CORNELL NOTES – GRAPHICS FOR GAME DEVELOPMENT

	Topic/Objective: ***Level 6: 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:*

Working with the Scene View

Letter Q **Navigate Tool ("Hand")**	Left Button = **Pan** Right Button = **Free Look Around** Left Button w/ ALT = **Orbit** Right Button w/ ALT = **Zooms View**
Letter W	**Move Objects in X/Y/Z Axis**
Letter E	**Rotate in X/Y/Z Axis**
Letter R	**Scales the Object**
Mouse Wheel	**Zooming In/Out**
ALT + CONTROL	**Activates "Hand" no matter what**

- When **moving** & **rotating**, advised to edit on **each individual axis** (avoid clicking the white cube)
    a. However, use center point (cube) for **scaling** (so it's proportionate)

Creating Terrains

- Add Terrain → **GameObject > 3D Object > Terrain**
    - New Object now appears in **Projects** Folder
- Add Texture to Terrain (Inspector Window)
    - Need **materials** in order to change **texture**
    - Download a standard environment asset package
        - Asset > Import Package > Environment
- Adding Height Map or "Mountains"
    - Choose a Brush in "Terrain"
    - Tools to work with:
        - - **Raise/Lower Terrain (SHIFT to Lower)**
        - - **Paint the Height (from a previous sample)**
        - - **Smooth the Terrain Height**
        - - **Paint texture (Use comma/period to cycle brushes)**

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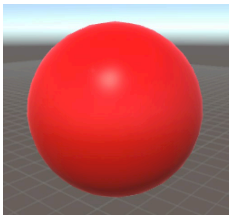
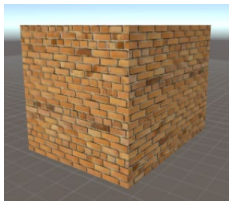
- Adding Water
  - From the Environment Package You Imported:
    - Environment > Water or Water Basic > (Use a Prefab)

- Adding Trees (Click the button)
  - Choose "Edit Trees" then "Add Trees"
    - **SHIFT + click your mouse** to get rid of trees
    - To add tons of trees, choose the "**Mass Place Trees**" button
- Add Grass Texture (Click the button)
- Use **Terrain Settings** button to adjust various areas of your terrain

Working with Materials in 3D Objects



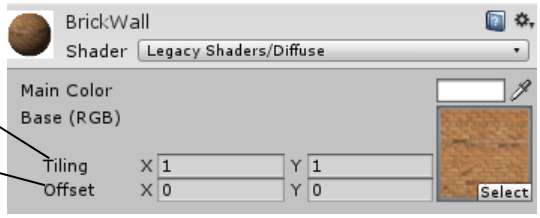
- **Materials** are directly applied to 3D Objects and contain properties that control:
  - **Colors**
  - **Textures** - flat images that can be wrapped around 3D objects.
    - Often contain **repeating patterns (ex. brick wall)**
  - **Shaders** – scripts that dictate what properties materials will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



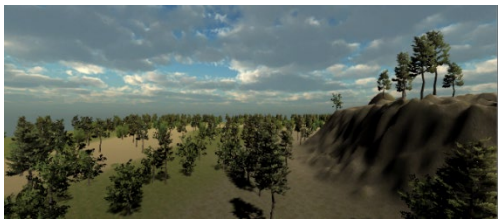
- Commands to Create a New Material
  - **Assets > Create > Material**
- It's good to keep **separate folders** for both your textures and materials.
- When searching Google for textures, include in your search the word **repeating**
- When adjusting your textures:

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 > Lighting > Skybox Material**)
  - Into the **Camera** (Choose **Camera** in Hierarchy > **Component > Rendering > Skybox**)