

# Paintz

Unity Paint System

## Important Notes:

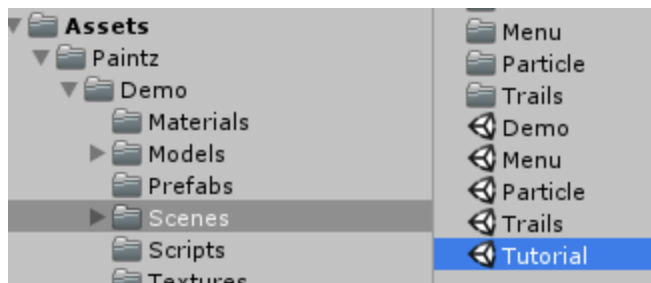
Universal Render Pipeline and Obi requires Unity 2019.3 or Newer

## Quick Start

Any object that will be painted will require:

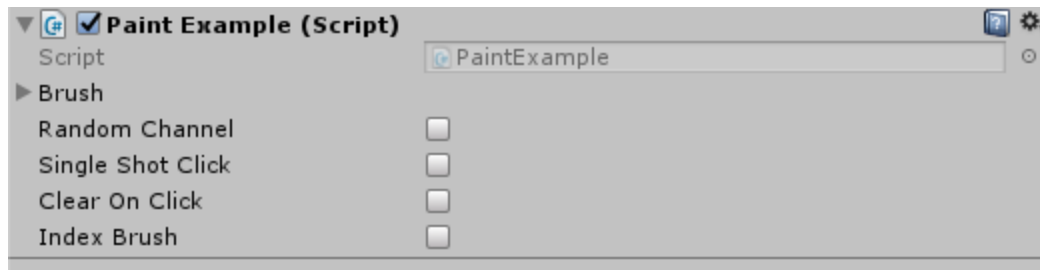
- Paint Target Script
- Material with a Paint Shader

Open Tutorial Scene

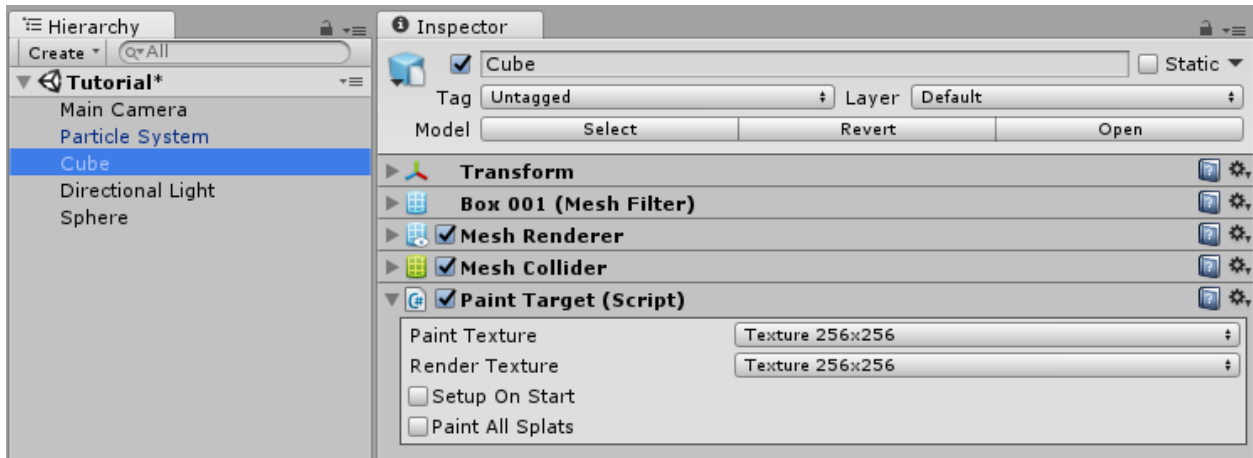


Add "Paint Example" to Main Camera

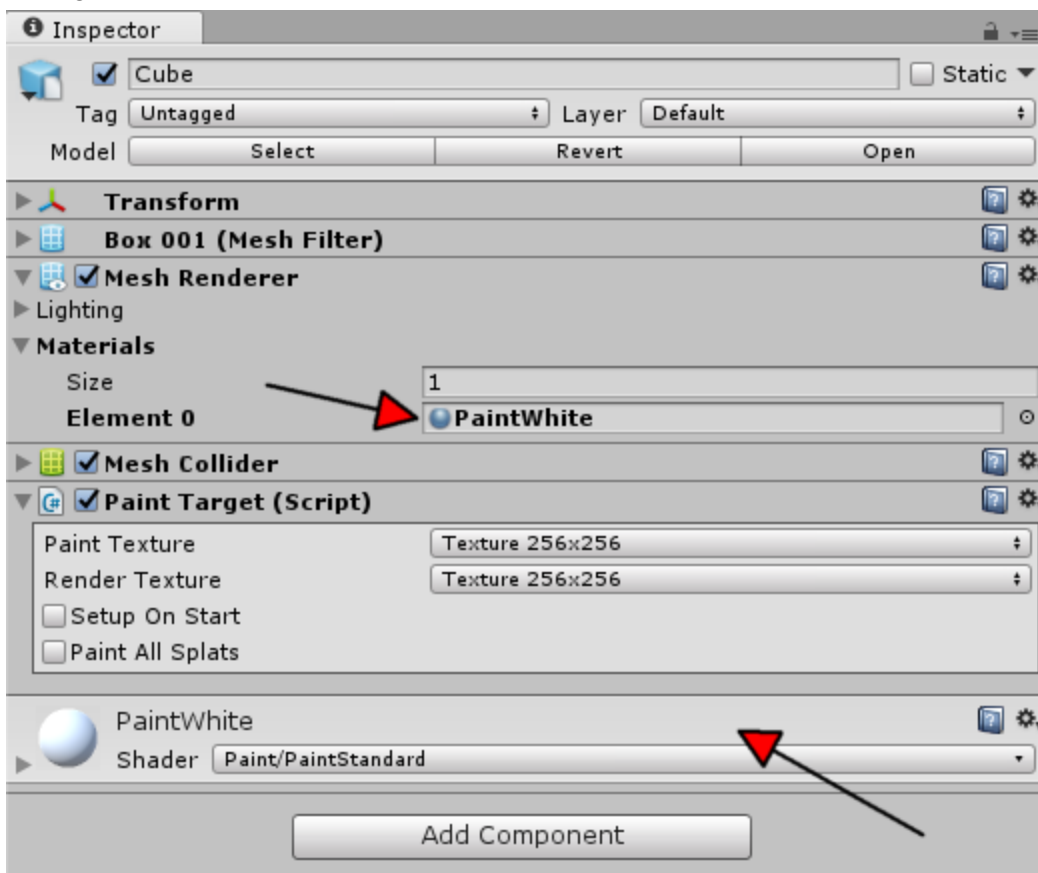
\*This is a sample script that uses Paintz features and basic GUI with WASD controls



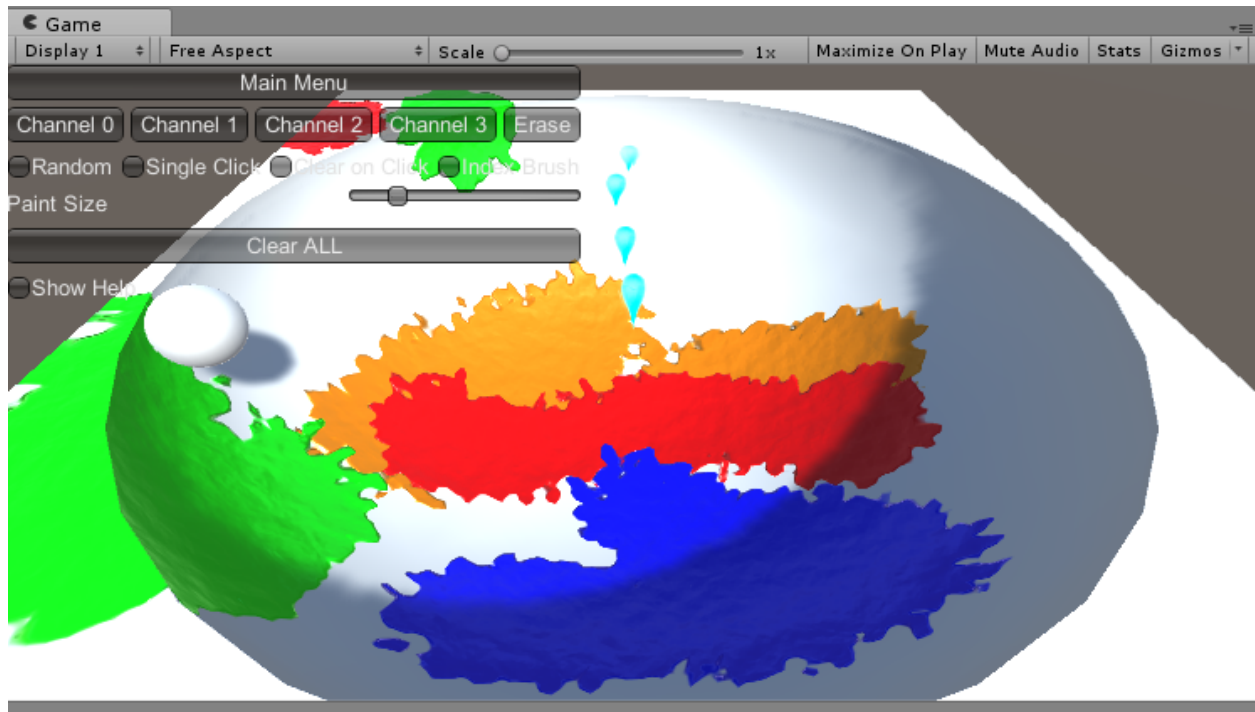
Select "Cube" and add "Paint Target"



Change Material to “PaintWhite”

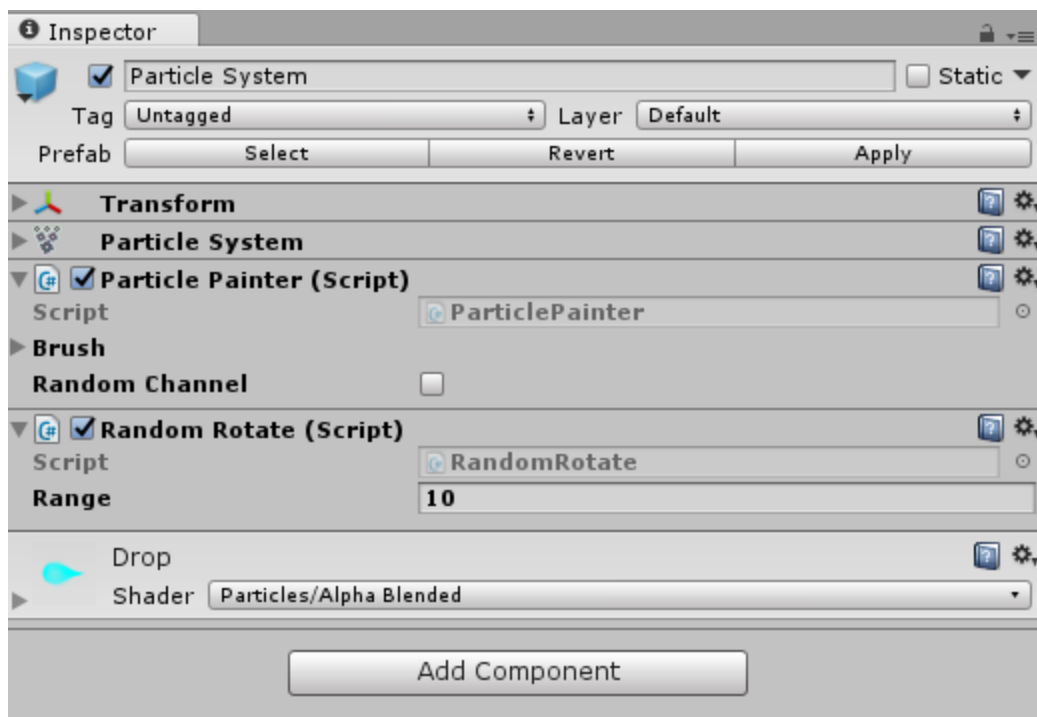


Now at this point you can paint on the “Cube” object!

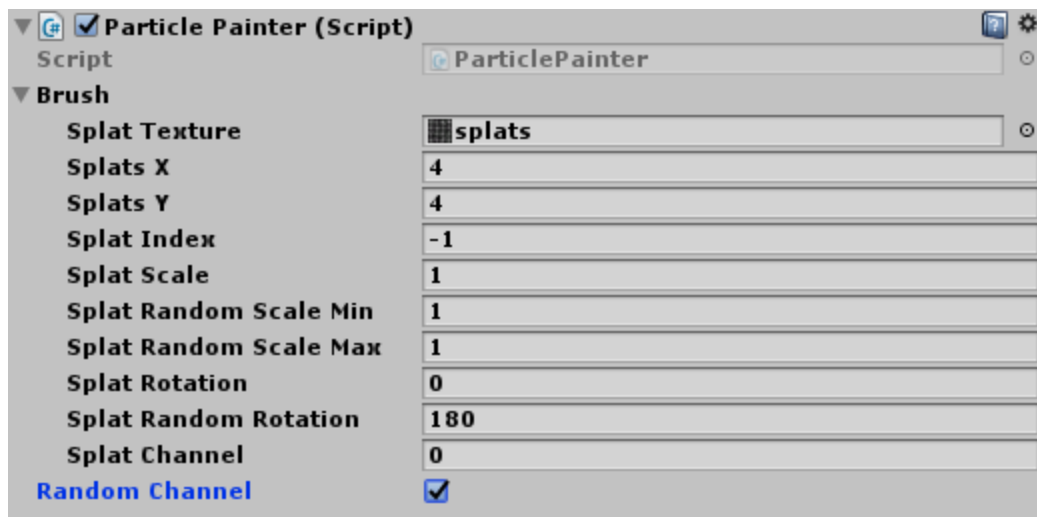


## Particule setup

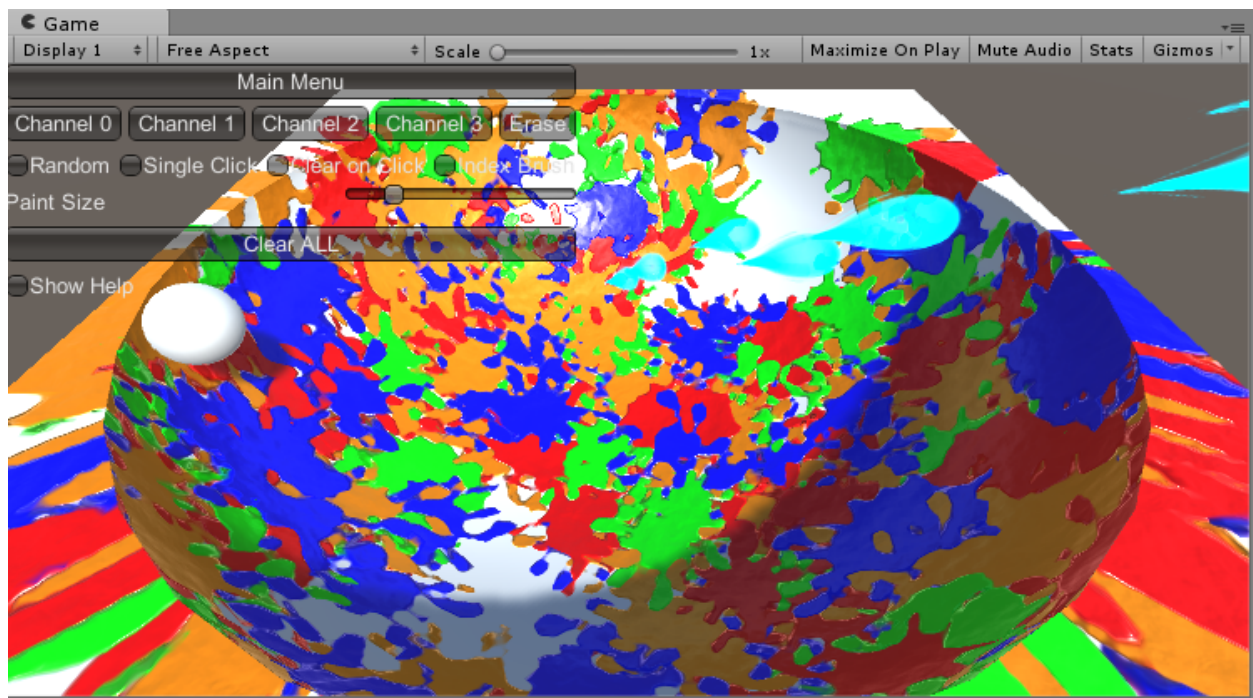
Just add the “Particle Painter” and “Random Rotate” scripts



Add the splats texture and SplatsX and SplatsY ( 4 x 4)



Now the play and you should see this:

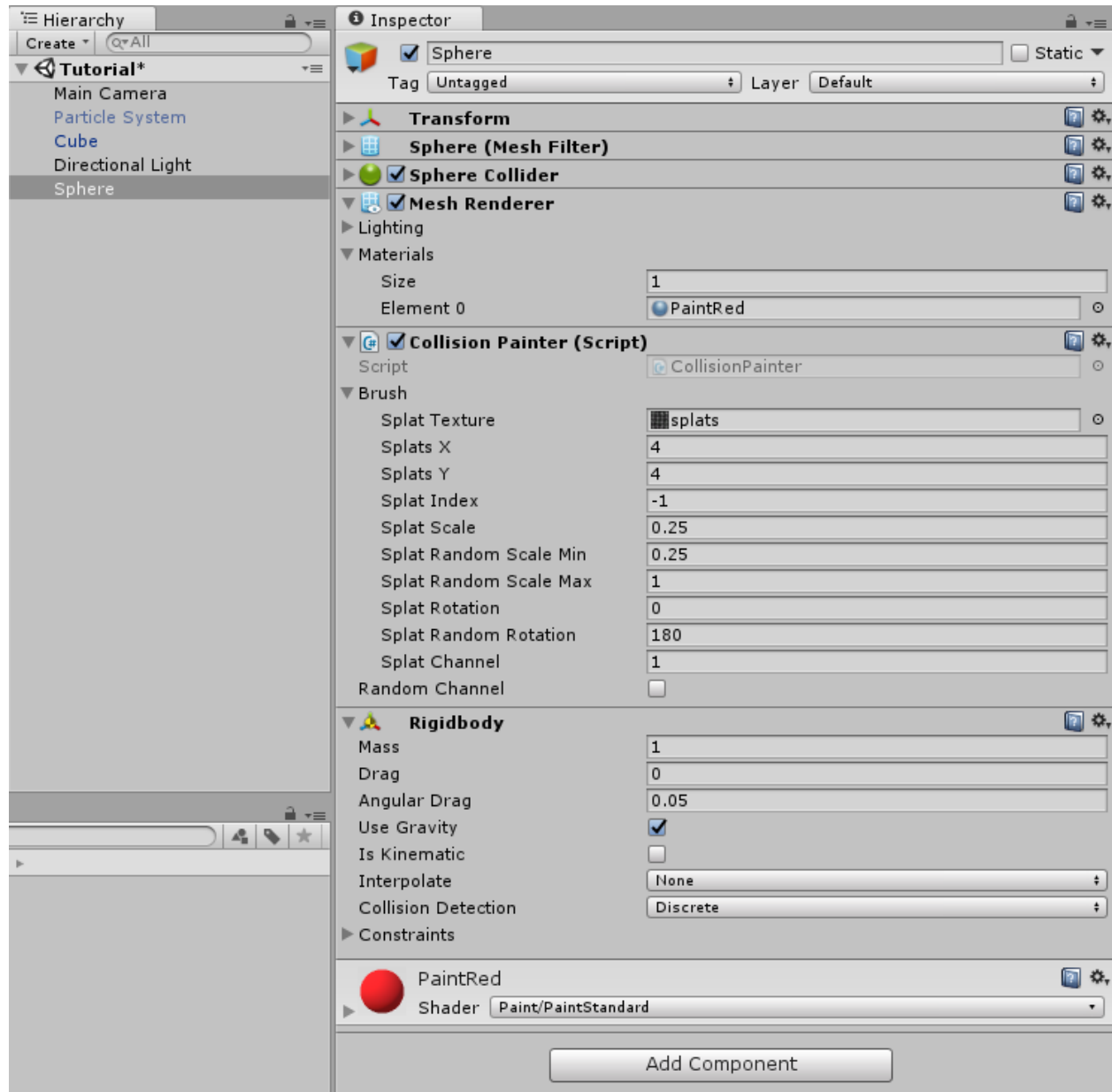


## Collision Sphere

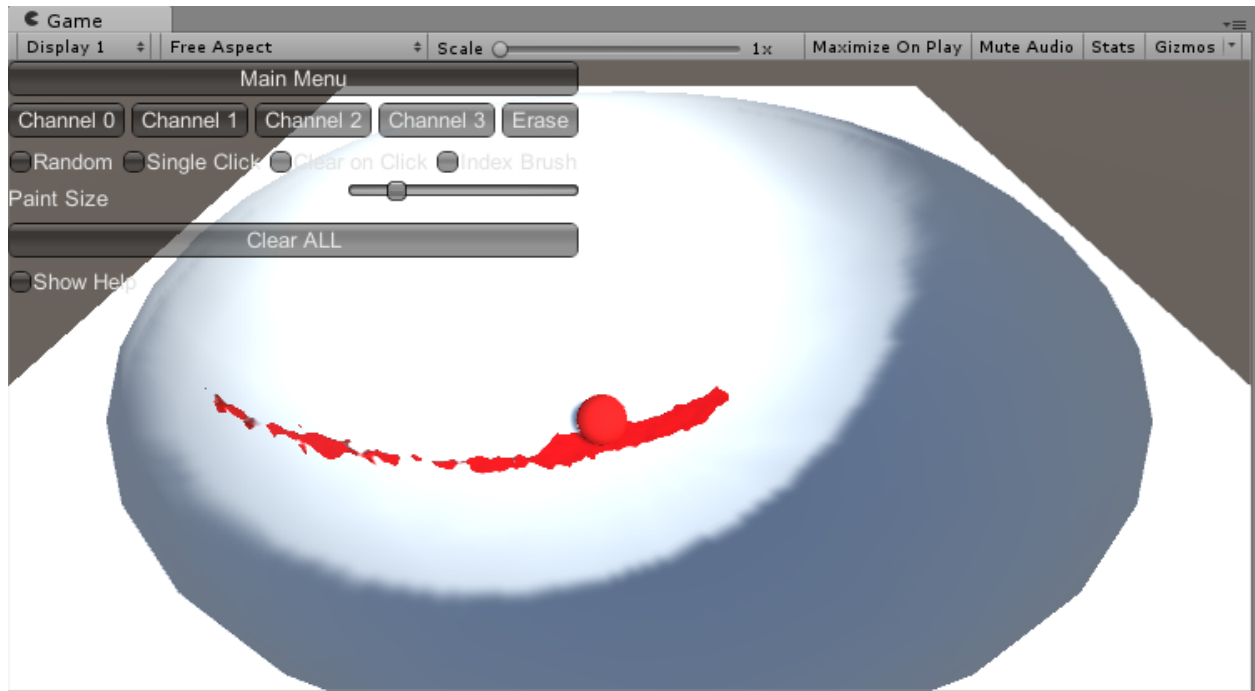
Add the "Collision Painter" and "PaintRed" material and Rigid Body

\*Add the splats texture and SplatsX and SplatsY

\*Change Splat Channel 1



Play and you should see this:

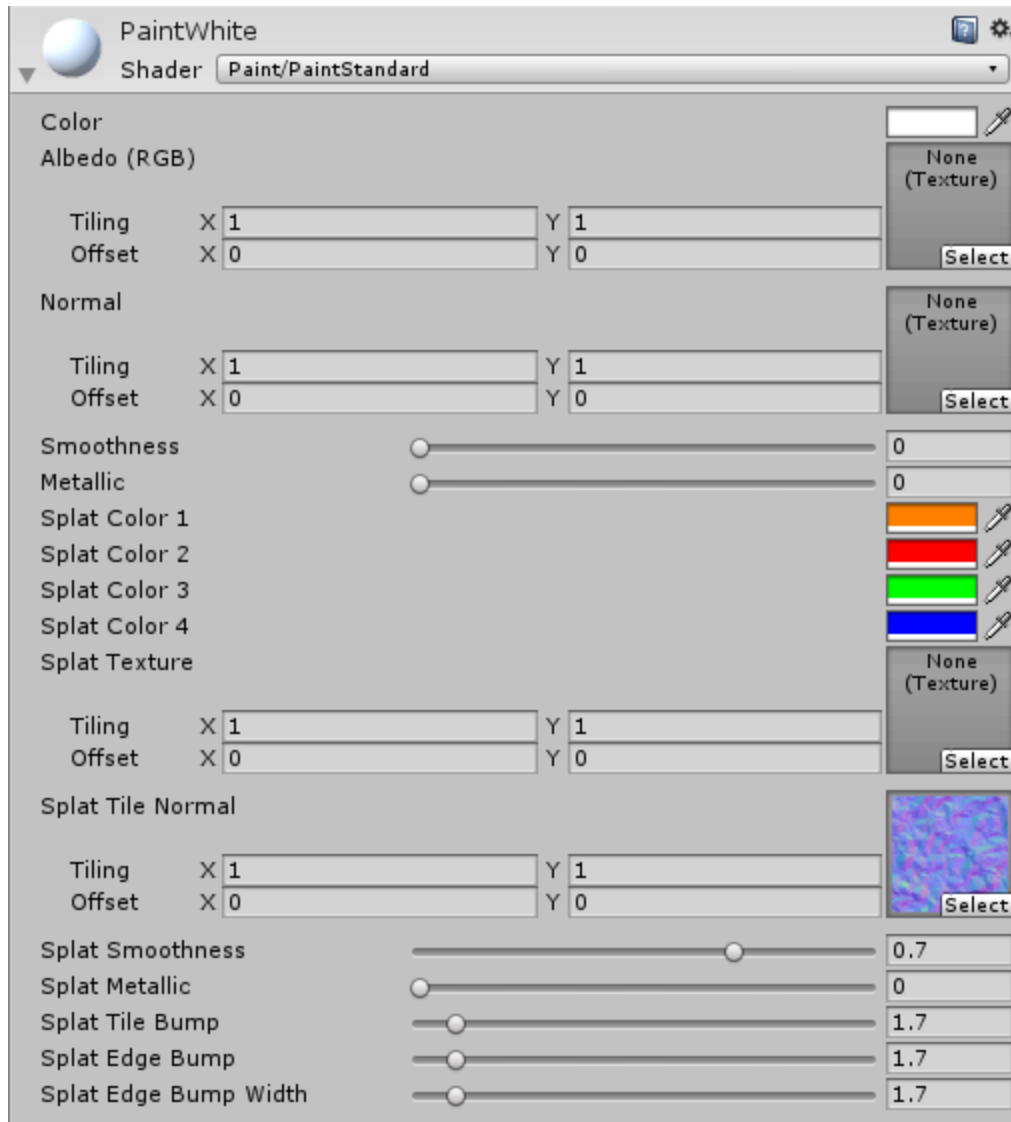


## Any object that will be painted

\*Needs Paint Target component

\*Material with Paint\* Shader

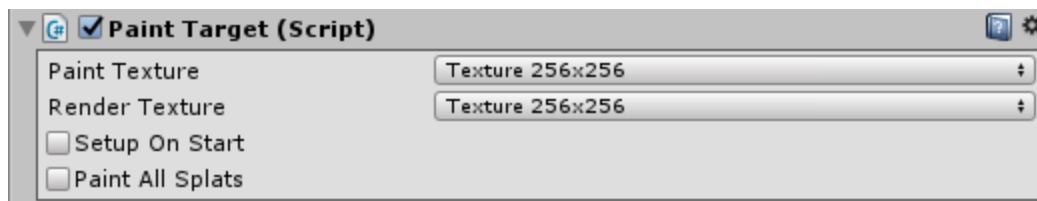
## Paint Material



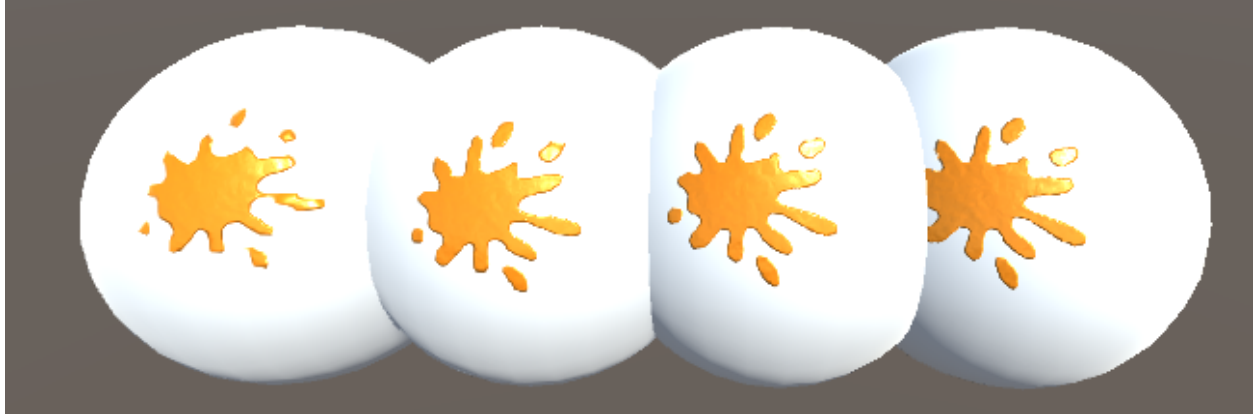
**Splat Color 1/2/3/4** - Paint Colors

**Splat Texture** - LEAVE EMPTY - created by paint target!

## Paint Target



**Paint Texture** - How detailed the paint splats will be




**Render Texture** - Used for normal/tangent maps (increase if you see artifacts)

**Setup On Start** - Create textures on startup or wait til object is painted

**Paint All Splats** - Update ALL splats added, otherwise it will paint 10 per frame

## Brush

▼ Brush	
Splat Texture	 splats
Splats X	4
Splats Y	4
Splat Index	0
Splat Scale	0.5
Splat Random Scale Min	1
Splat Random Scale Max	1
Splat Rotation	0
Splat Random Rotation	0
Splat Channel	0

**Splat Texture** - Texture used to paint splats

**Splats X/Y** - Number of “Frames” per texture

**Splat Index** - Frame offset to paint, -1 = random

**Splat Scale** - Overall scale to paint a “Splat”

**Splat Random Scale Min/Max** - Scale splat frame

**Splat Rotation** - rotate splat

**Splat Random Rotation** - random rotation added to rotation

\*Rotation is added both positive and negative so 180 is 360 degrees



# API

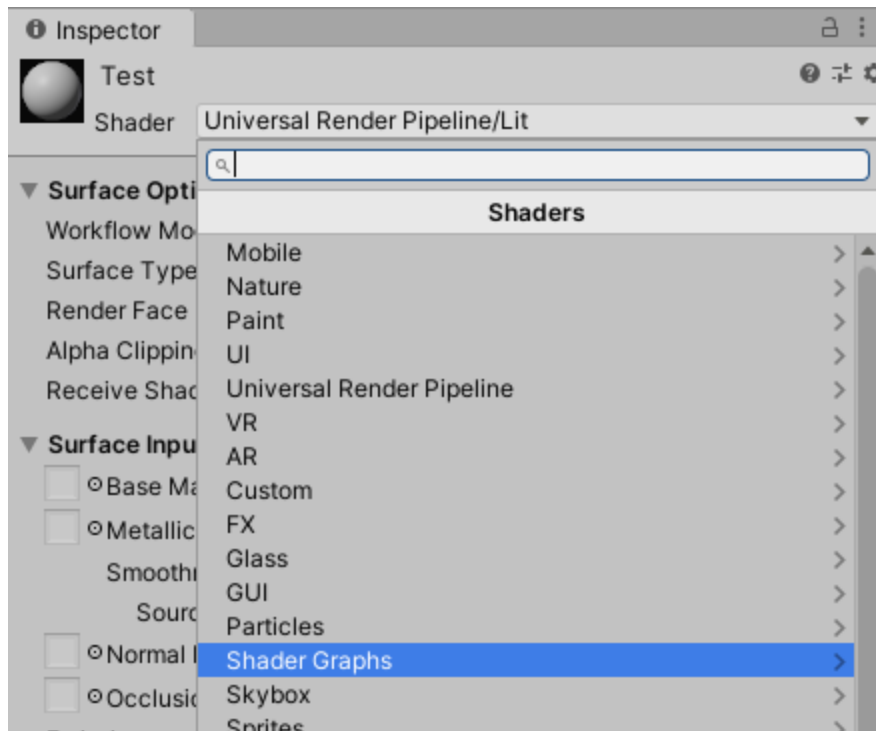
```
public static void PaintLine(Vector3 start, Vector3 end, Brush brush)...  
public static void PaintRay(Ray ray, Brush brush)...  
public static void PaintCursor(Brush brush)...  
private static void PaintRaycast(Ray ray, Brush brush)...  
public static void PaintObject(PaintTarget target, Vector3 point, Vector3 normal, Brush brush)...  
public static void ClearAllPaint()...  
public static void TallyScore()...
```

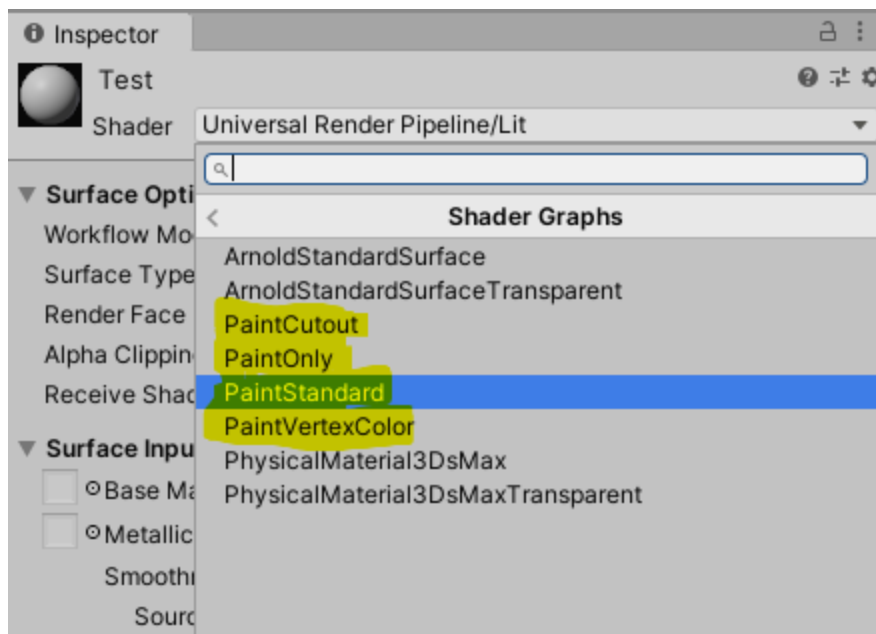
\*TallyScore will be SLOW! - suggest only using it for final screen

## Universal Render Pipeline

Everything works the same as the Built-in Pipeline, You only need to use URP shaders.

These are standard Shader Graph shaders that can be found here:

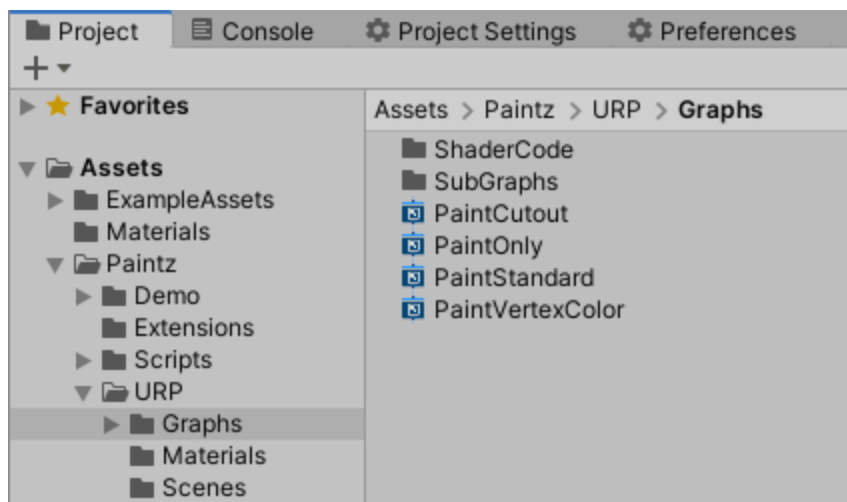


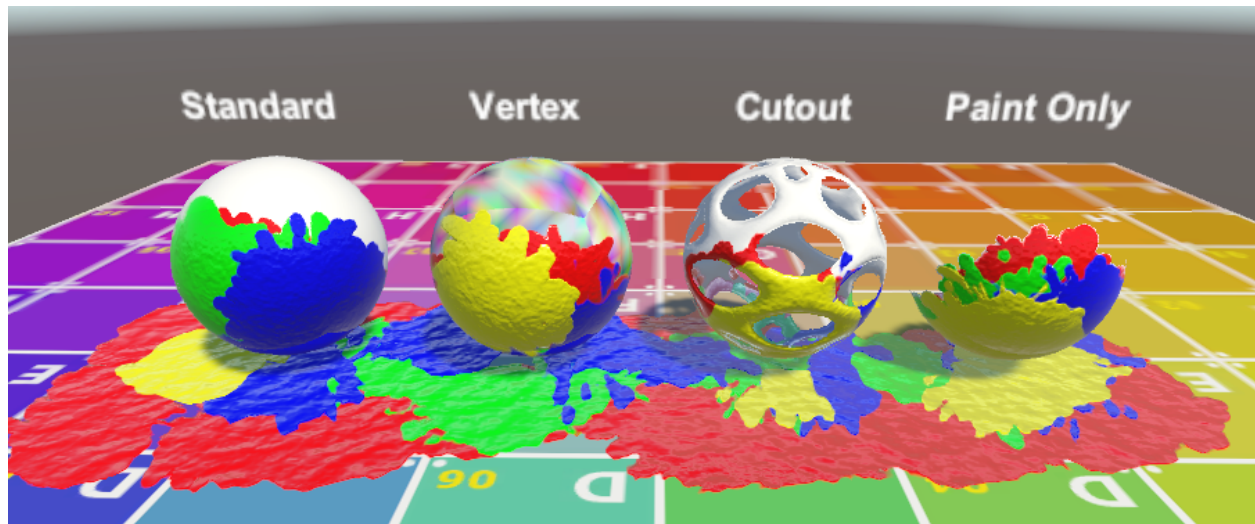


Included are 4 Common Variations, Standard/Vertex Color/Cutout/Paint Only

Suggest you Duplicate the “PaintStandard” Shader Graph, rename it and edit.

**\*IMPORTANT - You must start the shaders name with “Paint”**



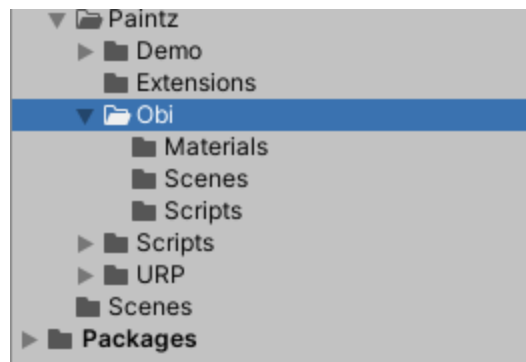


## OBI Fluid Extension

### **IMPORTANT - Import Obi Fluid into your project FIRST**

Import the Assets\Paintz\Extensions\Obi Fluid.unitypackage into your project

You should now have the following in your project:



### **Step 1 - Add "PaintManager" to your Main Camera**

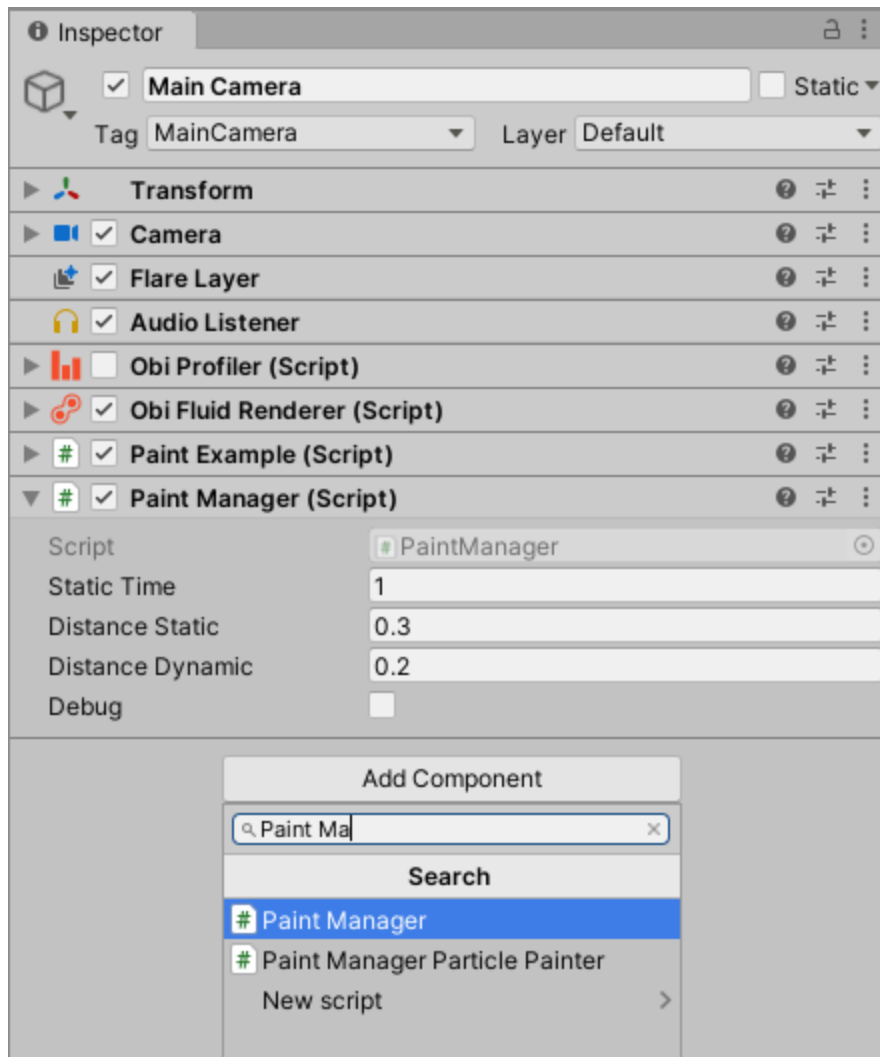
Paintz can not handle 1000's of splats from the tiny Obi particles.  
This class will limit "re-painting" an area for a certain amount of time.

Static Time - How long until an area can be repainted

Distance Static - Size of areas to limit painting

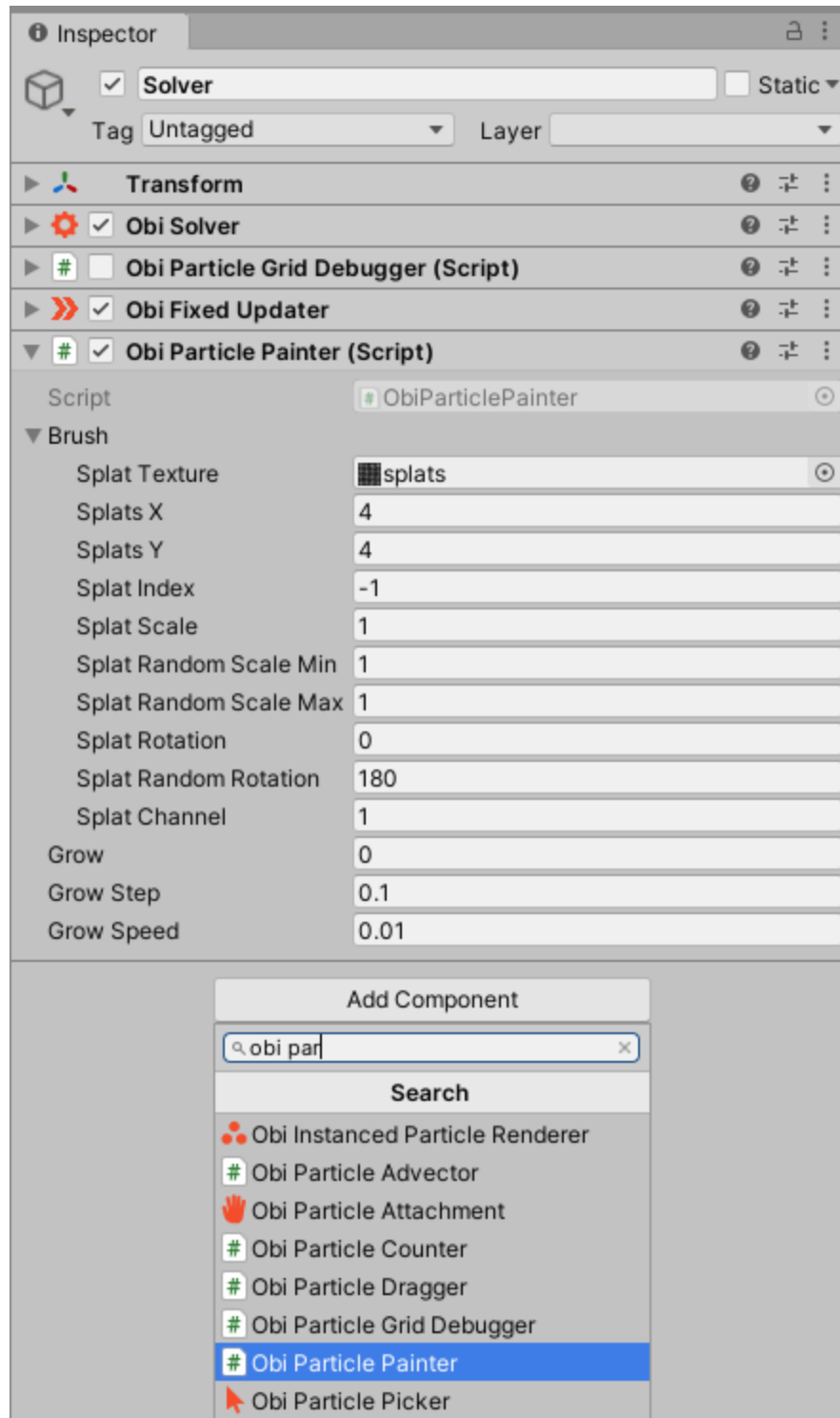
Distance Dynamic - Not used

Debug - Visually see area in editor viewport

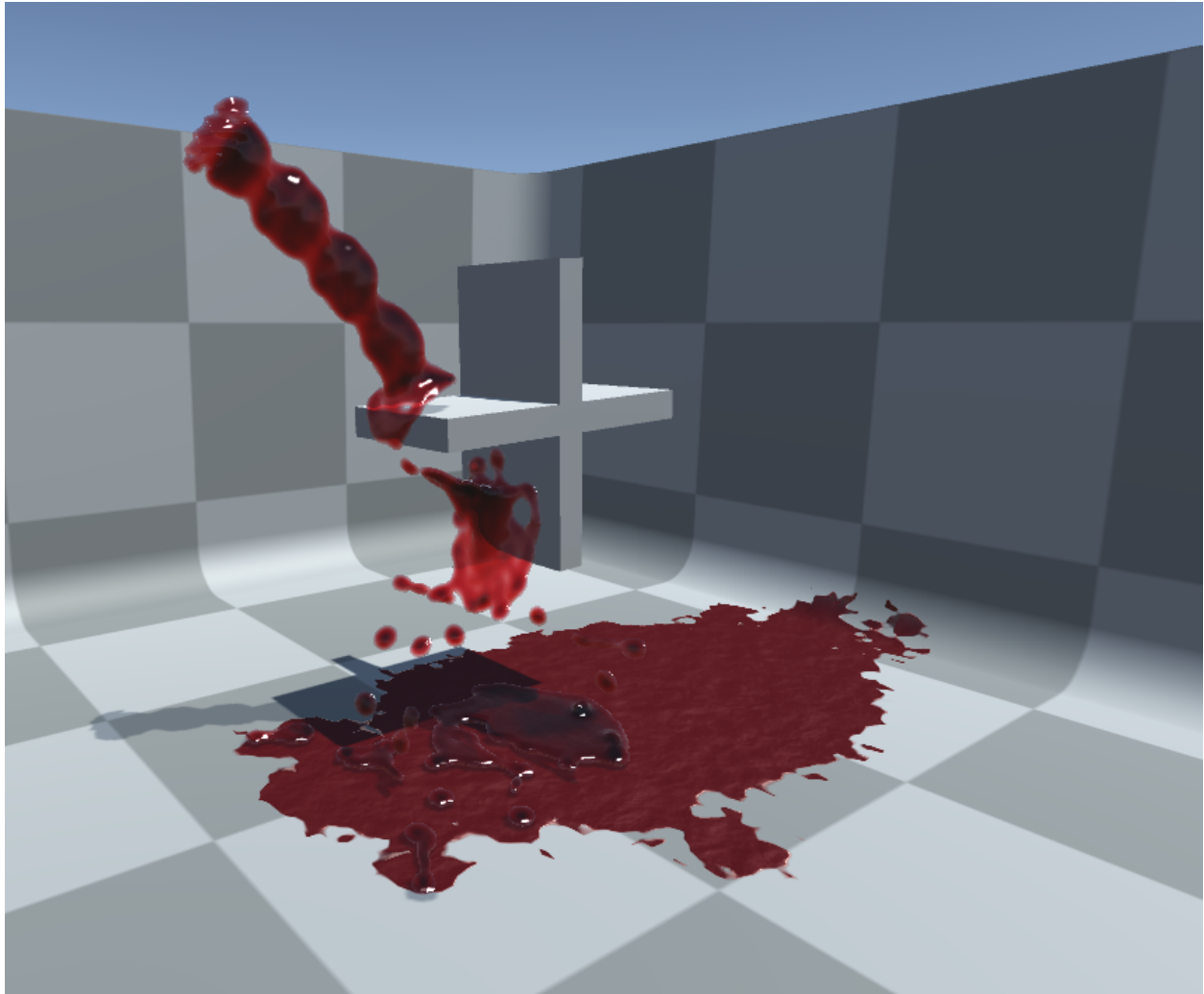


**Step 2** - Add "Obi Particle Painter" to your Solver object

**\*IMPORTANT** - Setup your Brush params, Note the Texture and Splats X/Y settings



That's it, the Obi fluid should paint any valid paint surface.

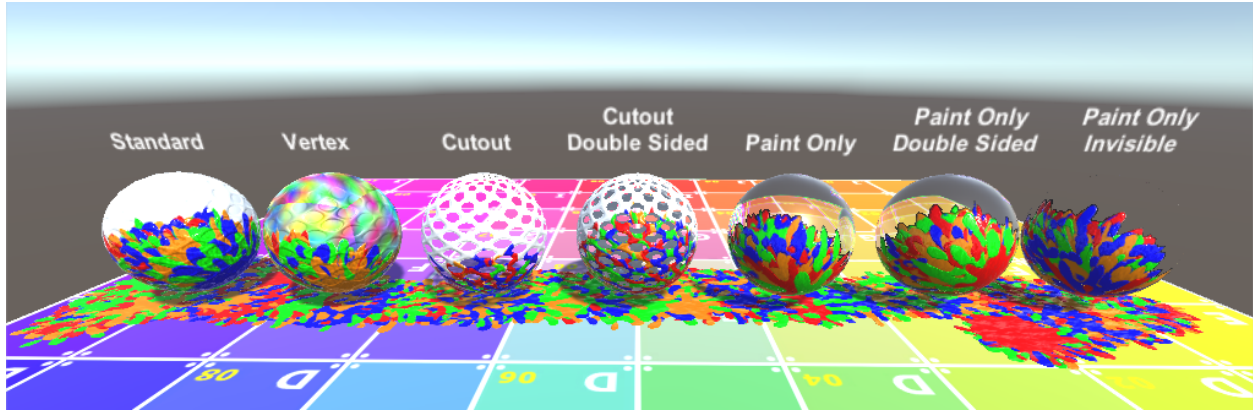


## Version 1.5

New API:

```
public static Color CursorColor()  
public static int CursorChannel()  
public static Color RayColor(Ray ray)  
public static int RayChannel(Ray ray)
```

New Shaders:



## Version 1.7

Universal Pipeline Support  
Obi Fluid Extension

## Version 1.71

Obi Fluid 6 support  
\*XR bug fixes  
Mobile fixes

\*If you have issues with VR, please add `Paintz\VR\PaintCamera` to your scene  
\*Do not rename it, due to a Unity bug in some versions, Camera parameters are not updated from scripts correctly.