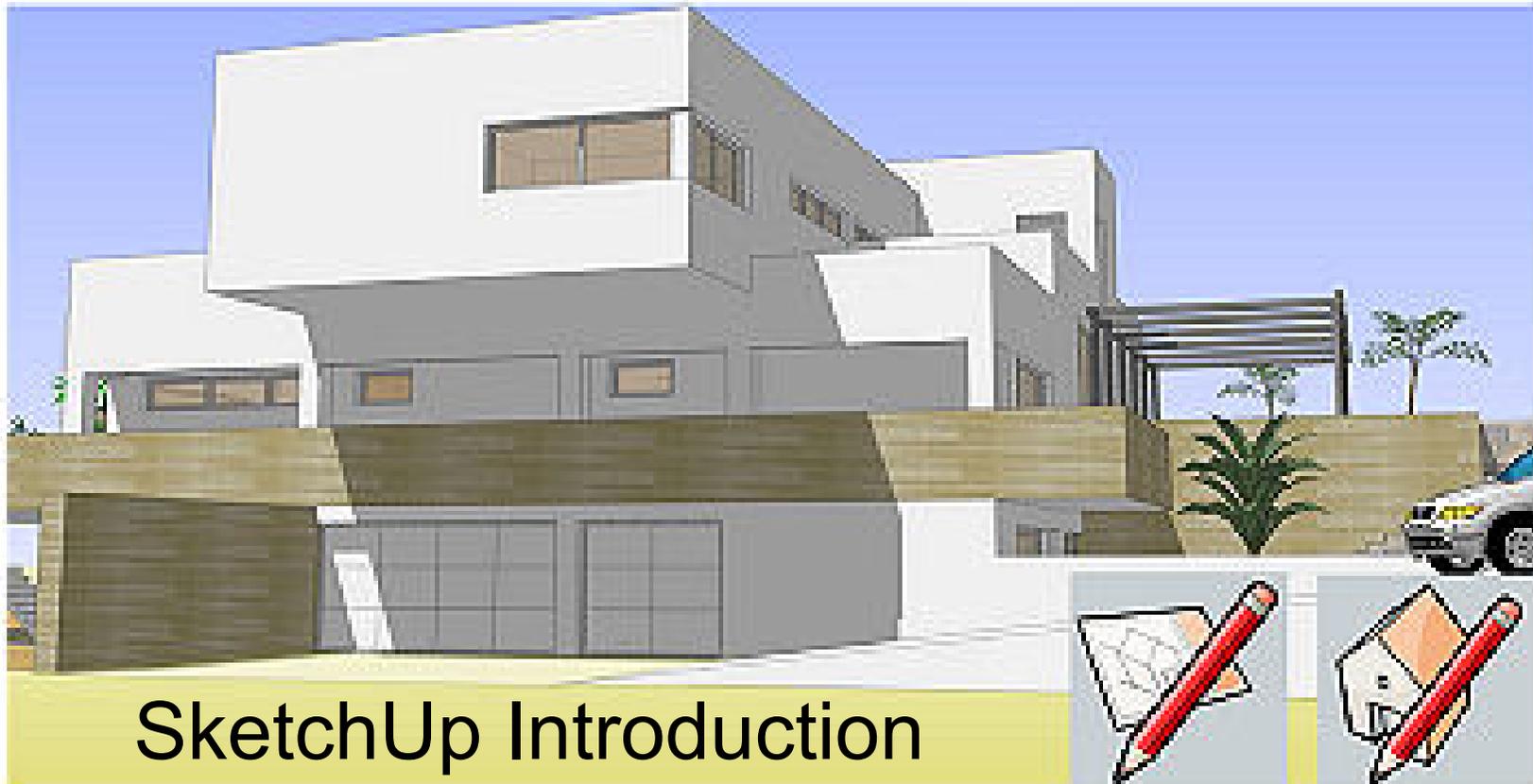


# Google

## SketchUp PRO



SketchUp Introduction

# The Benefits of SketchUp

- What is Google SketchUp?

- 3D modelling program
- Connected to many other Google products
- Conceptual modelling with plugins for rendering
- Vast component library

- What can it do?

- Insert your model into Google Earth
- Make sections from 3D models
- Produce digital sketch or massing models



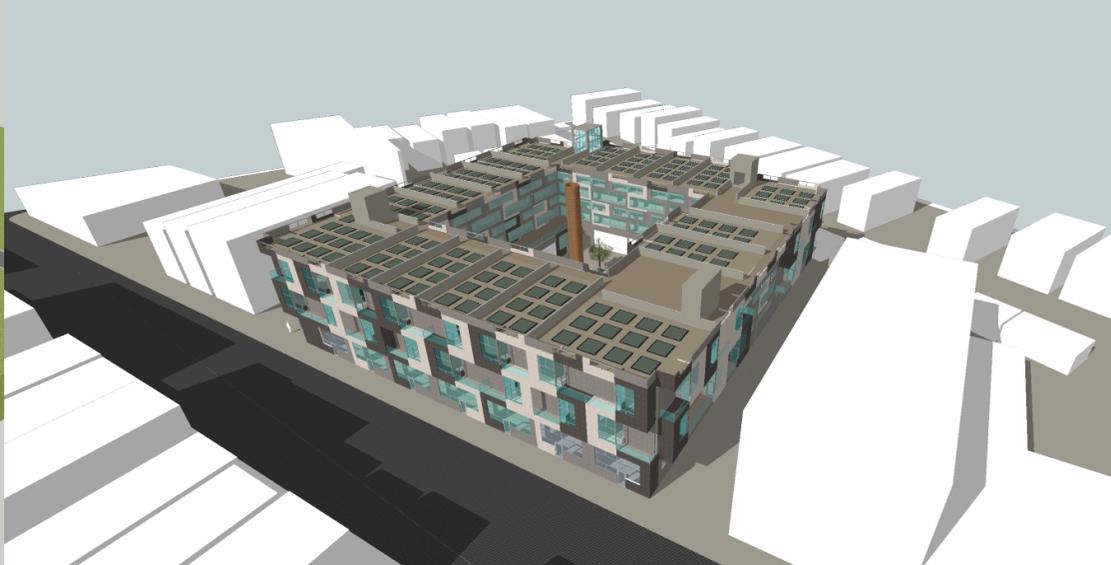
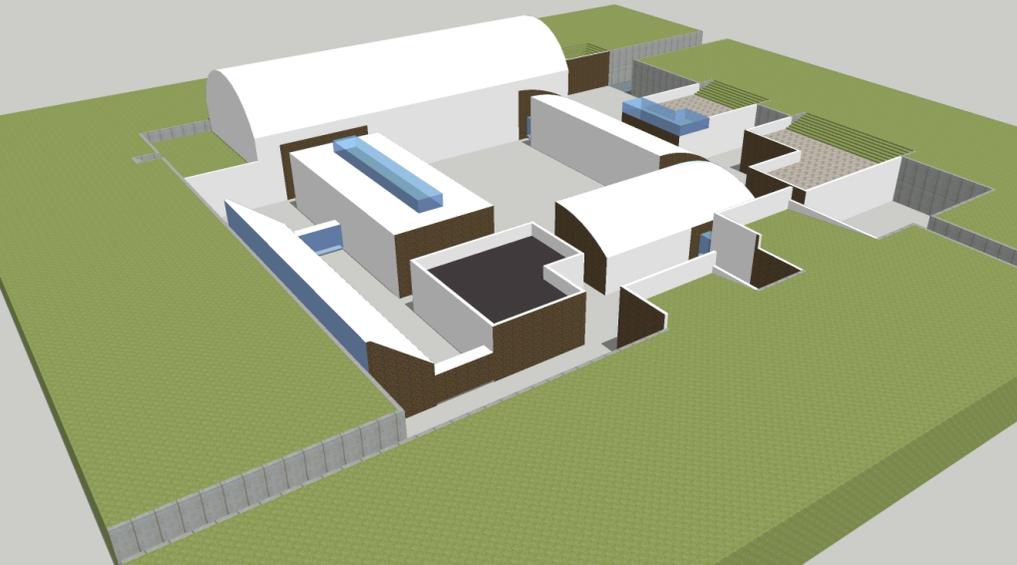
# Workshop Goals

- What we'll cover:

- Basic commands
- Applying materials
- Components
- Styles
- Shadows
- Exporting graphics

- What we won't cover:

- Importing other files
- Insertion into Google Earth
- Layers
- Section Planes
- Camera Views
- Creating scenes



# Moving Around

The image shows a screenshot of the SketchUp software interface. The top menu bar includes File, Edit, View, Camera, Draw, Tools, Window, and Help. Below the menu is a toolbar with various icons for drawing and editing. On the left side, there is a vertical toolbar with icons for selection, drawing, and navigation. The main workspace is a 3D environment with a green ground plane and a light blue sky. A person is standing on the ground. A red circle highlights the origin of the axes, with lines extending to the labels 'Blue', 'Green', and 'Red'. A yellow line points from the 'Zoom (Z)' label to the 'Click-Wheel' icon in the toolbar. An orange line points from the 'Pan (H)' label to the 'Click-Wheel' icon. A red line points from the 'Orbit (O)' label to the 'Click-Wheel' icon. The text 'Origin of Axes' is located near the red circle. The text 'Blue', 'Green', and 'Red' are positioned near the axes. The text 'Zoom (Z)', 'Pan (H)', and 'Orbit (O)' are positioned near their respective icons. The text 'Click-Wheel' is positioned near the icon in the toolbar. The text 'Shift+Click-Wheel' is positioned near the text 'You can Pan by holding Shift+Click-Wheel.'.

- You can **Orbit** by holding the *click-wheel*.
- You can **Pan** by holding *Shift+Click-Wheel*.

Orbit (O)

Pan (H)

Zoom (Z)

Blue

Green

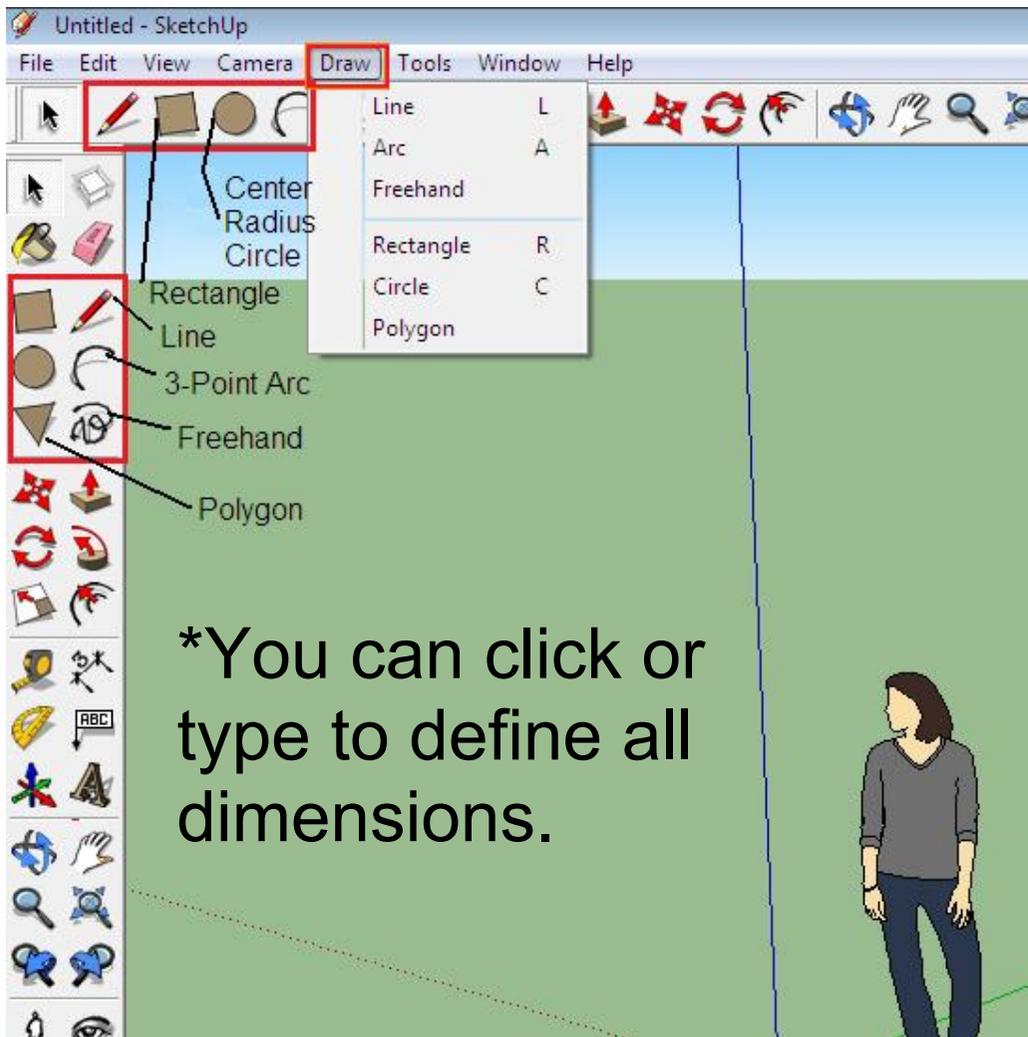
Red

Origin of Axes

Select objects. Shift to extend select. Drag mouse to select multiple.

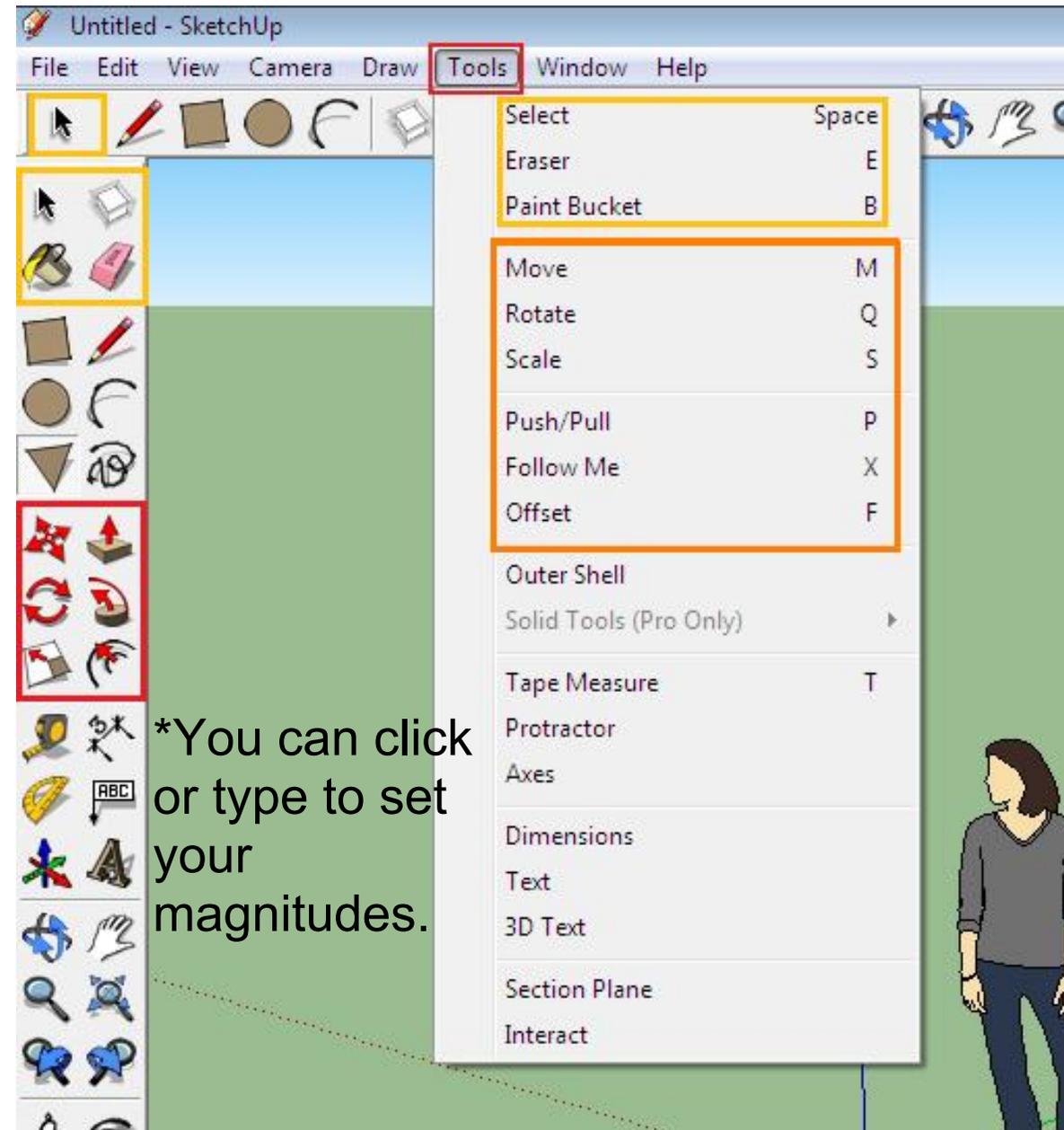
Measurements

# Drawing Commands



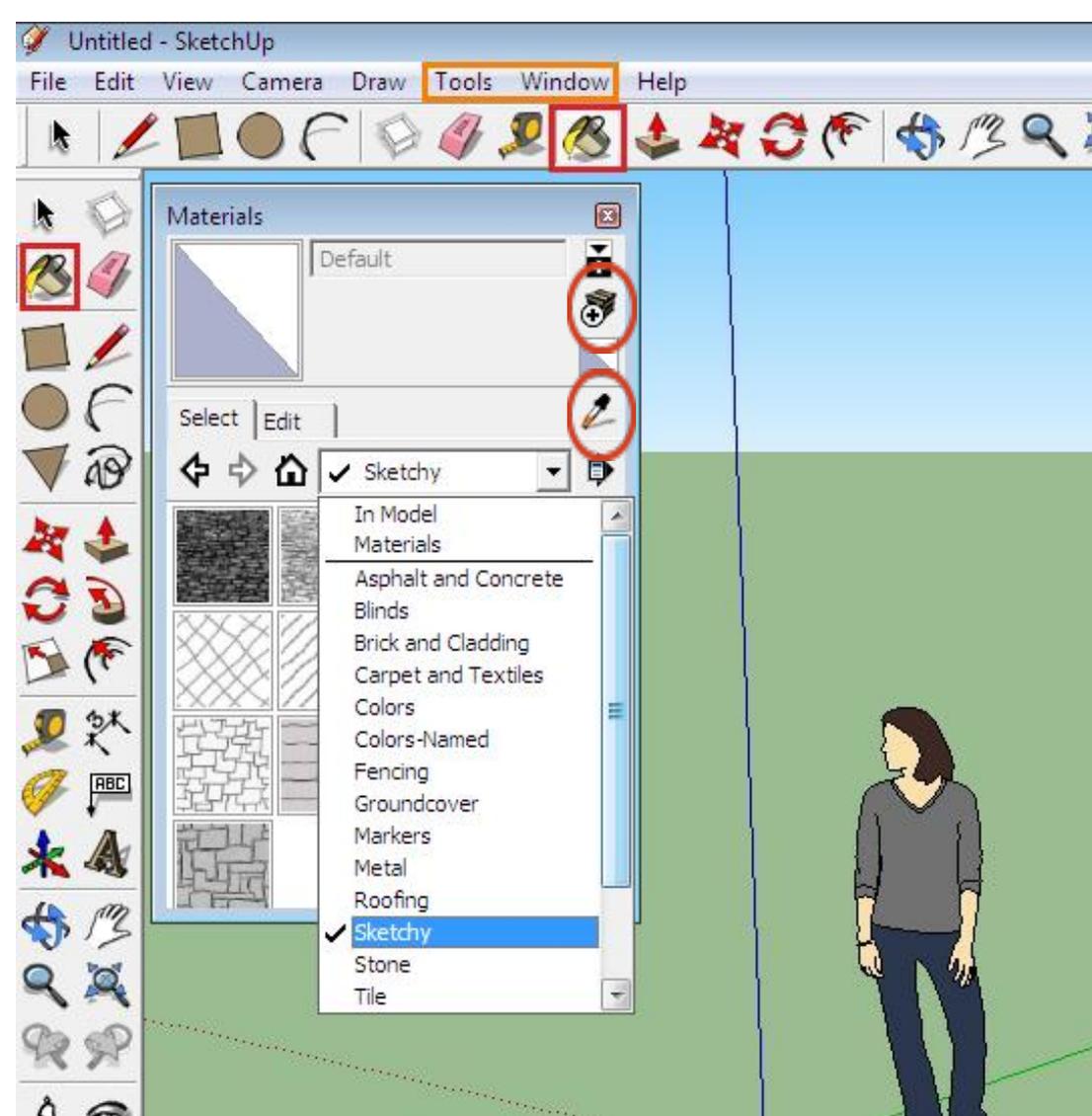
- Line - Set start and end points
- Circle - Set center point and radius
- Rectangle - Set opposite corners
- Arc - Set start-end-middle points
- Polygon - Specify # of sides, then center and radius

# Manipulation Commands



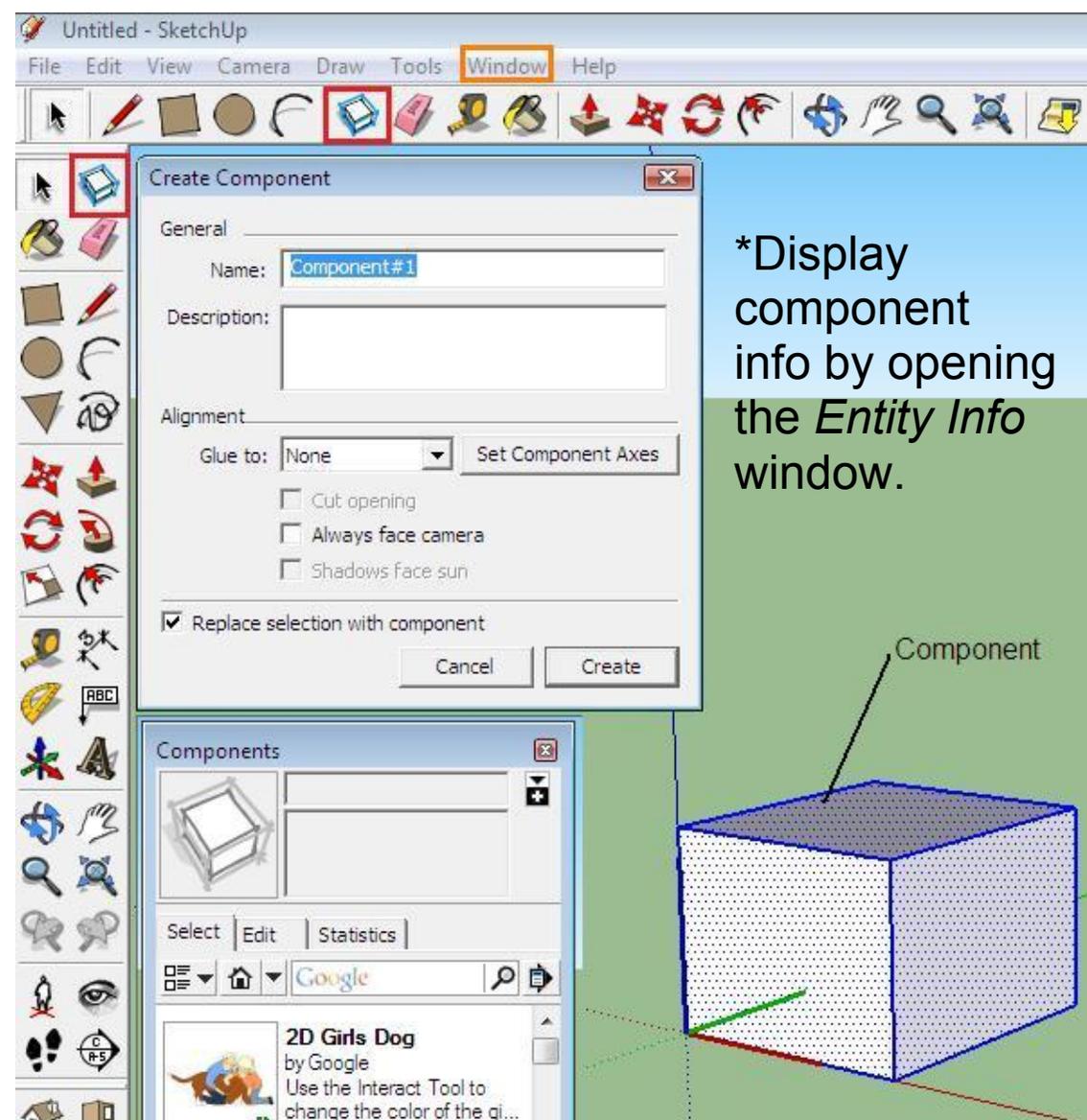
- Push/Pull - Extrude a face, but only perpendicular to it
- Offset - Set the distance to offset the concentric shape
- Rotate - Set the reference angle and angle of rotation
- Move - Set the base point and new location
- Follow Me - Extrude a face along any path
- Scale - Select a direction and magnitude to scale

# Applying Materials



- Paint Bucket (B) - Apply materials to faces
- Lots of preset textures and colors
- Can create new materials with buttons in window
  - Can load in images to use as materials
- Select material and click on face to apply to
- Use eyedropper to match another object's material

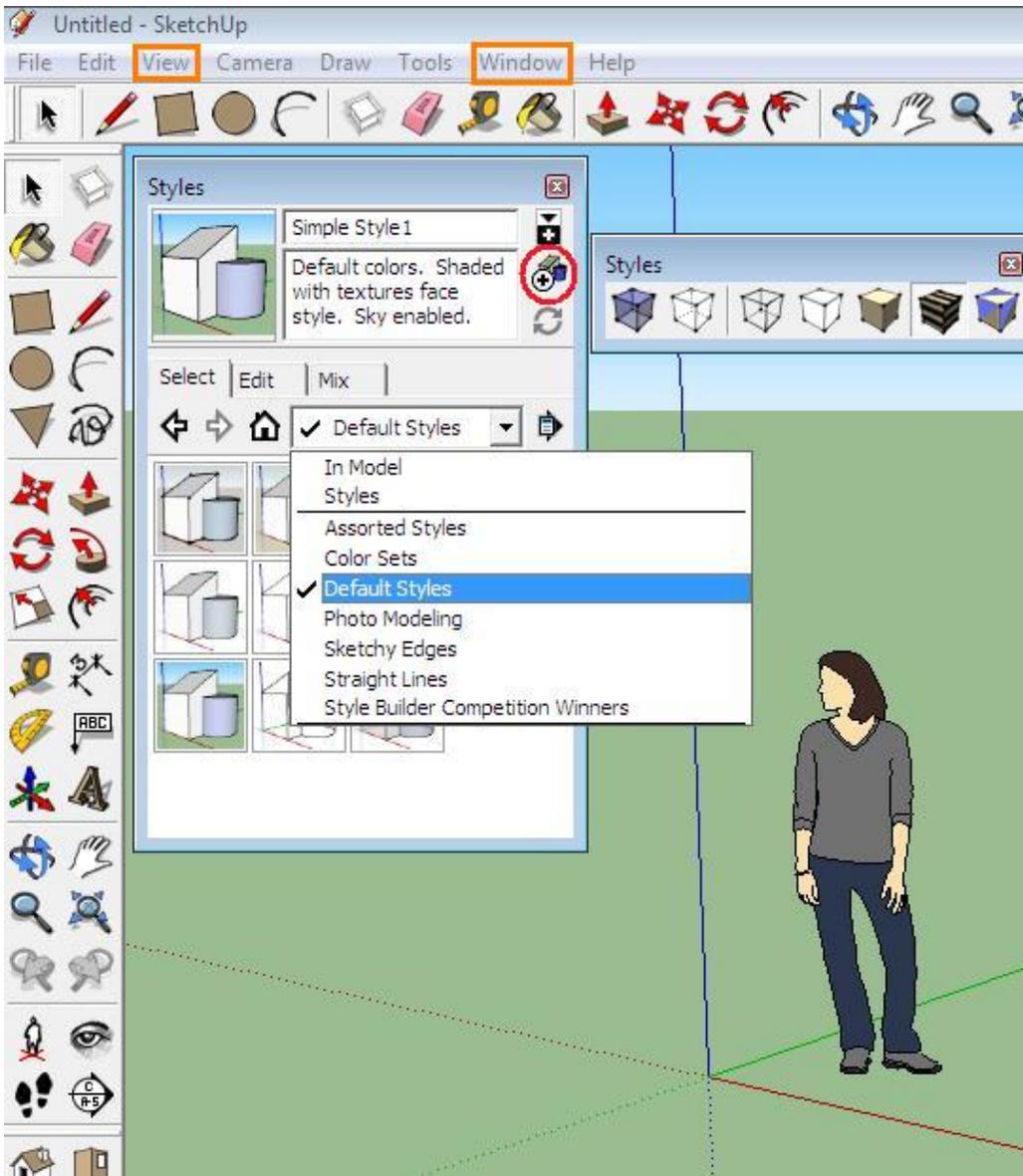
# Making/Using Components



\*Display component info by opening the *Entity Info* window.

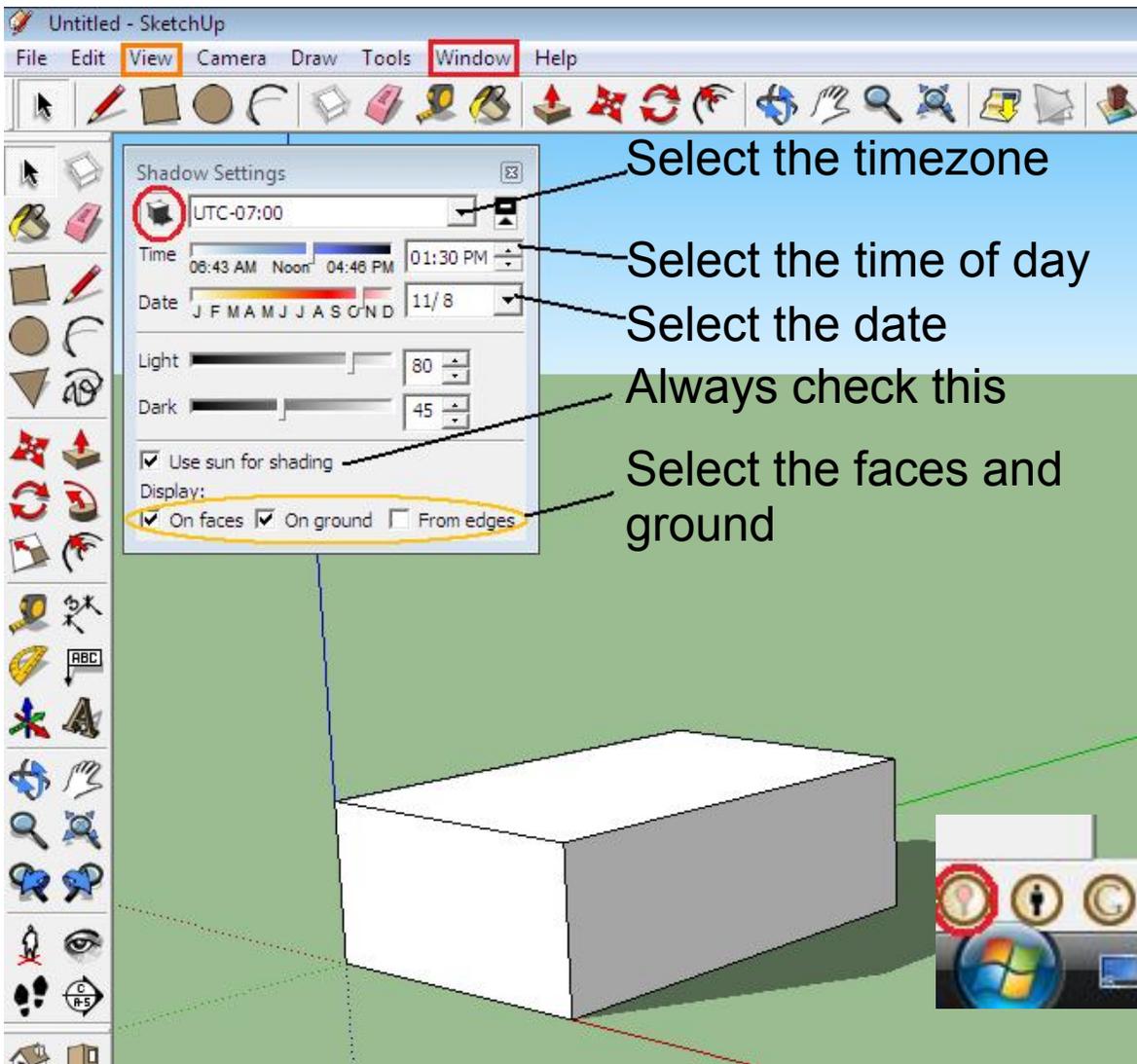
- Make Component (G) - select pieces, give a name
- Great for large-scale projects with repeating components; e.g. beams, columns, stairs
- Double click on a component to open it and make changes
- SketchUp has a database of shared components, such as people and furniture

# Changing Styles



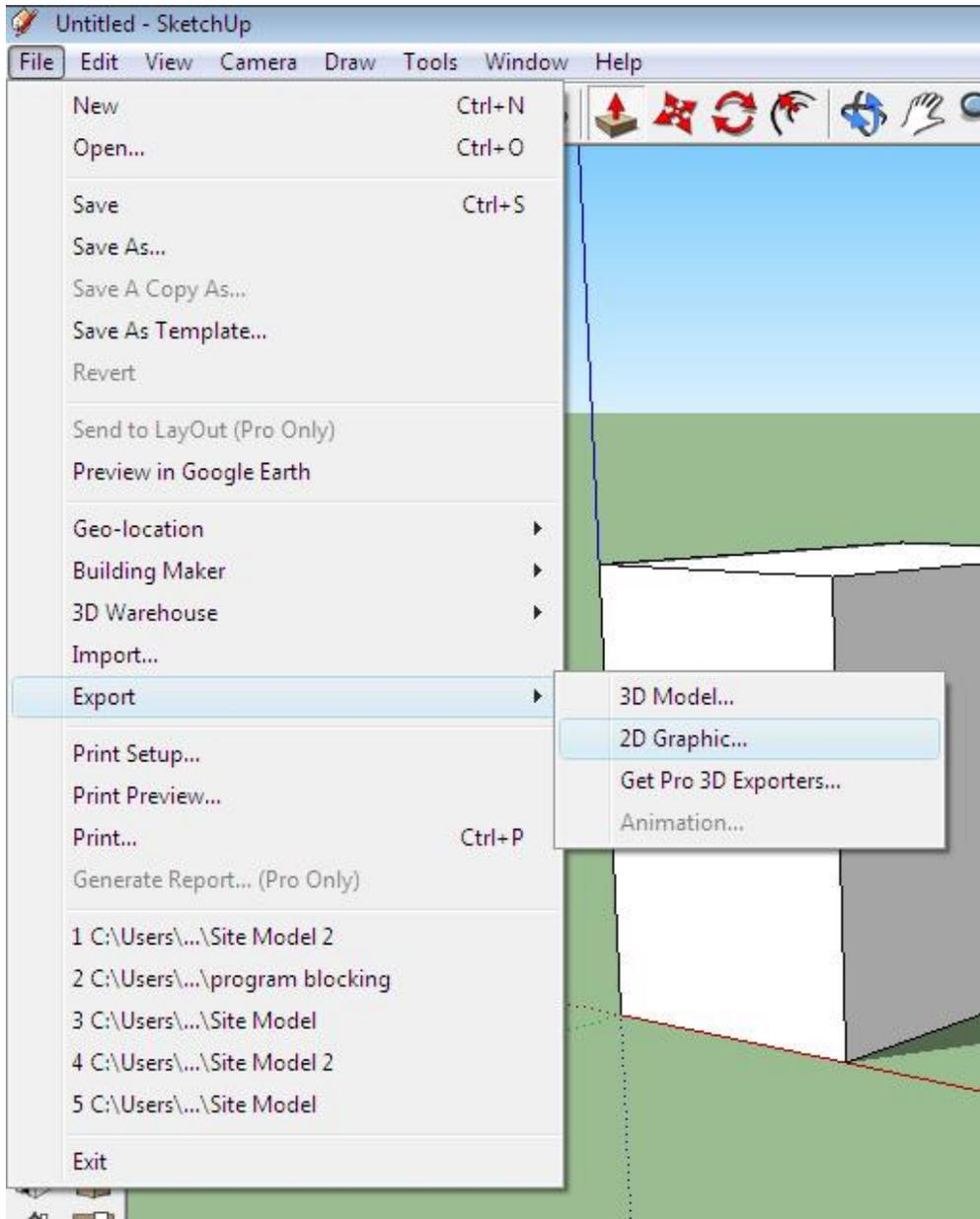
- Open the Styles UI from the *Window* menu
- If the Styles toolbar is not there, open with *View->Toolbars->Styles*
- Styles change the visuals of a project with one click
- You can make a new style with the button on the right
- The Styles toolbar will let you change face styles without changing edges or corners.

# Using Shadows/Sun Data



- Open the Shadow UI from *Window->Shadows*
- Ensure that *Shadows* are turned on under *View*
  - You can also click the button on the left
- If you have the correct timezone, you can create approximate sun studies
  - Use the *Geo-Locate* function to be more exact

# Exporting Graphics



- You can save a 2D image of your current view, without just taking a screenshot
- The graphic will not show the axes or anything that is not part of the model
- You can also export a 3D model for use with Google Earth
  - In Pro, there are other formats possible

# What's Next?

- Some other useful tools:
  - Camera Views
  - Creating Scenes
  - Using Layers
  - Section Planes
  - Importing other files
  - Insertion into Google Earth
- <http://sketchup.google.com>
- There are also outside plugins for rendering
  - SkIndigo
  - V-Ray
  - SU Podium
  - Twilight Renderer
  - Shaderlight
  - Kerkythea