Introduction

One of the great things about SketchUp is its accessibility. Its simplicity allows just about anyone to download the software, install it on their computer, and start modeling. This accessibility is one of the things that got me started modeling years ago. Along the way, I learned tips and strategies that helped make me better and faster in SketchUp. This allowed me to spend less time thinking about how I would model something, and more time actually modeling.

I wanted to create a guide that would allow me to pass some of the things I’ve learned over the past few years on to you. It’s by no means an exhaustive list - there are always new tips and tricks to learn to become a better modeler – but it’s a list of things that have been very helpful to me, and I hope they are helpful to you as well.

Also, you don’t HAVE to utilize all of these tips. If you find a better way than the strategies listed below to do something, and that works for you, by all means, do that. Always be looking out for what works best for you. This approach of continual improvement of your skills is vital to making you a better 3D modeler. If you have a better way to do something, I’d love to hear about it! Send me an email at Justin@TheSketchUpEssentials.com and let me know.
10 Time Saving Tips in SketchUp

Time Saving Tip #1 – Use Keyboard Shortcuts

Nothing saves time in SketchUp like using keyboard shortcuts. These are shortcuts you can use to activate tools simply by typing in a letter on your keyboard instead of having to click on icons in toolbars. Lots of tools in SketchUp come pre-mapped to different shortcuts. For example, you can activate the Line tool using the “L” key, or the Move tool with the “M” key.

I did a quick test to see how much time it would save me to use keyboard shortcuts. I modeled the following house twice, once just using my mouse and clicking on the buttons on the screen, and once using keyboard shortcuts.

The first time I modeled this house using just my mouse, this house took me 2 minutes and 10 seconds to draw.

The second time, I modeled the house using my mouse and keyboard shortcuts, and this house took me 1 minute and 11 seconds.
I was able to cut out HALF of my modeling time using keyboard shortcuts. If you’re not using them, you are quite literally wasting time that could be better spent elsewhere.

SketchUp comes with a bunch of keyboard shortcuts built in, but not all the tools in SketchUp start off having keyboard shortcuts attached to them. However, there is a great tool that you can use to customize your shortcuts. It’s located under the window drop-down at the top of your screen. Click on “Window,” then down on the list select “Preferences.”
This will pop up a preferences box where you can change a lot of the things that affect the way SketchUp works. On the left side of the box, go down and select the option labeled “Shortcuts.” This window allows you to set custom shortcuts for just about any of the tools in SketchUp.

1. Select “Shortcuts” on the left side of the screen
2. Select the tool you’d like to create a keyboard shortcut for from the list
3. Type in the shortcut you’d like to use for your tool in the “Add Shortcut” box
4. Click the “+” button to add your shortcut
It sounds simple, but using a mouse with three buttons can SIGNIFICANTLY increase your efficiency in SketchUp. A three button mouse is a mouse with a left click button, a right click button, and a scroll wheel. The scroll wheel (the button in between the left and right buttons) is actually a button as well.

How does the three button mouse increase your efficiency? The scroll wheel makes navigation in the model significantly easier in several ways. First, you can use the scroll wheel to zoom in and out without having to select the zoom tool.

Simply scroll the mouse button forward and backward and the view will zoom in and out based on wherever your cursor is on the screen.

The second thing you can do with a three button mouse to navigate the model is to orbit. You can do this by clicking the scroll button and holding it down just like you would the left or right click button. As long as you hold the scroll button down, you will temporarily activate the orbit tool, allowing you to fly around the model. When you get to a view you like, let up on the scroll button and the orbit tool will deactivate. The great thing about this tool is that it doesn’t close out of whatever tool you were using before you activated it. For example, if you were drawing a rectangle and you’d already clicked once to set your first corner, then you activated the orbit tool, you’ll be back to the rectangle tool without having to reset your first point once you deactivate the orbit tool.
The third thing you can do with a three button mouse to increase your efficiency in navigation is to pan. While the orbit tool allows you to move your view around your model, the pan tool lets you move the model up, down, left, or right while maintaining the same view angle. To use the pan tool with your scroll wheel, hold the “Shift” button on your keyboard, then click and hold down the scroll wheel button to activate the pan tool. As long as you hold the “Shift” button and hold the scroll wheel button down, the pan tool will remain active. As soon as you release these two buttons, SketchUp will take you back to whatever tool you were using before (if a tool was active).
Sometimes, when you’re trying to move objects around in your model, it can be very difficult to get things to go where you want them to. One of the difficulties in using software like SketchUp is that you’re telling the software where things should go in a 3D space on a 2D screen. For example, let’s say that I needed to move this box from the bottom left location to a location up in space, as shown on the right.

You could try to move your box to this location with a single click, but it would be very difficult to be precise, because there is no real good way to communicate to SketchUp where you want your box to go. However, if you use the inference tools and move your box along axis inference lines, this suddenly becomes a simple operation. As you can see in the following image, moving this box up into space is actually a combination of 3 steps – moving the box along the red axis 30’, the green axis 30’, and the blue axis 30’.
Start by moving your box 30' along the red axis line using the move tool ("m" keyboard shortcut).

**Moving a model quickly using axis inferences – Step 1 – The red axis**

1. Activate the move tool with the “m” key on your keyboard

2. Select your base point by clicking on the corner of your box

3. Move your cursor in the direction you’d like to move your box (along the red axis)

4. Type in the distance you’d like your box to move (30′) and press enter
After you’ve made your initial move, do the same thing along the green axis.

Moving a model quickly using axis inferences –
Step 2 – The green axis

1. Activate the move tool with the “m” key on your keyboard
2. Select your base point by clicking on the corner of your box
3. Move your cursor in the direction you’d like to move your box (along the green axis). Make sure your move guide line turns green
4. Type in the distance you’d like your box to move (30”) and press enter
Finally, we’re going to do the same thing along the blue axis.

Moving a model quickly using axis inferences – Step 3 – The blue axis

1. Activate the move tool with the “m” key on your keyboard.
2. Select your base point by clicking on the corner of your box.
3. Move your cursor in the direction you’d like to move your box (along the blue axis). Make sure your move guide line turns blue.
4. Type in the distance you’d like your box to move (30’) and press enter.

Your box is now located exactly where you wanted it to go!
One of the things that SketchUp does by default is making geometry sticky. This basically means that when lines and faces intersect, they stick together. Here’s an example. Let’s say I have two boxes on the screen, like the ones shown below.

If I move them together, so that their faces are touching, their faces stick together. This basically means that the end face of the small box merges into the face of the larger box.
This is problematic because if you go into the model and try to pull the boxes back apart again, since the faces are merged, the smaller box pulls the face of the larger box with it, as shown in the image below.

This kind of sticky geometry can sometimes be useful, but as you start working with more complex models, it can cause you all sorts of problems. However, there is a very simple solution that can help you avoid this issue. This solution is the “Make Group” tool. Groups in SketchUp are exactly what they sound like. They are a number of different geometry items grouped together to make a single item. The time saving thing about groups is that groups do not stick together. This means that when organized properly, you’ll never have to worry about going back into your model and trying to edit items, only to find that faces are stuck together and you have to delete faces and re-model them.

To create a group, click and drag a box around a group of items to select them, as shown below.
All of your selected items will turn blue, as shown below.

Right click and select the option labeled “Make Group”.

---

The SketchUp Essentials.com
Select the larger box and do the same thing. You should now find that when you click on the boxes, instead of individual lines or faces selecting, all the lines on the box will turn blue. This means that you have the group selected, and all the lines in the group will turn blue.

![Image](image1.png)

When you click once to select a group, all the lines in the group turn blue.

Now, if you move the boxes together, then back apart again, the faces no longer stick together, because SketchUp does not make different groups stick to each other. If you ever want to edit the items inside your group, double click on an item in the group. Your screen will then look like the image below.

![Image](image2.png)

If you'll notice, everything outside the dotted lines is faded and greyed out. This indicates that you are editing inside a group, and everything that isn’t faded out is included in the group. To get back out of the group, simply double click somewhere outside the group.
It is possible in SketchUp to have groups inside of groups (called subgroups). When you’re inside a group, simply select the items that you’d like to add to your subgroup, right click and select the “Make Group” option.

Groups help you keep your model organized. A good rule of thumb is that any time you have a bunch of objects you even remotely think that you might need to change later, put them in a group. Otherwise, you risk creating a model with so many faces stuck together that you’ll never be able to edit them in the future.
Components in SketchUp are similar to groups, but they are much more powerful. In SketchUp, a group is a bunch of objects combined into a single object. However, if you make a copy of a group, that copy will be different than the original group in your model. Every copy of a group is an independent object that is completely unlinked to the others.

On the other hand, a component is an object that is designed to be re-used in your model. This means that if you make multiple copies of a component, then change one of the copies, every copy of the component in the model will change as well.

Here’s an example. Let’s say you were drawing a simple table in SketchUp, like the one shown below.

![Table](image)

Nothing special about it, right? It has four simple legs and a simple top. What if I decide to jazz it up a little bit and add some shape to the legs? If I model the legs as groups, I’ll have to go back and change all 4 legs to the new design I want.
However, if I modeled these legs as components, all I have to do is change one of the legs and all the other copies of the legs will change as well. I can literally cut out \( \frac{3}{4} \) of my modeling time by using components.

Creating components in SketchUp is very similar to creating groups. Simply select the objects you would like to make up your component, right click, and select the “Create Component” option.
A box will pop up allowing you to enter some information for your component. There are some useful items in here, but for the purpose of this tutorial, all you need to enter right now is the component name and click the “Create” button.
This will create a component that includes all the objects you currently have selected. Let’s go ahead and create 4 copies of this box. You can use the strategies in tip 5 below (“Create Copies with the Move and Rotate Tools”) to create these copies. When you’re done, your screen should look like the image below.

If you go in and edit your original box, as you can see, the other boxes change as well.

Sometimes, however, you want to have some instances of a component that are different than the original. SketchUp has a cool feature where you can make some instances of a component unique from other instances. This is called “Make Unique.” Select the two boxes on the right hand side of the screen. Then, right click and select the “Make Unique” option.
Now these components are linked to each other. They are also no longer linked to the original component, so they will not change when you edit the original component.

Groups or Components?

A lot of people get confused about the difference between groups and components and when they should use each one of them. It’s actually a very simple differentiation. Groups are used for sets of objects that you will never duplicate or make copies of. Components are used for sets of objects that you will be duplicating or using multiple times in the model.

From a usage standpoint, it’s safest to just create everything as a component. They don’t take up any additional resources, and in case you do find yourself having to make copies of your object later, you will maintain the component functionality.

**Bottom Line:** Any time you need to combine multiple items into a single object in SketchUp, combine them in a component, not a group.
Now that we’ve talked about components and the benefits of having multiple linked copies of the same object in your model, now let’s talk a little bit about the best way to create those copies. The most basic way to create those copies is to simply select the object that you want to copy, then use the copy and paste tools. However, not only is this a very slow process, it’s very imprecise.

For example, if I wanted to make 5 copies of my box component that I created above and place the copies spaced exactly ten feet along the green axis from where the original box sat, it would be a very time consuming task. I’d have to copy/paste my box, place it somewhere in the model, then draw a line from the origin point to where I wanted my box to sit, then move my box to the end of that line so I’d know my box was in the right place, then I’d have to erase the guide line that I drew, then repeat the process 3 more times. Yuck, right? Too many steps, too time consuming.

What I would do instead is use the “move” tool to create the copy of my box. The nice thing about the “move” tool in SketchUp is that not only does it allow you to move objects around, it allows you to make multiple copies of objects.

Let’s go back to our box component that we created in item 4. Select the box by clicking on it once. Then, select the move tool using the keyboard shortcut “M.” Then, press the “Control” key on your keyboard. This will activate copy mode.

Now, click once on the corner of your box. This will activate the move tool. When the move tool is active, you’ll be able to move anything you have selected around in your model. Since you’re in copy mode, SketchUp will create a copy of your box and move it around in your model instead of the original. If you just wanted to create a single copy and don’t care about being ultra-precise with the location of your copy, you can just click where you want your new copy to go.
However, remember that we want to make multiple copies of this box at a spacing of ten feet. The move tool allows us to do this very easily. It’s a two-step process. First, we want to set our distance. To do this, start off like you did before. Activate the move tool using the “m” key on your keyboard. Press the control key to activate copy mode. Click once on the corner of your box. However, this time, instead of clicking to place your copy, simply move your mouse in the direction you would like your copy to be created and type in a distance. In this case, type in 10'0” and hit enter. This will create a copy of your box exactly ten feet in the direction of your cursor.
However, we’re still not done. Remember, we wanted to create 5 copies of our box, right? This is simple with the move tool. Once you’ve placed the copy of your box, type in the letter “x” and the number of copies you would like to make. SketchUp will automatically create this number of copies, all spaced the same amount apart as your original and your first copy in the same direction as your first copy. If you decide you want more or fewer copies, as long as you don’t click out of the tool, you can type in “x” and a new number and hit enter, and SketchUp will automatically add or subtract the number of copies it creates.
In addition to being able to create multiple copies in a direction, SketchUp can also create multiple copies equally spaced between an original and an end point. For example, let’s say that instead of creating 5 copies of an object in a line spaced 10’ apart from each other, we wanted to place 8 copies of an object equally spaced within a 20’ distance. To do this, we’d follow the steps above (activate copy mode, make a copy of an object, specify a distance of 20’ for our object), but instead of typing in “x5”, we would type in “/” and the number of copies we’d like to make. In this case, I’d type in “/7” and hit enter. This will create 7 copies of my object equally spaced between my original and my end object (and it would leave my original, giving me a total of 8 copies).
There is one more copy tool that SketchUp has that is a HUGE timesaver. What if you wanted to create copies in a circular direction instead of in a straight line? This would take FOREVER without a specialized tool. Lucky for us, SketchUp has a specialized tool that does this – the rotate tool. Now the base usage of the rotate tool is very simple – it’s a tool that rotates objects in your model. However, just like the move tool, if you press the control key while the rotate tool is active, it will create copies of your object along a circle using a radius you specify.

I’ll use the boxes we just created as an example. Drag a selection box around these objects to select them all. Now, select the rotate tool using the “q” key on your keyboard. Press the control key on your keyboard to activate copy mode. Just like the move tool, you need to set a base point. Click on the box where the axes intersect. Make sure that the protractor cursor is blue, indicating that you’re rotating your objects around the blue axis (Find a place on the screen where your protractor is blue, then hold down the “shift” key to lock it in. This will guarantee that you don’t accidentally change axes in the middle of this process.). Once you’ve set your base point, you’ll need to set the first point of your rotation. Click somewhere along the green axis line beyond your last box. Then, set how far you would like to rotate your copies, either by clicking on the screen or by typing in the number of degrees you would like and hitting the enter key.
Just like with the move tool, after you’ve created your initial copy, you can type in “x” and the number of copies you’d like to make to create multiple copies, or use “/” and the number of copies you’d like to make to create an equally spaced number of copies in an arc between your original and your first copy.
Using the Rotate tool to create multiple copies

After you’ve created your first copy, type in “x” and the number of copies you’d like to make and press the enter key. This creates multiple copies along your arc (image shows 12 copies at 30 degrees each)

After you’ve created your first copy, type in “/” and the number of equally spaced copies you’d like to create and press the enter key. This will create equally spaced copies along your arc (image shows 5 equally spaced copies)
Sometimes, when you need models of furniture and other items for your 3D model, it’s better to just check and see if someone else has done it first. SketchUp has a 3D model repository called the 3D Warehouse that has hundreds of thousands of 3D models created by SketchUp users that you can download for free. You can download just about anything you can imagine, from furniture models to fully colored models of Optimus Prime from Transformers. Often, you can use these models to fill in the blanks in your model (like if you were modeling a back patio and you wanted a grill on your patio).

To access the 3D warehouse, click on the “File” menu, then select 3D Warehouse and click on the “Get models” option.

This will bring up a window that allows you to search for 3D models in the 3D Warehouse. Let’s do a search for models of couches. Type in “Couch” in the search bar and click on the search button.
This will bring up a lot of models that are in the 3D warehouse with the tag “couch.” You can download any of the models shown into your model. However, use caution in what you download – remember that models with lots of curved edges and faces have a lot more polygons, and could bog down your model, so just because a model is cool looking does not mean that it’s necessarily the best model for you to download. Let’s scroll down and select one of the simpler options. Click on a model that you like, and you’ll be taken to the model information page.
This page shows the number of times a model has been downloaded, the file size, etc. You can also get a 3D preview of the model by clicking on the orbit icon on the right side of your screen. Check the .skp file size on the right to make sure the model isn’t huge. For example, this couch is just under 250 kb, so it’s not all that big. In contrast, one of the models above is over 9 megabytes in size (roughly 30 times the file size). Just use this as a quick double-check to make sure you’re not downloading huge files that will bog down your model.
In this case, we just want to download the couch into our model, so click the “Download” button on the upper right hand side. There will be a pop-up box that asks if you want to load this directly into your SketchUp Model. Select “Yes.” This will bring you back to your model. SketchUp will now want you to specify a point where it should insert the component into your model. Click wherever you would like to place this new component into your model.

Now you have a fancy new couch in your model without having to draw anything!
One of the things you have to be careful about when downloading models from the 3D warehouse is the number of background junk that comes along with them. What this means is whenever you download a model from the warehouse, SketchUp brings in a number of things with that model, like textures, component definitions, styles, etc. Now this is partially a good thing – you need a lot of these things to make models display like they should in SketchUp. However, a lot of these leftover items in your model are unnecessary. They may be materials that are no longer being used, or component definitions that are now empty. These items can really bog down SketchUp and make it run very slowly.

Luckily for us, SketchUp has an easy way to clear out all the junk in your model. It’s located in the window toolbar under “Model Info.”
Clicking on “Model Info” brings up a box that looks like this –

Click on the option labeled “statistics” on the left hand side of the page. As you can see, this brings up a bunch of information regarding the number of component definitions and materials in the model. All you need to worry about is the button on the button labeled “Purge Unused.” This button will remove all the things in your model that are left over from other operations. It will not delete anything that is being actively used in your model, so it won’t affect the usability of your model.

As you can see, I have a bunch of stuff left over in this model. I’m going to go ahead and click on the “Purge Unused” button. As you can see below, there was a lot of junk in my model that was serving no purpose other than to slow SketchUp down.
This tool is especially useful when downloading models from the 3D warehouse, so if you bring a model in from the warehouse and feel like your model has slowed down significantly, give this a try and see if it helps!

<table>
<thead>
<tr>
<th>Name</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Edges</td>
<td>12</td>
</tr>
<tr>
<td>Faces</td>
<td>6</td>
</tr>
<tr>
<td>Component Instances</td>
<td>0</td>
</tr>
<tr>
<td>Guides</td>
<td>0</td>
</tr>
<tr>
<td>Guide Points</td>
<td>0</td>
</tr>
<tr>
<td>Groups</td>
<td>0</td>
</tr>
<tr>
<td>Images</td>
<td>0</td>
</tr>
<tr>
<td>3D Polylines</td>
<td>0</td>
</tr>
<tr>
<td>Section Planes</td>
<td>0</td>
</tr>
<tr>
<td>Dimensions</td>
<td>0</td>
</tr>
<tr>
<td>Text</td>
<td>0</td>
</tr>
<tr>
<td>Component Definitions</td>
<td>0</td>
</tr>
<tr>
<td>Layers</td>
<td>1</td>
</tr>
<tr>
<td>Materials</td>
<td>0</td>
</tr>
</tbody>
</table>
One of the biggest things that slows down SketchUp is leaving shadows turned on. SketchUp has a cool feature where you can set the date and time of day and actually see how the sun would shine on your model. This tool is especially helpful for Architects who use SketchUp to place buildings on sites to study daylighting, shading requirements, and other things that go into designing buildings from a sunlight perspective. However, this comes at a cost. Using the shadows in SketchUp is very processor intensive, and will slow your model down a lot. As such, this is a tool that you should only turn on when you are actually using it, and it should be turned off the rest of the time.

To turn off shadows, go to the window toolbar, and select the “Shadows” option.

This will bring up a box that looks like the image below. Make sure the box labeled “Use sun for shading” is unchecked to turn off shadows.

This should result in a significant performance improvement while working in the model.
SketchUp offers a lot of advanced visibility settings that affect the way your model looks. For example, you can take your model and select a style that looks like it was sketched on textured paper, like the image below.

Or you could make it look like it was painted in watercolor –
There are dozens of styles included in the base version of SketchUp, and it can be tempting to leave them turned on because they are just so darn cool looking. However, these styles come at the cost of requiring your computer to do extra rendering, and therefore, slowing your model down. This means that in order to save time in SketchUp, you should select one of the simple default styles while you are doing your actual modeling. This will save you a lot of rendering time as you work. Then, once you’re done modeling, apply the more processor intensive styles.

There are several styles that I would recommend when doing your modeling. The first is the default style. This is the simplest style you can use. It has a simple gray background, and doesn’t add anything to the visibility of your lines and edges. This means that it doesn’t spend any additional time processing extraneous visibility items, so it’s probably the fastest option. To access this style, click on the window toolbar at the top of the screen, and select “Styles” from the dropdown.

This will pop up the styles window. This is where you can find all the styles you have installed in SketchUp. In this case, you’re going to want to click the drop-down and select “Default Styles.” This will give you access to the basic styles included with SketchUp. These are the styles that work best at keeping your computer running quickly.
Now you want to find the style labeled “Default Style.” It’s one of the styles with the gray ground. Click this option to activate the default style and apply it to your model.

This is the simplest style you can select. As you can see below, it creates a very simple, no frills model.
It’s great for processor speed, but sometimes, you want a model that helps you a little more with your actual modeling. For this, I recommend the “Architectural Design” style. This style is a little more processor intensive (not too much though), but it has a useful feature. This style creates a slightly thickened line at every end point of a line in the model. While this doesn’t contribute to a clean looking appearance, it means that while you are working, you can actually see where your lines end and where all your parts and pieces come together. This is quite helpful when you are modeling.

To activate this style, open up the style window again. This time, find the icon labeled “Architectural Design Style” and select it.

![Styles window with Architectural Design Style selected](image.png)

This will activate “Architectural Design Style.” As you can see in the image below, this style is a little rougher looking, but when you’re modeling, this “roughness” can be quite helpful.
You will notice, especially when dealing with more complex models, that when you do things like orbiting your model, SketchUp will render all of your basic items first (lines, faces) before it renders your thickened endpoints, so your model will flash a visibility of just a default style first, then all your endpoints will show up. This is just an aspect of SketchUp having to render additional thicknesses at all your endpoints. It’s normal, but it will slow you down just a little bit when you move around in your model.
Hopefully, this guide will save you time in the future when you are modeling in SketchUp. If you’d like, send me an email and let me know if you found these strategies helpful. You can contact me at Justin@TheSketchUpEssentials.com.

Remember to check back at http://www.TheSketchUpEssentials.com for more tutorials and other SketchUp resources.