

## 3 – Creating Objects with Primitives

It's assumed that you already did Tutorial "1 - Easy first Scene" and get the basics on Unity3D.

Unity 3D is not a modeler and normally uses objects created with specific programs called modelers (like Blender or Sketchup) but it is possible to create objects using Unity's geometry primitives (Figure 1). Although this functionality is mainly used for simple objects, complex objects can be created using a building blocks technique (like in Lego or Minecraft).

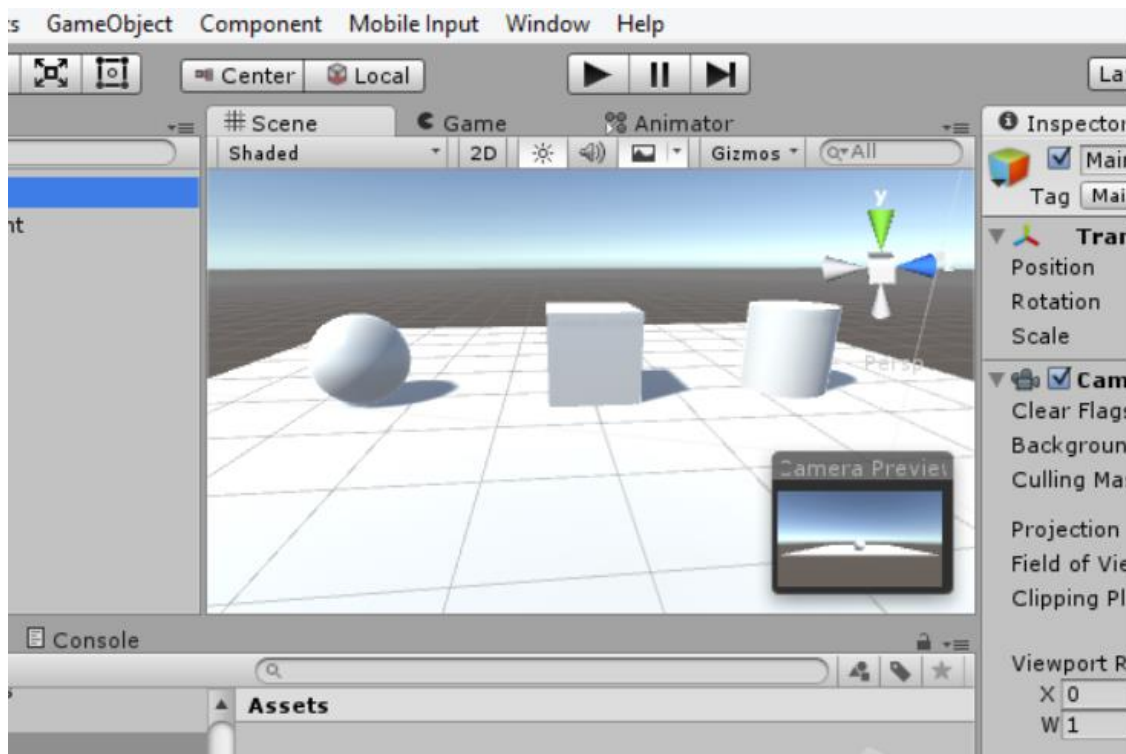


Figure 1 – primitive objects and compositions can be created with Unity

More info on primitive objects:

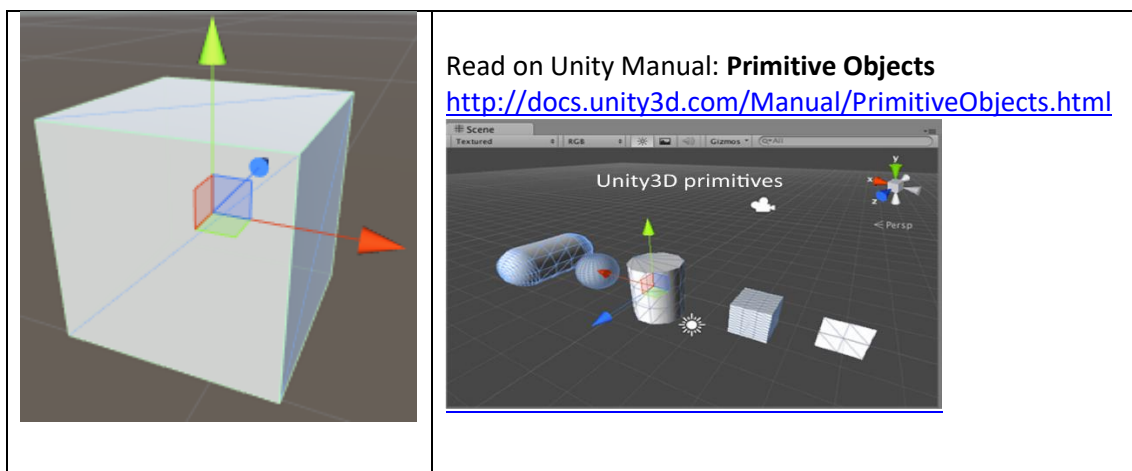


Figure 2

## 1. Building a simple scene with primitives

Let's create a basic scene

### 1.1. Create the floor using a plane

On top menu choose *GameObject > 3D Object > Plane*, as seen in Figure 3

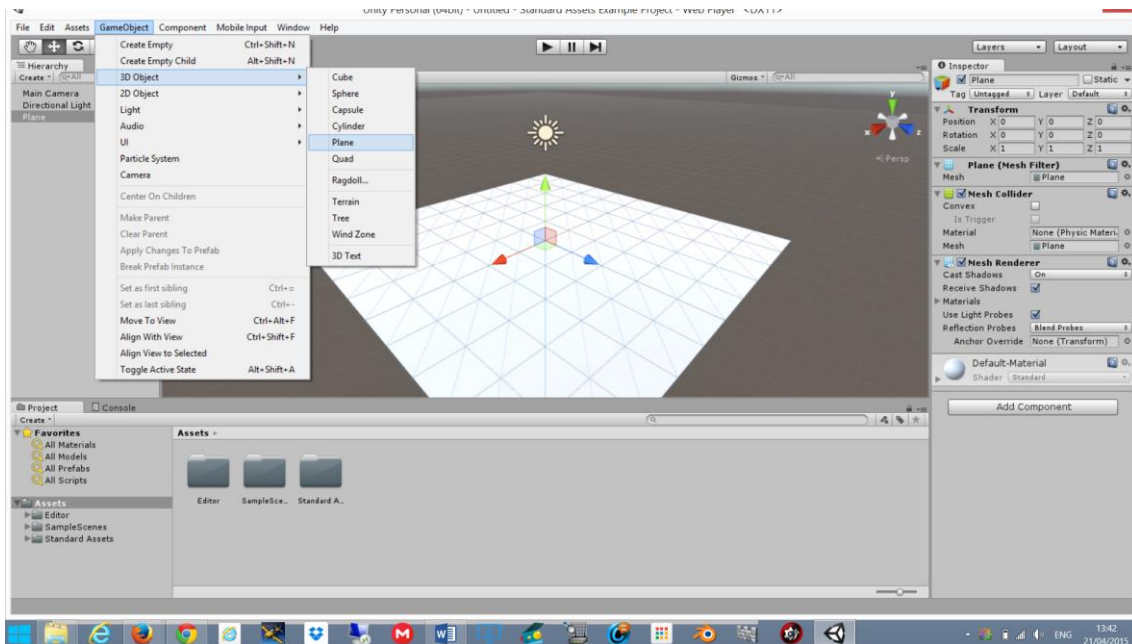


Figure 3 - Adding a plane

Notice that the plane is automatically added to the Hierarchy tree which registers all elements in the scene.

### 1.1. Add other primitive objects and manage them

In a similar way add other primitive objects. Position the objects with the mouse using the tools to position and change objects (Figure 4) located at top left corner of Unity's interface and come up with a scene similar to Figure 1.

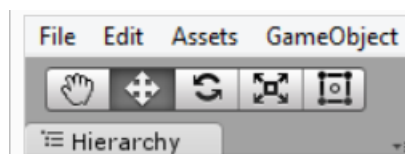


Figure 4 - Tools to position and change objects in Unity3D

## 2. Adding textures

Upon creation, objects appear in white (the default material definition) but we can change their definitions and add textures.

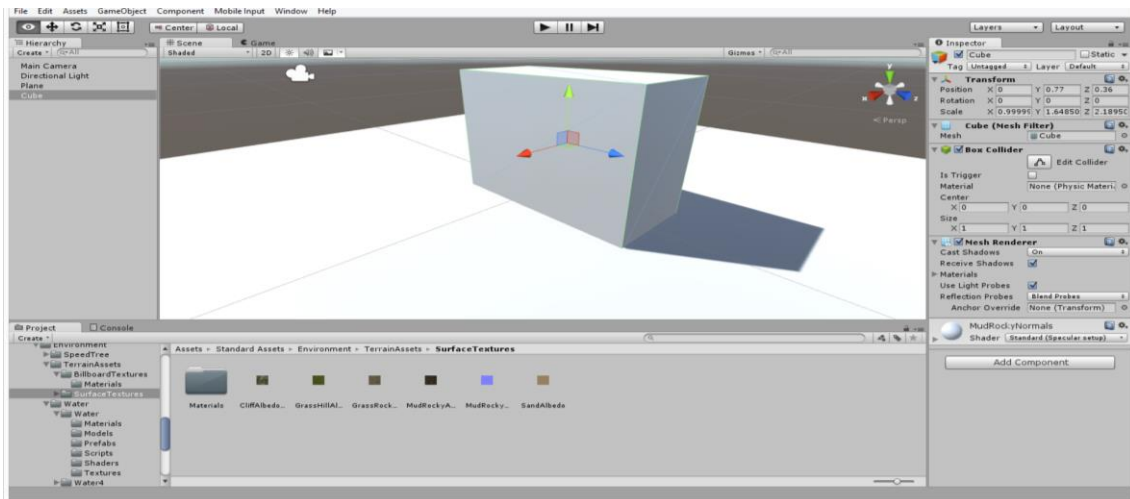


Figure 5 - Objects with the default material

You can use textures already in standard assets or others imported. Simply drag them (with the mouse) from *Project* folder to objects in the *Scene* (Figure 6). [Tip: try searching for texture SandAlbedo.psd and CliffAlbedoSpecular.psd and assign them to the floor and the cube].

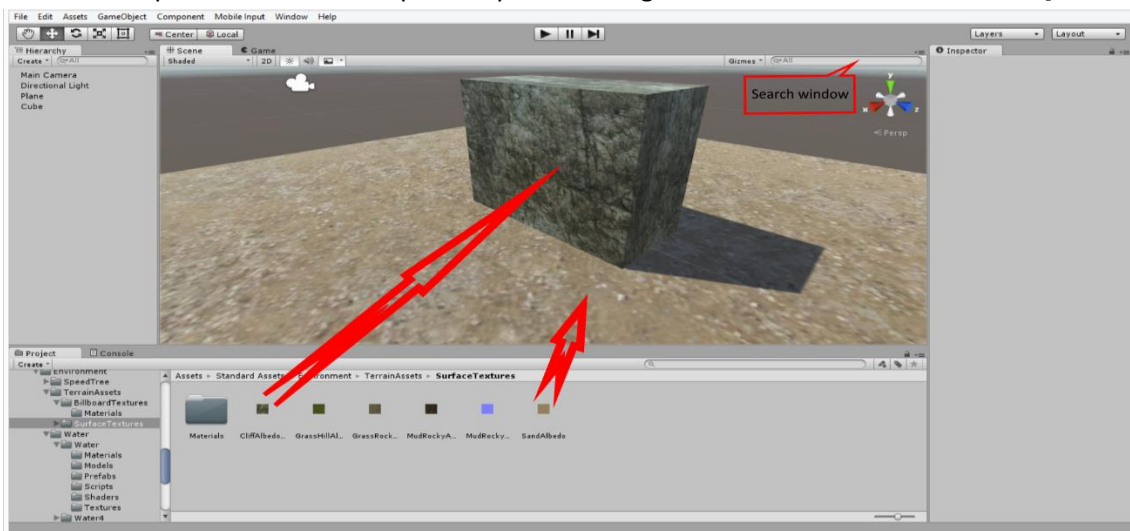


Figure 6 - Objects with texture

More info on textures in Unity3D:


	<p>Read on Unity Manual: <b>2D textures</b> <a href="http://docs.unity3d.com/Manual/class-TextureImporter.html">http://docs.unity3d.com/Manual/class-TextureImporter.html</a> See this video: <a href="http://www.unity3dstudent.com/2010/07/beginner-b09-adding-materials/">http://www.unity3dstudent.com/2010/07/beginner-b09-adding-materials/</a></p>
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Figure 7

### 3. Extending Unity's base primitive objects

Unity's base primitives can be extended with add-ons, paid or free. *DestPrimitives* (<http://forum.unity3d.com/threads/release-free-primitives.234595/>) is a free package that adds a group of additional primitives to your project assets, under the name DestPrimitives.

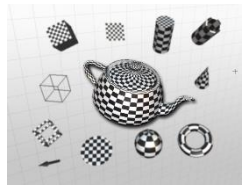


Figure 8 –Unity3D primitive objects can be extended with add-ons

#### 4. Complex objects made with primitives: the building blocks technique

One popular technique known as *building blocks* is appealing to a certain kind of creators. It is, eventually, not the best way to create 3D but has a long tradition, going from the classic *Lego* constructions to the more recent *Minecraft* game where everything is created with “cubes”: objects, environment and even characters.

The building blocks idea can be applied in Unity3D to create models more or less elaborated.

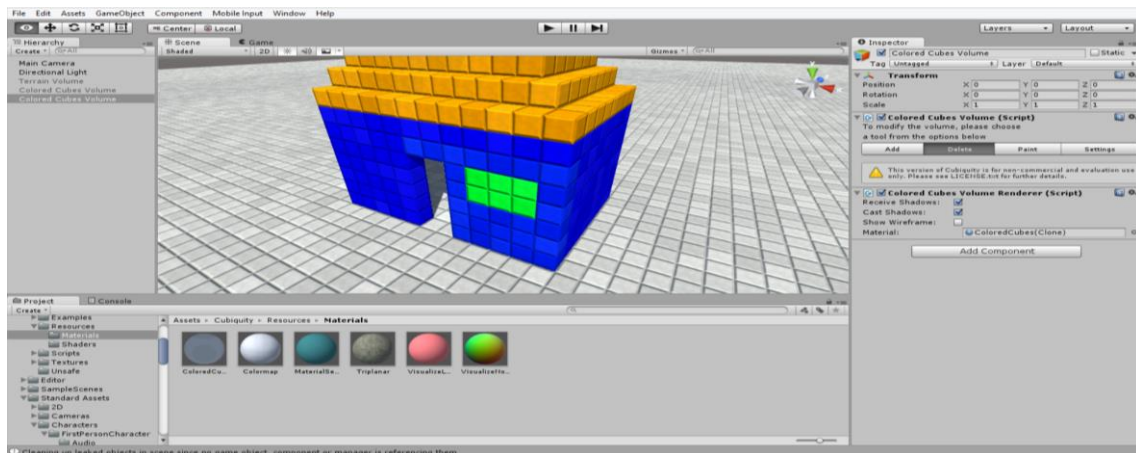


Figure 9- A simple house made with blocks

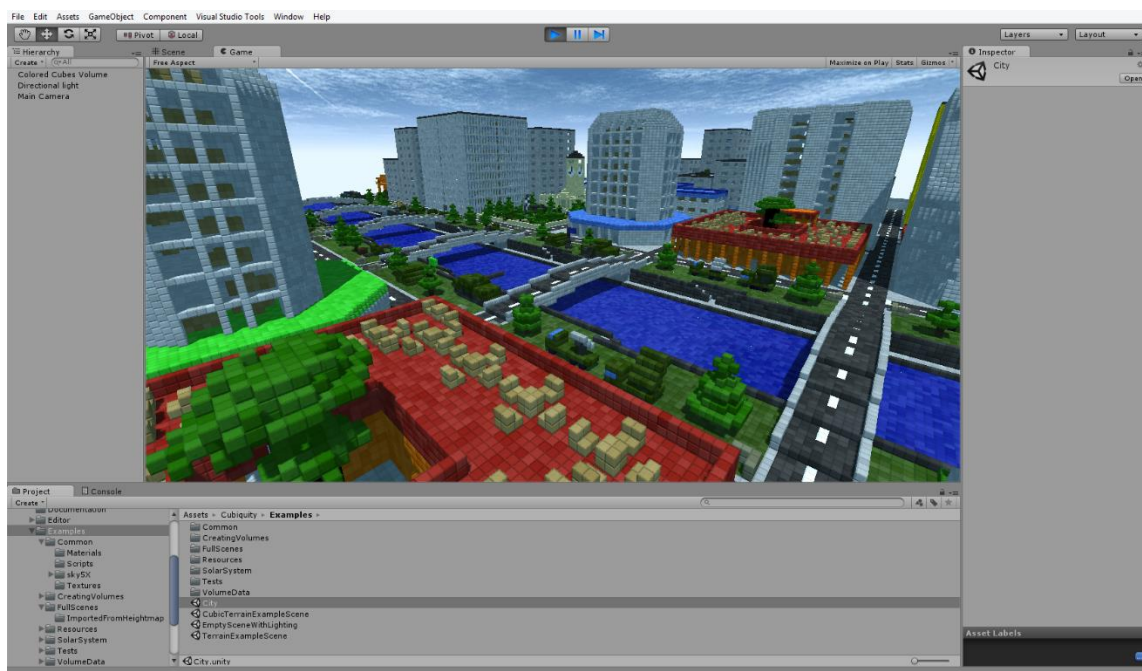


Figure 10 – A highly elaborated model in blocks (Cubiquity)

Since this building technique is appealing to some creators, plugins (*Cubiquity* and others) are available in [Asset Store](#) to facilitate its use in Unity3D.

Have in mind that this is a particular case of an art form (building blocks). Normally we use programs like Sketchup or Blender to create complex objects for our 3D scenes in Unity.

## 5. Navigate and publish the scene

This scene can be seen in game mode, but statically, through the main camera. To navigate it dynamically or with an avatar follow the instructions on Tutorial “1 - Easy first Scene”; the same can be done here.

## 6. Defy

Using the primitives create a simple scene with the following objects, or similar and display them in [babelx3d](#) forum:

- a basic car (looks like the wooden toys: wooden car example [here](#)),
- A basic house, very simple (can also be like a [wooden toy](#)),
- A snowman,
- Try creating other objects of your choice,

Start by creating simple / crude objects, improve them and finally add textures.



## 7. References

Tutorials are simple texts aiming to motivate. To go beyond look for reference documents:

- Unity Documentation, is the fundamental reference text to learn from <http://docs.unity3d.com/Manual/index.html>
- Unity Learn –Tutorials, videos and training on Unity site. <http://unity3d.com/learn>

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Important: this tutorial is updated from time to time so, preferably, [read it online](#) or get the latest version from [https://1drv.ms/f/s!AiVFncpESHaShZNdh\\_DaKhqFHCeWQ](https://1drv.ms/f/s!AiVFncpESHaShZNdh_DaKhqFHCeWQ)

More tutorials are available at <https://1drv.ms/f/s!AiVFncpESHaSrUR3FA2O03Z138HJ>

