# 1 Island

## Get the Assets

Go to Canvas

Download

* 0 STD Assets
* 1 Island
* 1 Skyboxes

Put the package on your desktop

## Create a Unity account

Launch Unity

Choose a username and password you will remember

Create a new Unity Project

Name it Island

**Save it to your desktop**

Activate Collaborate

Create an organization

Push the current game

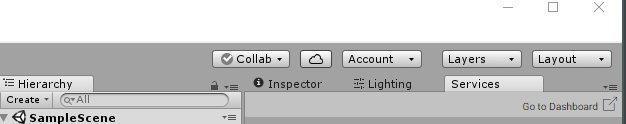
## Import Assets

In Unity’s top Menu

1. Go to Assets / Import Package
2. Navigate to the Desktop
3. Open folder 1 Island
4. When you are asked if you want to import the package, say yes to all

Repeat steps 1 – 4 for **0 STD Assets** and **1 Skyboxes** as well.

## Click Collab

In the upper right corner, find the button marked Collab and click it. This will store your changes on the cloud.

### The Unity Interface

This is something you’ll get used to rather than memorize.

* Five main windows:
  + Game (what your final result looks like)
  + Scene (where you manipulate the stuff in your game)
  + Hierarchy (A list of all the stuff currently in your game)
  + Project (A list of all the stuff that you can add to your game. Note, these are folders like any other).
  + Inspector (Provides detail control over whatever you happen to have selected)
* Other windows that may appear
  + Services (these are services provided by Unity. The only thing we need now is Collaborate.)
  + Console (this reports errors when they happen.)
  + Asset Store (where you can new assets to use, either for free or for purchase.)
  + Lighting (gives you detailed control over scene lighting.)
* **Layout**
  + Click on a tab of any of the windows and drag it.
  + Note you can place it on top of any other tab, to place one behind the other. You can also split part of the screen between two tabs.
  + At the upper right most corner in the window find the button called layout. Click and select any of the options to see what they do.
  + Select Default.
  + Note, Click on the Menu item Window to get access to any of the available windows.
    - Some windows are located in sub folders.
* **Click Layout and select Default**

# Goal: Build an Island

This is a brief tour of what Unity can do. We will go very fast. Don’t expect to remember everything you do today.

### Name and save the Scene

* From the top Menu bar, select File / Save Scene As…/
* Select the folder called Scene
  + Name the new scene 1 Island
  + Save it.
* Navigate to the 1 Island folder under assets.
* Click Save.

### Adding a Sky

* In the menu at the very top of your screen open
  + Window / Rendering / Lighting Settings
    - Click the tab that says Lighting and drag it to the bottom of the Hierarchy pane (It will become fixed there)
    - Be sure the Scene button is highlighted.
  + Press the little button next to the Sky Box Material
    - Sky07
* Unset Mixed Lighting
  + Mixed lighting is an amazing thing, but it adds realizim we don’t need yet and will slow us down. So… note the words Mixed Lighting. Uncheck the box next to it.
* Adding a controllable sun
  + In the hierarchy, find the item called Directional Light
  + In the Lighting control panel, note the rectangle labeled Sun
  + Drag the Directional Light from the hierarchy into that rectangle
* In the Hierarchy,
  + Right Click on the Directional Light
  + Select Rename
  + Name it Sun

### Create a Terrain

* In the Hierarchy pane
  + Click Create (just under the word Hierarchy) or right click; Create / 3D Object / Terrain.
  + Or you can right click in the Hierarchy and do the same.
* Select the Assets Folder.
  + **Find the object named New Terrain**
  + **Rename it Island Terrain**
  + **Drag it into the Island folder**

## GameObjects, Transforms, And Components

* GameObject
  + Everything that has a presence in the Unity world is a gameObject. That contains the unique identity of whatever the thing happens to be.
  + Every gameObject has a transform. That contains the position, rotation and scale of the gameObject
  + A gameObject may have one or more Components. These are what make that particular gameObject useful. For example:
    - Color
    - Shape
    - Mass
    - Behavior
    - Sound
* In the Hierarchy, select the Terrain
  + Note that the inspector has settings for a terrain.
  + Currently the terrain is 500 meters square and the position 0, 0, 0 is at the lower left.
  + We want 0, 0, 0 to be in the center so…
  + In the Transform at the top of the Inspector
    - Set X to - 250
    - Set z to - 250
* With the Terrain still selected, look in the inspector, just below the transform to find a row of buttons.
  + Select the second from the left, a mountain with an up and down arrow
  + Click that button.
  + Below the box with the brush shapes, you’ll find a slider named Height
  + Set that to 5 and click Flatten

### Add the first Texture to the Terrain

* Click the fourth button from the left – a paint brush
* Look for a button called Edit Textures
* Click it
  + Note the new window.
  + At the top is a search bar.
  + Search on Sand or dirt or grass
  + Select sand, if it is there
  + In the bottom right of that window, click Save
* The terrain should look as if it is covered with sand

### Save your work -- Select Collab and Push

# Controlling your view

**With the Cursor in the Scene Window**

**Right Click & Drag to Tilt**

**Scroll to Zoom**

**Middle Click (Scroll Wheel) and drag to move**

### Getting familiar with the tools

* With the Terrain still selected, look in the inspector, just below the transform to find a row of buttons.
* Select the left most button – a mountain with an up arrow
  + Set the brush size to 60
  + Set the opacity to 25.
  + Hold the cursor over the terrain
  + ***Note, if you don’t see a light blue spot where under the cursor and left clicking the button, try changing the layout to any other view, then selecting Default again.***
* Click and drag across the terrain
  + You are building hills
* Shift click and drag to reverse the shape
* Take a moment to try some of the other brushes
* Change the brush size and opacity to see what they do.

### Flatten the Terrain

* Select the second button from the left (a mountain with two arrows)
* Set Height to 15
  + Select Flatten
  + Note the terrain is completely flat and is 15 meters higher than it was.
* Note that the other brushes have no effect. That is because the number you put in the height box controls the Upper limit of the brushes
* Select the left most brush, hold down the shift key and make a broad depression in the center
  + Note it only goes down about 15 meters below the height.
* Select the Height brush again and one of the bumpy brushes.
  + Now paint an island in the center
  + Note that it is rough till it reaches the limit of 15 meters.
* Select the Smoothing brush (third from the left with a drop of water)
* Try it on bumpy areas

### Flatten the Island again

* Take a few minutes to get a little of the feel

### Flatten the Island again – One way to build an island

* Pick the big round brush
* Set height to 18 and lay out the largest area of the island
* Set height to 23, lay down the next level inside the larger one – note if you have cliffs, they’ll have to come to the same edge
* Set height to 30 and lay down one or more higher areas
* Pick other tools to raise and lower areas, create roughness, etc.

### Painting the Island Part II

* Select the brush button again
* Select Add Texture
* Search for Grass
* Add it to your palette
* Repeat and search for Cliff
* Add the cliff, material then press the select button again and find Cliff normal (It will be a purplish version of cliff).
* Select that and press add.
* Now, select the grass material
  + Lower the brush size to 50
  + Lower the opacity to 50
  + Lower the target strength to 50
  + Put down a base for the grass
  + Increase opacity and target strength to 75 and paint in the darker areas
  + Increase the target strength to 100 and paint the thickest areas of grace
* Select the cliff material and paint in the rocky areas

### Save your work -- Select Collab and Push

### Adding Trees

* In the scene window, tilt the view and zoom into to some place where you’d find palm trees.
* With the terrain selected, select the fifth button from the left (with little trees)
* Click, edit trees.
* Click select Add Tree
* Next to the little pane where it says Tree Prefab none, click the little button
* Select Palm Desktop
* Make your brush size 1
* Click where you want to see palm trees

### Adding Wind

* With the Terrain Selected
  + In the Hierarchy, right click / Create / 3D Object / Wind Zone

### Add Water

* In the Project Pane
  + Expand the Standard Assets Folder
  + Expand the Environment Folder
  + Expand the Water4 Folder
  + Select the prefabs
  + To the right you’ll see to objects.
  + Select Water4Advanced
  + Drag that into the hierarchy
  + With Water4Simple Selected
  + Set its Transform to
    - Position x:0 y:8 z:0
    - Scale x:100 y:1, z:100
* The Terrain should be covered with water

### Adding Sound

* With the Terrain Selected
* In the Inspector click Add Component / Audio / Audio Source
  + Open the Audio Source if necessary,
  + Be sure Play on Awake is Selected
  + Click the check box called “Loop”
  + At the very top of the Audio Source pain is a box labeled “Audio Clip”
  + Click the little button on the right and search for “Surf”
  + Add it

### Adding a building

* Find a flat spot on your island that is above water
* Look in the Prefabs folder for an object called Cabin
* Drag it to the spot you have chosen
* To move close, select it in the Hierarchy, move the curser into the Scene window and press “ f “ for find.
* Open the Cabin Prefab
  + Select the child object called door
  + Delete it (right click and select Delete)

### Adding a Campfire

* Find a flat spot on your island that is above water
* Look in the Prefabs folder for an object called Campfire
* Drag it to the spot you have chosen
  + - Particle systems – if we have time

### Adding a First Person Controller

* In the Hierarchy, select the UI Camera
  + With it selected, look at the top of the Inspector and uncheck the box next to its name.
* Open Standard Assets
  + Expand Characters
  + Select the RigidBodyFPSControler
  + Drag it to a spot in the scene window near the cabin
  + It will look like an old fashioned movie camera attached to the outline of a capsule
  + Be sure the capsule is entirely above the terrain

### Exploring your world

* In the Hierarchy, select the UI Camera
* In the Game Window, at the top, select Maximize on Play
* Play the game

### Compile