



How to use the Yenka 3D Importer

Introduction

This tutorial will guide you through the process of using the 3D Importer object in Yenka to import a 3D object into the software to use in your models. By the end of this tutorial you should be able to create a simple 3D object using Google SketchUp that you can then use in Yenka, or alternatively you will be able to download a pre-made model from the Google 3D Warehouse to use.

Required software

Before continuing with this tutorial, make sure you have the following software installed:

- A licensed copy of **Yenka** (version 2.3.0 or higher). This is available for purchase or trial from <http://www.yenka.com>
- **Google SketchUp** (version 6 or higher). This is available as a free download from from <http://sketchup.google.com>

Section 1.1 - Making a 3D model in SketchUp

Let's make a really simple model in SketchUp to get us started! We're going to make a simple cylinder just to show you how the Export functionality of SketchUp works - but if you'd like to learn how to create more complex models on your own, you can use SketchUp's help feature or read more about it at SketchUp website (<http://sketchup.google.com>).

1. Start the SketchUp program. In the main window, you will see a 3D view where you will create your model.
2. All of the tools are located in the toolbar, which is located at the top of the screen by default. It is easiest to draw 2D shapes in SketchUp and then extrude them into 3 dimensions later to create a 3D object. As we're going to make a cylinder, that means we need to draw a circle first, so click on the *Circle* icon on the toolbar.

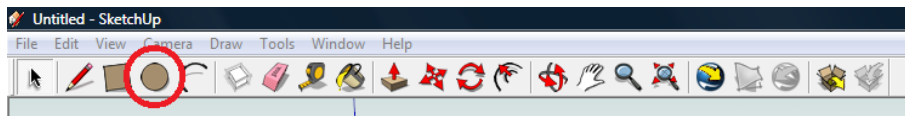


Figure 1 - Circle tool (highlighted) on application toolbar

3. Now we need to select the centre of our circle. It is best to use the origin (i.e. the co-ordinate (0,0,0)) as the centre of any object you create so that when you import the object into Yenka later, it appears in the right place. To do this click once on the origin. The origin is the point at which the three axes that are visible in the main window cross. This point is shown in the following image. When your mouse pointer gets near the origin, it should snap to it.

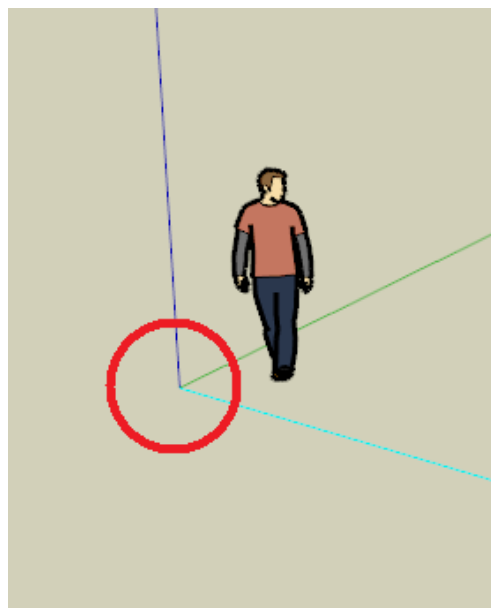


Figure 2 - The origin (crossing point of the 3 axes)

- Next we need to set the radius of the circle. Drag your mouse back and forth to see the preview of the circle expand and contract. The current radius is displayed in the number display at the bottom right hand corner of the window. When you are happy with the size of your circle, simply click the mouse button again. You will now have a 2D circle object with a solid colour inside.

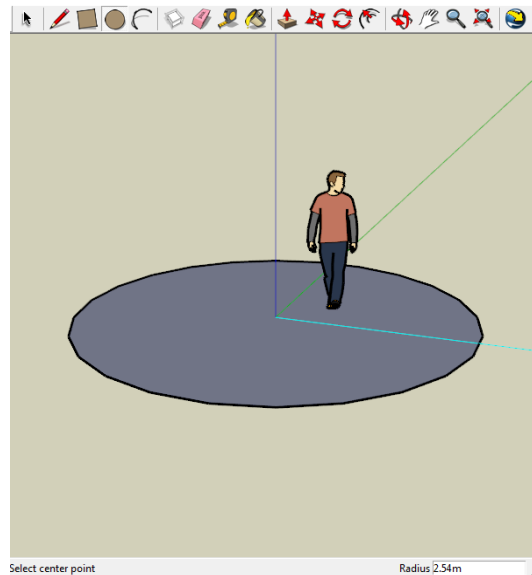


Figure 3 - Circle centred on the origin

- To make our circle into a cylinder, we need to extrude it. SketchUp uses the *Push/Pull* tool to extrude shapes. Find the *Push/Pull* tool on the toolbar (circled in the image below), and select it by clicking it once. Now, click on the face of the shape you want to extrude (in our case, the circle) once, and then drag your mouse cursor up and down to show a preview of the shape that will be created. When you are happy with the height of your cylinder, click the mouse button again.

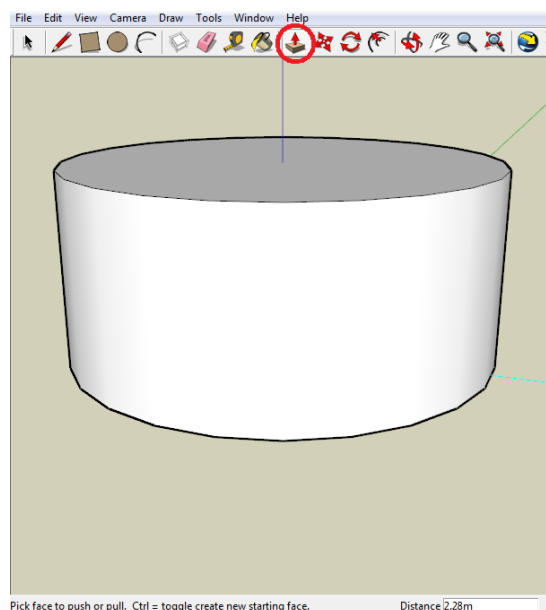


Figure 4 - Extruded circle (*Push/Pull* tool circled)

6. Before we use this cylinder, we need to give it a texture or colour, using the *Paint Bucket* tool. Click on the *Paint Bucket* tool on the toolbar (circled in the following image). Doing this will open a window called "*Materials*". This window has a drop-down menu (shown in the following image also) with material categories such as *Wood*, *Stone* and *Tile*.

Let's make a wooden cylinder - select the *Wood* option. The window will now show previews of all the wood textures available. Click one that you like and then click one of the cylinder's faces to "paint" that face with that texture. You can paint every face individually if you like, using as many different textures as you want (use the *Orbit* tool on the toolbar to rotate the view if you can't see a face from the current viewing angle), or by holding the Shift key on the keyboard whilst painting a face, you can paint all of the faces of that material in one go.

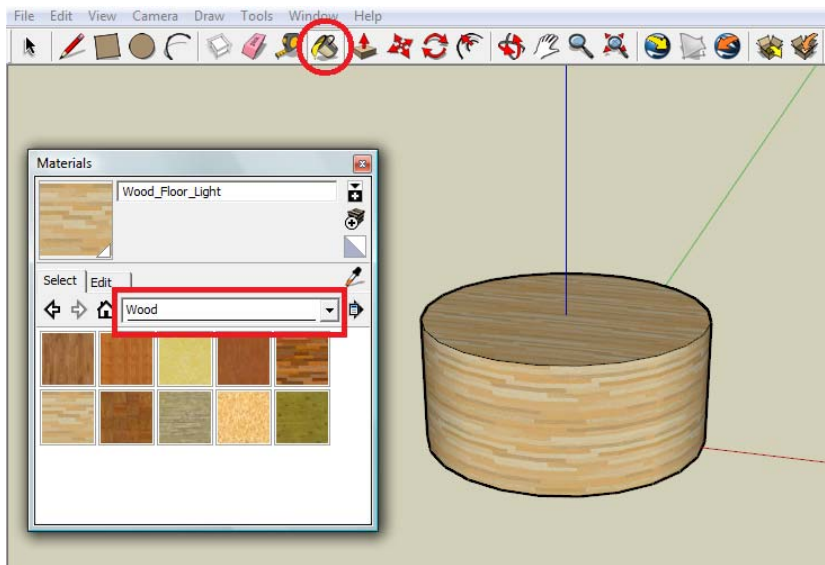


Figure 5 - Applying textures to objects using the *Paint Bucket* tool

7. Now we're ready to export our cylinder. Select the *File* menu at the top left of the screen and then select the *Export* option, and finally click the *3D model* option, then in the window which appears:
 - If you are using SketchUp version 6; Make sure that "Google Earth 4 (*.kmz)" is selected as the Export type. Type a name for your model and export it to a suitable location, perhaps the Desktop.
 - If you are using SketchUp version 7; Type a name for your model and export it to a suitable location, such as the Desktop. It will automatically be exported in the correct format.

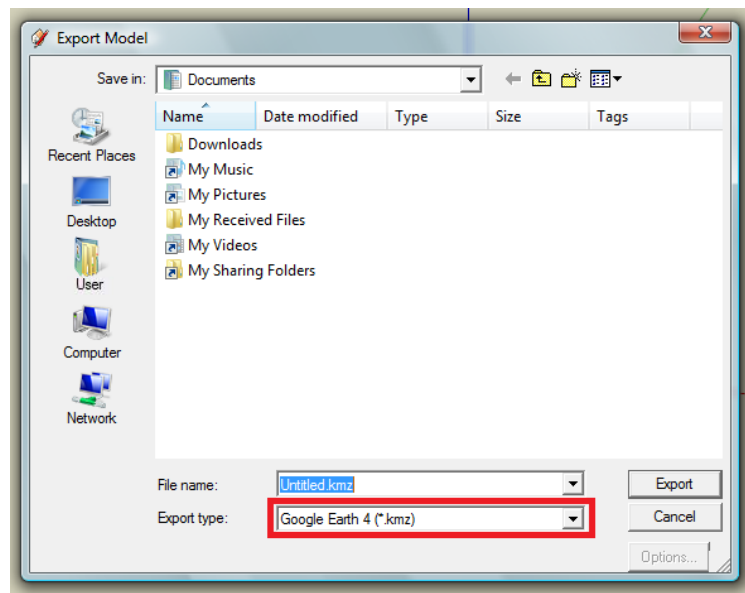


Figure 6 - Export Model dialog for SketchUp version 6. Note that Google Earth 4 is selected as the Export type.

Section 1.2 - Getting the model into a usable format

Before we can use the object in Yenka, we need to unzip the file.

1. Navigate to the location where you saved your model.
2. Make sure that known file extensions are shown by Windows and then right click on the file and select the *Rename* option from the menu that appears.

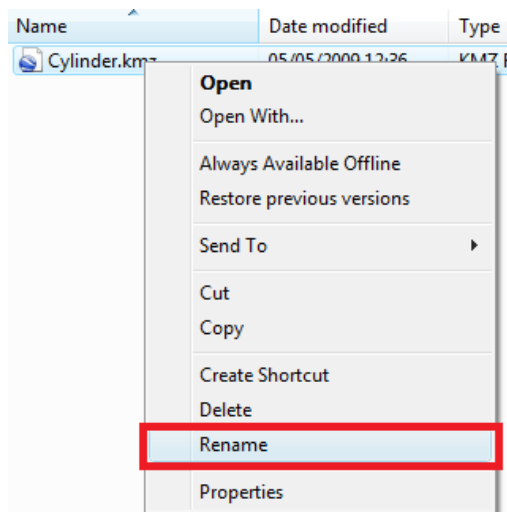


Figure 7 - Rename option

3. Change the file extension text '*kmz*' to '*zip*', and then click away from the file or press the *Enter* key on the keyboard. You may see a message asking if you're sure you want to change the file extension, as the file may become unstable: just click *Yes* to confirm you want to change it.

4. Now right click on the file again and click the *Extract all...* option, as shown below. You may also extract the files by double clicking on the file.

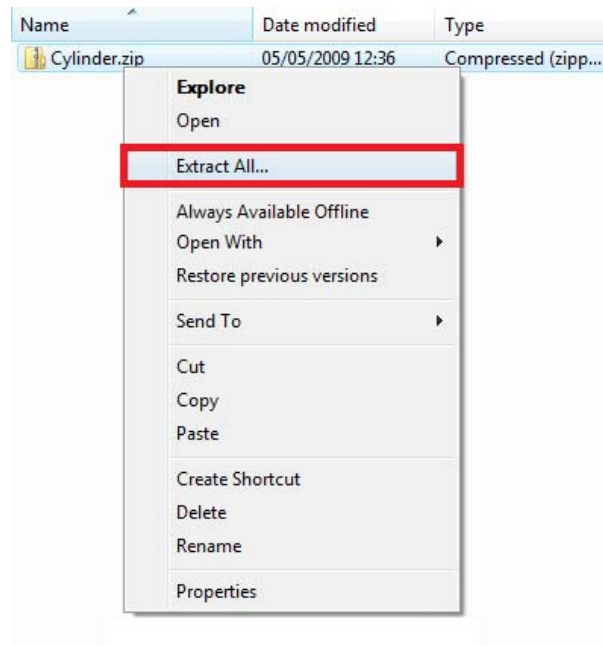


Figure 8 - Extract all option

5. A window will appear asking where you wish to extract the files to - the default location should be fine, so just click the *OK* button. Note that you need to extract all of the files, not just the model file (*.dae) itself; otherwise your models won't load into Yenka properly! You should now have another folder in the same location, with the contents of your model inside, as shown below.

Name	Date modified	Type	Size
images	08/10/2008 10:31	File Folder	
models	08/10/2008 10:31	File Folder	
doc.kml	08/10/2008 10:27	KML File	2 KB
textures.txt	08/10/2008 10:27	Text Document	1 KB

Figure 9 - Extracted folder contents (example)

6. That's it - now we're ready to import the object into Yenka! Find out how to do this in Section 2 of this tutorial.

Section 1.3 - Downloading a model from Google 3D Warehouse

The Google 3D Warehouse has a huge collection of pre-made models. Unless you're looking for a really specific object, you should be able to find what you need on the 3D Warehouse which will save your lots of time, and make it really easy for you to add a 3D object into your Yenka model - let's see how to do it!

1. In your web browser, go to <http://sketchup.google.com/3dwarehouse/>.
2. On the main page you will see a selection of featured models. You can either click on any of these to see the model's page, or search for a more particular kind of model by using the search box at the top of the page.

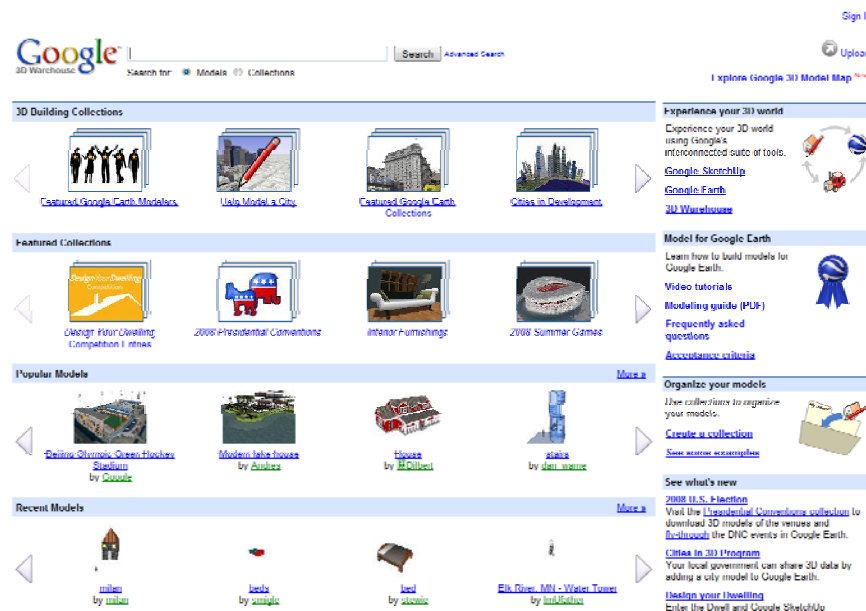


Figure 10 - Google 3D Warehouse page

3. When you've found a model you like, make sure you're on the model's Details page and then click the *Download* button below the model's preview picture.

- In the drop-down menu that appears click the download link next to the option "*Collada (.zip)*" and save the file to a location you'll remember later.

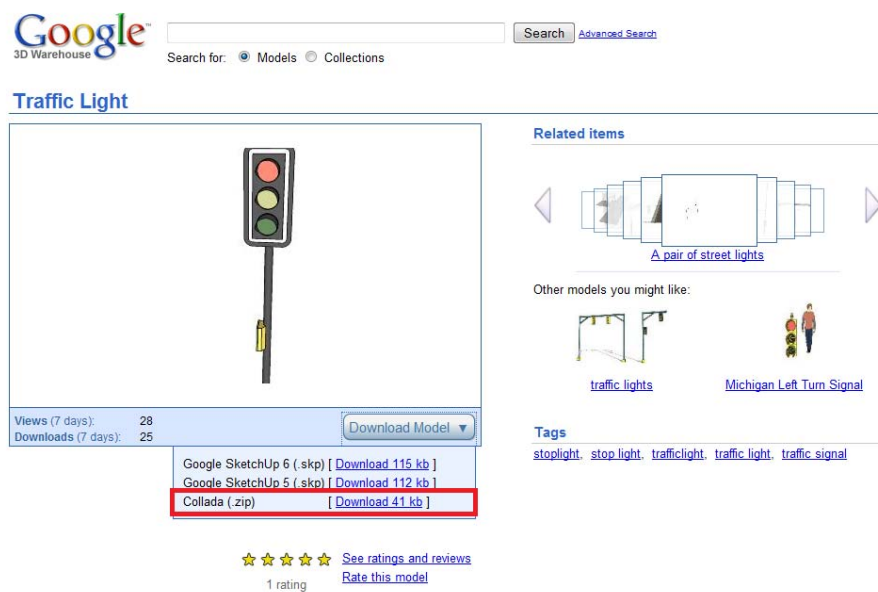


Figure 11 - Collada download option

- Now all you need to do is extract the files as in Section 1.2 - you don't even need to rename the file like you did before, as it's already in the correct format and ready to extract.
- When the model is extracted, you can move on to Section 2 and import your model into Yenka.

Section 2 - Importing the 3D object into Yenka

1. Open Yenka, and make sure that you're in the *Programming* object tree. If not, then click the *Home button* at the top of the Objects/Contents pane, select *Programming* from the *Computing* tab on the Home Screen and click the *OK* button.

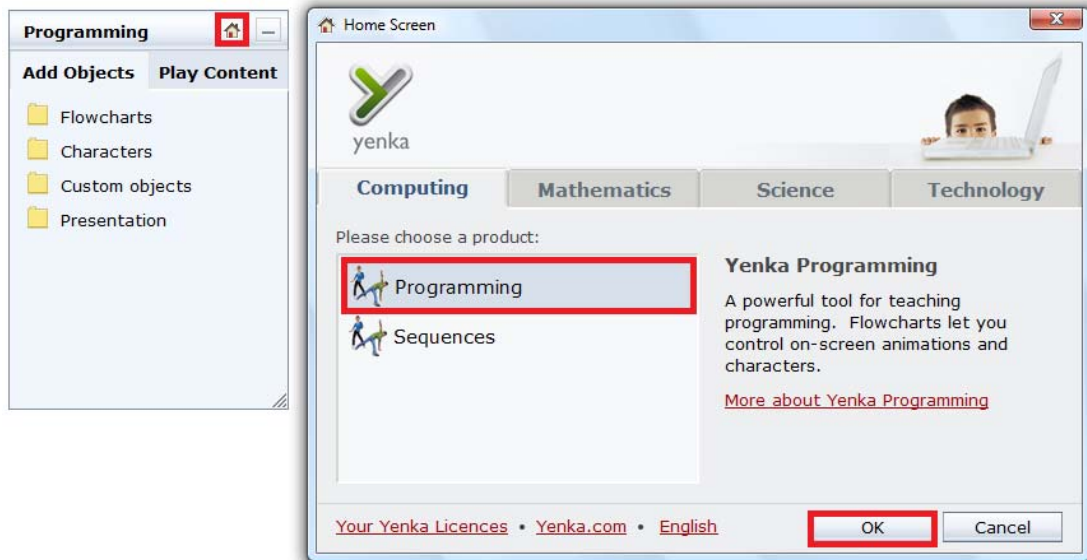


Figure 12 - Changing the Yenka Objects tree

2. In the Objects pane, expand the *Presentation* folder, and drag the *3D Importer* object to the main scene.

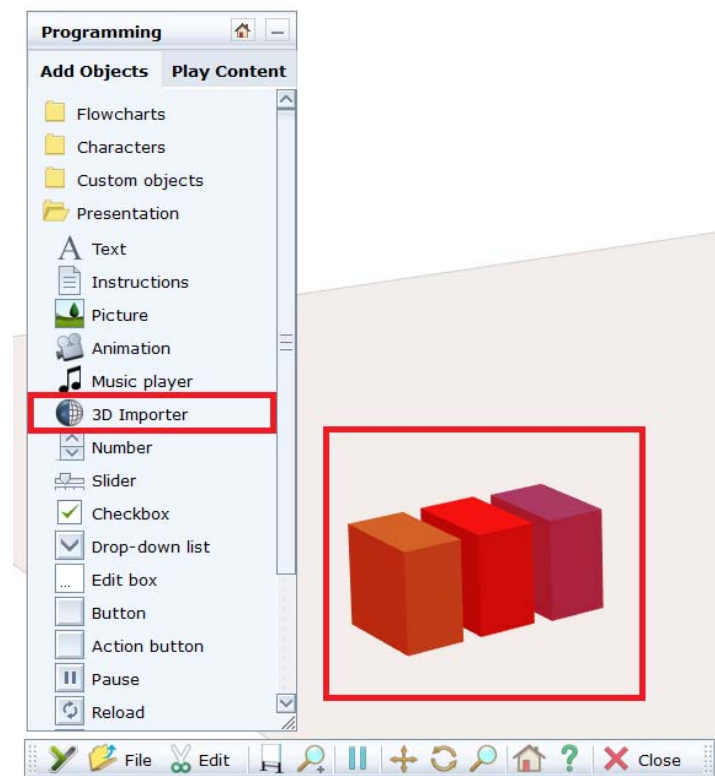


Figure 13 - Dragging a 3D Importer to the scene

3. Double click on the object that appears to open its properties pane.
4. Under the "Choose file:" heading in the pane, click the + button to select a file.

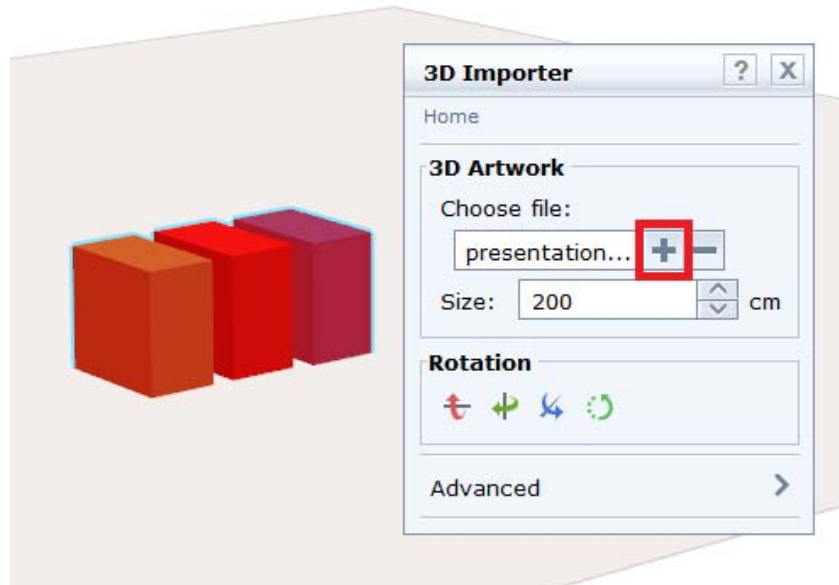


Figure 14 - 3D Importer's properties pane, with Choose file button highlighted

5. In the navigation window that opens, navigate to the location where you extracted the files to, and open the relevant folder. In that folder there may be multiple folders, but the only one we're interested in is the *models* folder. Navigate into that folder and then double click on the 3D model file to choose it. The model should have the file extension *.dae*.

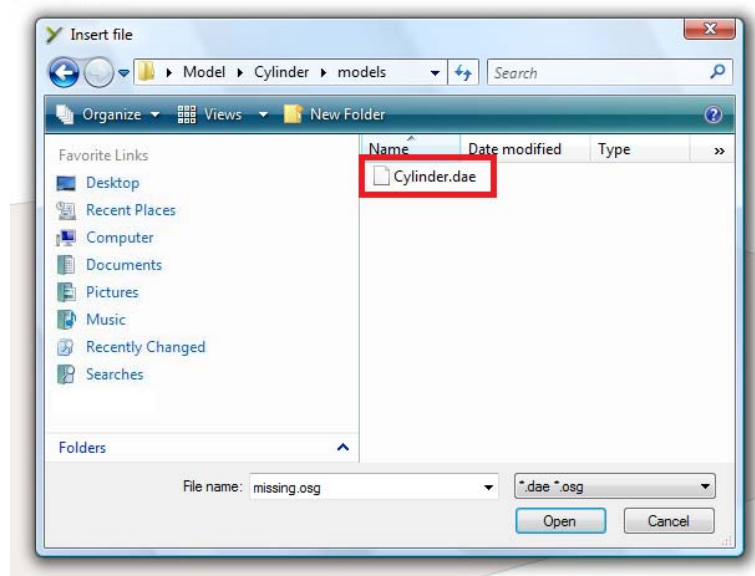


Figure 15 - Selection of the *.dae file required

6. You can click the *Rotation* buttons in the properties pane to rotate the object about all 3 axes, and click the *Reset* button beside them to rest the object's orientation. In addition, changing the *Size* value will scale the object up or down

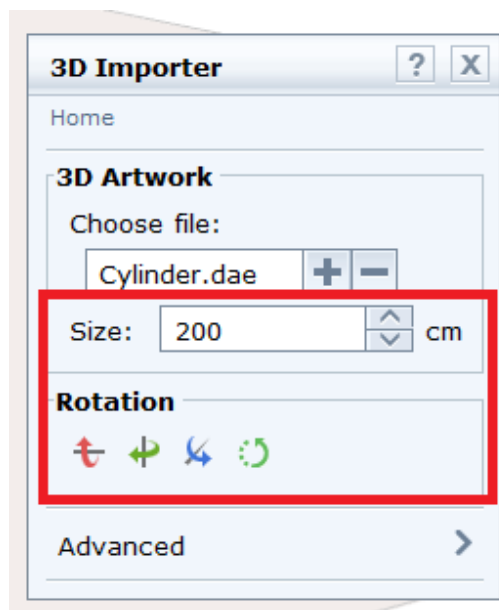


Figure 16 - 3D object's properties pane

7. Congratulations! You've imported your own 3D object into Yenka, for use in your models!

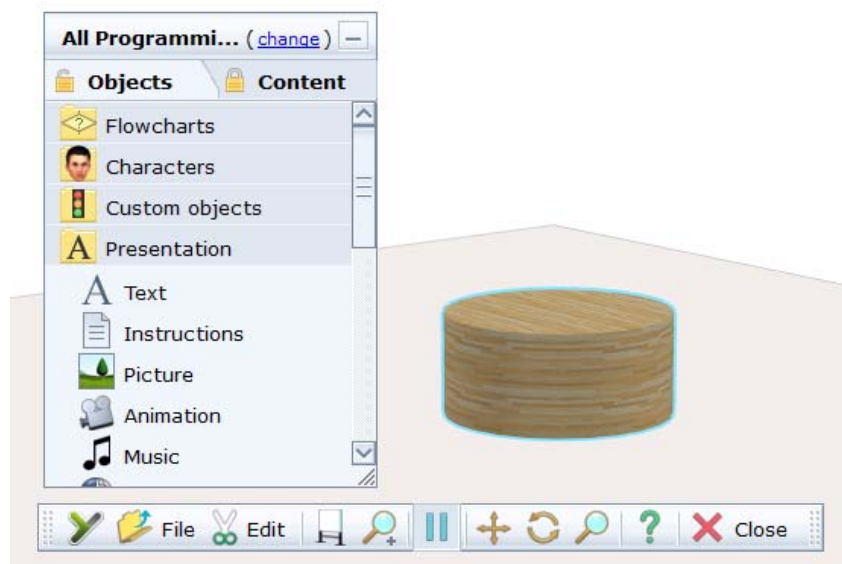


Figure 17 - Finished model

You can now continue adding 3D objects to your model to create a scene in Yenka. If you want to make a full background scene, you may find it easier to create the entire scene in SketchUp before importing it in to Yenka, rather than importing many individual objects that will each need to be positioned within in Yenka.