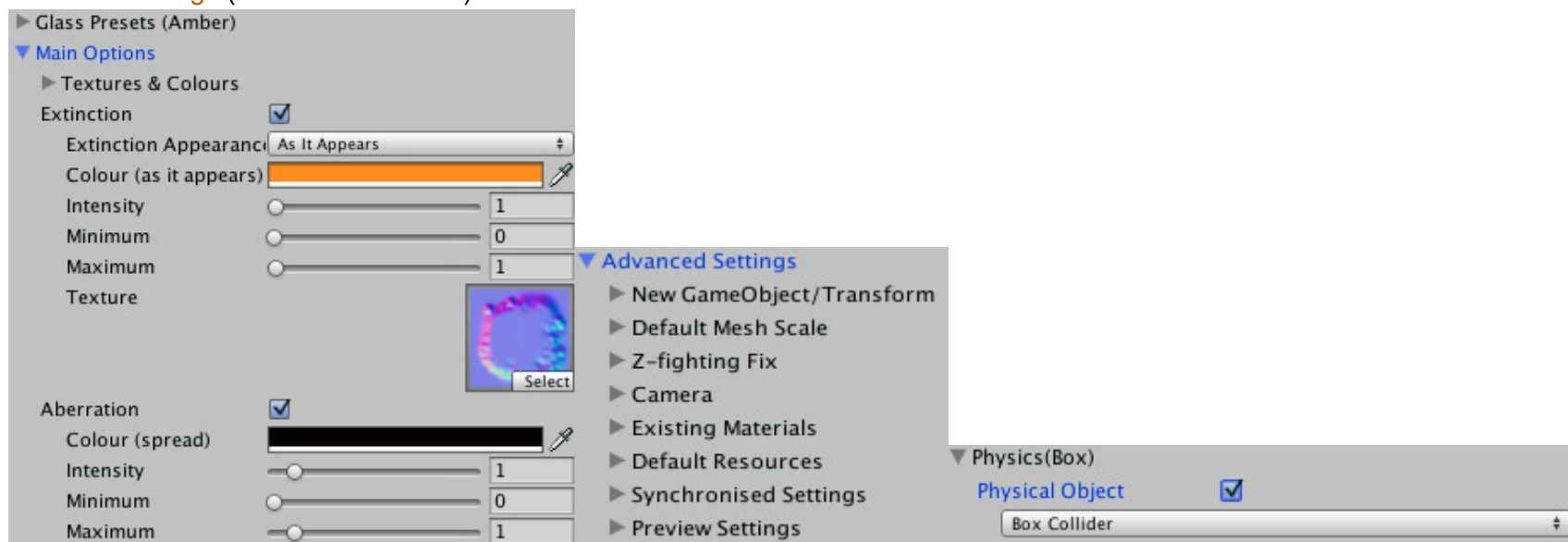
2. Right-click on one of the selected objects (you can skip to here if you only wish to use one object) and choose **Create Other > Glass...**



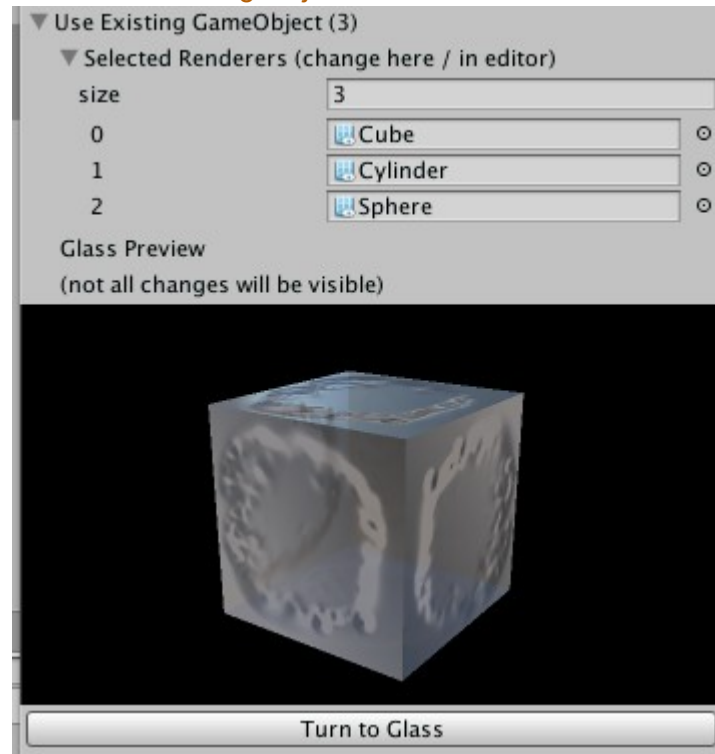
OR choose the menu option **GameObject > Create Other > Glass...** while they are selected.



3. Set your options in the Glass Maker. These can be found under the toggable sections such as **Main Options**, **Physics**, and **Advanced Settings** (details in Section 5):



4. Click the 'Turn to Glass' button in the Use Existing Object section.

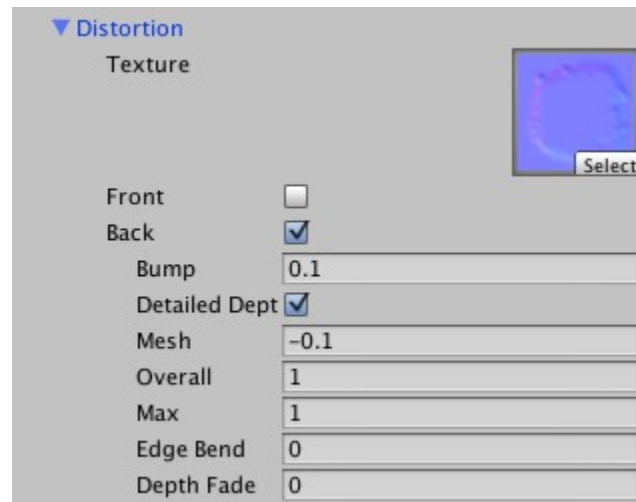


5. Done! Your objects are set up as Glass objects and you can now close the Glass Maker window.

5. Glass Settings

This section will define the majority of the settings available in each Glass object that contribute to its appearance.

5.1 Distortion



As you can see, the front and back faces can have different settings, including being disabled completely.

5.1.1 Bump

This value defines the intensity of distortion applied based on the colour of the pixel in the texture shared with the Bump effect.

5.1.2 Mesh

This value defines the intensity of distortion applied based on the normal of the mesh face.

How the normal values are calculated and then interpreted is dependant on the Normal Technique (accessible by [GlassManager > Depth > Depth & Normal Techniques](#)).

5.1.3 Overall

This value defines the overall magnitude of the effect e.g. setting it to 0 will result in no distortion, regardless of the Mesh Normal and Bump values.

5.1.4 Max

This value defines the maximum amount of distortion that will be applied to any pixel.

5.1.4 Edge Bend

This value defines the amount the distortion in a way that causes it to wrap around edges.

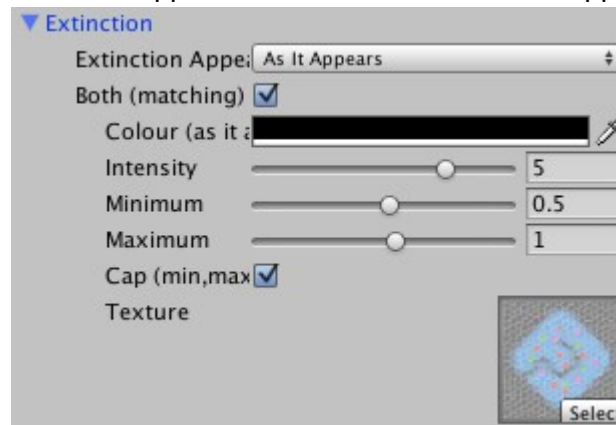
5.1.4 Depth Fade

This value defines the amount the distortion is faded out in lower depth e.g. having objects near the surface of water (made of Glass) be less distorted.

5.2 Extinction

Extinction defines the rate at which color is absorbed by the object.

For convenience, the option to set this based on the appearance of the effect is also supplied and set by default.



Here you can see *Both (matching)* selected and therefore only one set of options is displayed.

*When deselected, both **Front** and **Back** sections are available.
The last section edited will be used to define the shared settings when switching.*

5.2.2 Colour & Extinction Appearance

This colour option is either the extinction that will occur or is the inverse colour which will appear as a result of the extinction, depending on the Extinction Appearance option.

The extinction intensity is derived from the Depth value of each pixel; depth values are calculated and then interpreted dependant on the Depth Technique (accessible by Glass Manager>Depth>Depth & Normal Techniques).

5.2.2 Minimum

This value is used to interpolate the range of extinction values and defines the '0' value.

When Cap Values is applied, this value also defines the Minimum amount of extinction that will be applied, regardless of material depth.

5.2.3 Maximum

This value is used to interpolate the range of extinction values and defines the '1' value.

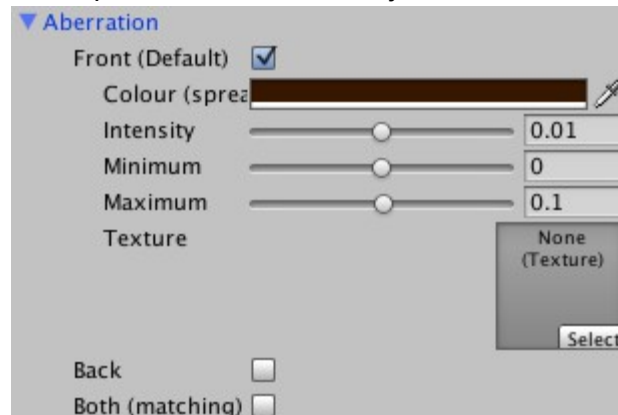
When Cap Values is applied, this value also defines the Maximum amount of extinction that will be applied, regardless of material depth.

5.2.4 Texture

This allows you to set the color of extinction from a texture. It will be multiplied by the Intensity color. For convenience, when a texture is set after it being blank, the Intensity color is set to white (appearance) so as to result in an extinction that looks like the texture.

5.3 Aberration

Aberration defines the rate at which colours will spread out within the object.



Here you can see only the **Front** section is displayed as **Back** and **Both** are disabled.

5.2.2 Colour

This colour option defines the rate at which each colour spreads. The alpha channel also affects the overall rate.

5.2.2 Minimum

This value defines the minimum amount of aberration that will be applied, regardless of material depth.

5.2.3 Maximum

This value defines the maximum amount of aberration that will be applied to any pixel.

5.2.4 Texture

This allows you to set the color of aberration from a texture. It is multiplied by the Colour option.

5.3 Surface



As you can see the surface values are defined per-face.

5.3.1 Glossiness



This functions the same as the Standard surface shader's Glossiness texture input and can be multiplied by the Amount value.

5.3.1 Metallic



This functions the same as the Standard surface shader's Metallic texture input and can be multiplied by the Amount value.

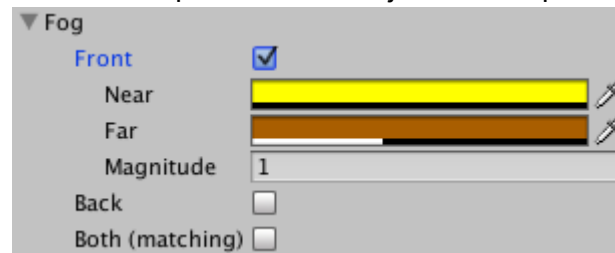
5.3.1 Glow



This functions similar to the the Standard surface shader's Emission texture input, however, it uses the calculated Glass's Albedo and Glossiness values as its base.

5.4 Fog

Fog defines colourisation at the nearest and furthest depth within the object. The depth used is magnified by the **Magnitude** value.



5.5 Physics

When enabled, a Rigidbody and the chosen Collider will be attached to the GameObject.

When a non-convex Mesh Collider is chosen, the Rigidbody will be set to Kinematic as non-kinematic non-convex meshes are not allowed in Unity.

5.6 Textures & Colours

5.6.1 Albedo Texture

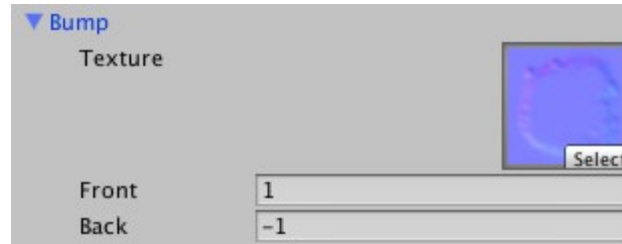
This texture will be multiplied by the Albedo Colour to give the material's Diffuse colour. It's visibility is affected by the Albedo Texture's alpha channel, the Albedo Colour's alpha value and the Opacity value.

5.6.2 Textures Section

'Textures' - which is outside of the Settings section in its own section - allows you to see and assign textures to all settings that accept them.

It is also useful for making sure your textures match in resolution.

5.7 Bump

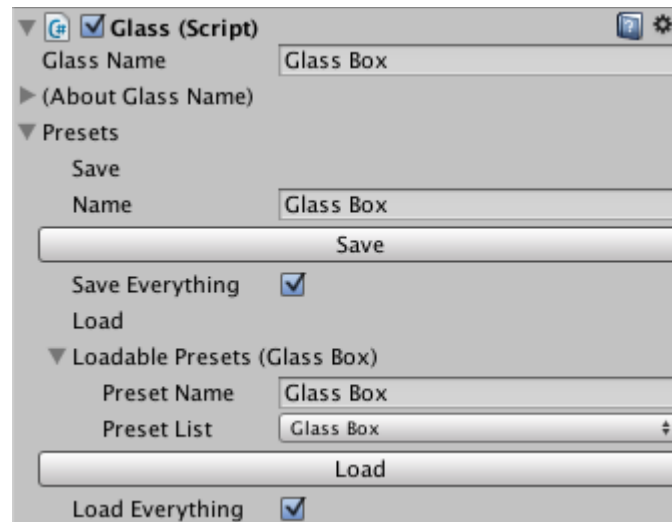


This section defines the bump intensity caused by the shared distortion texture.

6. Editing Glass Objects

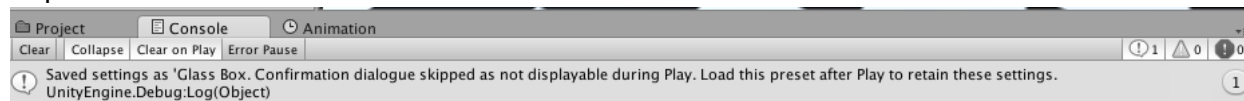
6.1 Presets

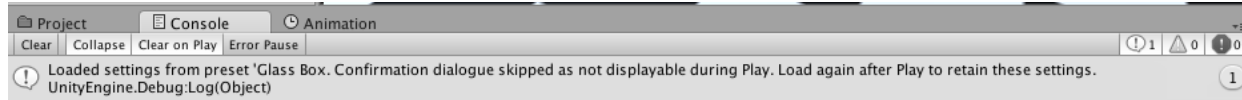
You can both save to and load from Presets.



This can be done in Play and Editor mode.

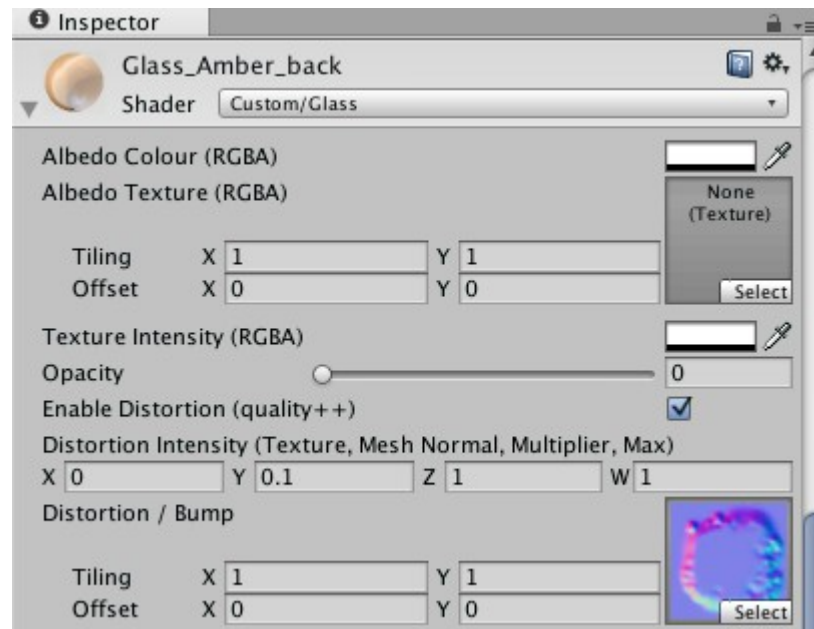
When saving or loading from Presets during Play, you will not be given any confirmation or warning messages, however, information and guidance will be printed to the Console.



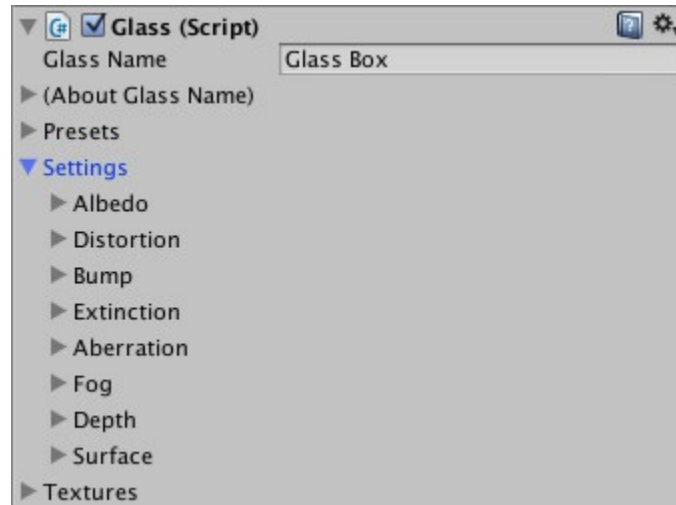


Presets are a good way of making changes during Play where you can see the results in the Game view, saving them to a Preset, and then loading those Preset values to your Glass object if you are happy. This means you can make changes to multiple objects during Play without restarting.

6.2 Editing Materials

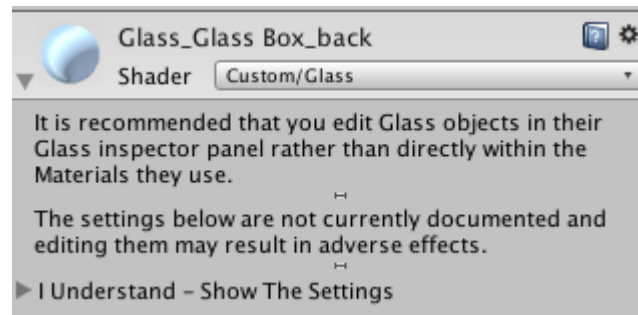


[fig.6.1] - do not edit via this interface



[fig.6.2] - make changes to glass via this section of the Inspector GUI

It is not recommended that you edit the materials directly [fig.6.1]. Instead, it is recommended that any changes be made in the Glass's own Editor GUI [fig.6.2].



Currently, the materials' Inspector interface is hidden behind a warning that reveals the default GUI generated by Unity. Changes here don't feed back into the Glass class. As such, any changes you make to the materials will not be retained in the Glass class. Additionally when you change or view the settings via the Glass Inspector GUI they will overwrite any changes made elsewhere.

6.3 Settings

The options available in the Settings section are the same as those provided by the Glass Maker tool and laid out in a similar fashion under togglable descriptive headings.

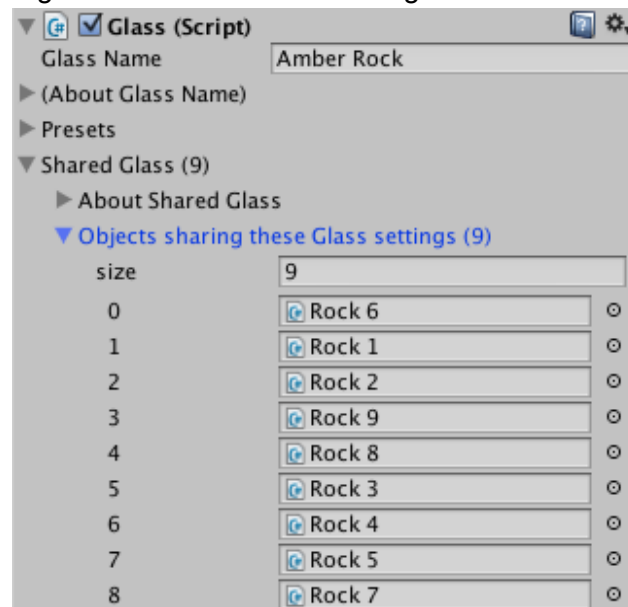
6.4 Synchronising Glass

To assist in editing multiple Glass objects simultaneously, Glass objects that match will synchronise any changes made. Synchronisation can be disabled in the Glass Manager - an object that is created when Glass objects exist in a scene.

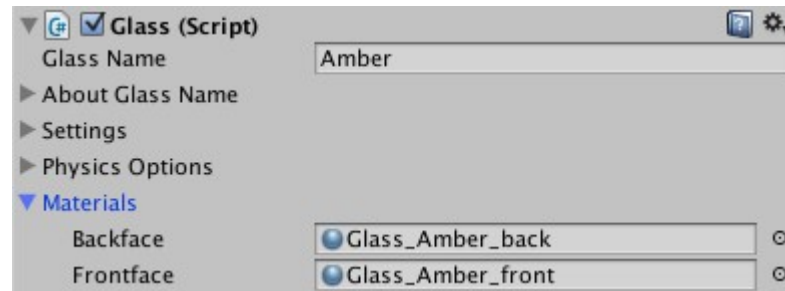
6.4.1 Glass Matching

By default, 'matching' Glass objects are those whose Glass Name *[fig.6.3]* is the same.

You can change the matching method in the Glass Manager to be those that have matching materials.



6.5 Changing Materials



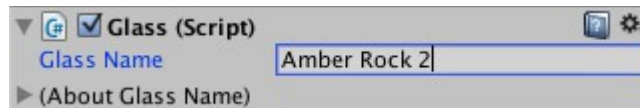
[fig.6.4]

If you wish to change the materials attached to a Glass object, it is recommended that you do so via the Materials section [fig.6.4] as this will synchronise changes with matching Glass objects.

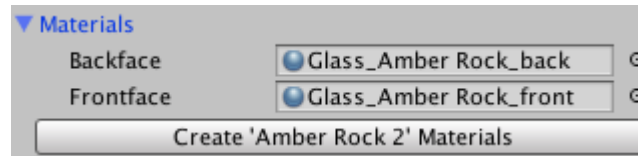
6.6 Creating Materials / New Glass in-Editor

If you want to branch off into a new Glass type from something you're working on or you wish to change the Glass assigned to an object without going to the Glass Maker:

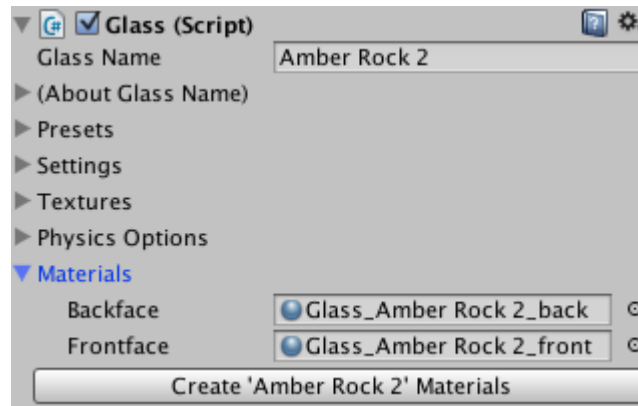
1. Give your Glass a new Glass Name



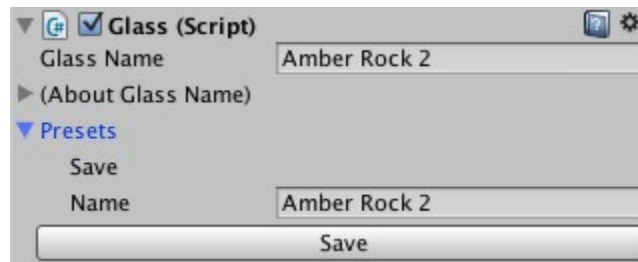
2. Open up its Materials section, then click the Create 'New Name' Materials



3. You have now created a new set of materials for his Glass. They have automatically been assigned the current settings and set as the Glass object's materials.



It is also recommended that you save this new Glass object as its own Preset (the Name is automatically updated when you change the Glass Name).



7. Help and Support

7.1 In-Editor

If you come across an issue or error while using Fantastic Glass, a solution may be available from within the Unity Editor. Such references can be found in the **Help** section of **Glass Maker** as well as under **About** and **Info** sections within the **Glass** and **Glass Maker** inspector windows.

7.2 Online

7.2.1 Guides , References, Links

User Guides and references are available online for each version of a Unity Asset developed by Fantastic Development. You can find them here: <http://www.fantasticdevelopment.co.uk/AssetStoreHelp>

7.2.2 Support

We maintain a support website at <http://www.fantasticdevelopment.co.uk/support> where you can submit bugs, questions, and suggestions.

7.2.3 Tutorials, Demos

As well as the User Guide provided for each version, you can watch Tutorials for this and other Assets on the Fantastic Development [YouTube page](#). Each product's set of videos will have their own playlist. You will also get a chance to see demos of current Assets as well as those still under development.