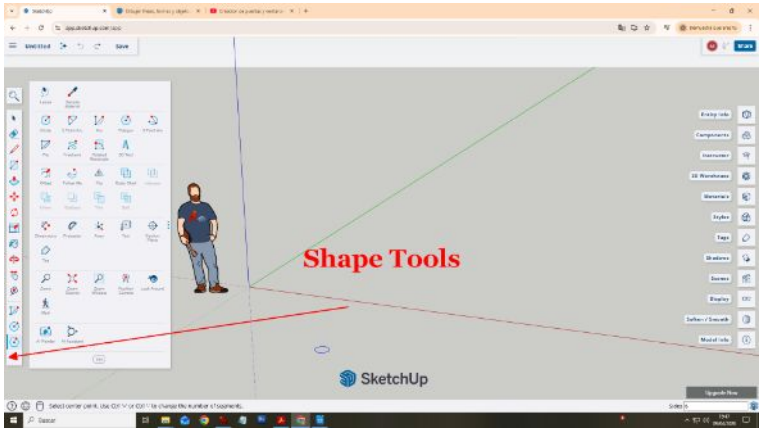
3D ACADEMY ERASMUS+

SKETCH-UP Workshop
Shapes, Volumen and extrusion

SKETCH-UP Workshop 2

1. DRAWING SHAPES

Beyond lines, you can draw two-dimensional shapes using the shape tools.



Task:
Draw some rectangles, circles, and polygons, just to try them out. All you have to do is click on the **corresponding tool.**

Since you are working with a 3D program, you will see the 2D figure placed horizontally. And if there is a surface below the 2D shape will be anchored to it.

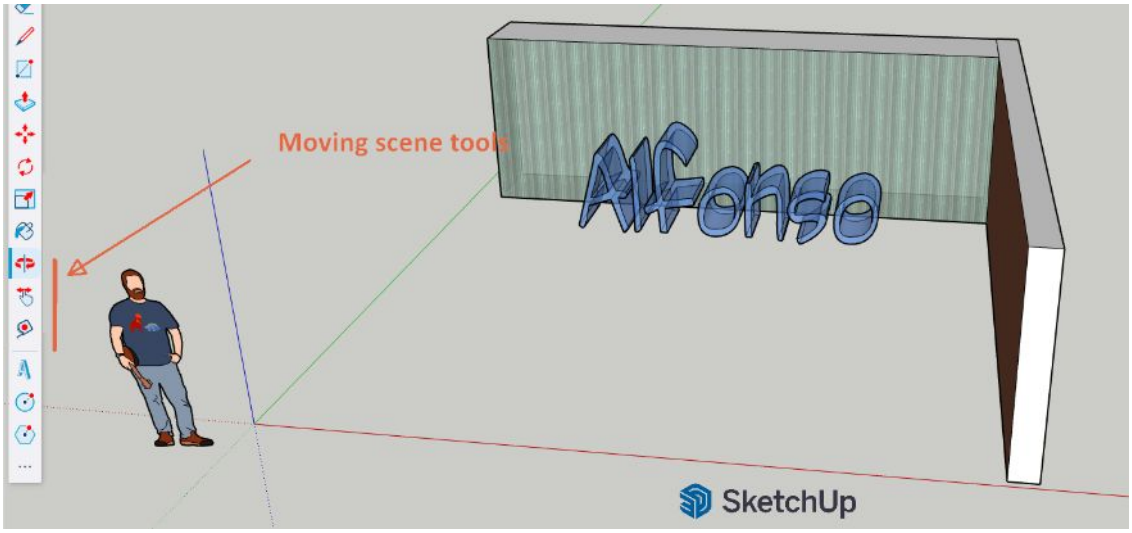
2. THE "OVERVIEW", ZOOM AND "ORBIT" COMMANDS.

The need to see created objects from different perspectives is an important part of any 3D program, and SketchUp allows it.

- The **Overview tool** allows you to move the drawing left or right and up or down. It also allows you to do a combination of these actions.

- The **Orbit tool** lets you circle the object you created. This variation of perspective allows you to see the entire object from every point of view.

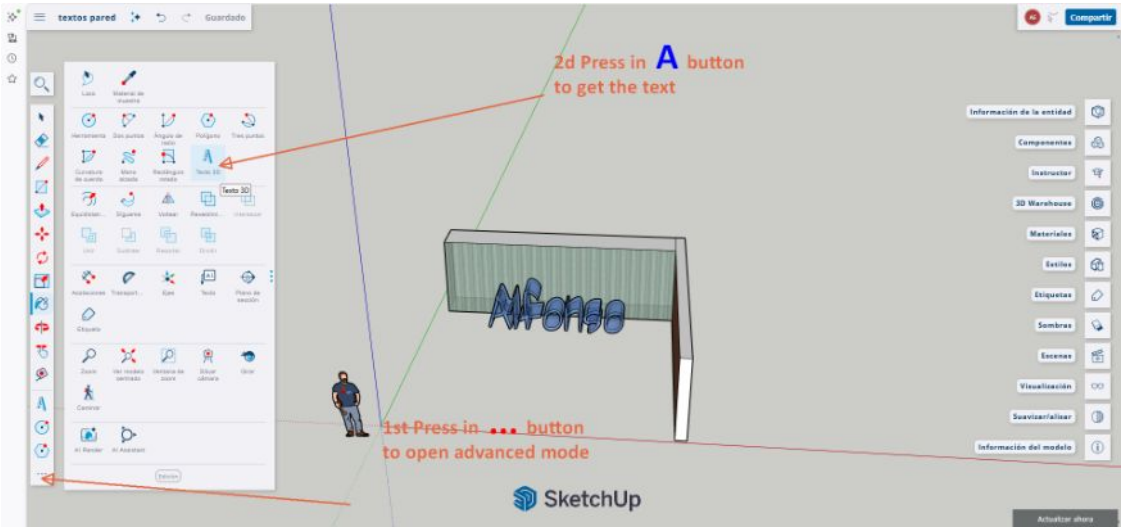
- Allows you to zoom in and out of shapes. Use the **Zoom tool** to go into more detail. Scrolling the mouse wheel in one direction will zoom in and out.



Task:

Use the middle scroll button of your mouse to circle around your image. You can also do this by clicking on the Orbit button, present on the top bar (it has two red arrows on it).

3. CREATE TEXT

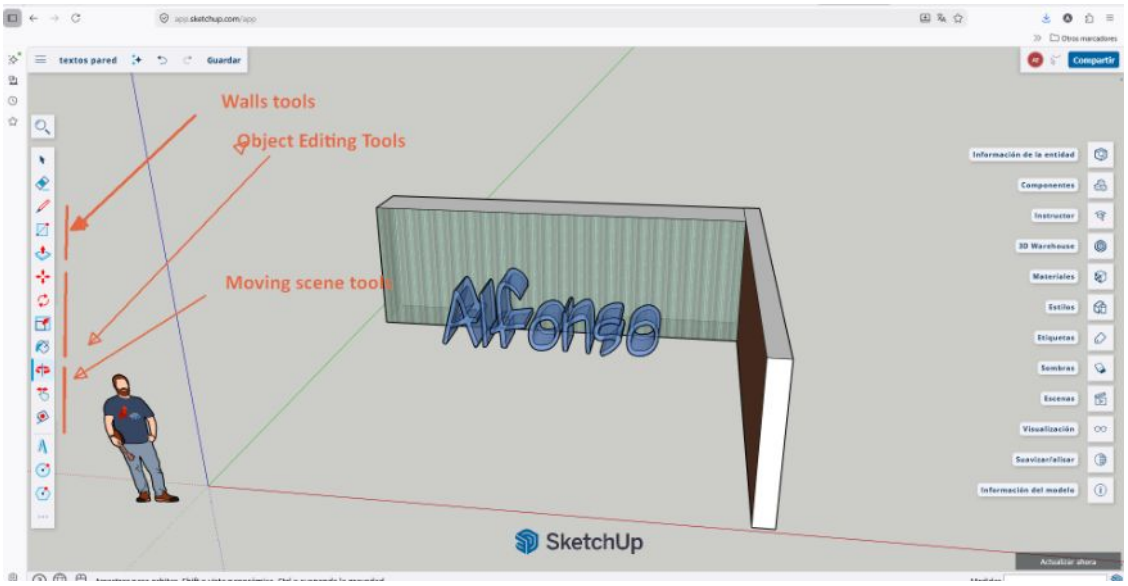


Task:

Create some walls and your name near them

4. MOVE AND ROTATE OBJECTS

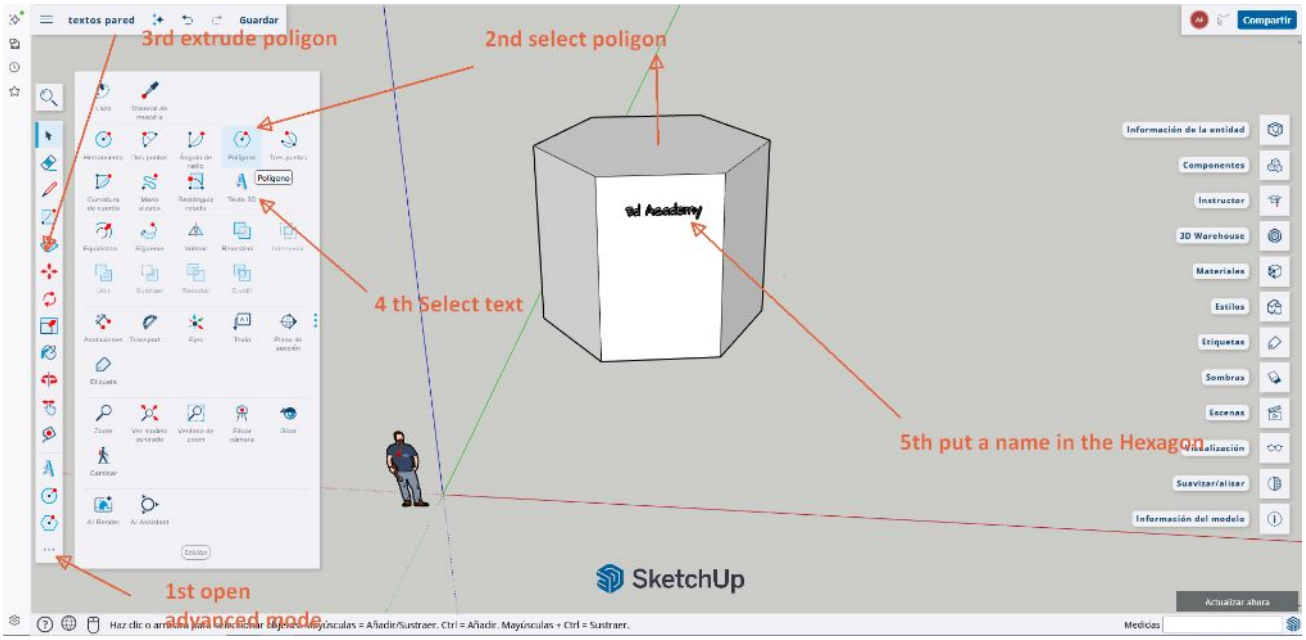
Move and Rotate tools Allows you to change the location of all the objects you've created. Use the Move and Rotate tools to see if you can move objects to a different location.



5. CREATE THREE-DIMENSIONAL OBJECTS

The way to do this is to "push" or "pull" a 2D shape so that it becomes a 3D shape. Use the **Push/Pull tool** over the 2D shapes you've created and start seeing what's going on.

Select the **Push/Pull tool:** Press the mouse button on the shape you want to push or pull three-dimensionally. Click, then push or pull the shape as desired. Click New. Enlarge the item as much as you want.

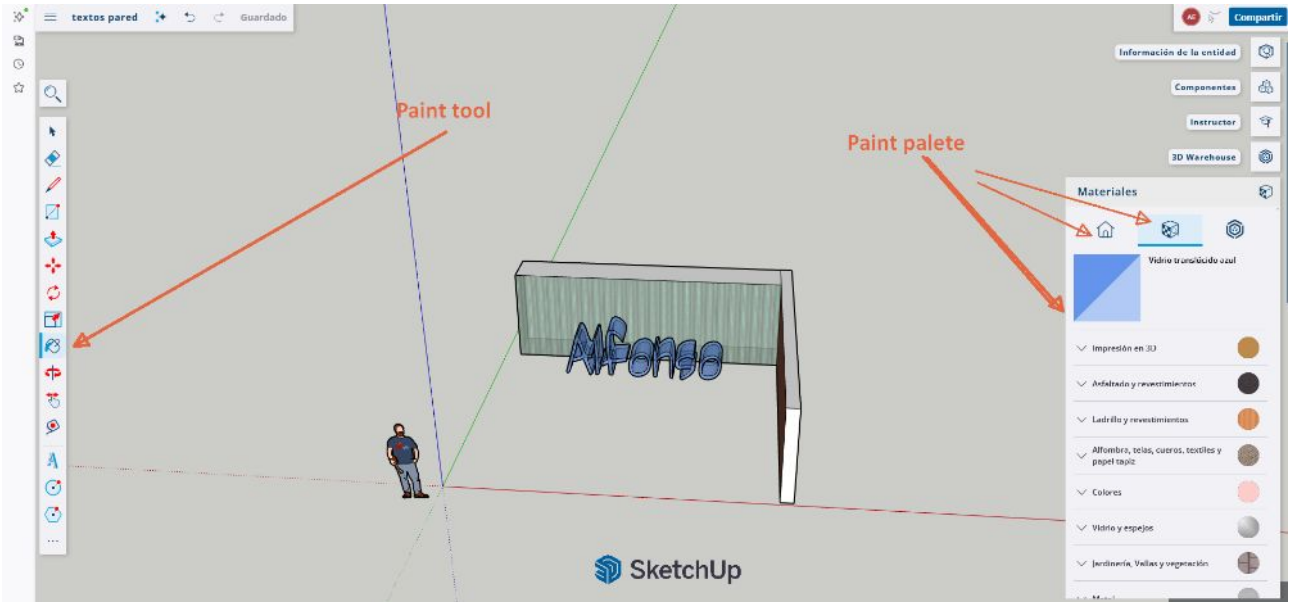


Task:
Create the upper scene

6. COLORING AND PAINTING OBJECTS

Once completed, the shape will become another color, usually a gray-blue. In order to be colored, the shapes must be complete.

Using the **Paint tool,** objects can be painted in solid color or texture. As for textures, SketchUp will automatically align them to any surface, making the experience fun and useful.

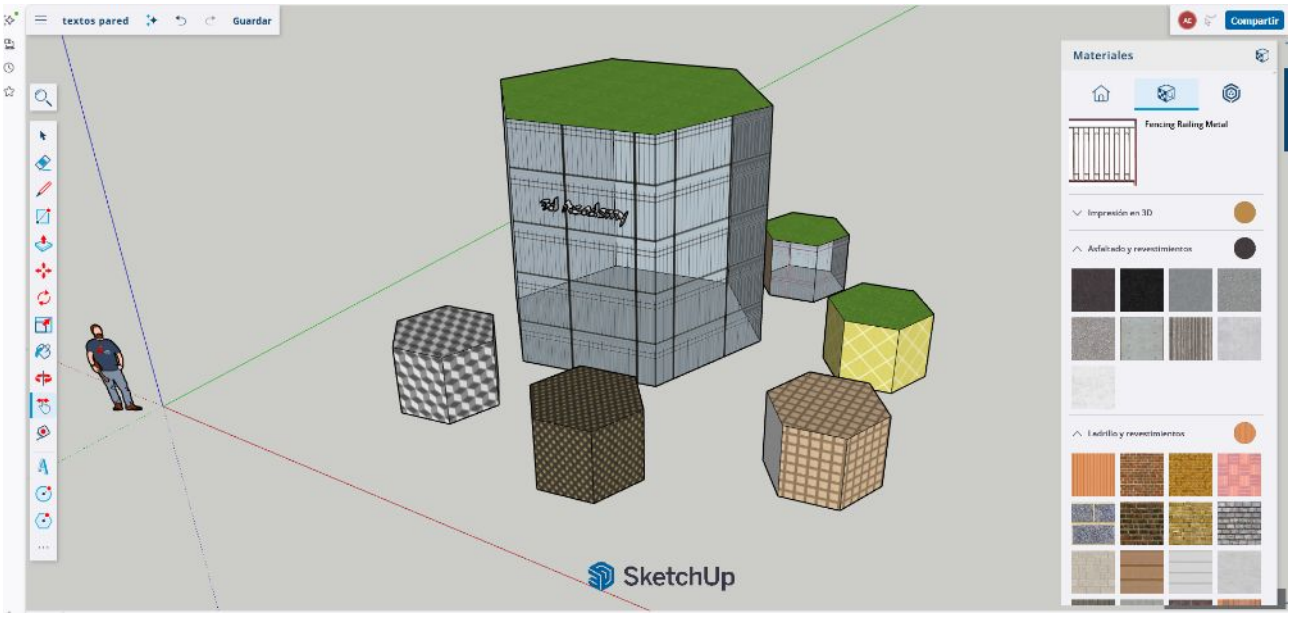


To add color, click on the paint bucket. Choose one of the categories such as Land Covers or Colors with Names. Select a color/texture and then click the area of the shape you want to shade. To make the effect of the windows, go to Translucent. Use the eraser to remove any unwanted edges.

Task:
Create a similar scene with different colours

Task 1

Create this scene with hexagons and text and draw it with textures



7. TASK 2: CHAIR

A chair can be created in several ways:

1. The first option is to compose the individual parts of the chair from a rectangle (backrest, legs, etc.).
2. The second option is to create a large rectangle/square and then extrude unnecessary shapes.

Clever pupils have the opportunity to think about the implementation of the second option of creating a chair.

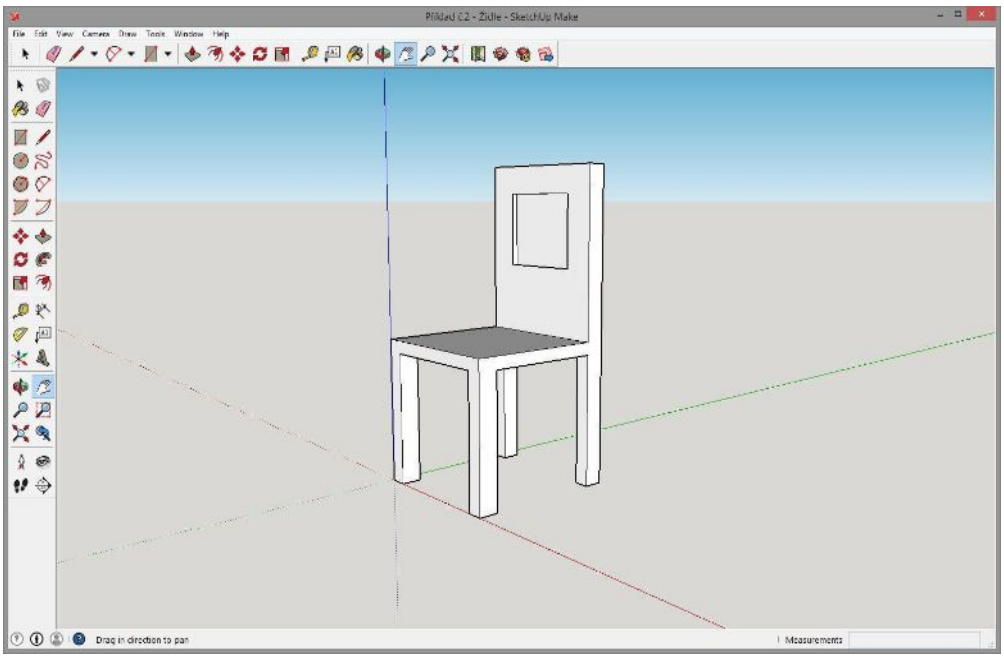
Procedure

a) Folding individual parts of a chair from rectangles

1. From the intersection of the axes with the help of the Rectangel tool, we make a rectangle or square that will represent the basic part of the chair - the seat.
2. Create a rectangle/square on the back and use the **Pull/Push tool** to create a backrest.
3. Using the **Orbit tool** (rotation), we turn the model upside down.
4. At the bottom of the chair, we create four rectangles/squares in the corners to represent the legs. Then, using the Push/Pull tool, we pull out the individual rectangles to create the last part of the chair.

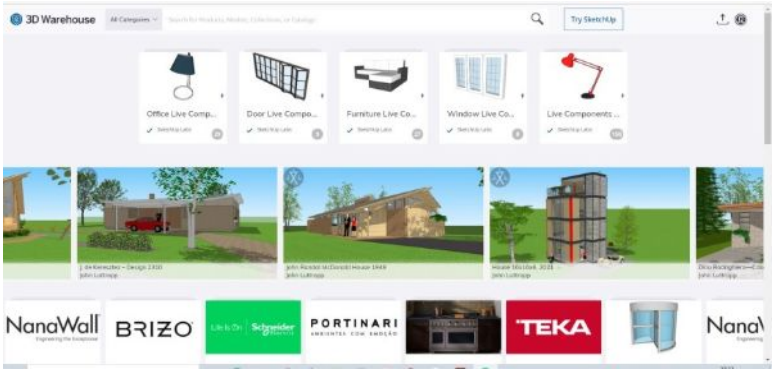
b) Extrusion of unnecessary shapes

1. On the surface we create a rectangle / square – the base of the chair.
2. Use the **Push/Pull tool** to pull the shape to the desired height of the chair.
3. On the right side edge we make two rectangles - one rectangle will represent the backrest, the other the legs of the chair.
4. Use the **Push/Pull tool** to push individual rectangles and create individual parts of the chair.



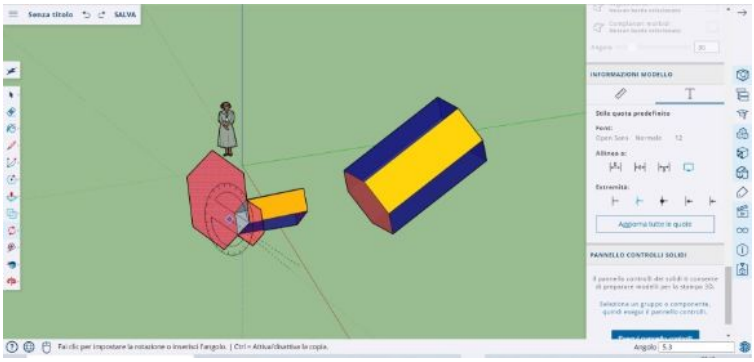
8. PRE-BUILT MODELS IN SKETCHUP

There are many available pre-built models, ready and without the need to invent others. The 3D program offers architectural objects, human characters, landscape and construction elements, playgrounds and transport vehicles. In the component library you can find objects of all kinds to play with and practice [3D Warehouse (sketchup.com)]



9. CONSTRUCTION GUIDES

SketchUp allows you to place construction guides anywhere within a drawing. They are dotted lines and make it easy to align objects.



10. ADVANCED TOOLS ON SKETCHUP

Resizing: it is used by selecting an object and dragging the small boxes on corners and faces to make it of any format you want - wide, tall, short or crouching.

Follow Me: Moves an object along a specified path, creating a new object.

- Uniform: If you click on one face, it will create another face, just like the one you clicked on. You can make a face smaller or larger, proportionally to how much you drag the cursor.
- Curve: If you create a line and drag it to the side, you will get a curve.

- Text: It will allow you to add text on one face of your template.
- Angle: It will allow you to rotate an object by clicking on a face and rotating around your cursor.
- Measuring Tape: it can be used to measure an object and also create sections, by typing the measure in the homonymous window on the lower right side of the screen.

Build something with SketchUp

You'll easily find tutorials to help you create buildings and structures.
Using SketchUp you can easily create a living space, a kennel, a polygonal building, a uniformly sloping roof. You can import images from Google Earth and draw on them.
And much more

GLASS

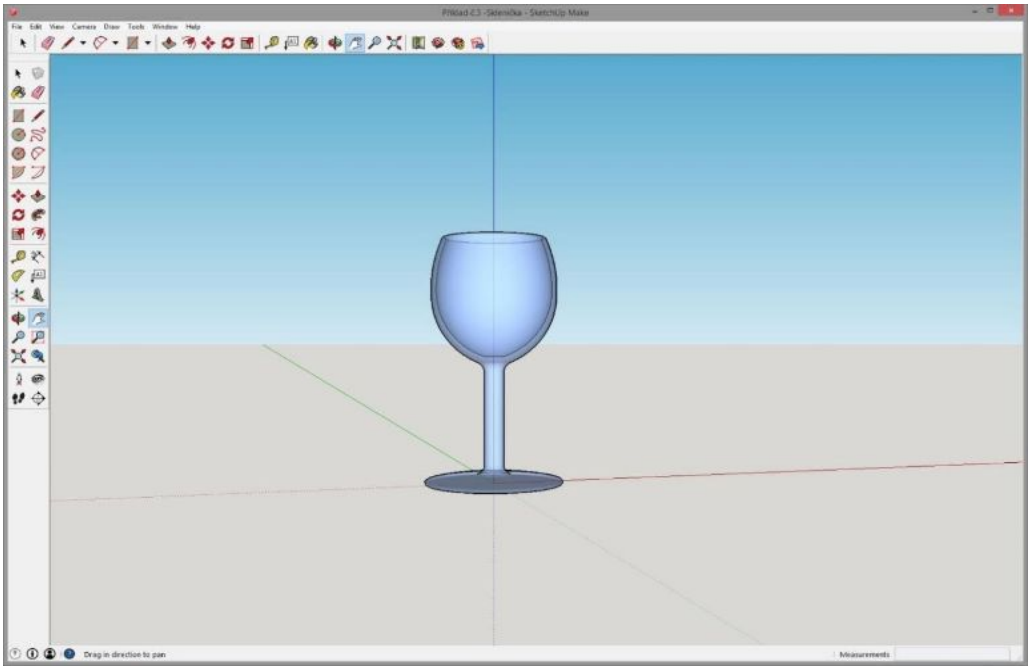
Assignment

Create a model of a glass of any shape and size in SketchUp, e.g. as in the attached sample. Use the following tools to create:

- Shapes
- Rectangle
- Circle
- Line
- Push/Pull
- Follow Me
- Arc
- Eraser
- Select

Procedure

1. With the Circle tool, we create a glass base and a base for the Follow **Me tool.**
2. From the center of the circle we lead a perpendicular line to the desired height of the glass.
3. On the perpendicular we make a rectangle, into which we will subsequently carve a glass.
4. In the created rectangle with the help of Arc and Line tools, we paint the shape of the desired glass.
5. We erase excess lines using the **Eraser tool.**
6. Use the **Select tool** to double-click the created circle from the first point.
7. With the Follow Me tool, we click on the cut out part to create a glass.


Drag in direction to pan
Measurements