

SKETCHUP - A BEGINNERS GUIDE

Sketch up is a free 3D modeling computer program that makes easy architecture and concept designs. As a beginner, you can start with SketchUp free. For professional jobs you can get a more advanced set of features by paying to be a part of SketchUp shop, pro, or studio. These range from 119 dollars a year to 1,199 dollars a year. Through this guide, you will learn the basic skills needed to work SketchUp.

STARTING OFF

- To begin, you need to create a free trimble account that is connected to your email.
- Once logged in, the main account home will open. This is where your recent projects will be shown. There will be two options to start working at the top – “create new” and “open.”
- Clicking “open” allows you to browse existing sketch up projects. “Create new” allows you to start with a fresh template.

THE WORKSPACE

- Once “create new” is clicked, you will be given the option to choose what measurement unit you want to use. A SketchUp project will then open. Every new project is completely empty showing a 2D human interface as reference along with 3 axis planes.
- Drawing and editing **tools** are located on the left hand side of the screen and **panels** are located on the right side of the screen. You can close and reopen these when needed.
- I have created a Google Drawing that identifies the names of these tools and panels. See Fig. 1 on the last page. This is something to reference while reading

about the application of some of the tools and panels, just to make the instructions clearer.

- To draw, use the tools (located on the left side.) Some related tools are grouped into a single button. Once a tool is enabled, you can use it by either moving your mouse or typing precise measurements in the box in the bottom right corner.

DRAWING TOOLS

- Line Tool - Enable this tool to drop straight segments sharing the last node. You can continue drawing until you use the escape key or close the shape in. Closing the shape in fills up the shape automatically.
- Free Hand Tool - Just as the name implies, you can draw free hand with this tool. Use your mouse to zoom in to make lines and curves more precisely
- Arc Tools - Use any of these tools to drop different types of arcs. The arc made depends on the tool selected.
- Rectangle, Circle, and Polygon Tools - You can create these shapes using these tools!
- 3D text tool - Used to draw 2D and 3D text. You can choose font, size, filling, as well as extrusion length.
- To undo any drawing, use the escape key on your computer.
- To undo any action/modification use CTRL+Z.
- Opening the **Instructor Panel** allows you to access tips on how to use the selected tool.

VISUAL AIDS

- When drawing any segment, it becomes the same color as the axis parallel to it.

- There are also snappings to the most important key points in an object. When hovering your mouse over shapes and such, these will pop up and act as helpful guides. Colored circles are for vertices and nodes. Squares are for points on sides. Rhombuses are for points on faces and filled areas. Dotted guidelines may also appear. You can manage all aids from the control panel (right hand side of screen). From here, you can also control effects such as shadows and fog.

DRAWING 3D OBJECTS

- Use the push/pull and follow me tools to start making a 3D object.
- With the push/pull tool you can make a 3D object by clicking and dragging from its 2D base.
- The follow me tool is used to define 3D conductors.
- You can also use the line tool to make 3D objects by drawing each vertex and side until the 3D object you want to make is complete.
- If you want to, you can use the components panel to search for pre-made objects that you can import into your project.

VISUALIZATION TOOLS

- There are visualization tools you can select on the left panel. You can use these to move around and rotate your screen.
- Located on the right hand side is the walk and look tool, where you can view your project from a human point of view. There is an option to view your work from standardized points of views as well. You can access this from the views panel.
- Length and measurement tools are used to precisely measure objects. From the model info panel, you can set the units to annotation style and precision.

- Use the Styles panel to preview your objects differently (different lighting/color).

RESHAPING OBJECTS

- Use the select tool to select the object you want edited, do this by clicking on the select tool then clicking on the object you want to edit.
- To modify a 3D object as a whole, you need to select all of its subcomponents. To do this, click and drag your mouse diagonally across the object (bottom right corner to top left corner). This should create a box around the selected object. From here, right click and select “make group.” Now you can modify the whole object.
- Text models already come with sides and faces grouped, so you automatically edit the object as a whole.
- To only reshape a text's subcomponents, you have to right click, then select “explode.” From here you can edit individual components.
- To deselect anything, just click anywhere on the work space.

EDITING TOOLS

- Move Tool- Select and move objects to wherever you like.
- Rotate Tool- Rotate an object by fixing a main anchor point and choosing an angle.
- Scale Tool - Scale an object by clicking and dragging in different 2D and 3D directions.
- Offset Tool - Use this tool to add a 2D contour.
- To cut, copy, or paste a selected object simply use CTRL + X, C, and V. You can remove any object from the workspace by cutting it.

- From the entity info panel, click on “material” to apply several materials to the selected object. You can give the object the look of metal, glass, color, patterns, and much more.

SAVING PROJECT

- To save your project as a SKP file use the save button in the top left corner. The project will be stored within your project lists in your trimble account. To save as an STL file, select “export” and choose STL. This will create a new file.
- If you exit your project without saving your progress, what you had made could be lost!

MORE RESOURCES

- If you want more of a visual on the instructions above, I suggest watching youtube videos about SketchUp. The video “SketchUp - Tutorial for Beginners in 10 minutes!” made by youtuber Bai really helped me while I was learning how to work the program. Videos from The youtube channel TheSketchUpEssentials also have many great beginner videos as well as more in depth videos explaining the ins and outs of SketchUp.

Fig. 1 SketchUp Tolls and Panels Identified



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