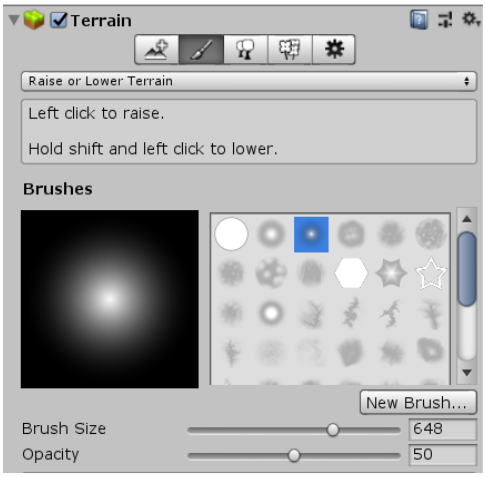
CORNELL NOTES – COMPUTER PROGRAMMING & GAME DESIGN I

	Topic/Objective: ***Level 3: Creating the Environment***	*Name:*
		Class/Period:
		Date:

Level Objective:
To create various aspects of a game's environment that's graphical appealing to the player including terrains, materials in objects, skyboxes, and other elements.

Questions:	*Notes/Answers/Definitions/Examples/Sentences:*

Creating Terrains



- Add Package from Asset Store
  - **Terrain Tools Sample Asset Package**
  - **Environment**
- Add Terrain
  - **GameObject > 3D Object > Terrain**
- Adding Height Map or "Mountains"
  1. Click your Terrain object in your scene
  2. Choose in Inspector Window (**Paint Terrain Button)**
  3. Choose **Raise or Lower Terrain** in the Drop-Down Menu
  4. Choose a **Brush & Begin Clicking**
- Keyboard Shortcuts with Brushes

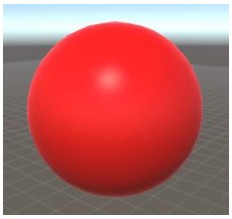
Lower your Terrain	**SHIFT + Click Mouse**
Making Brushes Bigger/Smaller	**Bracket Keys [ ]**
Change Opacity (also known as transparency)	**Minus/Equals Keys - =**
Cycle through all your brushes	**Comma/Period , .**

- Add Texture to Terrain (as a whole or to portions of it)
  1. Choose in Inspector Window
  2. Choose **Paint Texture** in the Drop-Down Menu
  3. Click **Edit Terrain Layers** then choose **Create Layer**
  4. Add additional layers as you want to paint more textures
- Adding Trees
  1. Choose in Inspector Window (**Paint Trees Button**)
  2. Choose **Edit Trees** then **Add Trees**
  3. Choose your Prefab Tree to Use
     - **SHIFT + click your mouse** to get rid of trees
     - To add tons of trees, choose the "**Mass Place Trees**" button
- Adding Water
  - Click and drag the **Prefab** from the **Project Window**

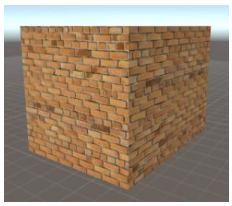
Questions:	*Notes/Answers/Definitions/Examples/Sentences:*

- Adding Grass Texture
  - Choose in the Inspector Window (**Paint Details Button**)
  - Choose **Edit Details** followed by **Grass Texture**
  - Choose your Prefab grass texture to use
- Use **Terrain Settings** button to adjust various areas of your terrain
  - For example, size of your terrain, resolution, etc.

Working with Materials in 3D Objects



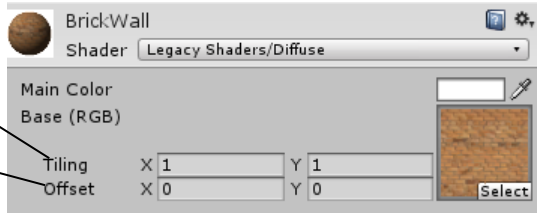
- **Materials** are directly applied to 3D Objects and contain properties that control:
  - **Colors**
  - **Textures** - flat images that can be wrapped around 3D objects.
    - Often contain **repeating patterns (ex. brick wall)**
  - **Shaders** – scripts that dictate what properties materials will have



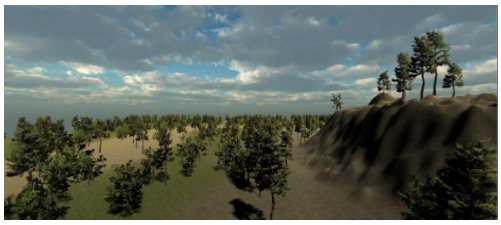
- Commands to Create a New Material
  - **Assets > Create > Material**
- It's good to keep **separate folders** for both your textures and materials.
- When searching Google for textures, include in your search the word **repeating**
- When adjusting your textures:

How often texture repeats

Will a gap exist in the object



Adding a Skybox



- Definition – **a panoramic texture drawn behind all objects in a scene to represent the sky**
- Search for free skyboxes in the Unity Store (Standard Assets, Classic Skybox, Sky5X One, etc.)
- Two ways to add:
  - Into the **Scene** (**Window > Rendering > Lighting Settings**)
  - Into the **Camera** (Choose **Camera** in Hierarchy > **Component > Rendering > Skybox**)