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BA COMPUTER GAMES DESIGN

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Unreal Engine 4: Using Geometry Brushes



- **Unreal Engine 4: Using Geometry Brushes**
 - **Geometry Brushes Overview**
 - What are Geometry Brushes?
 - Why are they important?
 - How Geometry Brushes are used
 - **Self Directed:** Geometry Brush Exercise



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Unreal Engine 4: Using Geometry Brushes

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Geometry Brushes Overview

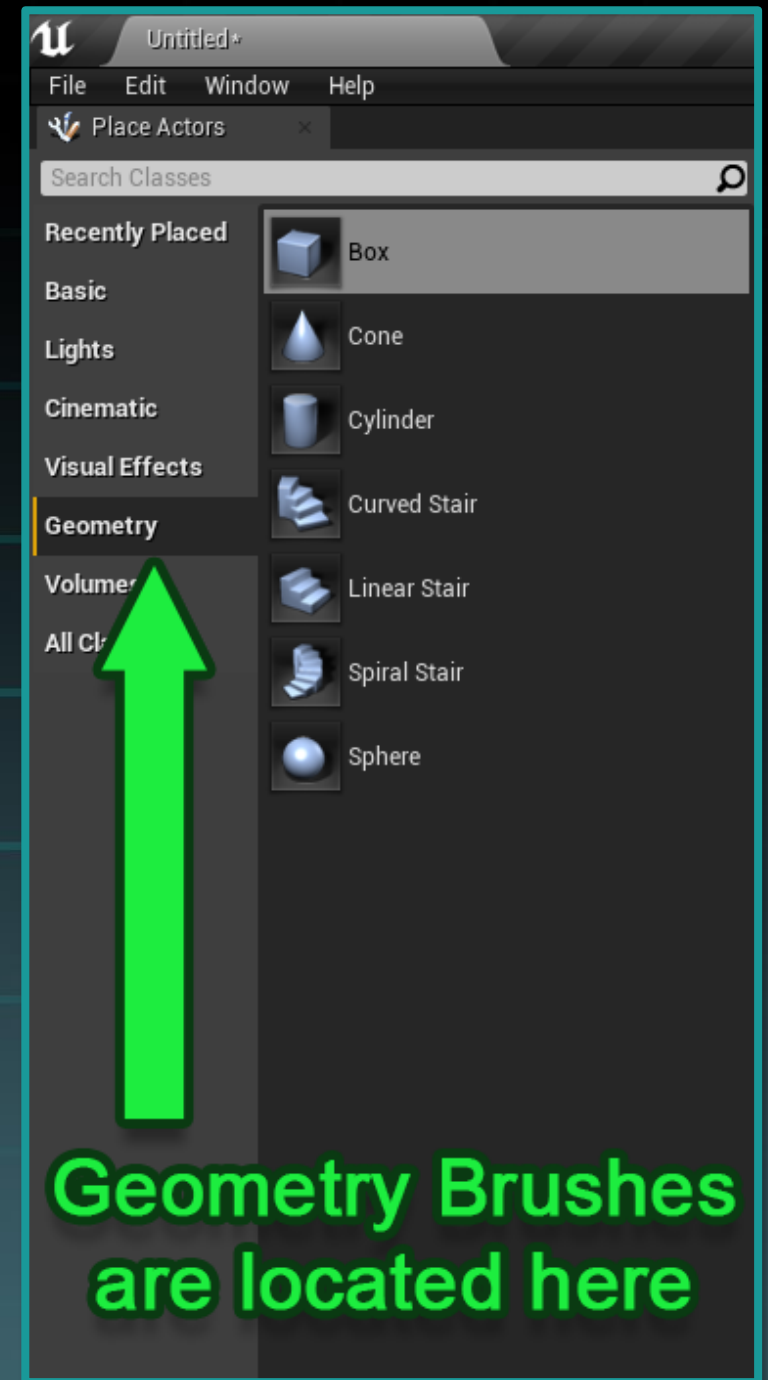


What are Geometry Brushes?

Geometry Brushes are a simple and quick way of **laying out space in your level**; defining what's solid and what's not.

Designers place these Brushes to create **Geometry** which is what forms the foundation of a level.

(Epic, 2015)



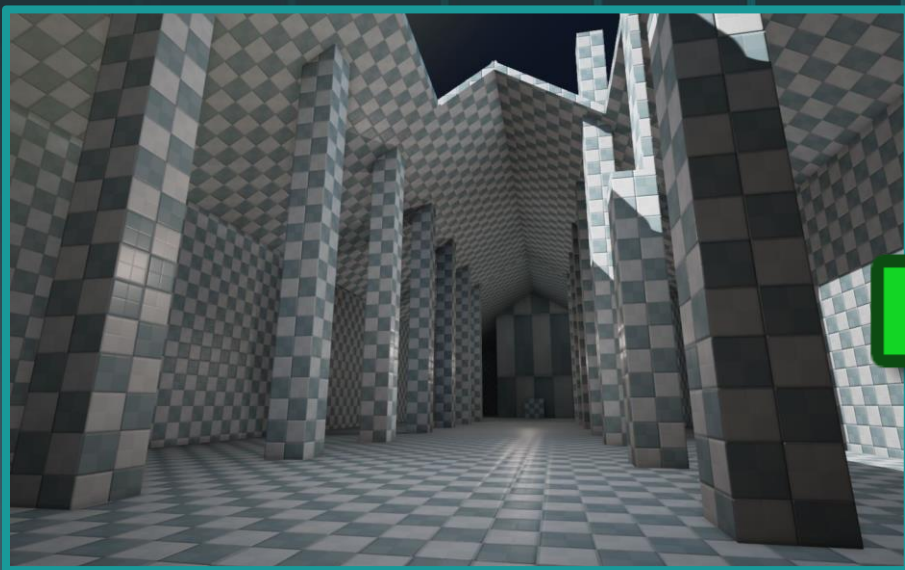


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Why are they important?

Geometry Brushes are both very fast to work with and can be edited easily within the editor. They allow designers to quickly **prototype and modify levels** which is crucial in the early stages of both level and game development.

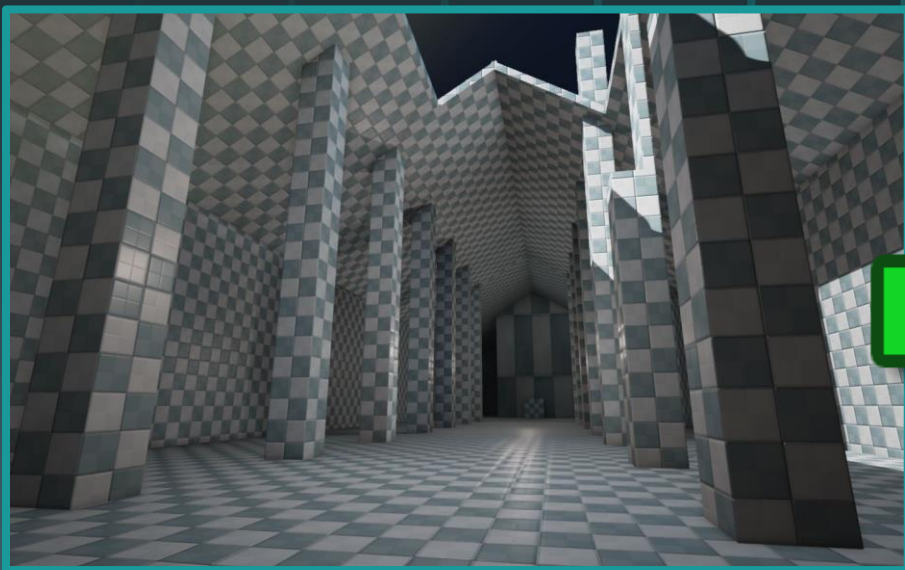




How Geometry Brushes are used

In general, you can think of Geometry Brushes as a way to create **basic shapes for use in your level design** process, either as permanent fixtures or as something **temporary to test with** while your artists finish creating final meshes.

(Epic, 2015)



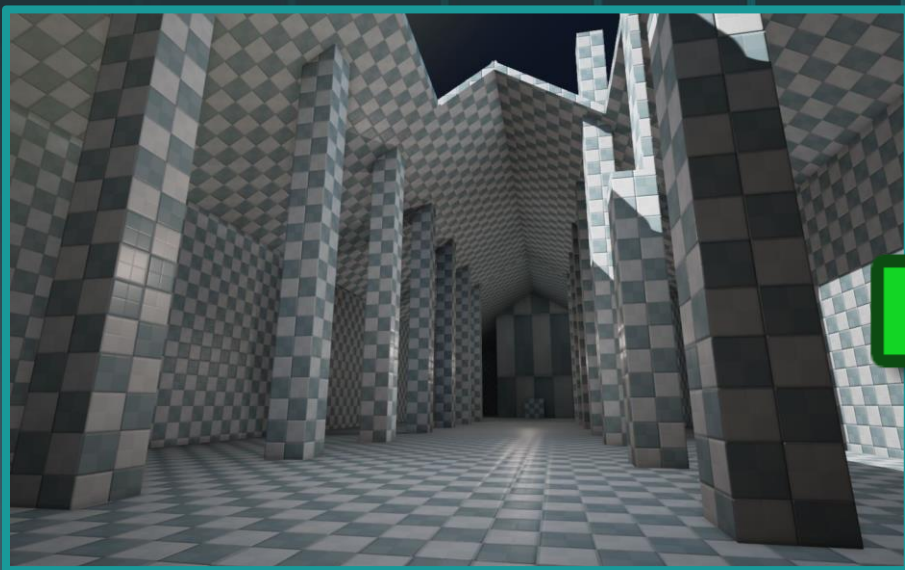


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How Geometry Brushes are used

Most level designers will start off a level with Geometry, **test, edit and test again** until they are happy with it.



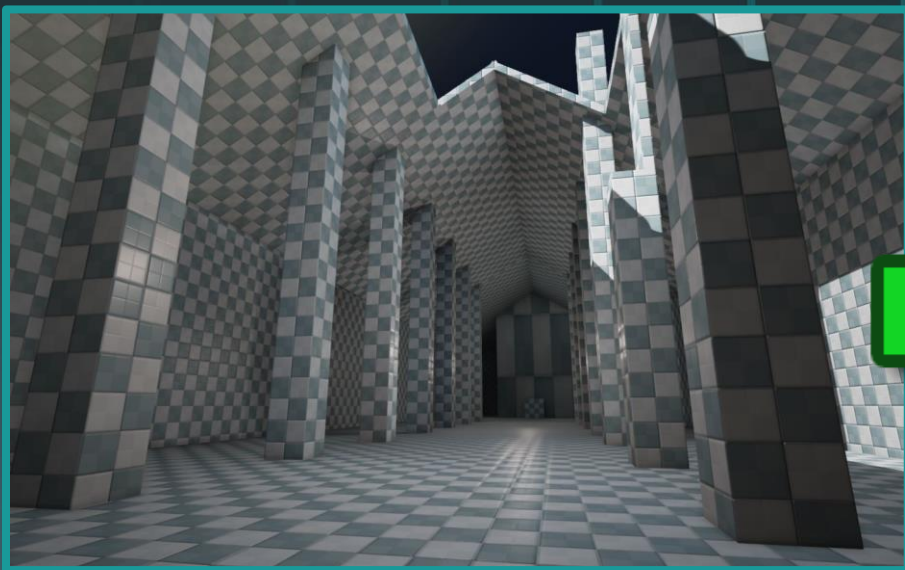


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How Geometry Brushes are used

Learning to use Geometry Brushes is the first step to **creating levels**. Without them you'll likely end up with a confused mess.

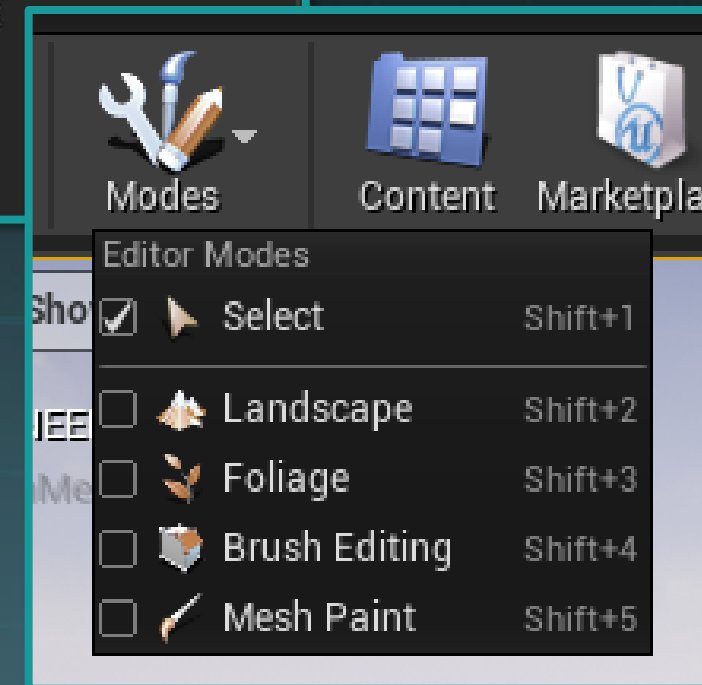
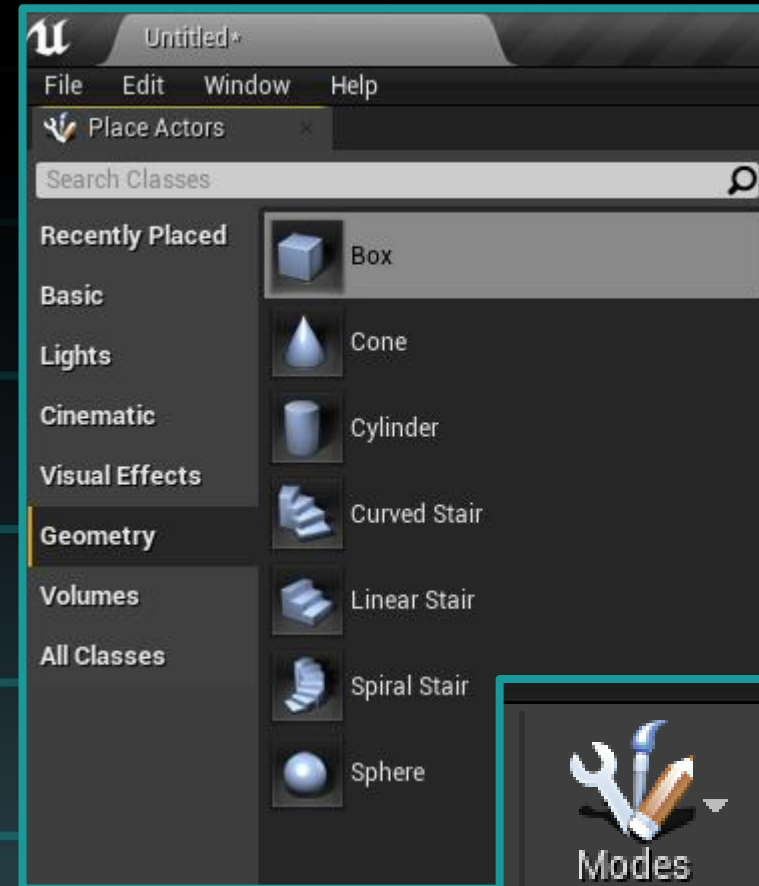




How Geometry Brushes are used

The menus highlighted here are used most often for basic Geometry Brush editing.

- **Place Actors: Geometry**
- **Modes > Brush Editing**



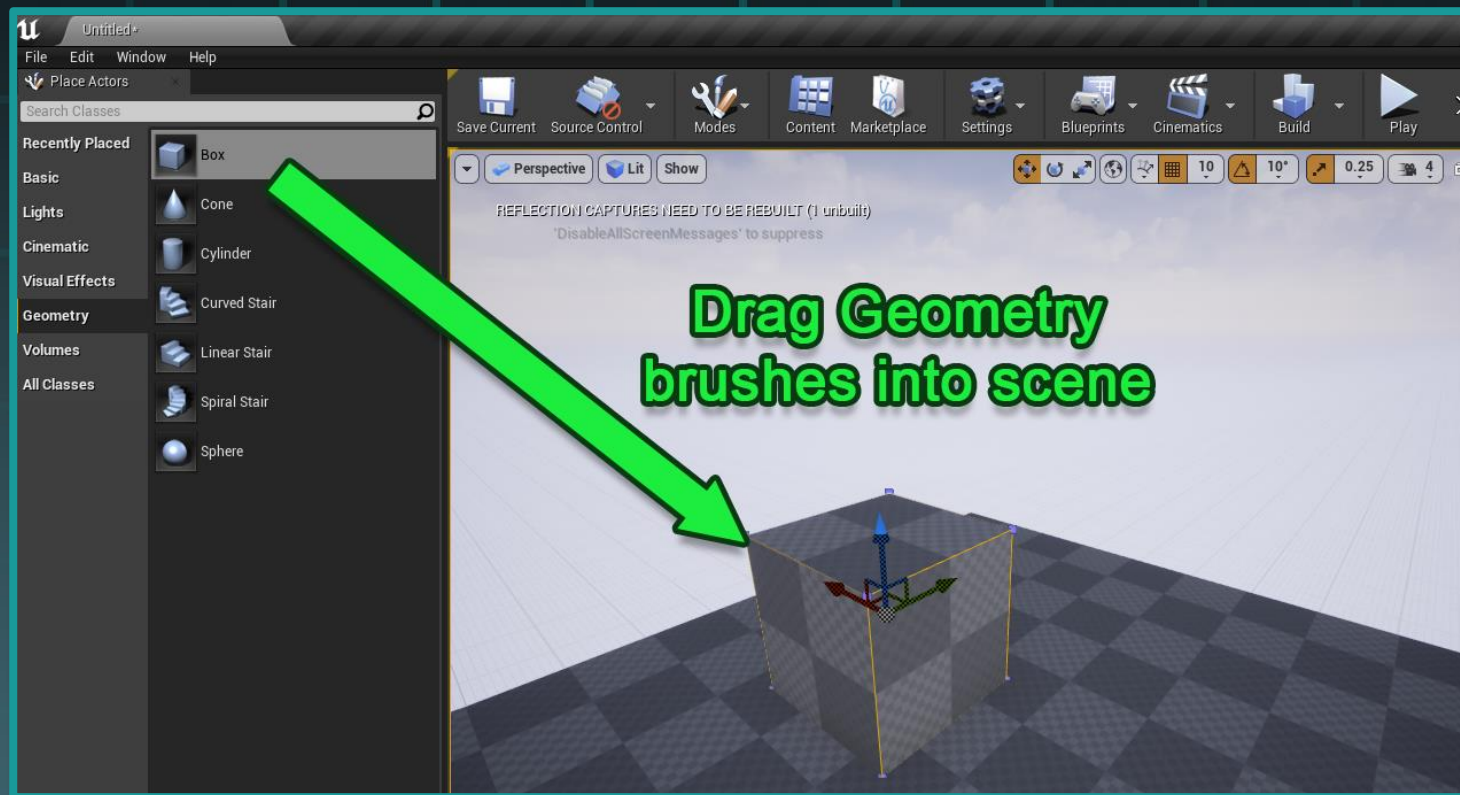


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Place Actors: Geometry

To add **Geometry brushes** to your scene, drag them from the **Place Actors** menu.

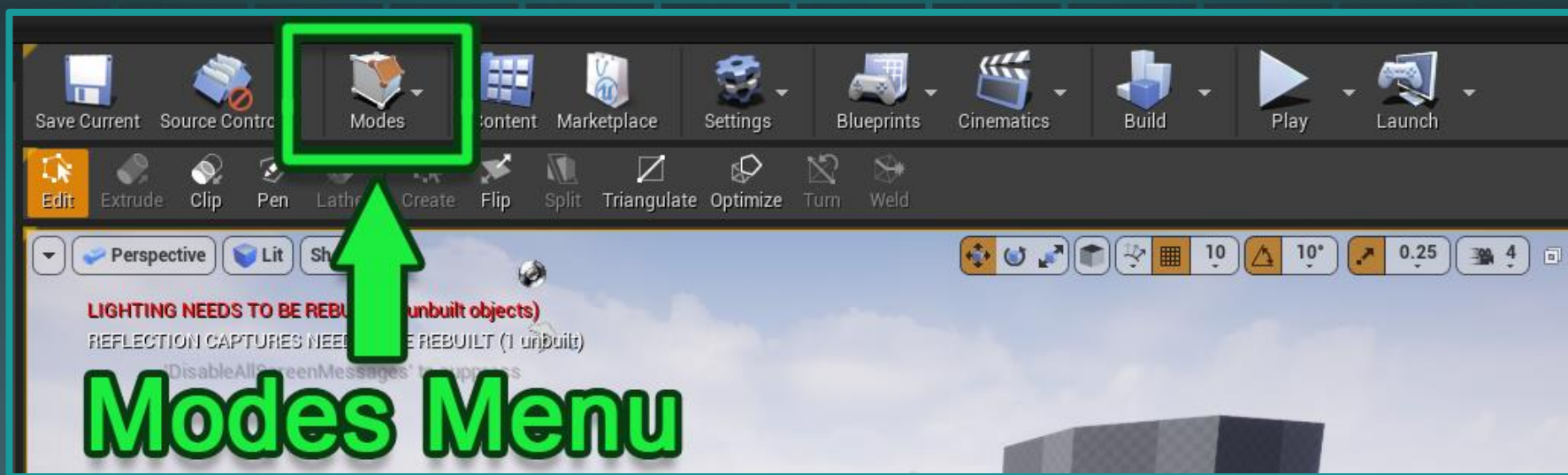




Place Actors: Geometry

These brushes can be **scaled, rotated and translated** as well as being manipulated into **bespoke** shapes.

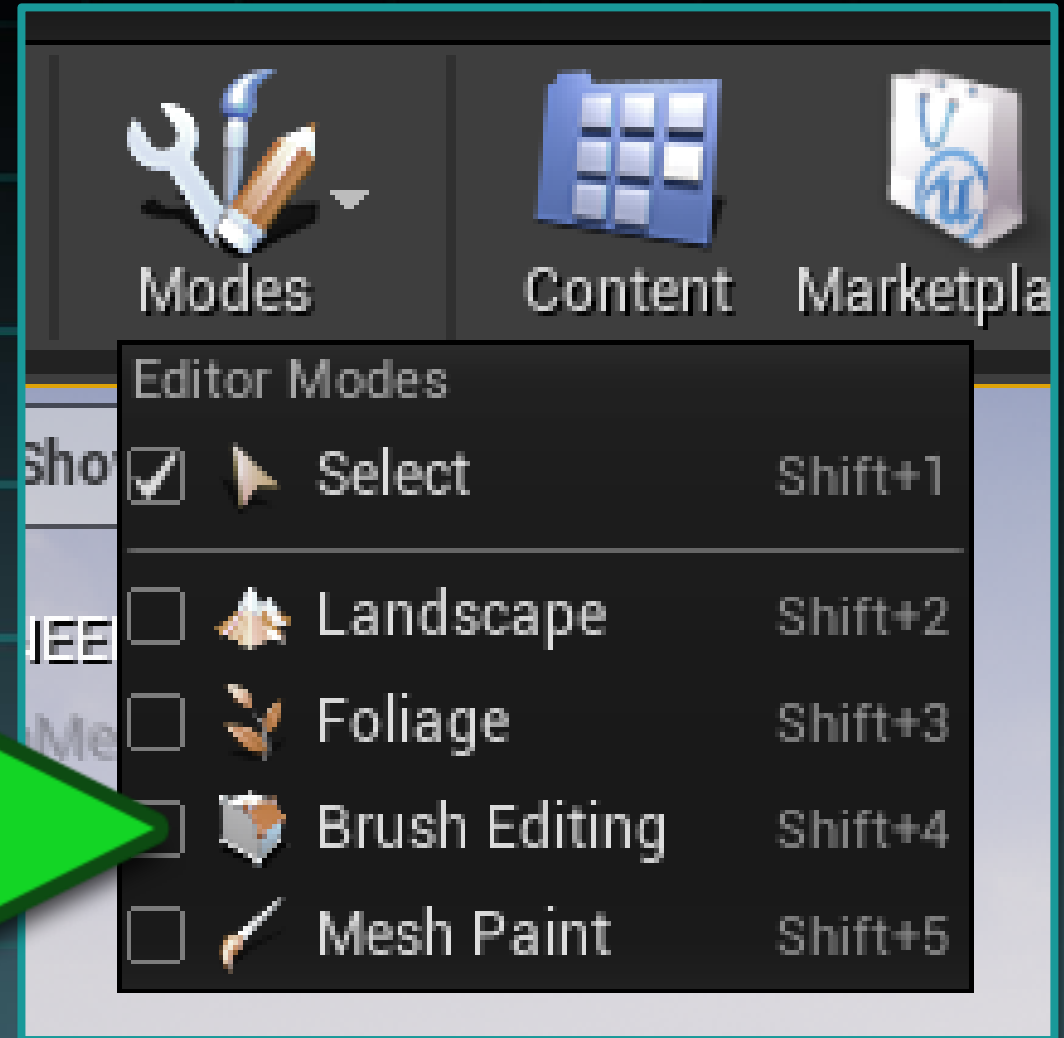
In order to do any of this, you need to access the **Modes Menu** in the **main viewport**.





Modes > Brush Editing

The **Modes Menu** contains many important UE4 tools, but for now the **Brush Editing** will be our main focus.



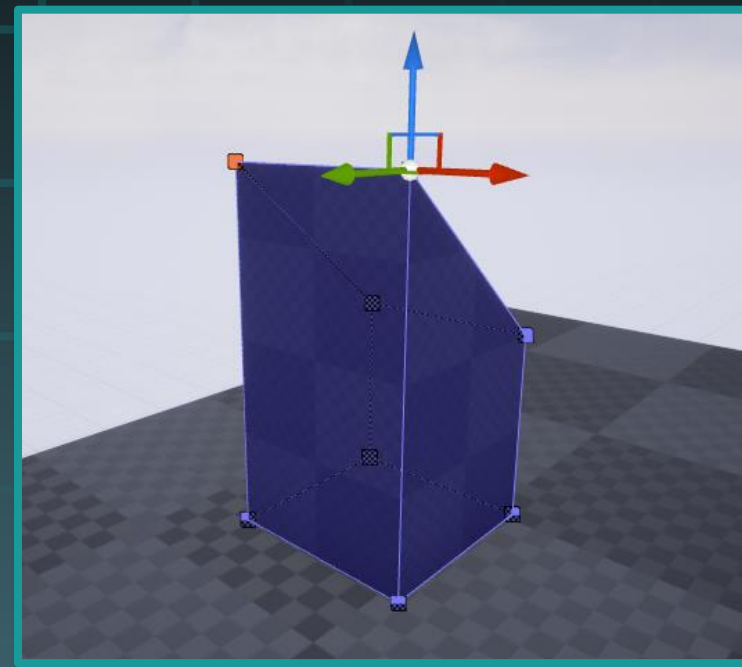
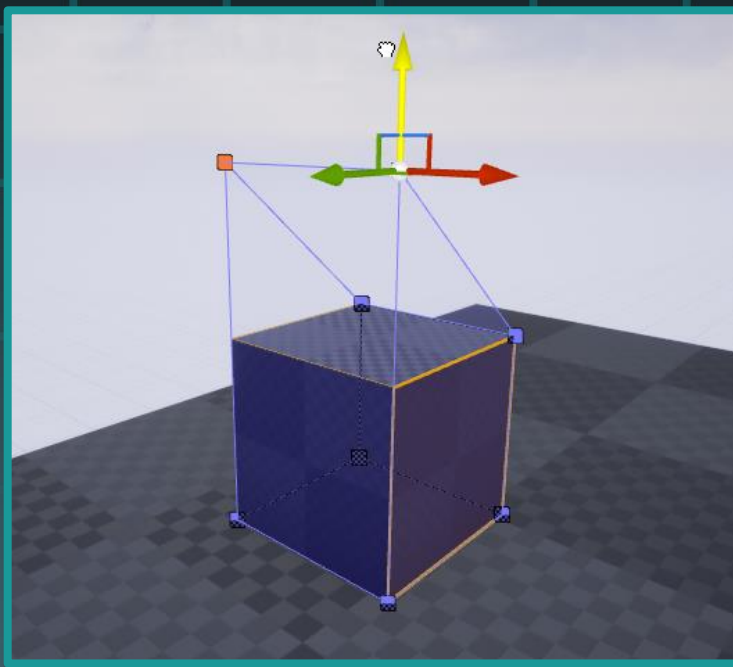
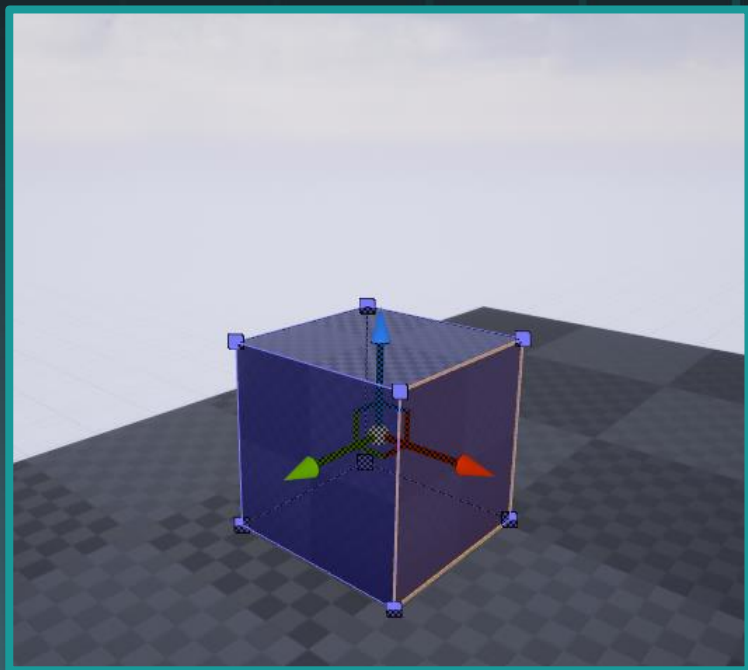


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Modes > Brush Editing

With **Brush Editing** selected, you will be able to **manipulate any Geometry Brushes** you have added to your scene.



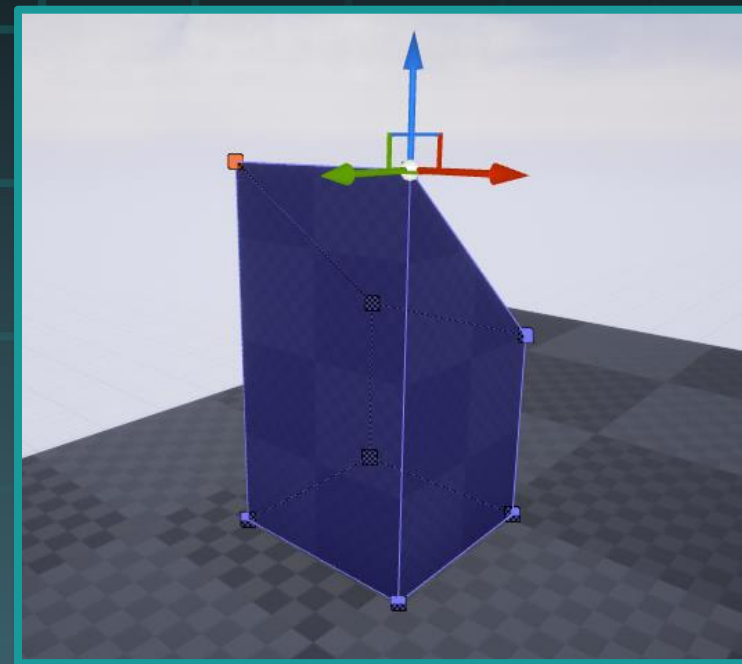
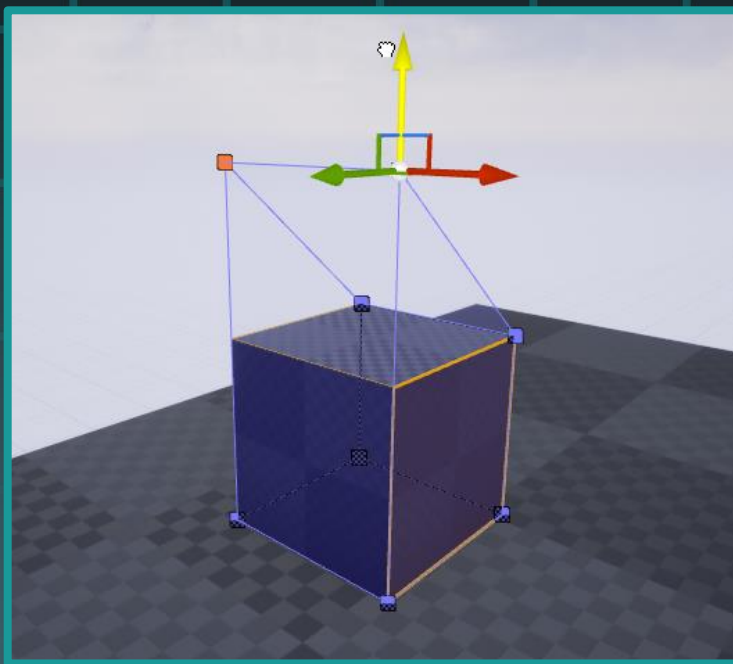
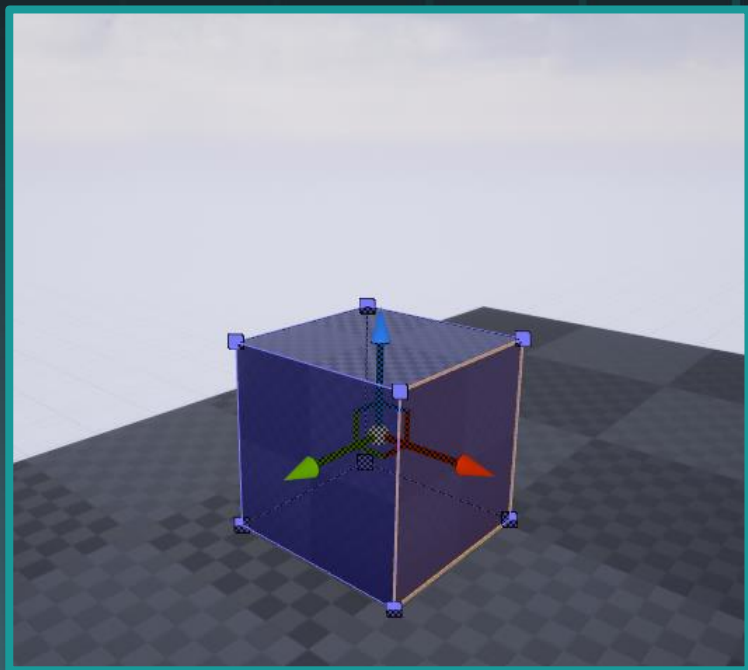


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Modes > Brush Editing

In a similar fashion to **Maya's Component Mode**, you will be able to move vertices and faces on your brushes.





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Example: Geometry Brushes and Static Mesh Whiteboxing





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Geometry Brush Exercise

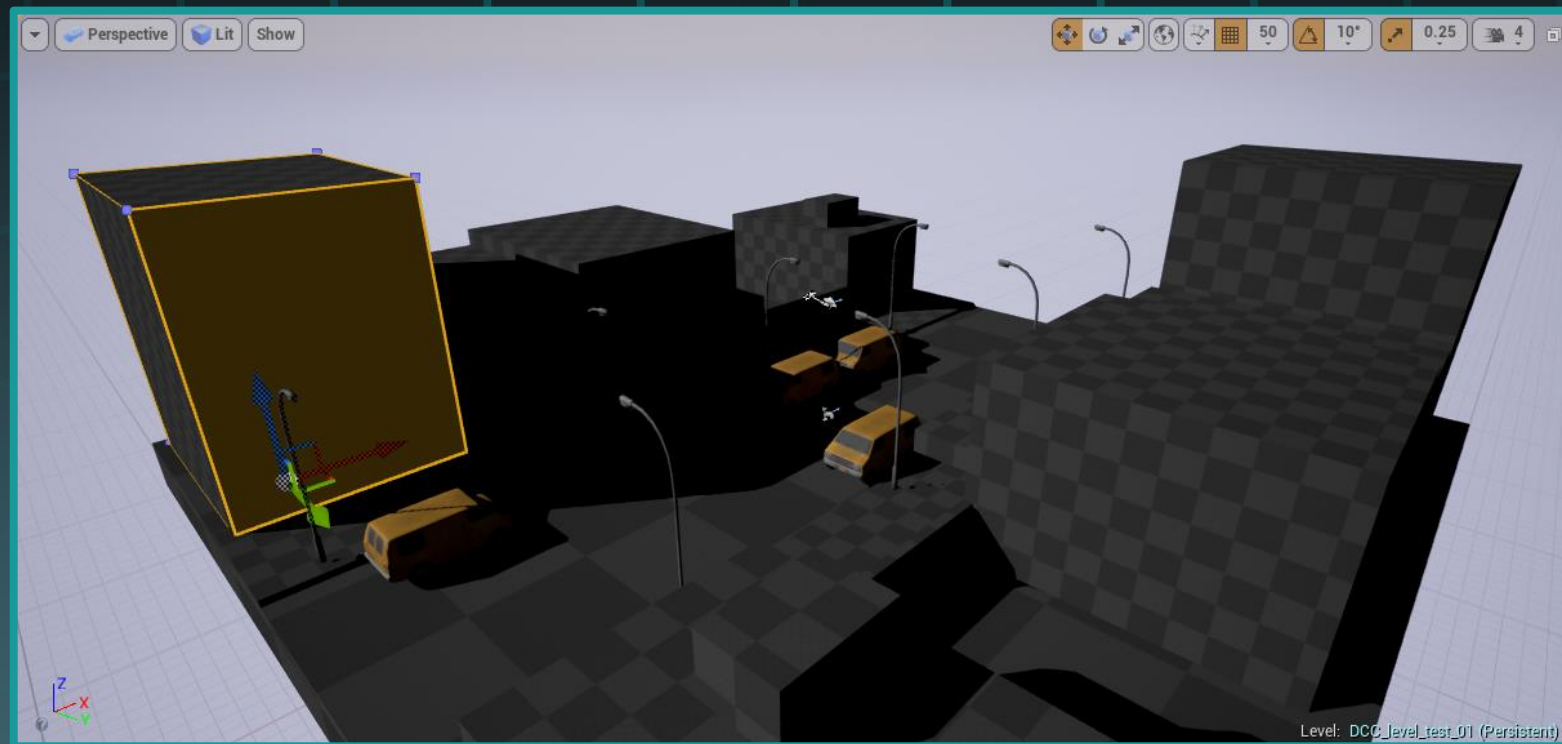


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Geometry Brushes: Self-directed Exercise

Create a **block-out** / **Whitebox** in Unreal Engine 4 using **Geometry brushes** and **static meshes**.





Geometry Brushes: Self-directed Exercise

Use the following sources (and others retrieved independently) to help you create a basic whitebox scene:

<https://docs.unrealengine.com/en-US/Basics/Actors/Brushes/index.html#usesforgeometrybrushes>

<https://docs.unrealengine.com/en-US/BuildingWorlds/LevelEditor/Modes/index.html>

<https://docs.unrealengine.com/en-US/Basics/Actors/Brushes/index.html>



Geometry Brushes: Self-directed Exercise

Throughout the remainder of your studies you will have to conduct and develop your own **independent research** / problem solving skills.

This exercise may be a good opportunity to try this out.



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UNREAL ENGINE 4 Level Designer Quick Start Tutorials:

<https://docs.unrealengine.com/en-US/BuildingWorlds/LDQuickStart/index.html>

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+ Landscape Outdoor Terrain

Water

Foliage Tool

Level Designer Quick Start

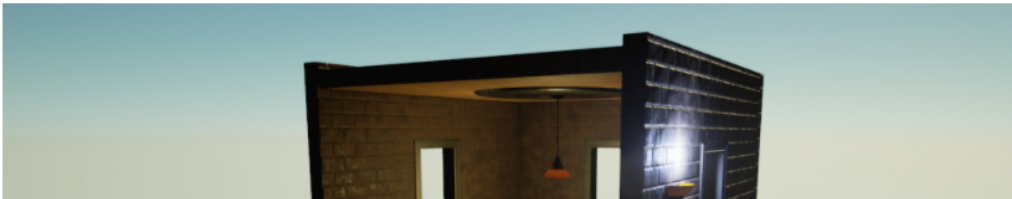
Get up and running with the basics of the Unreal Editor.

Unreal Engine 4.25

Prerequisite Topics

This page assumes you have prior knowledge of the following topics. Please read them before proceeding.

- [Installing Unreal Engine](#)
- [Create a New Project](#)



ON THIS PAGE

1. Required Setup
2. Navigating the Viewport
3. Create a New Level
4. Placing Actors in the Level
5. Editing Placed Actors
6. Running the Build Process
7. On Your Own!



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Remember:

**SAVE YOUR WORK
AND SAVE IT OFTEN!**



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