# Building a Scene with Prefabs

In this lesson, students learn about scene design and develop their own unique scene using a collection of polygon prefab assets.

## Objective

Students will be able to:

* Comfortably incorporate and manipulate prefabs in their scenes.
* Understand the difference between prefab and object property changes.
* Design their own scene from scratch.

[Video - Building a Scene with Prefabs](https://youtu.be/jPPneNXiqYE)

[Video - Changing prefabs](https://youtu.be/Qy4U_dXFVIA)

## Getting Started with Prefabs

In this activity, your goal is to explore the difference between prefab properties and individual properties. Use the Unity project you created in the previous activity.

Start by creating a ground with one of the rock prefabs by adding it to the scene and expanding its X and Z scales while decreasing its Y scale.

Then choose a log prefab and add at least three of them to the scene.

With this setup:

* Change the default prefab scale of your log so that all of the logs in the scene, and any future logs added to the scene, have the new scale. For example, make the default scale value of X be equal to 2.
* Change the color of one of your logs by creating a new material with a color of your choosing.

After you completed the two tasks above, publish your changes through the Collaborate section in Unity (leave comment “Completed Getting Started exercise” in the summary) and answer the reflection questions below in the editor:

1. What’s the difference between the prefab log\_1 (found in the Project Window) and the GameObject log\_1 (found in the Hierarchy Window, when you add it to your scene)?
2. What are the advantages/disadvantages of changing the prefab properties instead of the individual GameObject properties?
3. Identify a scenario in which you would want to change a prefab property.

## Plan Your Scene

As the first tip in the video mentions, you want to start with the general layout of your scene before getting into too many details.

Remember that the prefabs in this project are all nature prefabs, for example: rocks, trees, plants, etc. Keep this in mind as you are planning your scene. In other words, your scene could be in the mountains, desert, grasslands, hills, islands etc, but probably won’t be in a city for now.

Use this exercise as a space to brainstorm and identify the general layout of your scene. There are a couple of ways to do this (if in doubt, ask your teacher what they want):

You can use pencil and paper to draw out a birds eye view of a few ideas (like a map), take a picture of the drawing, upload the photo, or write a description, or create it in a google drawing.

[Place/description image here]

# Build Your Scene

Start a new scene in the same Unity project as the previous Unity exercises. You should still have all of the prefabs available in your Project panel that you used in the “Getting Started with Prefabs” activity.

Your task is to use the prefabs to build a beautiful original scene! You can go many directions with this, but here are a few requirements:

* You must use at least 5 different prefabs from the imported package.
* You must adjust the prefab properties of at least one of the prefabs used in your scene.
* You must create and apply a new colored material to one of the individual objects in your scene.
* You must set up your camera so the Game View (i.e. when you press Play) captures a well-composed perspective of your scene.

Remember the tips from the first video in this lesson!

1. Start with the general layout of the landscape/scene
2. Design quickly and get early and frequent feedback
3. Focus on one perspective to start
4. Use real life and other games as inspiration
5. The best way to learn is to do it!

***CHALLENGES:***

1. *Create your own polygon objects using the Unity shapes and color them with new materials*
2. *Import a character with a controller from a previous lesson into your scene.*

## Scene Reflections

Be sure you have shared your project with your teacher in the Collaborate section of Unity and published your recent scenes.

Once you have done that, answer the following questions:

1. What is the name of the project?
2. Identify how you addressed each scene building requirement (listed again below):
   * You must use at least 5 different prefabs from the imported package.
   * You must adjust the prefab properties of at least one of the prefabs used in your scene.
   * You must create and apply a new colored material to one of the individual objects in your scene.
   * You must set up your camera so the Game View (i.e. when you press Play) captures a well-composed perspective of your scene.
3. What was the most challenging part of this project?
4. Where do you feel like you improved while working through this project?
5. Looking at the final product, what are you most proud of?