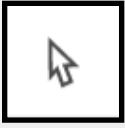








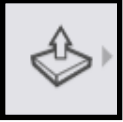


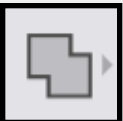
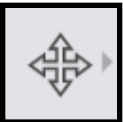












Kat Adair's SketchUp Toolbar Reference







Remember...in SketchUp, most mouse operations use **CLICK-MOVE-CLICK**, and not CLICK-DRAG. This allows the user to enter dimensions after the first click, then press enter to accept.






Left Toolbar		
	Space bar	Selection tool. To select objects. I usually use this after each operation. In the new web-based version of SketchUp, especially in Safari, the cursor icons don't necessarily update. This will ensure you have the right cursor.
	E	Eraser tool. Works well for erasing lines or guidelines.
	B	Paint Bucket tool. Use this to paint objects with a color. Look for the Materials icon in the Right Toolbar. To view available materials, select the magnifying glass in the Materials section. The "Home" button shows what materials have been already used in your model. If you click and hold down this icon, you'll access the Eye Dropper .
	L	Line tool. I occasionally call this the "pencil" tool. When drawing a line, click once with your mouse and release to establish the origin, move the mouse (rubber-band effect), then click again to establish the end. It's helpful to draw on an axis line (red, blue, green). After the first click, you can just start typing dimensions and press enter .
		Freeform Line tool. Accessed by pressing and holding the Line tool icon. This will allow you to draw a freeform line (this is like rocket science, huh?).
	A	Arc tool. By clicking three points, you can create an arc. Clicking and holding this icon will give you access to other methods for creating arcs.
	R	Rectangle tool. By clicking two corners, you can define a rectangle. You can also click once, enter TWO dimensions separated by a comma, and press enter. For example, a 2x4 can be created by pressing 1.5,3.5. Because I chose the Simple Template with feet and inches, these will be inches. To enter feet, add an apostrophe (5'). For meters, cm, or mm, enter the abbreviations after the number (5cm, 5mm, 5m).
	C	Circle tool. Access by pressing the Rectangle icon and holding for the side menu. Click to establish the center of the circle, then move the cursor, and enter the radius of the circle, and press enter.
		Polygon tool. Access by pressing the Rectangle icon and holding for the side menu. Click to establish the center, then immediately type the number of sides and press enter. Move the mouse to establish the size, and enter a dimension if you'd like and press enter.

	P	Push Pull tool. This extrudes a face into a three-dimensional object. Use the same click-move-click technique. After the first click, you can enter a dimension, then press enter . By adding the option/alt key, it will add another line around the object as you pull, which I used to demonstrate making a frit jar.
		Follow Me tool. Accessed under the Push Pull icon by clicking and holding. By creating a profile and applying it to an edge, you can create complex "trim." I use this one for crown moulding or "lathe" type operations, rotating a profile around a central axis. This is also how you can create a sphere in SketchUp.
	F	Offset tool. Accessed under the Push Pull icon by clicking and holding. I use the Offset tool to create walls and borders. It's also handy for mocking up things like cabinet doors. Create a rectangle, then press F and click and move your cursor towards the inside or outside of the line, and enter dimensions if desired. You can also use the Selection/Arrow tool to select edges, then offset.
		Addition and subtraction of objects to make complex shapes. I would use this for creating the profile for crown moulding. In other 3D programs, these are known as "boolean" operations.
	M	Move tool. This allows you to move items but also to COPY items by adding option/alt key. Try to select corners or edges when moving so you can line those up with other points. To create multiples, copy an item over, then add x with a number (x5, x8) to make more copies. To divide a space with a number of items, move the copy further away, then type a slash and a number (/5, /14). You can type another number as long as you haven't clicked anything else.
	Q	Rotate tool. This will allow you to click an origin point, then click away for a "handle," then you can rotate about the origin.
	S	Scale tool. Access by pressing the Move tool and holding for the side menu. To scale about the center of the model, add option/alt while clicking and moving or clicking and dragging. You can also add a scale factor if you click, move the mouse, then enter the scale factor (0.8 would be 80%).
	T	Tape Measure tool. This will create guide lines. If clicking on a corner or a point, then moving the cursor and either entering a measurement or clicking again, this will make a small line with a point. If clicking on a line or axis, moving and entering a dimension (with the enter key) or clicking again, this will create a guideline. To measure something, you can also click on a point or line, move over the desired point and look in the bottom right box, then press the space bar to stop the measurement. Click and hold this icon to get more options.
		Dimensions tool. Accessed by holding down the Tape Measure tool icon. This will add dimensions to your model. Click on one corner or edge and release, then click another corner or edge, and move away to click a location for the dimension. You can change how the dimensions look under Entity Info or Model Info (on the Right Toolbar), and consider adding them to a tag to turn them on and off.
		Text . Accessed by holding down the Tape Measure tool icon. This is different than 3D Text. These callouts will allow you to add detail, such as a glass color number, stain color, part number, or identifying information.

		Section Plan tool. Accessed by holding down the Tape Measure tool icon. This will allow you to see a cross section of your model, and is helpful for looking directly at a layout of a wall if other walls are in the way. Click on one of the walls or faces, then drag the section plane to the desired location.
		Protractor tool. Accessed by holding down the Tape Measure tool icon. This allows you to make angled guidelines, similar to the tape measure...but angled.
		Axes tool. Accessed by holding down the Tape Measure tool icon. This allows you to re-orient the axes of a component or group.
	O	Orbit tool. This will rotate around the object. You can also access this by pressing the scroll wheel.
	H	Hand tool, also known as "panning." By pressing the H key you can click and drag with the mouse to move your object side to side. It can also be accessed by pressing the Shift key while pressing the scroll wheel and moving the mouse.

Right Toolbar

		Entity Info. Here you can see how many components are in the model, and also see what "tag" the entity is marked with (tags will allow you to turn on and off groups...formerly called "layers.")
		Outliner. Very cool feature that is not included in the free version . It allows you to group objects in an outline form.
		Instructor. If you forget how to use a tool, the Instructor shows mini animations on how to use a particular tool.
		Components. This shows what components are in your model, and also gives you access to the 3D Warehouse . The search function will allow you to look for models to add to your scene. Pay attention to the file sizes...large models will make SketchUp unresponsive. Look for ones under 1MB if possible. If you end up with too many components in your model, use the "recycle" button at the bottom to purge unused components.
		Materials. This is where you find materials to apply to models, which is accessed by pressing the B key for "paint bucket ." If you'd like to add a new material, use the file folder on the upper left near the Save button. Insert as either a "material" or an "image." Materials will have a repeating pattern; images are singular. You can also "project" an image on a curved surface.
		Styles allow you to choose different appearances for your model. For example, you could make all of the lines in your scene look hand-drawn and "sketchy."

	<p>Tags allow you to assign components, groups, or even edges and faces to different groups... this is a similar functionality to “layers” from previous versions. In my worktable example, after I created the lumber pieces, I created a tag called “lumber,” then assigned all of the lumber to that tag. I created a second tag called “plywood,” and assigned the tops to that group. Then you can turn the visibility of the tags on and off. NOTE: You cannot turn off visibility of the ACTIVE group, which shows a “pencil” to the right of the tag name. Also, if a tag is the active tag, any new items drawn will automatically be assigned to that tag.</p>
	<p>Views. This is how you can look directly down or at a side. You can also create something called Scenes here, which will allow you to go between different defined views. You can also turn perspective on and off here. If I am creating a strip platter and want to print the plan, I will use this to turn on a top view and turn off perspective. You can then print.</p>
	<p>Display. Different than Views, this will allow you to toggle on and off <i>hidden</i> items. It will also give you access to using something called Sections, which makes it easier to view your room or cross-sections of your work. You can also turn Shadows on and off, which is something I described using to build a neighbor's pergola for her patio.</p>
	<p>Model Info. You can change units and adjust precision in this area.</p>
	<p>Solid Inspector. Allows you to fix errors for 3D printing, but not included in the Free version. Most 3D printer slicing software will include a method for fixing models, called making them “watertight.”</p>

Things You Might Want to Know

- When drawing lines or moving anything, it’s a good idea to move **along axis lines**. Once you start moving an object or drawing along an axis, you can press **Shift** to lock onto the axis. Click to stop drawing or moving, then release the Shift key.
- To import a new model, click the folder icon on the upper right to the left of the Save status. Use the **Insert** feature.
- To import a new material or texture image, use the **Insert** function. You can input the image a scale if you know it. Materials are repeating, an Image is singular.
- Importing large files will degrade the performance of SketchUp. Choose smaller 3D Warehouse models whenever possible.
- Using the **Download** function from the folder to the left of the Save status will download the model to your local drive. It will give you an option to save with different versions—choose **2017**. This is an older version that you can open in the last desktop version of SketchUp, which is still available.
- You can export two different file versions in the Free version of SketchUp: PNG and STL. PNG will be for a regular image, and STL is a format that can be used for 3D printing. Other file formats are only available in paid versions.

