

Dream place with 3D objects

Lesson complexity: Intermediate

Grades: Grade 3 and up

Subjects: STEM, Social studies, Languages, Arts

Created by: Jennifer and Brian Cauthers, CoSpaces Edu Ambassadors

Introduction:

CoSpaces Edu has a vast library of 3D objects to use to create any virtual worlds. However, there are times when you might not find exactly the object that suits your needs or you may have students creating their own 3D objects in programs such as Tinkercad, Sketchup, or others.

Thankfully, CoSpaces Edu enables users to import external 3D objects (.stl or .obj files) directly into the space. There is also a feature that allows users to search Google Poly for publicly shared 3D objects from the library.

The objective of this lesson is to teach how to import 3D objects from outside resources and develop digital literacy skills and creativity, through the creation of a virtual world. This could be a favorite vacation spot, a place you dream of visiting, a favorite room in your house, or anything you can think of that makes you smile.

Benefits:

- Encourage kids to invent, create and build
- Teach spatial awareness and construction basics
- Develop creativity and sense of design
- Develop sense of ownership

Activity examples:

1. Challenge students to use their imagination in order to create a scene that makes them happy, such as their favorite vacation spot, a dream vacation spot, or even a fantasy spot that could make them happy.
2. Challenge students to create a 3D model of bone from the skeleton to illustrate a fracture in a modeling program such as Tinkercad or Sketchup for import into CoSpaces Edu in a visual storytelling scene.

3. Search Google Poly for 3D objects that do not exist in the CoSpaces Edu library for use in your scene, such as an anaconda for a rainforest scene, or a canoe for use in a story that involves traveling on a river.
4. Search Thingiverse or other 3D warehouses for objects that were shared for use (teach students to give credit to the source in their scene) for a story. Objects can include characters, objects for a house or city scene, vehicles, sci-fi objects, and more.
5. Ask students to use their sense of sight and sound to create a rich environment including their 3D objects.
6. You can then have your students view their space in VR or AR in order to feel like they are truly in the scene they created.

Creation guide

Create or search for objects

Option 1: Student creation of objects

1. Use any software to create your objects
 - a. TinkerCad
 - b. Sketchup
 - c. Blocks (Vive and Oculus)

Download for 3D Printing

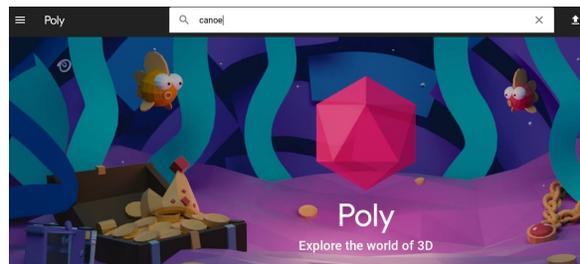
Download this model as an STL file if you want to use external services or 3D printers.

2. Click the download button and choose .obj or .stl files to your computer

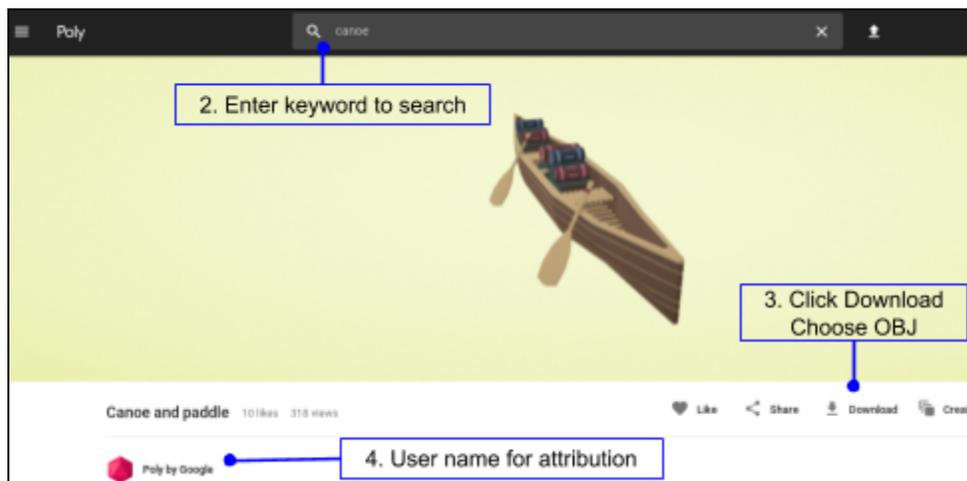
3. Select all files (.obj, .stl, .mtl and/or .png) to include color/texture

Option 2: Download existing objects from Google Poly

1. Go to [Poly.google.com](https://poly.google.com)
2. Search for objects of your choice using keywords and filter for Poly
3. Click the Download link and choose OBJ to download all files.



4. Remember to give attribution to the creator

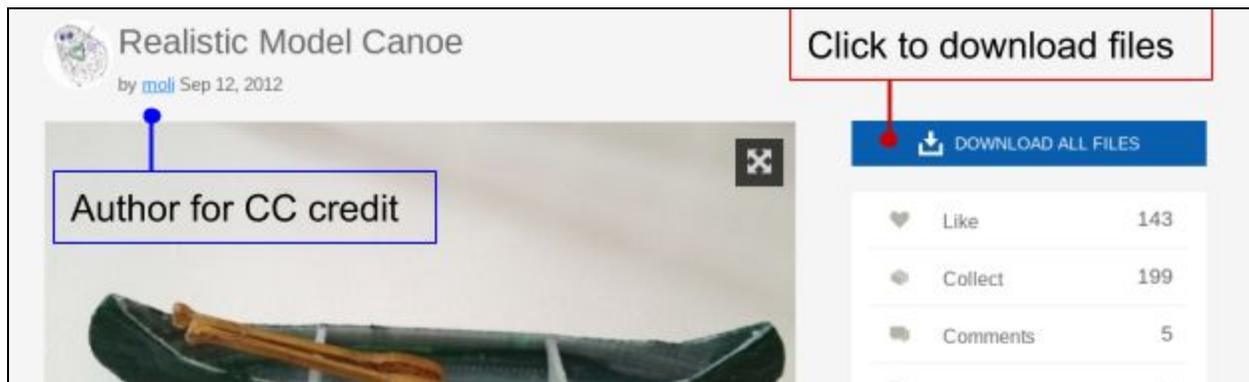


Option 3: Download already created objects from Thingiverse

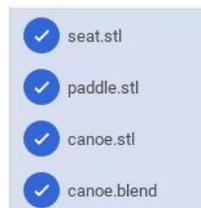
1. Go to [Thingiverse.com](https://www.thingiverse.com)
2. Search for objects of your choice using keywords and open one of the files



3. Click the Download link and save all of the files

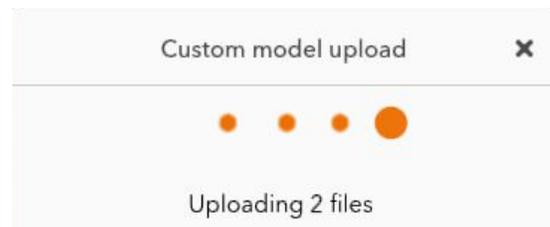
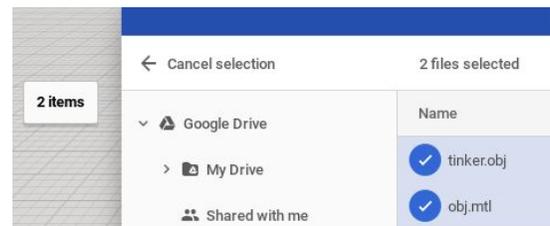
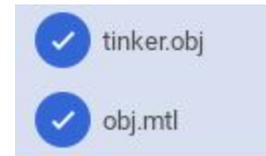


4. If files saved as a .zip, extract the zip folder to your computer. Select all files (.obj .mtl and .png) to include color/texture.
5. Remember to give attribution to the creator listed under the name of the model.



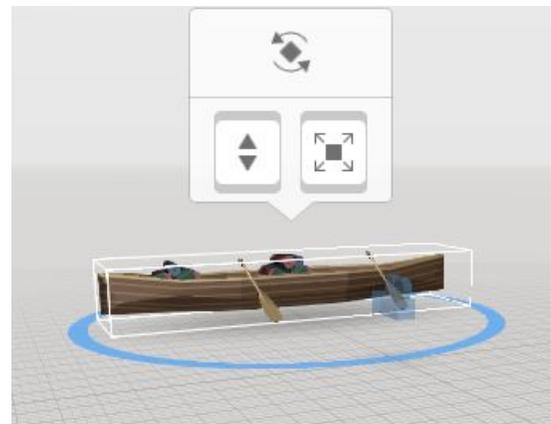
Upload your 3D Objects to CoSpaces Edu

1. Open a scene in CoSpaces Edu
2. Upload 3D object to CoSpaces Edu
 - a. Locate your downloaded files on your computer
 - b. If saved as a zip file, unzip the file to a folder.
 - c. Select all files (.obj, .stl, .mtl and/or .png) by pressing and holding the CTRL button and clicking to select multiple files at once on a PC or chromebook (or the command button on a mac).
 - d. Drag and drop the selected files into your scene in CoSpaces.
 - e. Use the objects in your scene as you do from the library.



[Sample canoe](#) example space with color and texture downloaded from Google Poly. File from the “Poly by Google” library of published objects under the Creative Commons license.

The canoe is placed in an environment with water to appear in a river with trees and animated grass surrounding it from the library. There is also a man from the library placed into the canoe in a kneeling position to appear to be riding in the canoe.



The scene can be created to represent a beautiful rainforest where a person can explore the wonders of the rainforest, including plants, animals and even the sounds of the rainforest. Let your imagination go wild and create the place that makes you smile or that you’re dreaming of...

Example space



Uploaded 3D Canoe

[View example space](#)