# ITEC185
# Introduction to Digital Media

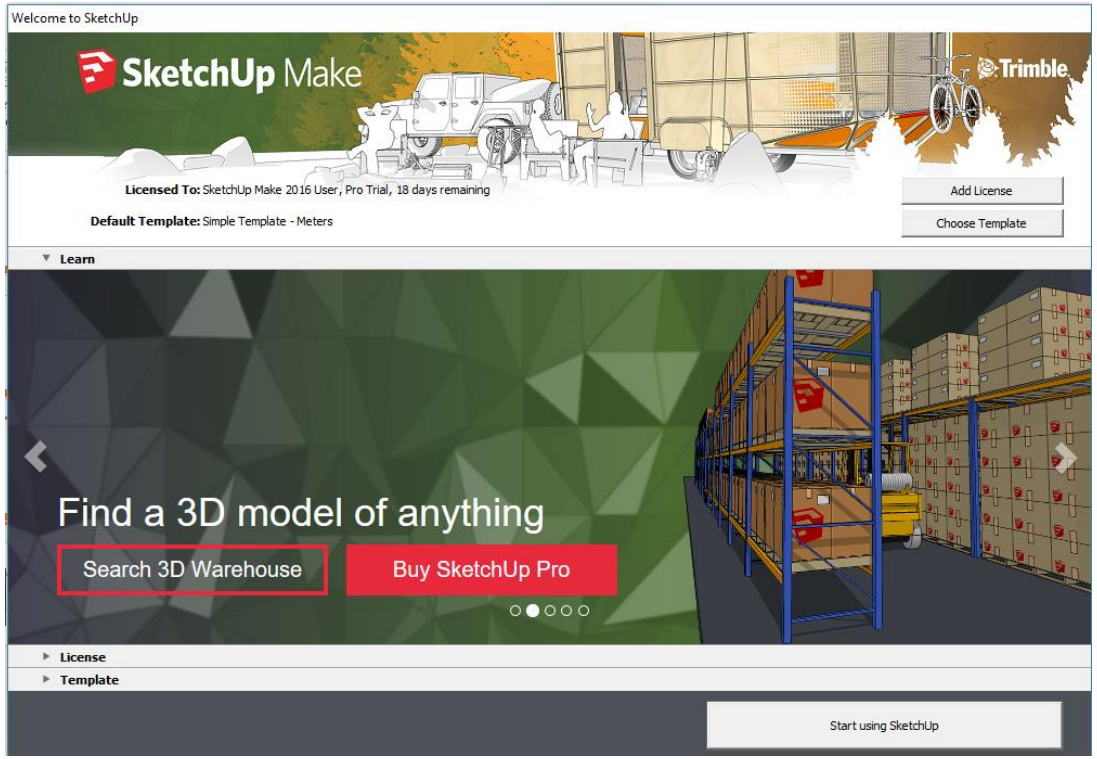
SKETCHUP MAKE 2016 - I

# What is SketchUp?

- It’s software that lets you use your computer to create models of objects and buildings in three dimensions.
- It's not hard to create simple three-dimensional objects and buildings with SketchUp software.
- There are lots objects and buildings you can import into your sketch, or you create your own.
- SketchUp software is mostly easy to learn and makes a great first step before you move into more complicated software like Blender (for making characters and movies, as well as objects) and CAD (computer-aided design) software used professionally.

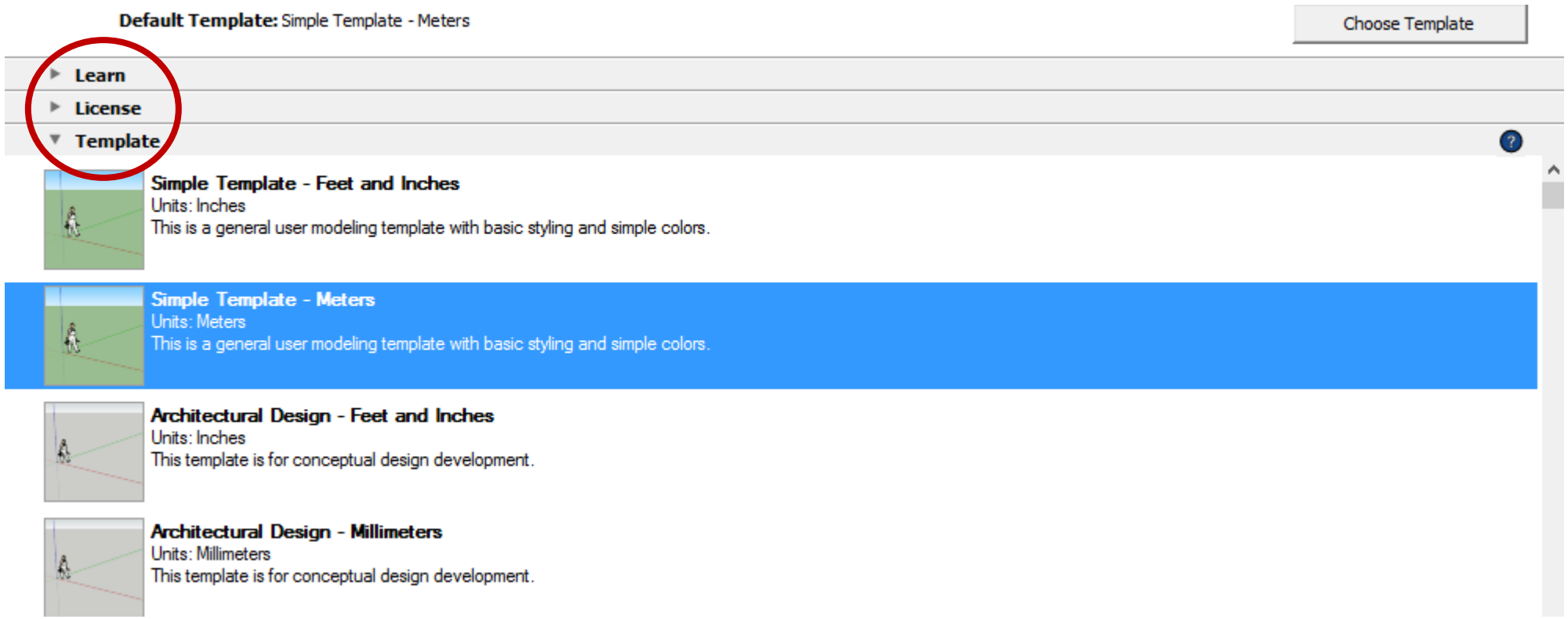
# Getting Started in SketchUp

- When you first run SketchUp, the Welcome to SketchUp dialog box appears, as shown here.
- This dialog box is your starting point for creating a model and appears every time you start SketchUp.



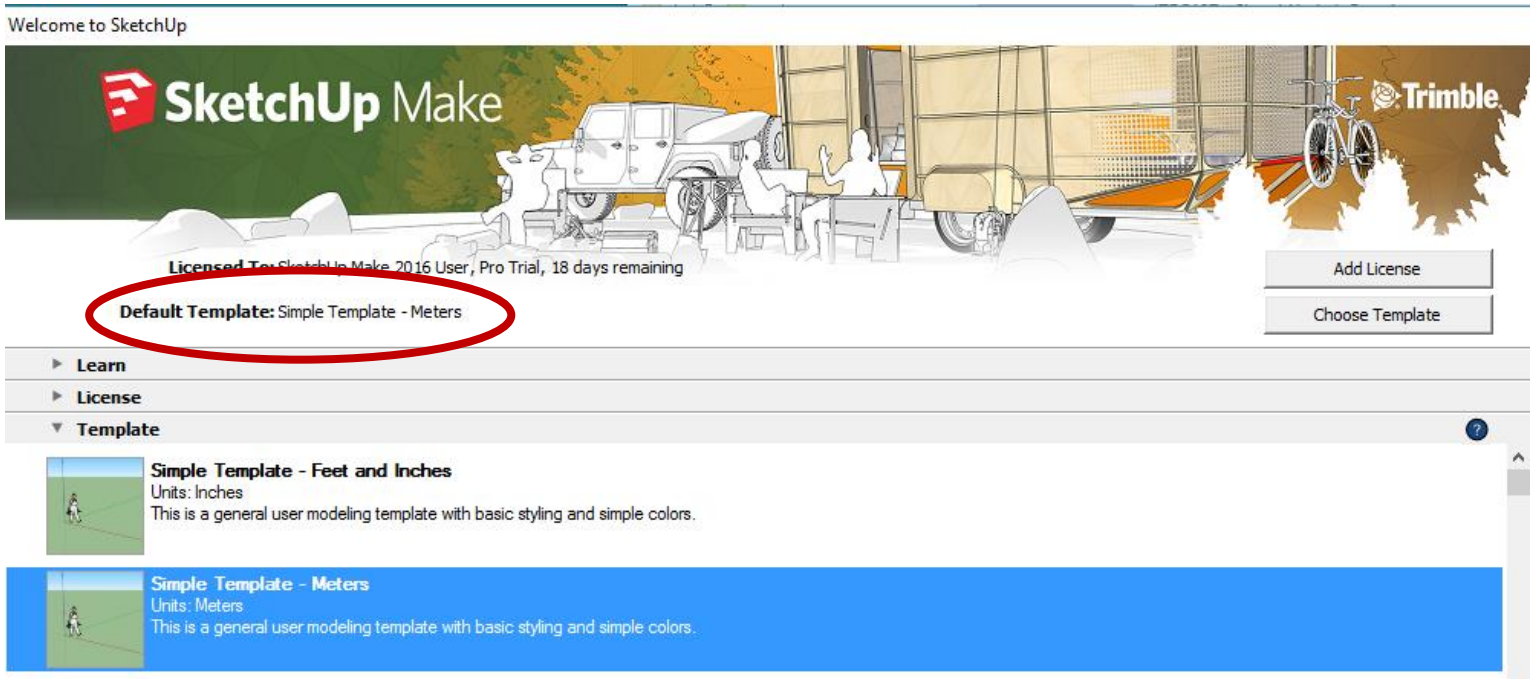
# Getting Started in SketchUp

- In the Welcome to SketchUp dialog box, you can choose a template for your model and learn more about SketchUp.



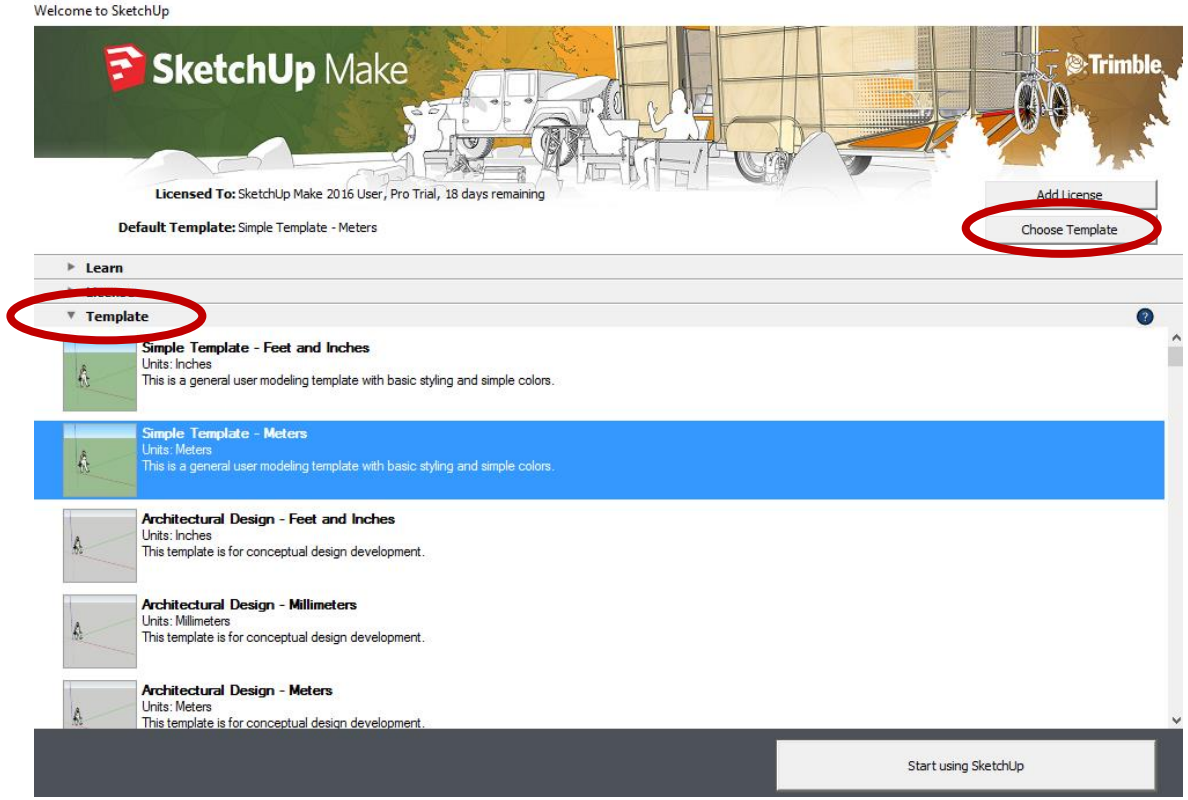
# Selecting a Template

- Every model in SketchUp is based on a template, which has predefined settings for your model's background and units of measurement.
- Here's how to select a template in the Welcome to SketchUp dialog box:
- At the top of the dialog box, the Default Template field tells you the name of the currently selected template.



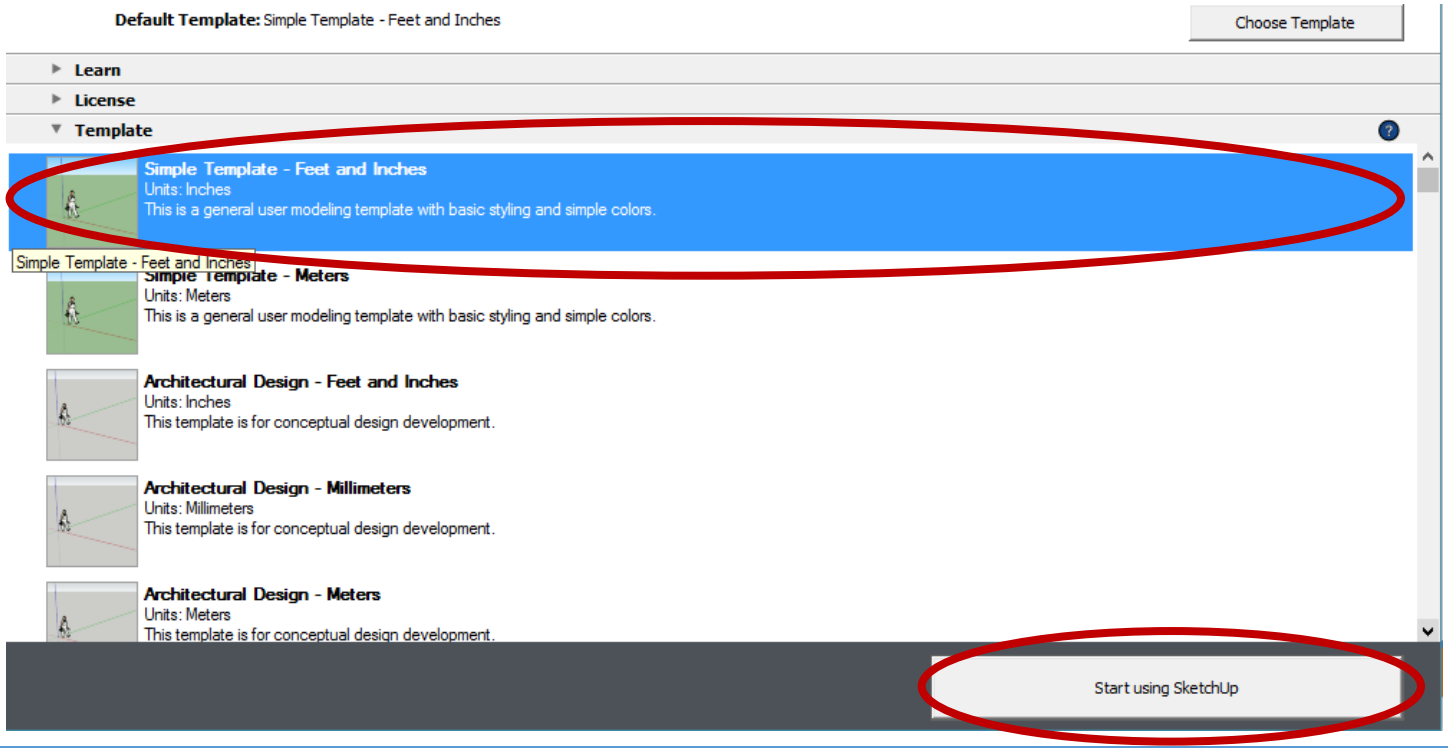
# Selecting a Template

- To change the template, click the **Choose Template button** or click the arrow next to the Template tab.
- The Templates tab opens with a list of templates that come with SketchUp, as shown here.



# Selecting a Template

- Scroll through the list and select your desired template. (Note that the examples in the rest of this article are based on *Simple Template - Feet and Inches*.)
- Click the **Start using SketchUp** button, and SketchUp opens, ready for you to start 3D modeling.

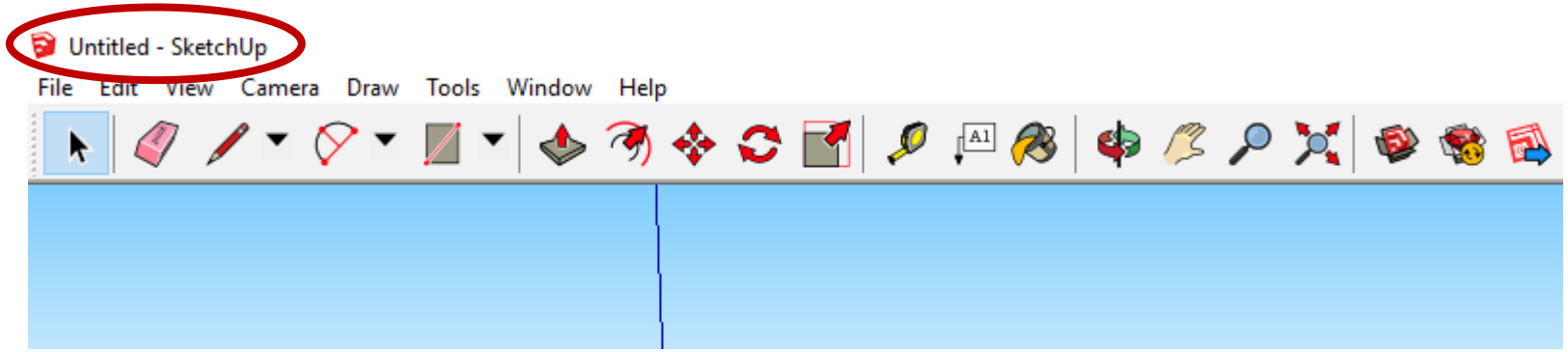


# Exploring the SketchUp interface

1. Title bar
2. Menu bar
3. Getting Started toolbar
4. Drawing area
5. Status bar - Tips
6. Status bar - Measurements box
7. Window resize handle

## Title bar

- The title bar contains the standard window controls (close, minimize, and maximize) and the name of the currently open file.
- When you start SketchUp, the name of the currently open file is *Untitled*, indicating that you have not yet saved your work.



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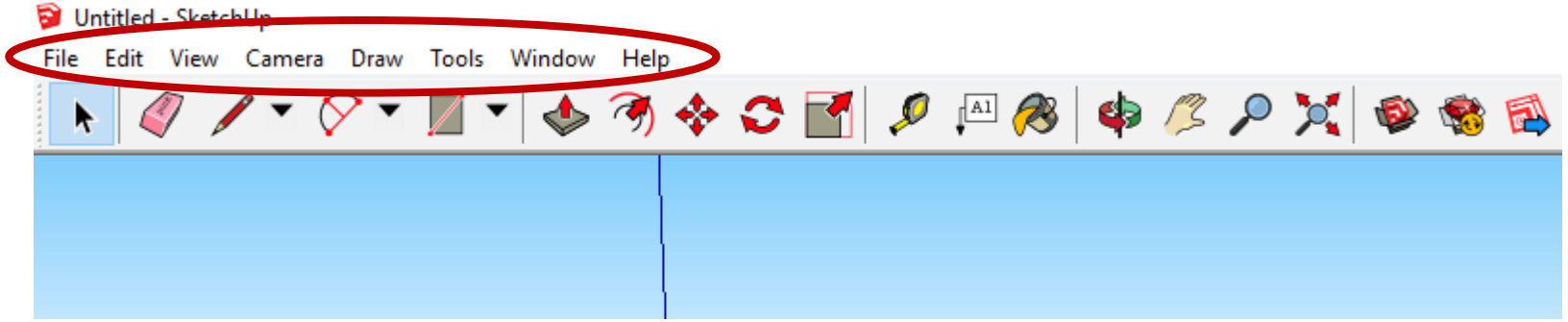
## Menu bar

- The majority of SketchUp tools, commands, and settings are available within the menus on the menu bar.
- The menus are: SketchUp (Mac only), File, Edit, View, Camera, Draw, Tools, Window, and Help.



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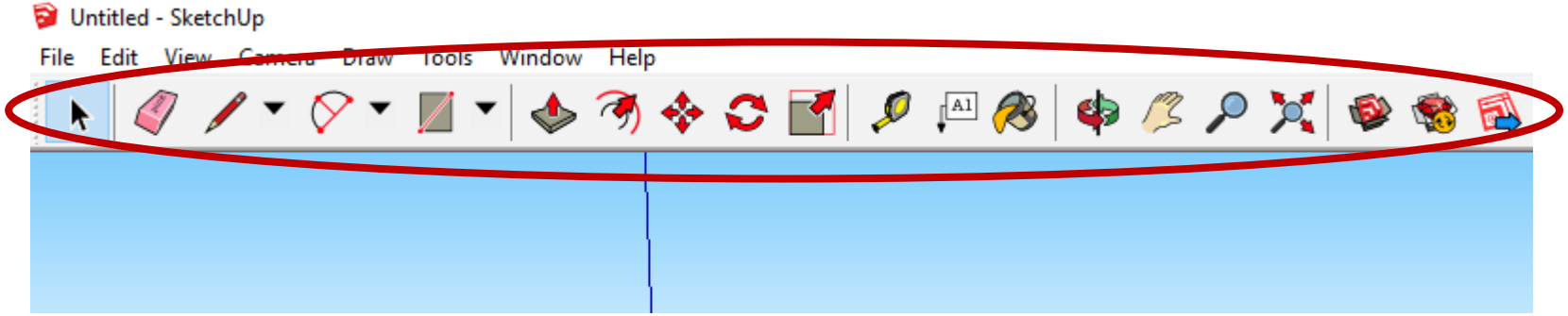
## Getting Started toolbar

- When you begin using SketchUp, the Getting Started toolbar is the one you see by default.
- It contains the basic tools you need to begin creating 3D models.



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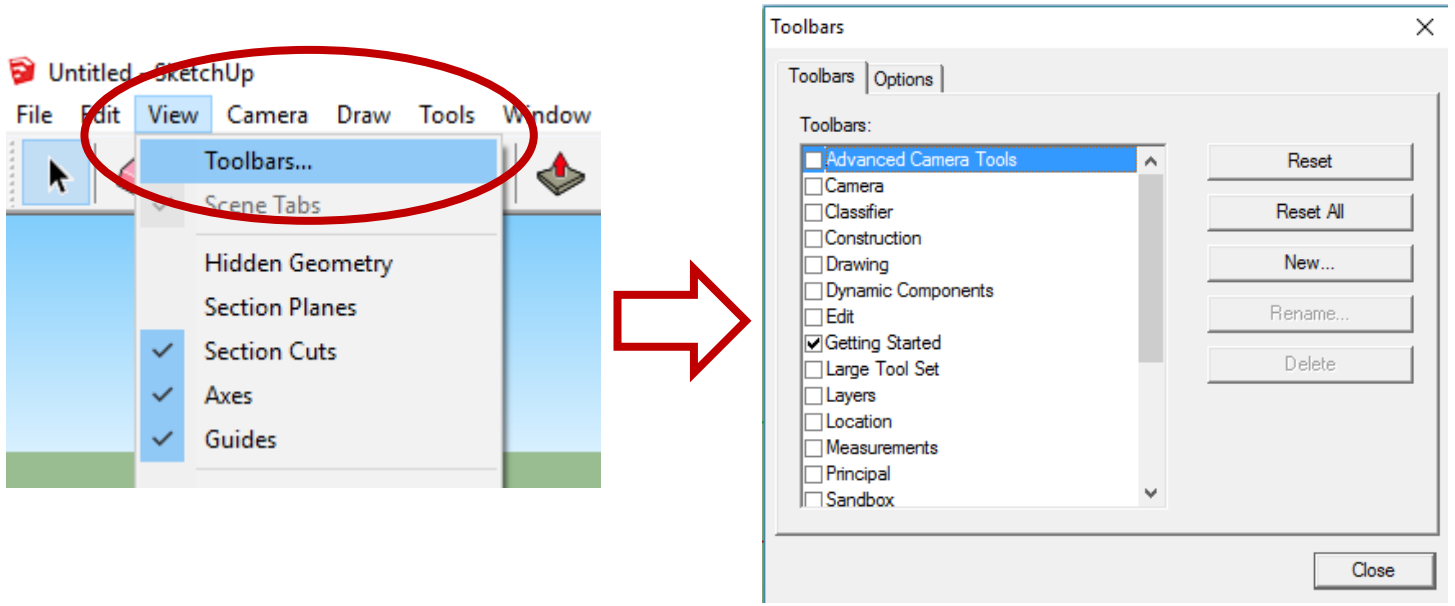
## Getting Started toolbar

- To display additional toolbars, select **View > Toolbars**.
- In the Toolbars dialog box that opens, select the toolbars you want to see and click Close.



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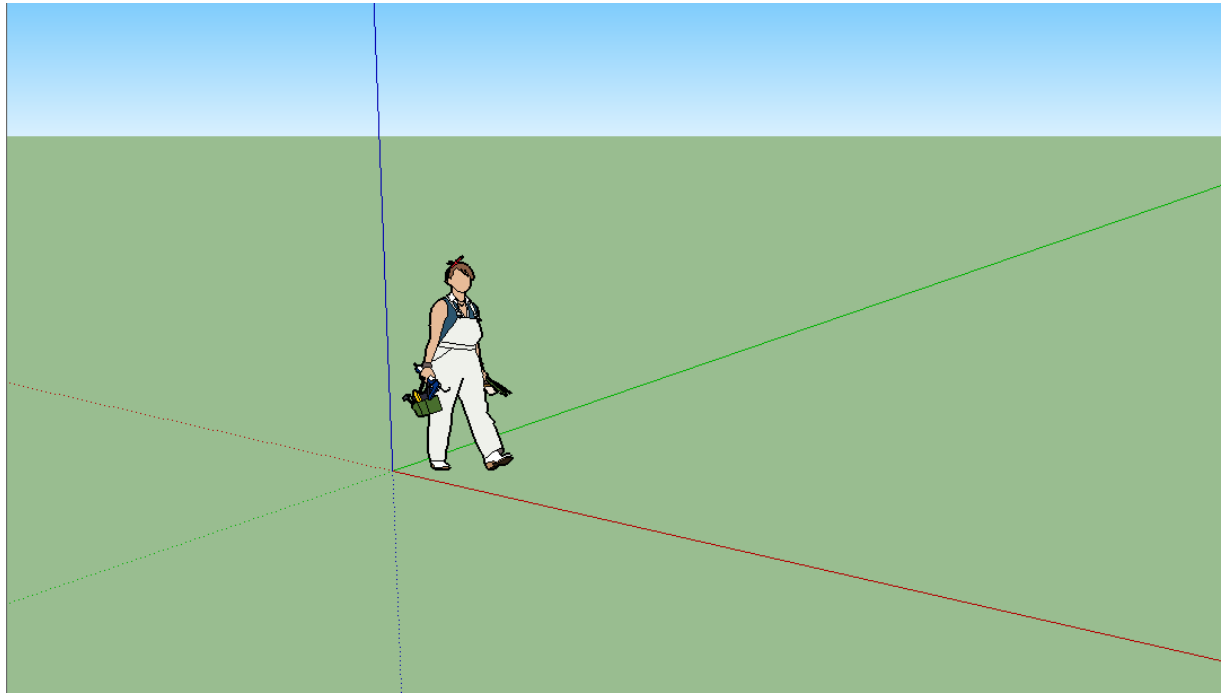
## Drawing area

- The drawing area is where you create your model.
- The 3D space of the drawing area is identified visually by the drawing axes, which provide a sense of direction in 3D space while you work.
- The drawing area also contains a simple model of a person to give you a sense of 3D space.



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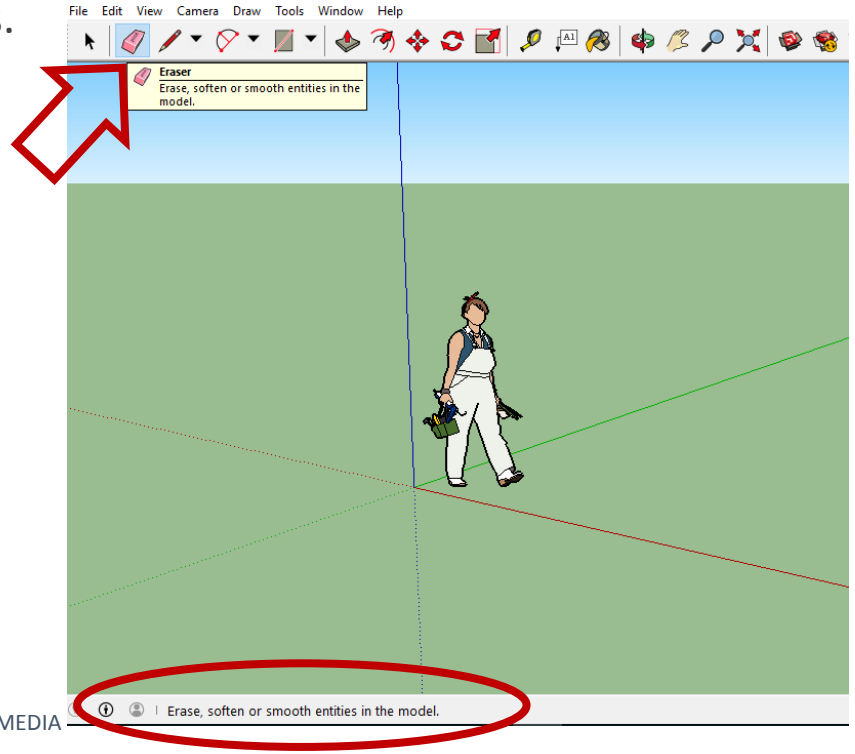
## Status bar

- When you're getting started with SketchUp, the two important elements on the status bar are the tips in the middle and the Measurements box on the right:
  - **Tips for using the tools:** In the middle area of the status bar, click the question mark icon to display the Instructor window, which offers basic information about using whatever tool you select in the toolbar. The middle area also displays a brief sentence about using the selected tool. This area is helpful when you're not sure how a tool works.



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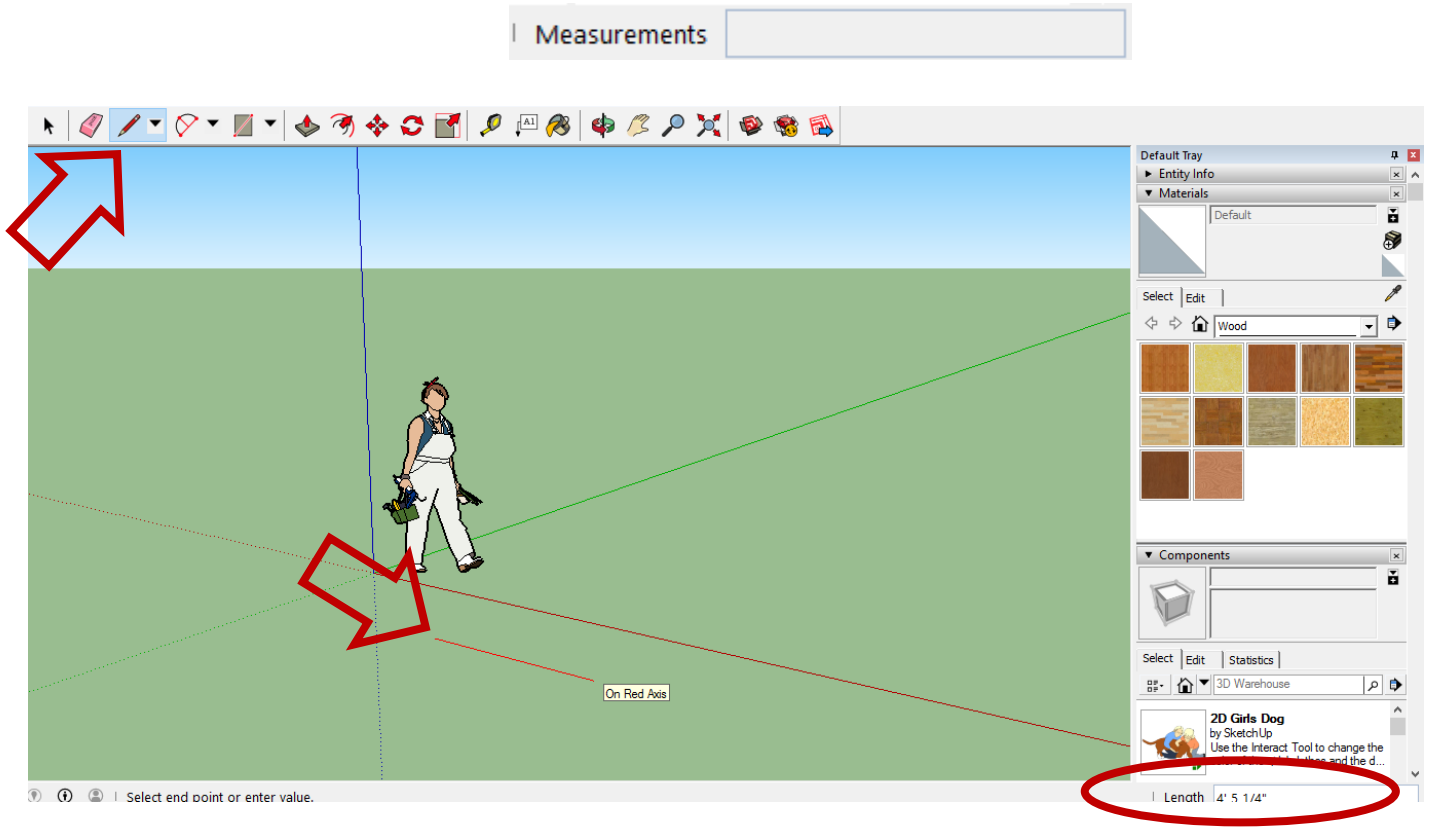
## Status bar

- **Measurements box:** This box is a critical tool for creating accurate models. The box displays dimensions as you draw. You can also use this box to manipulate currently selected entities (such as creating a line that's a specific length) or to create evenly spaced copies of entities (such as columns, fencing, or housing blocks in a post-industrial dystopia).



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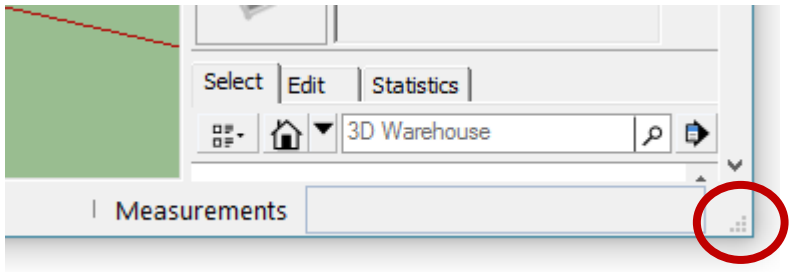
## Window resize handle

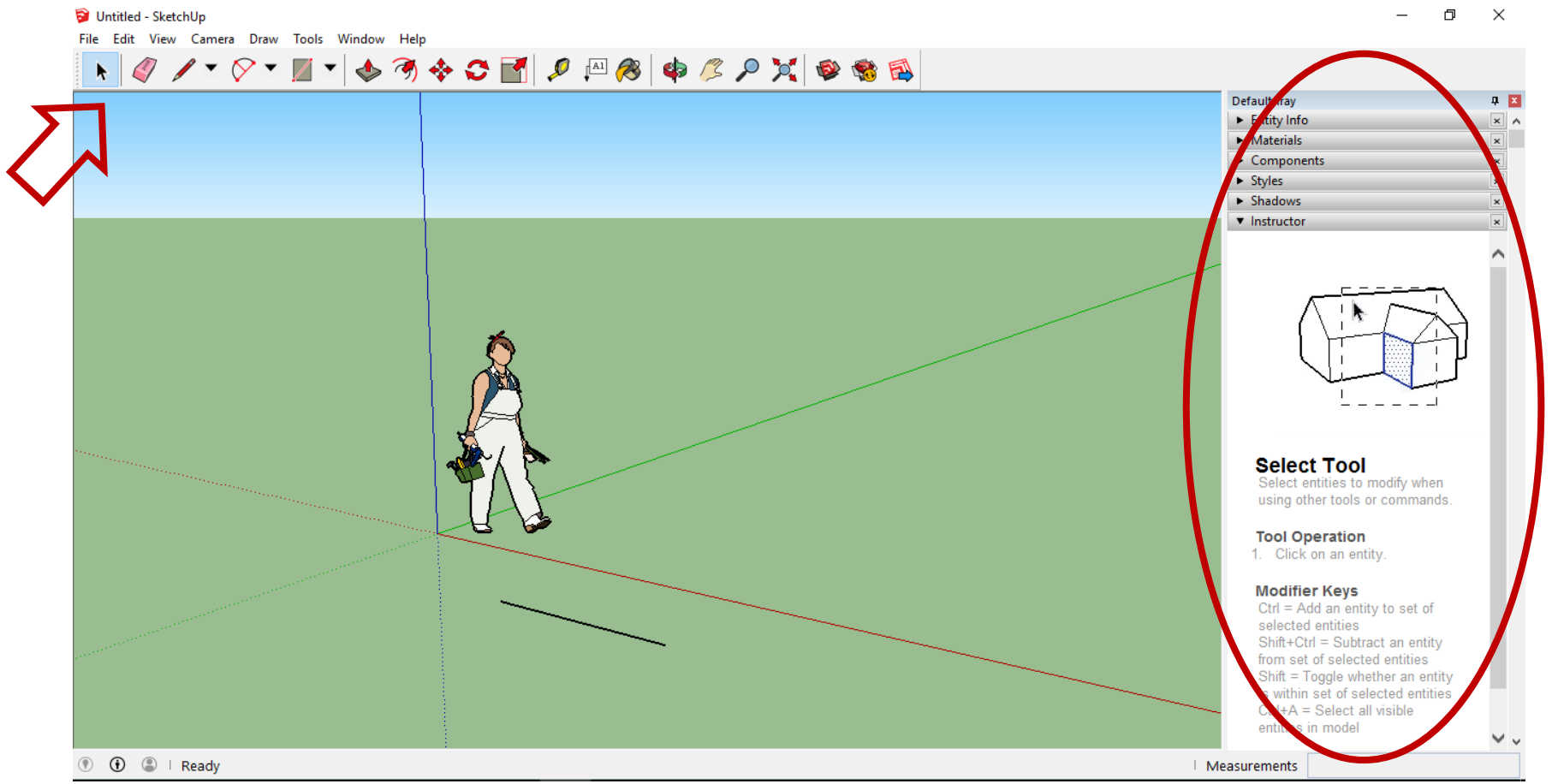
- To the right of the Measurements box is the window resize handle, which you can click and drag to change the size of the application window.



# Learning How To Use SketchUp Tools

- As you use SketchUp, the Instructor and the status bar give you pointers on using each tool.
- The Instructor teaches you how to use the currently selected tool.
- To turn on the Instructor, open the **Instructor** dialog box in the **Default Tray** , or click the question mark icon in the status bar.
- Here's what the Instructor has to offer:
  - An animation that shows basic use of the selected tool
  - A description of what the tool does
  - Steps for using the tool, which correspond to the animation
  - Modifier keys that enable the tool perform additional functions
  - Links to Knowledge Center articles about advanced functions of the tool

# Learning How To Use SketchUp Tools



# Viewing the SketchUp Quick Reference Card

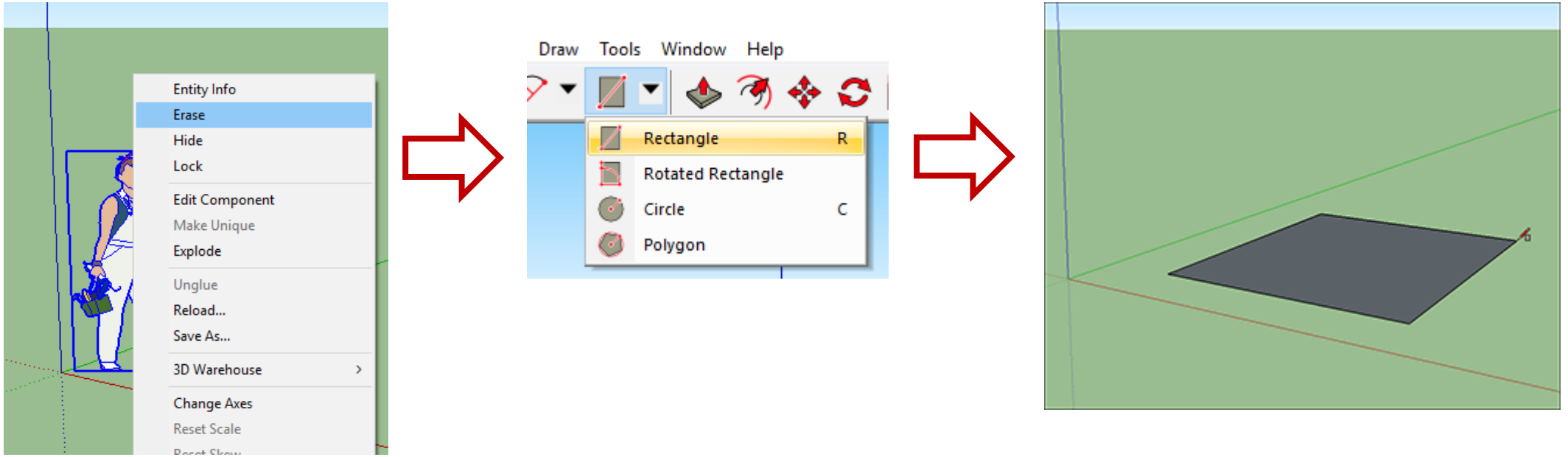
# Viewing the SketchUp Quick Reference Card

SketchUp Pro 2016

| Tool | Operation | Instructions |
|---|---|---|
| **2 Point Arc (A)** | Bulge | specify bulge amount by typing a number and Enter |
| | Radius | specify radius by typing a number, the R key, and Enter |
| | Segments | specify number of segments by typing a number, the S key, and Enter |
| **Circle (C)** | Shift | lock current inferences |
| | Radius | specify radius by typing a number and Enter |
| | Segments | specify number of segments by typing a number, the S key, and Enter |
| **Eraser (E)** | Ctrl | soften/smooth (use on edges to make adjacent faces appear curved) |
| | Shift | hide |
| | Ctrl+Shift | unsoften/unsmooth |
| **Follow Me** | Alt | use face perimeter as extrusion path |
| | *Expert Tip!* | first Select path, then choose the Follow Me tool, then click on the face to extrude |
| **Line (L)** | Shift | lock in current inference direction |
| | Arrows | lock direction; up = blue, right = red, left = green, and down = parallel/perpendicular |
| | Length | specify length by typing a number and Enter |
| **Look Around** | Eye Height | specify eye height by typing a number and Enter |
| **Move (M)** | Ctrl | move a copy |
| | Shift | hold down to lock in current inference direction |
| | Alt | auto-fold (allow move even if it means adding extra edges and faces) |
| | Arrows | lock direction; up = blue, right = red, left = green, and down = parallel/perpendicular |
| | Distance | specify move distance by typing a number and Enter |
| | External Copy Array | n copies in a row: move first copy, type a number, the X key, and Enter |
| | Internal Copy Array | n copies in between: move first copy, type a number, the / key, and Enter |
| **Offset (F)** | Double-Click | apply last offset amount to selection |
| | Distance | specify an offset distance by typing a number and Enter |
| **Orbit (O)** | Ctrl | hold down to disable "gravity-weighted" orbiting |
| | Shift | hold down to activate Pan tool |
| **Paint Bucket (B)** | Ctrl | fill material – paint all matching adjacent faces |
| | Shift | replace material – paint all matching faces in the model |
| | Ctrl+Shift | replace material on object - paint all matching faces on the same object |
| | Alt | hold down to sample material |
| **Push/Pull (P)** | Ctrl | push/pull a copy of the face (leaving the original face in place) |
| | Double-Click | apply last push/pull amount to this face |
| | Distance | specify a push/pull amount by typing a number and Enter |
| **Rectangle (R)** | Dimensions | specify dimensions by typing length, width and Enter ie. `20,40` |
| **Rotated Rectangle** | Shift | lock in current direction/plane |
| | Alt | lock drawing plane for first edge (after first click) |
| | Angle, Dimensions | click to place first two corners, then type angle, width and Enter ie. `90,20` |
| **Rotate (Q)** | Ctrl | rotate a copy |
| | Angle | specify an angle by typing a number and Enter |
| | Slope | specify an angle as a slope by typing a rise, a colon (:), a run, and Enter ie. `3:12` |
| **Scale (S)** | Ctrl | hold down to scale about center |
| | Shift | hold down to scale uniformly (don't distort) |
| | Amount | specify a scale factor by typing a number and Enter ie. `1.5` = 150% |
| | Length | specify a scale length by typing a number, a unit type, and Enter ie. `10m` |
| **Select (Spacebar)** | Ctrl | add to selection |
| | Shift | add/subtract from selection |
| | Ctrl+Shift | subtract from selection |
| **Tape Measure (T)** | Ctrl | toggle create guide or measure only |
| | Arrows | lock direction; up = blue, right = red, left = green, and down = parallel/perpendicular |
| | Resize | resize model: measure a distance, type intended size, and Enter |
| **Zoom (Z)** | Shift | hold down and click-drag mouse to change Field of View |

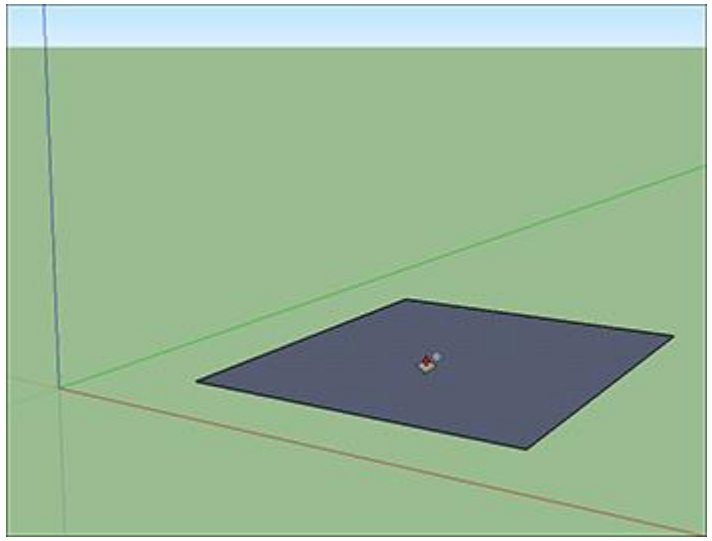
# Creating your first 3D model in SketchUp

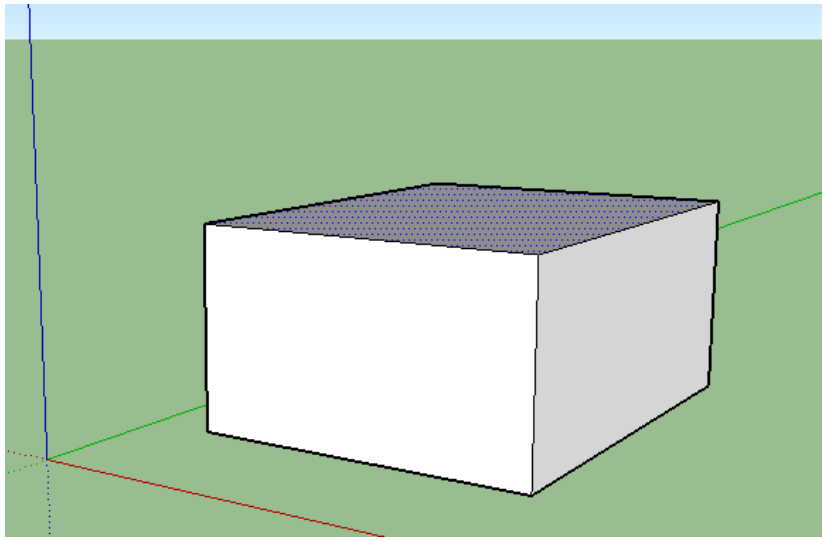
- Select the person, context-click the selection, and select **Erase** in the context menu that appears.
- In the Getting Started toolbar, select the **Rectangle** tool ( ).
- On the ground plane, in the space between the red and green axis, click the **Rectangle** tool cursor ( ). Then move your cursor to the right and click again. A rectangle appears on the ground.



# Creating your first 3D model in SketchUp

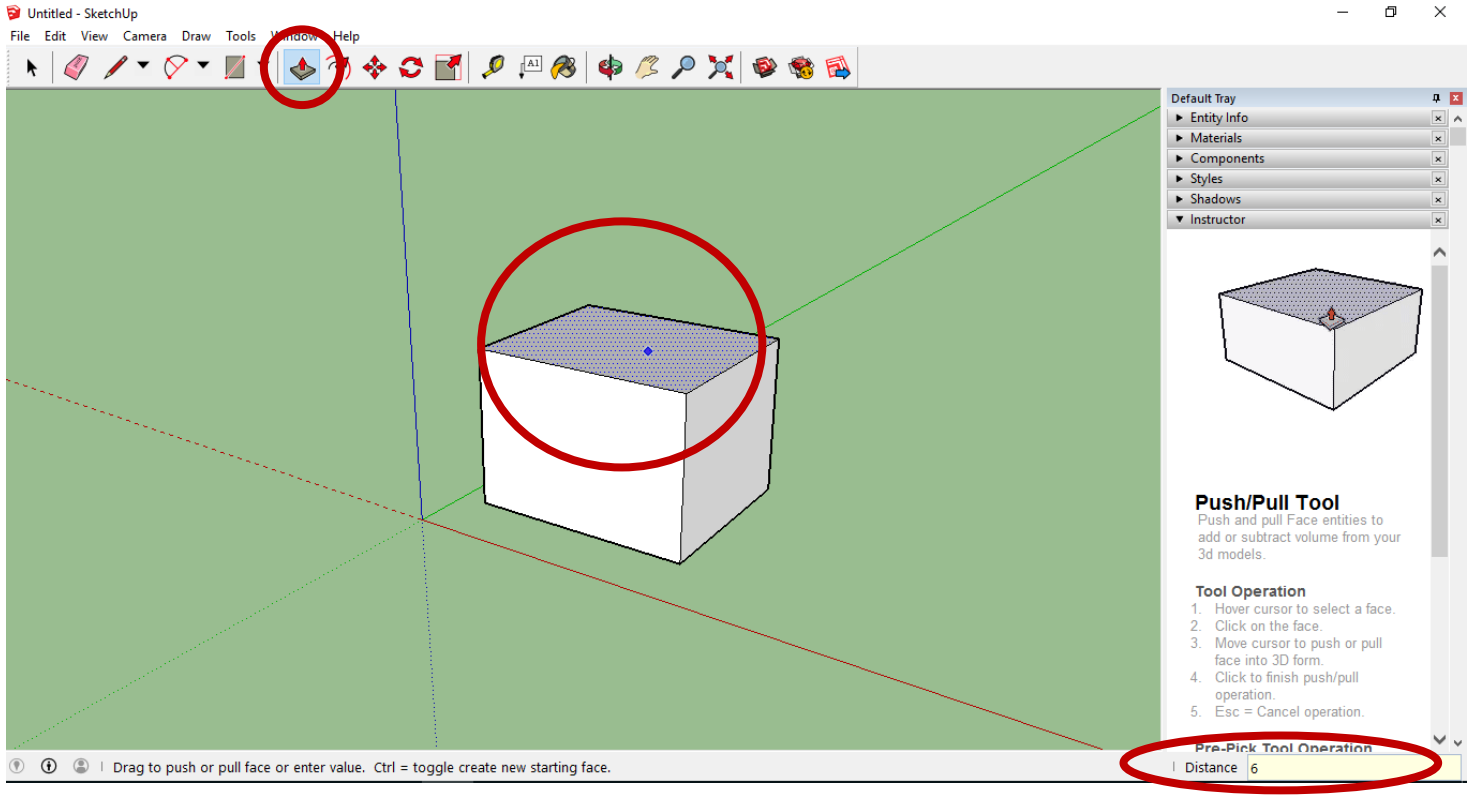
- On the Getting Started toolbar, select the **Push/Pull** tool ( ), and place the Push/Pull cursor over the rectangle you just created, as shown in the following figure.
- Click and drag your rectangle up into a 3D shape. Keep an eye on the Measurements box and release the cursor when your shape is about 5 feet tall.





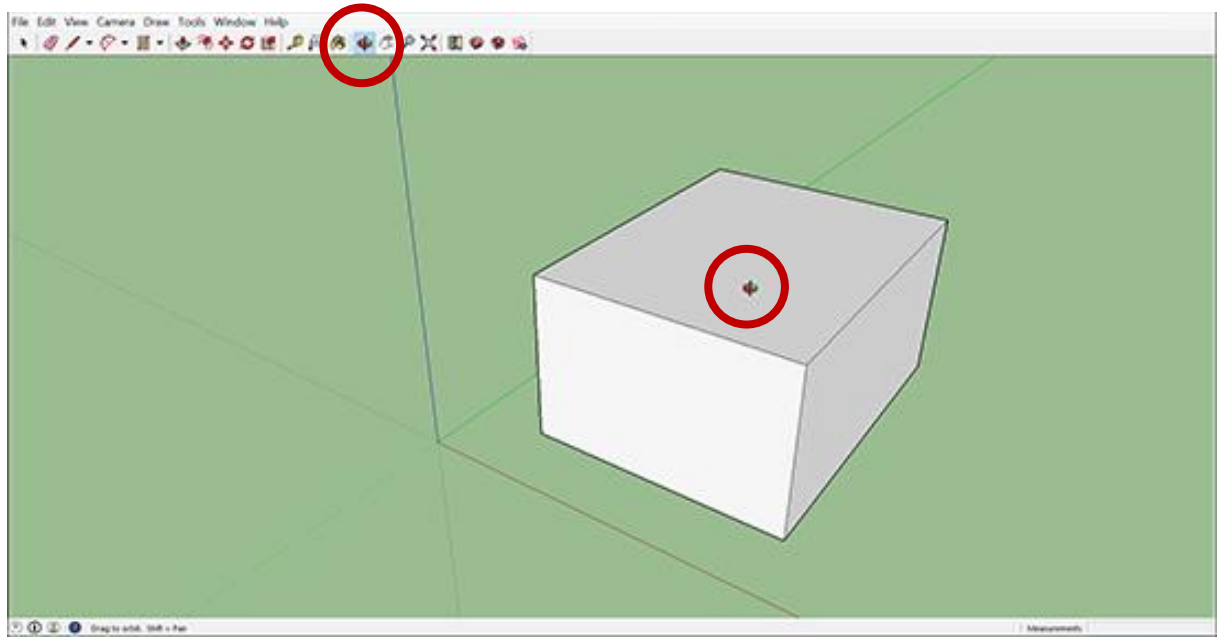
# Creating your first 3D model in SketchUp

- Without clicking or selecting anything, simply type **6’** and press **Enter**.
- Notice how the height of your shape changed to exactly 6 feet tall, and the value you entered appears in the Measurements box.



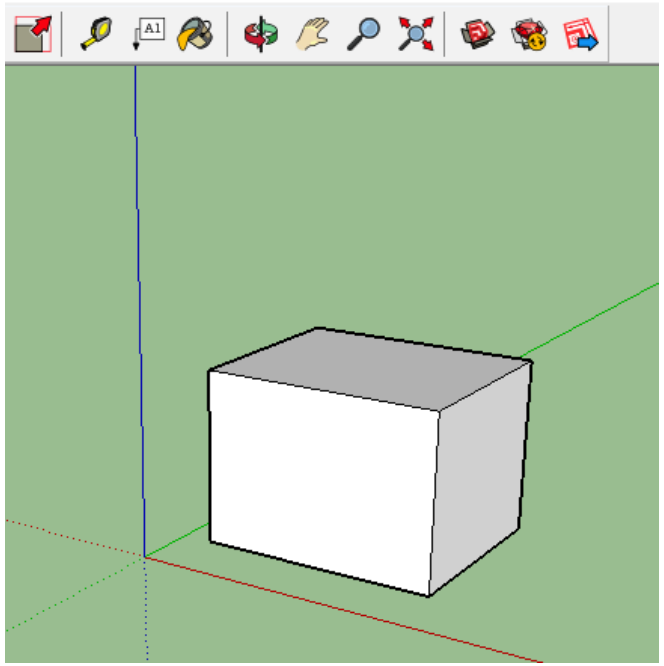
# Creating your first 3D model in SketchUp

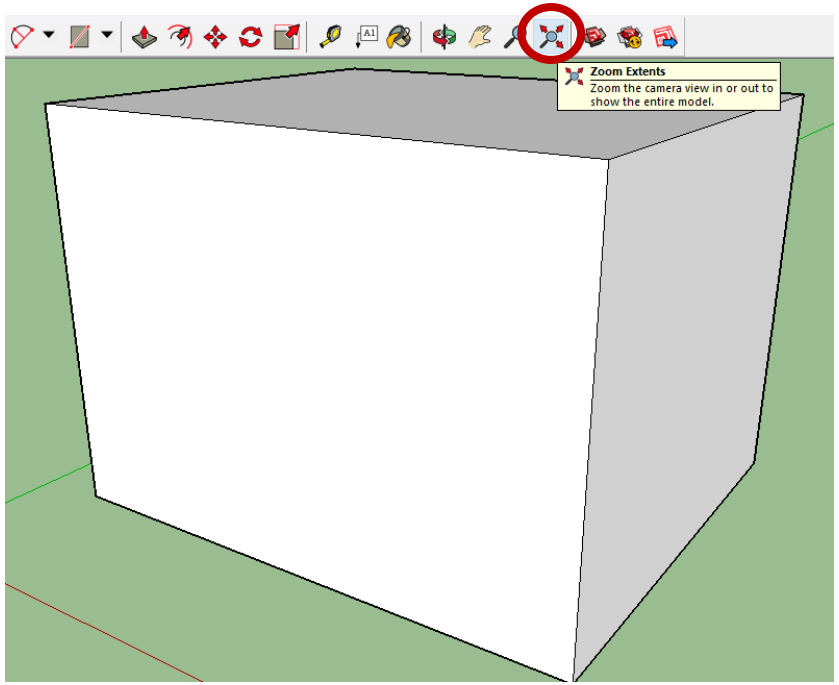
- In the Getting Started toolbar, select the **Orbit** tool ( ).
- Place the Orbit cursor above your shape.
- Then click and hold while you move the mouse down.
- Notice how the view of your shape changes.



# Creating your first 3D model in SketchUp

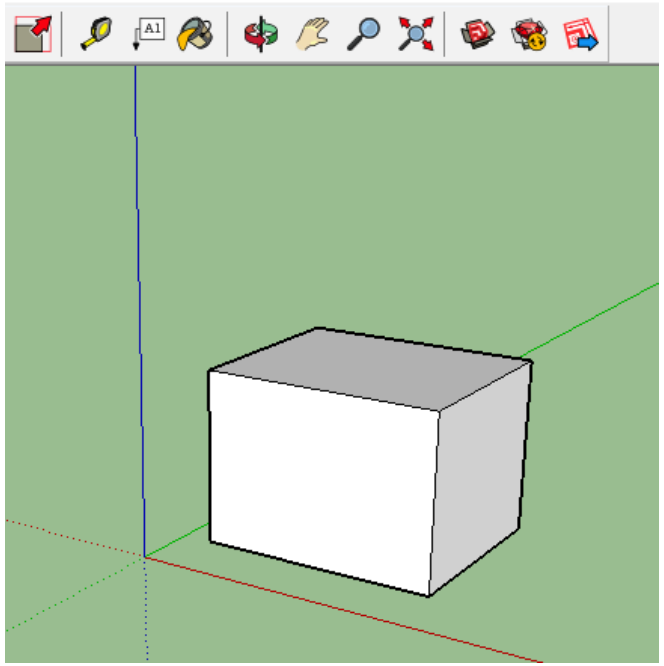
- In the Getting Started toolbar, click the Zoom Extents button ( ).
- If you orbit around until you lose track of where you are in your model, the Zoom Extents button is a handy way to reorient yourself.

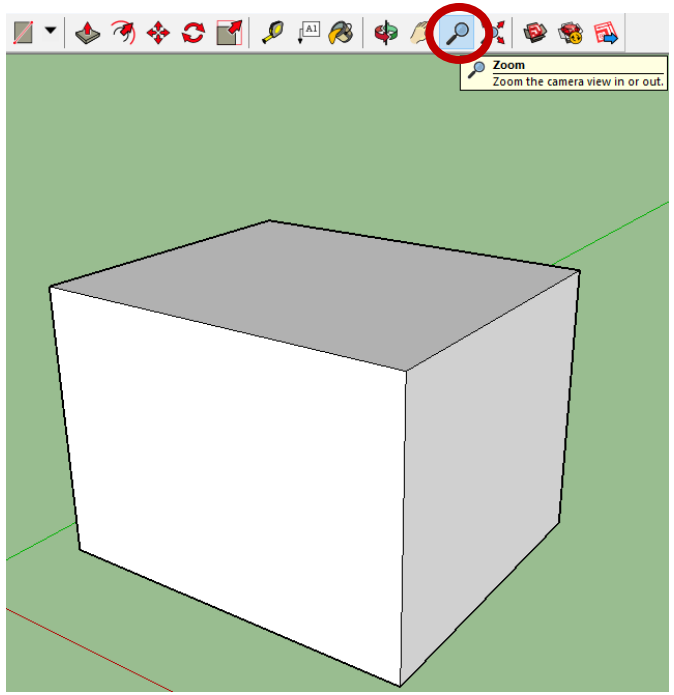




# Creating your first 3D model in SketchUp

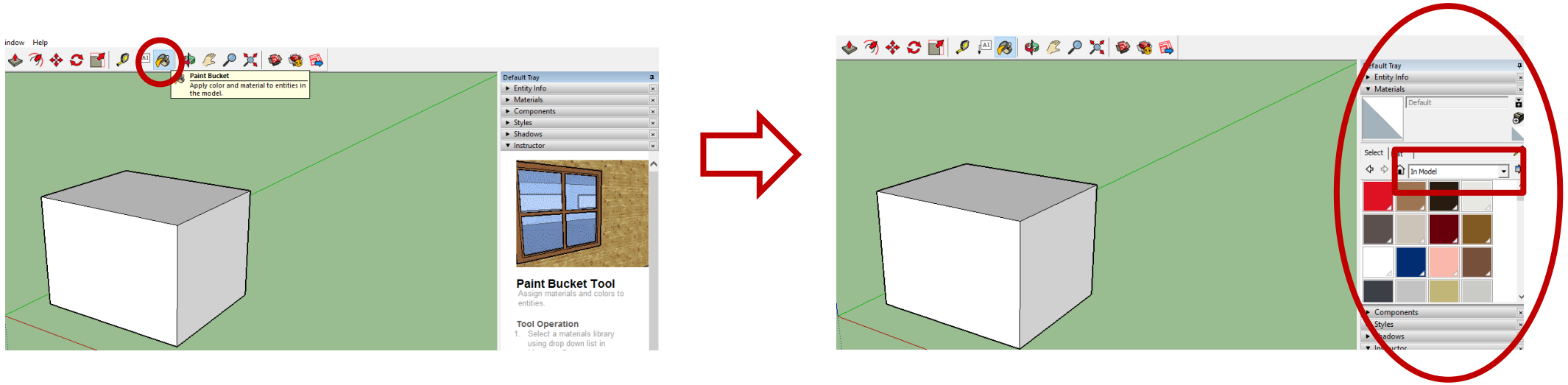
- If you have a scroll-wheel mouse, scroll down to zoom out a bit.
- Working in SketchUp is much easier with a scroll-wheel mouse.
- However, if your mouse lacks a scroll wheel, click the **Zoom** tool ( ) and you can zoom in and out that way, too.





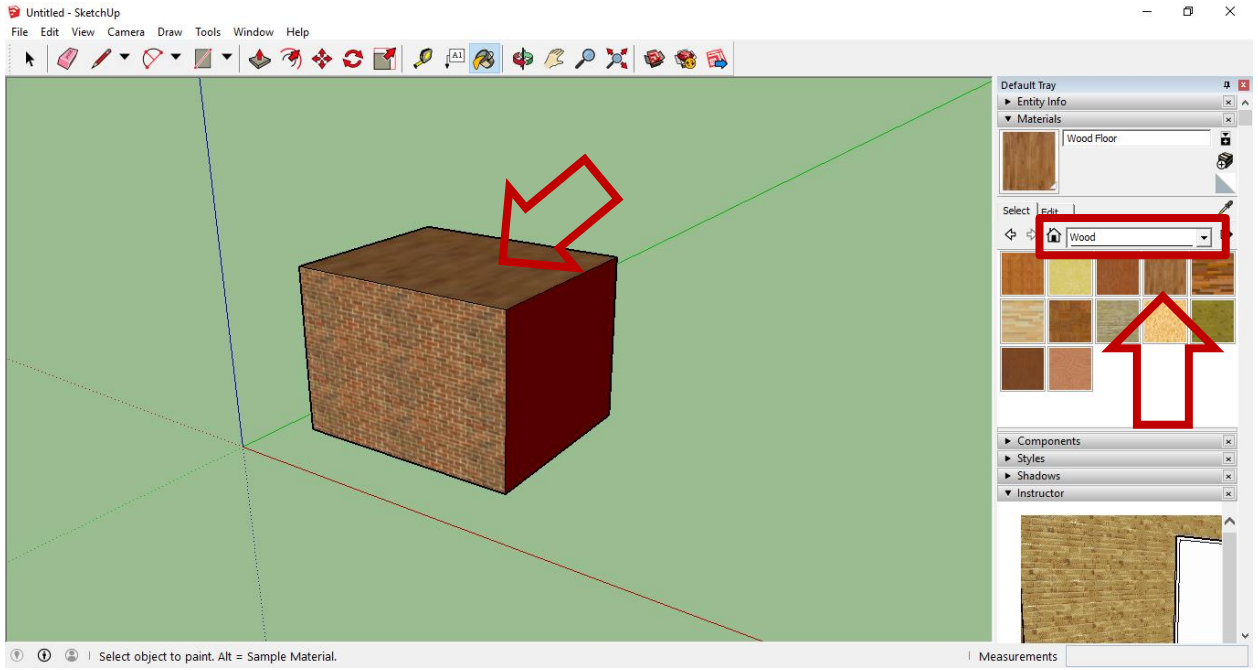
# Creating your first 3D model in SketchUp

- In the Getting Started toolbar, click the **Paint Bucket** tool ( ).
- In the Materials dialog box that appears, select **Colors** from the drop-down menu.
- Then select a color from the options that appear on the Select tab.



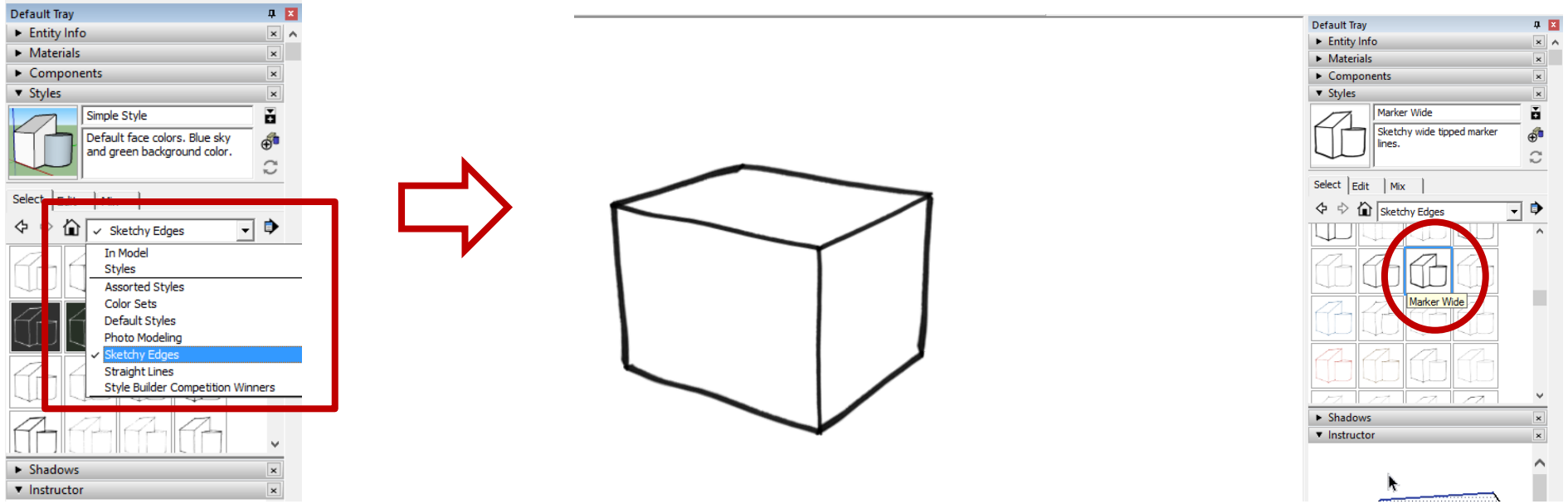
# Creating your first 3D model in SketchUp

- Click one side of your model with the Paint Bucket cursor to apply your selected color.
- Experiment a bit with the different options in the drop-down menu if you like.
- For example, select *Wood* from the drop-down menu and apply *Wood Floor* to your model.
- Orbit around and apply different materials to each side of your model.



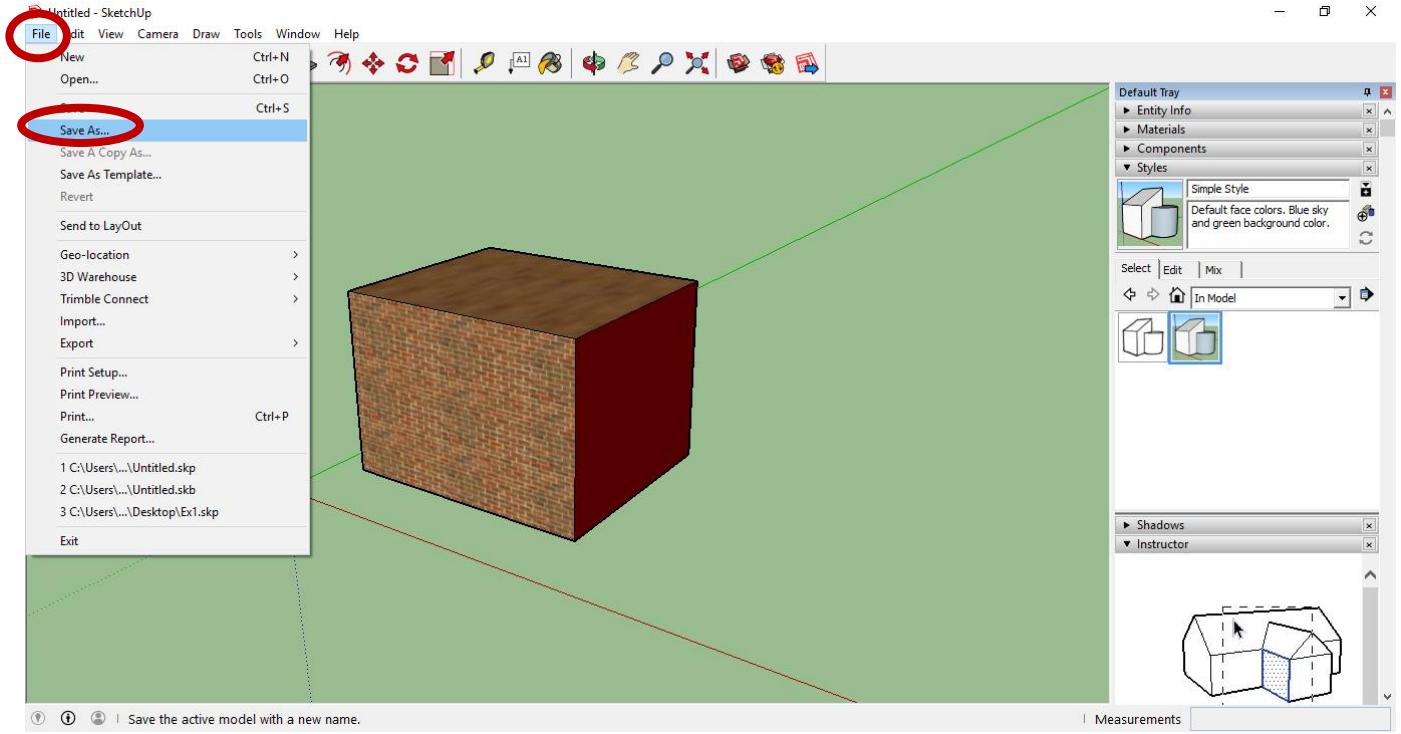
# Creating your first 3D model in SketchUp

- Close the Materials dialog box and open the **Styles** dialog box in the **Default Tray**.
- From the drop-down menu, select **Sketchy Edges** and then select a style option.
- In the following figure, Marker Wide is selected.
- Notice that the style completely overrides all the materials and colors applied.
- To see them again, select **In Model** from the drop-down menu and then select the **Simple Style** option.



# Saving and Reopening a Model

- On the menu bar, select **File > Save**.
- If this is the first time you're saving a model, the **Save As** dialog box appears.
- To save an already saved model with a new name, select **File > Save As**.



# Saving and Reopening a Model

- Use the Save In area at the top of the dialog box to select where you'd like to save your model.
- In the File Name box, type a name for your model.
- SketchUp model files end with the .SKP file extension.
- Click the **Save** button.