

# Google SketchUp Design Exercise 3



This advanced design project uses many of SketchUp's drawing tools, and involves paying some attention to the exact sizes of what you're drawing. You'll also make good use of components. The final result: a dream bedroom, complete with furniture and a swimming pool.

Once you understand how this room is built and furnished, the concept can be applied to anything - a dream classroom, dream rec room, dream bathroom, dream gym, etc. It's a very fun project; kids really get to exercise their creativity designing and furnishing spaces they'd like to live in!

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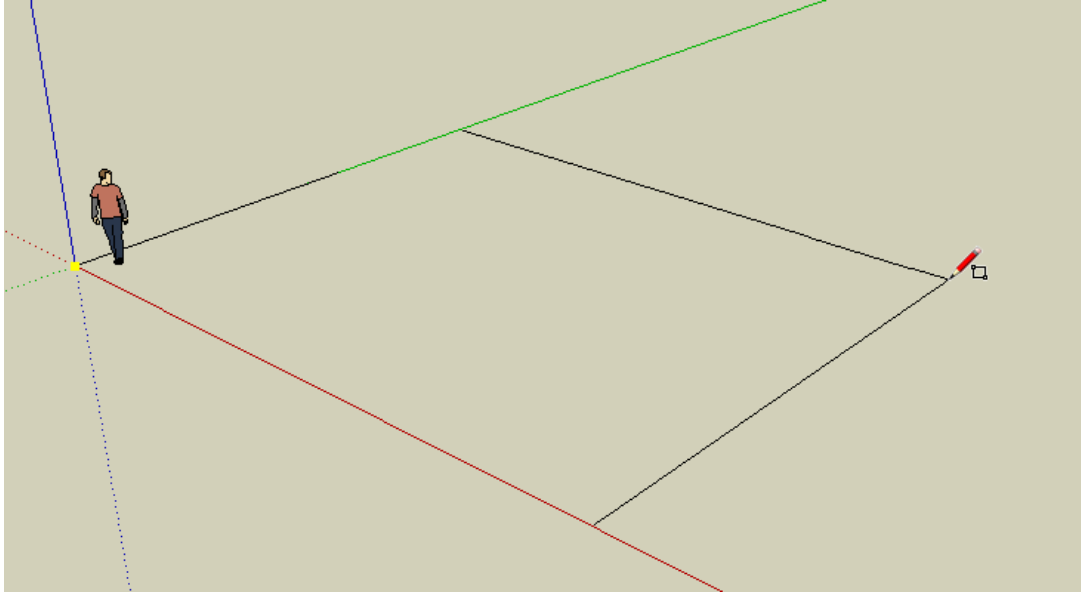
*If you need some basic information on downloading Google SketchUp, or about its user interface and basic tools, please see our printable "Intro to SketchUp" PDF.*

The PC version is at [www.3dvinci.net/SketchUp\\_Intro\\_PC.pdf](http://www.3dvinci.net/SketchUp_Intro_PC.pdf).

The Mac version is at [www.3dvinci.net/SketchUp\\_Intro\\_Mac.pdf](http://www.3dvinci.net/SketchUp_Intro_Mac.pdf).

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1. This bedroom will be pretty big, so leave the person in the file as a basis for size. Make a rectangle for the basic room shape, but don't click to finish it yet.



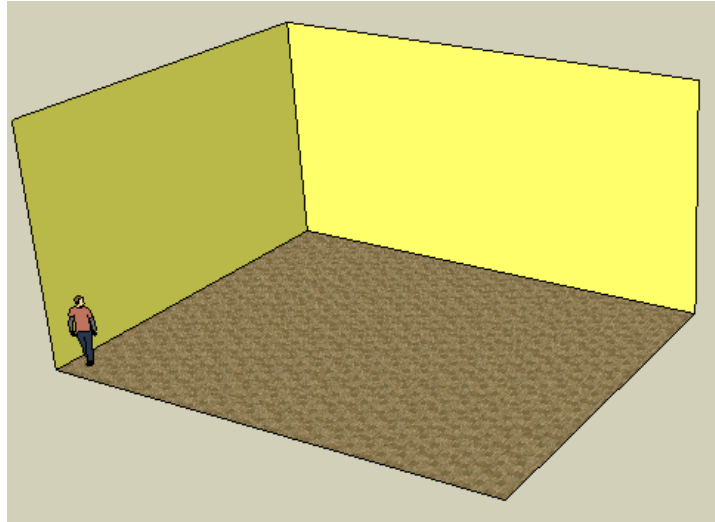
2. Many of SketchUp's tools can use exact numbers. While you're using the **Rectangle** tool, look at the **Dimensions** box below the SketchUp window. You'll see the length and width of the rectangle change while you move the mouse. Make this rectangle about 40 feet wide and 30 feet long. (If you want the numbers to be exact, you can type them in and press Enter. Be sure to include the apostrophe foot symbol, and separate the two numbers with a comma.)

Dimensions 40' , 30'

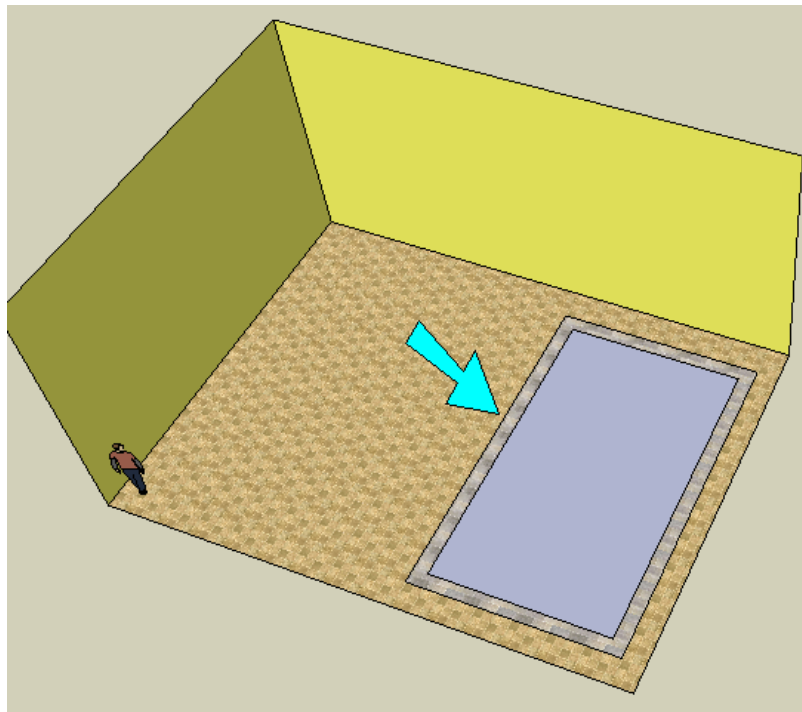
**To draw this specific sized rectangle:**

1. Start drawing the rectangle.
2. Let go of the mouse, **DO NOT CLICK**, and type 40',30'
3. Press ENTER

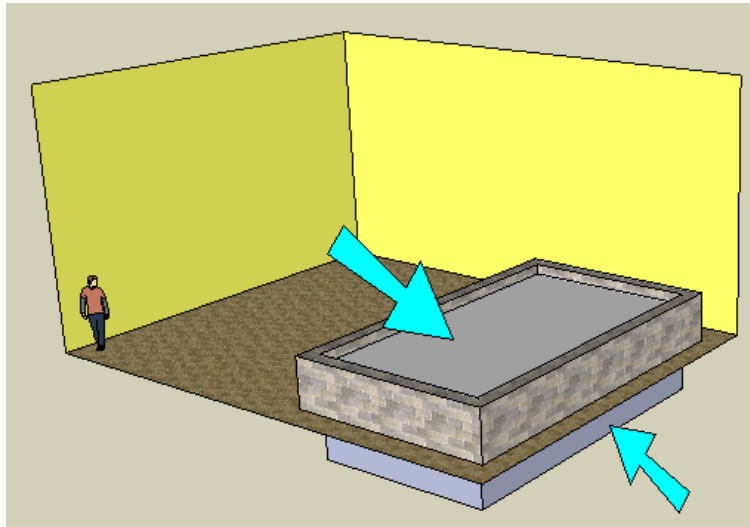
3. The bedroom will be a loft (it has two levels), so pull the rectangle up about 20 feet. Erase edges so that the ceiling and two walls disappear, enabling you to see inside.



4. About half of the lower level will be filled with a swimming pool (because no bedroom is complete without one). Use **Rectangle** to make the shape. To make the outline, you can make another rectangle, or use the **Offset** tool.



5. Pull up the pool walls, and pull up the floor to make the water line. When you use **Push/Pull** for this, keep the CTRL key pressed. This means that the bedroom floor will stay intact, instead of being “sucked up” with the pool objects. (Try it first without the CTRL key to see the difference). If the water doesn’t seem deep enough, pull the bedroom floor down (*without* the CTRL key).

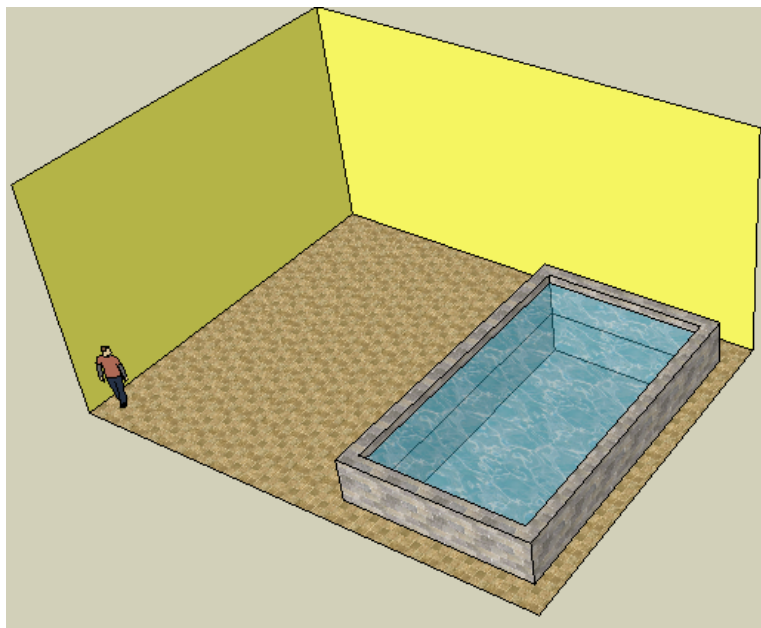


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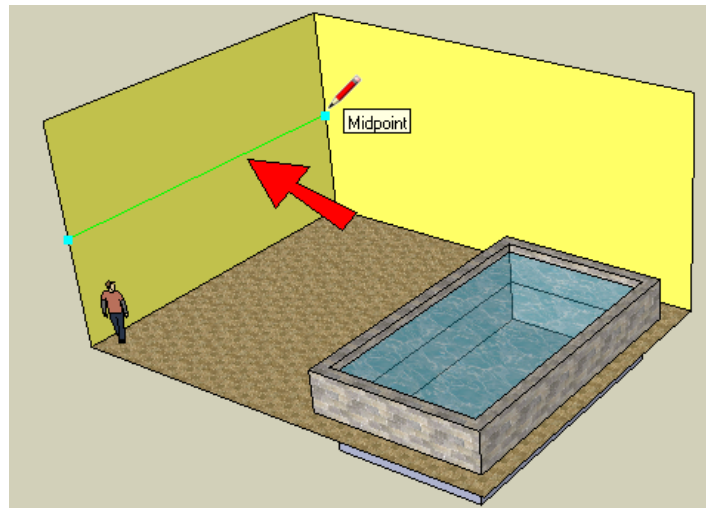
*Yes, it looks weird to have a pool sticking out below the floor. But at the end, you can place a large square of grass or concrete around the room, which will hide the bottom of the pool.*

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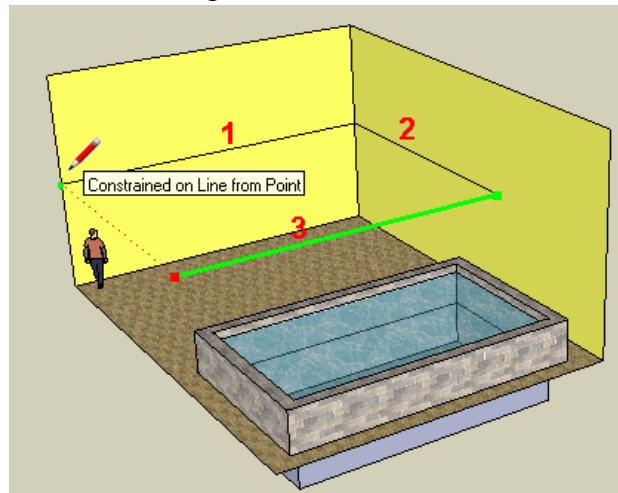
6. There is a “Water” folder for materials, which contains one translucent water material. Use this for the face of the water line, and you can see through to the bottom of the pool.



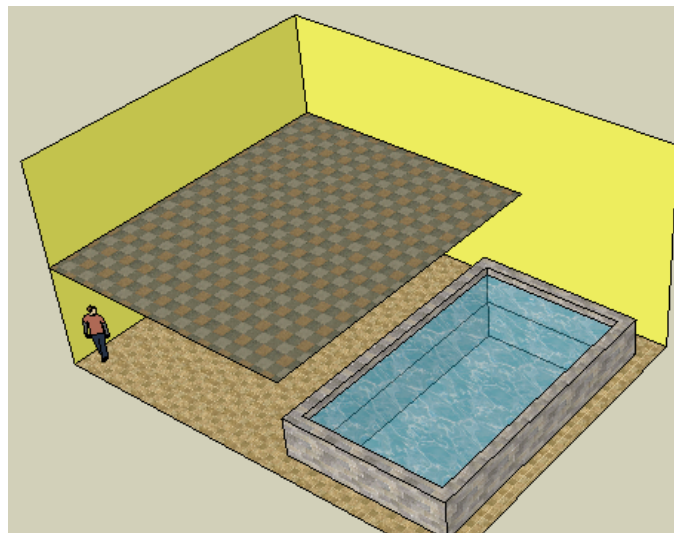
7. Now we can make the loft floor. It will be a simple rectangle which extends as far as the pool below. Start with a line along one wall like this:



8. Make the floor long enough to hang a little over the pool (Line 2). When you make Line 3, start drawing in the direction you want the line to go (green, in my example). Press Shift to “lock” the direction, and click the first point of Line 1. This sets the exact length of Line 3.

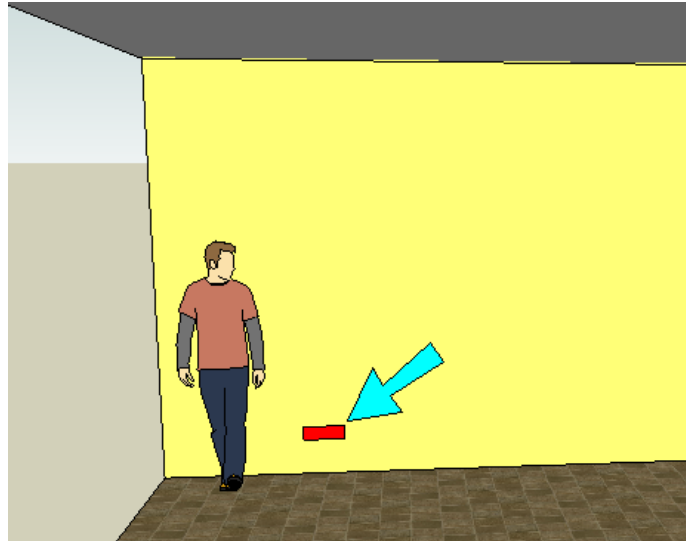


9. Complete the last line to finish the loft floor.



If your second floor does not look like this, use CNTL-Z to undo and repeat steps 7-9 exactly as written.

10. Now we need steps to get up to the loft. Steps are MUCH easier when you use components. Start with a small rectangle along the wall, for the first step. (If you're using exact numbers, it should be about 12" x 2".)



If you need, go back to Step 2 to review how to make rectangles a specific size.

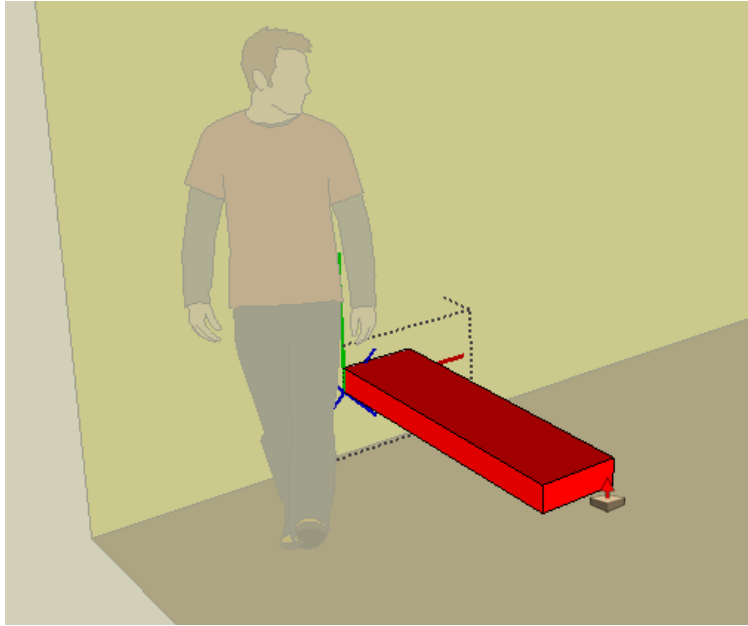
11. **Select** this small face plus its edges and make it a component.

The easiest way to select the face plus the edges is to double click on the face. **MAKE SURE** both the edge and the face are selected. If you don't, Make Component will not be an option.



12. Edit the component, and pull the step out about 4 feet.

Double-click to  
edit the  
component

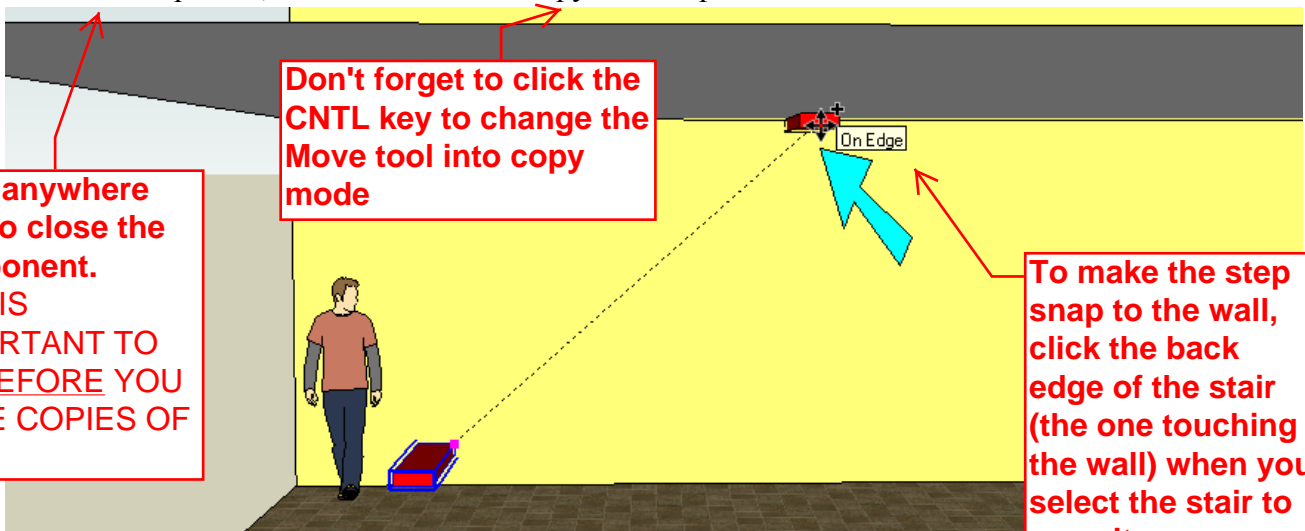


13. Close the component, and then make one copy at the top of the loft floor.

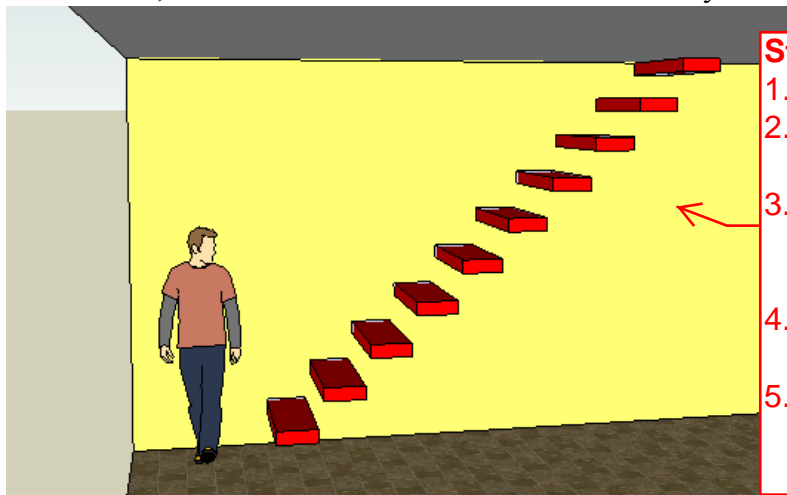
Click anywhere  
else to close the  
component.  
THIS IS  
IMPORTANT TO  
DO BEFORE YOU  
MAKE COPIES OF  
IT

Don't forget to click the  
CNTL key to change the  
Move tool into copy  
mode

To make the step  
snap to the wall,  
click the back  
edge of the stair  
(the one touching  
the wall) when you  
select the stair to  
copy it.



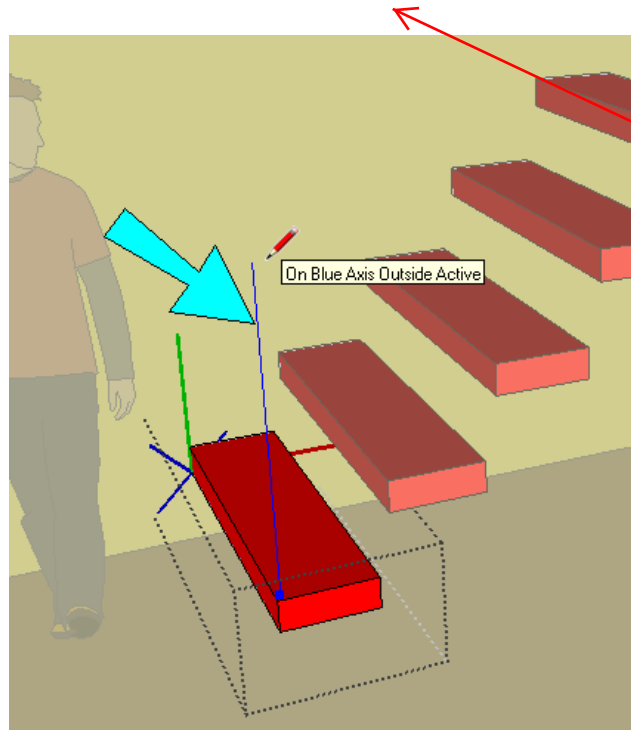
14. To make all the steps in between, enter "9/" or whatever number works for you.



**Steps to build the stairs:**

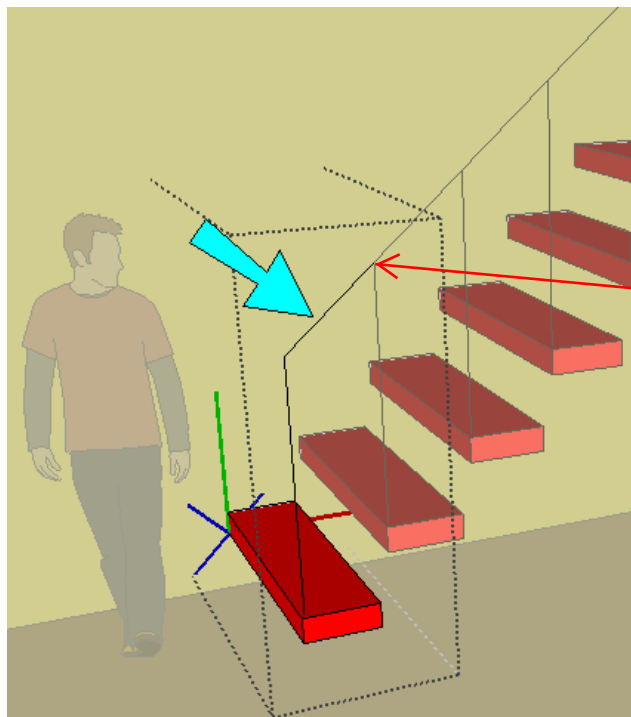
1. Select the Move Tool
2. Press the CTRL key to go into copy mode
3. Click the back edge of the stairs - the one touching the wall.
4. Drag the copy to just below the second floor
5. Release the mouse (DON'T CLICK) and type 7/ then ENTER to copy

15. Components are also great for making railings. Edit any step, and draw a vertical (blue) line in the lower corner, about 3 feet high.



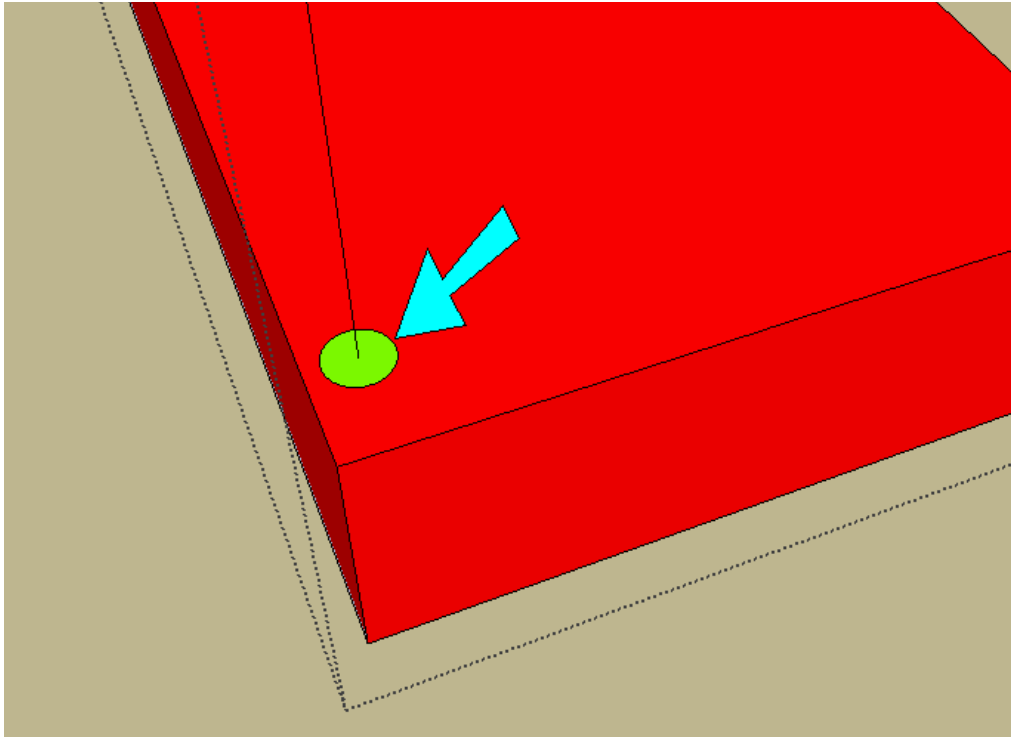
Don't forget to double-click to edit the component first

16. Then add a line connecting one vertical line to the next.

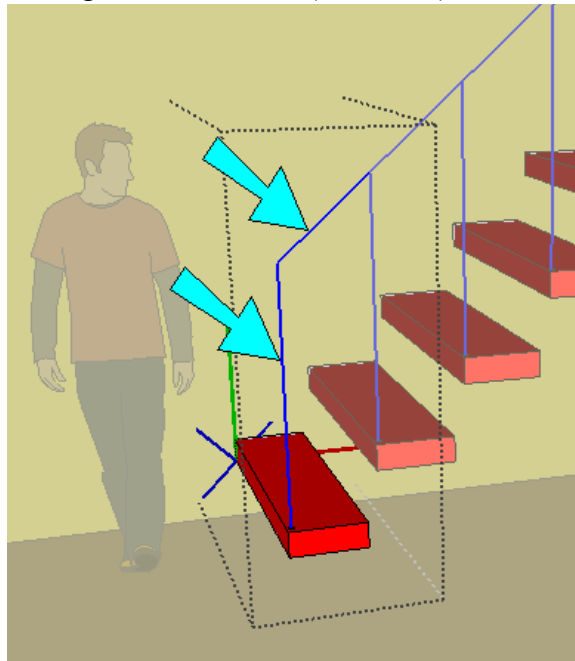


**Stop the line HERE.**  
Do not go all the way up the staircase.

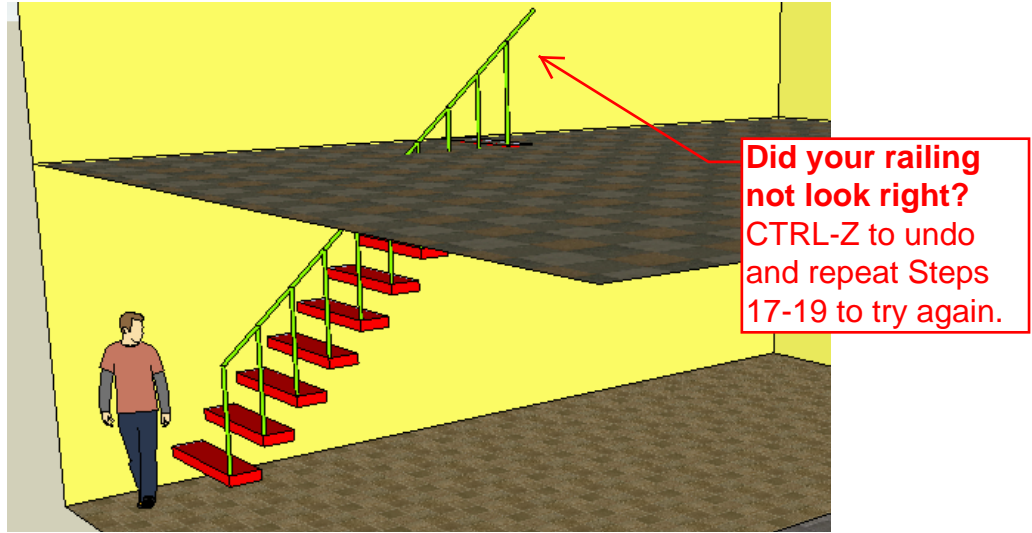
17. At the base of the vertical line, make a small circle.



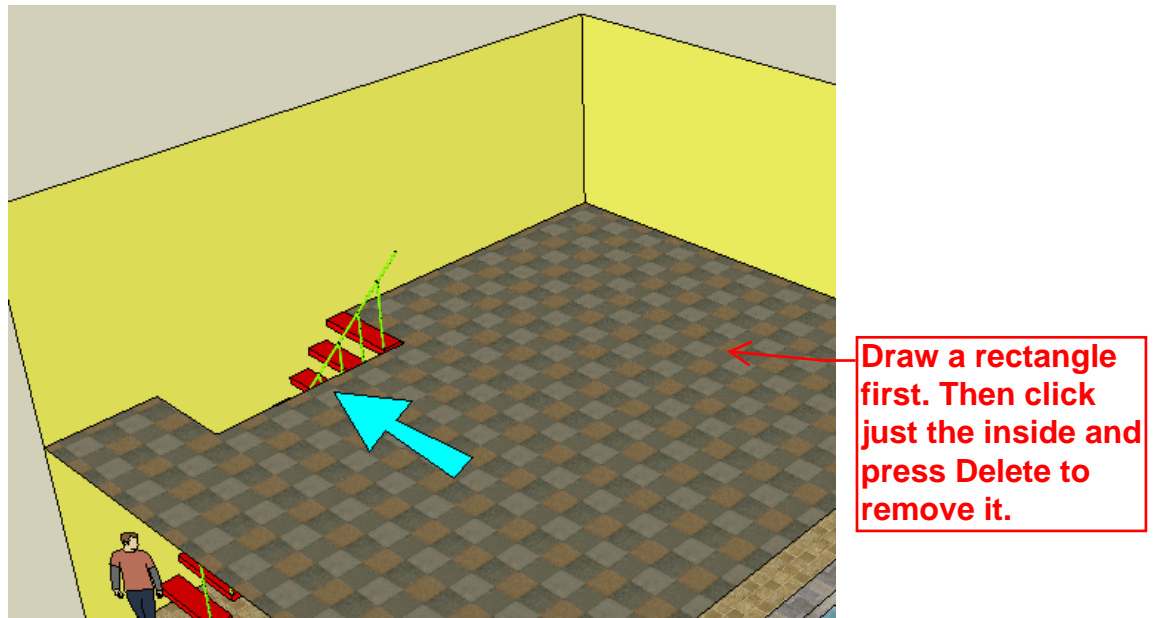
18. **Select** both of the railing lines using the Select Tool (the arrow). Hold CTRL to select more than one thing.



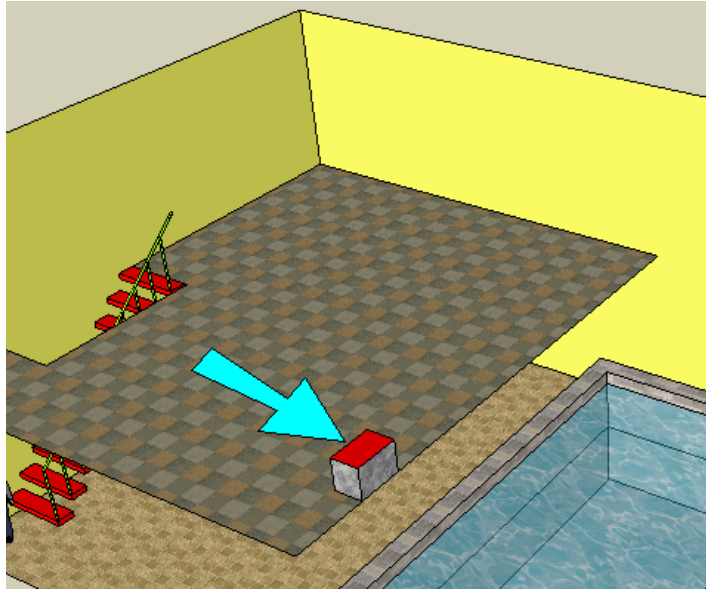
19. Activate **Follow Me** (**Tools / Follow Me**) and click the circle. The circle is pushed along the vertical and diagonal lines, creating a railing at every step.



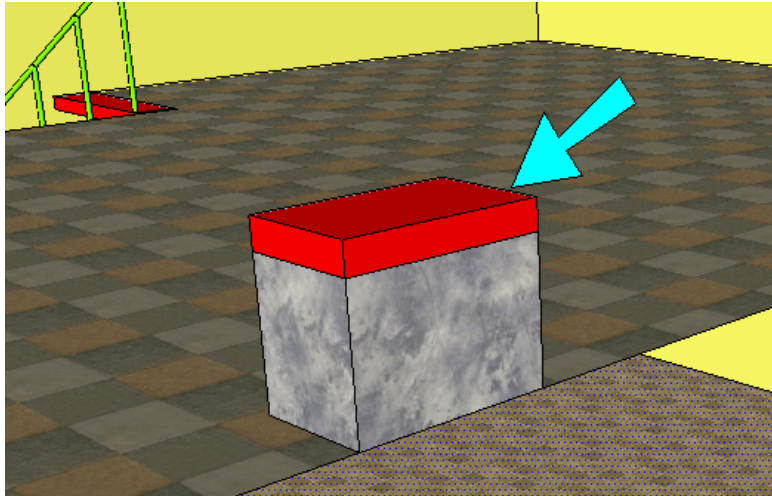
20. We want to go up the steps without hitting our heads on the floor above, so cut a hole out of the loft floor.



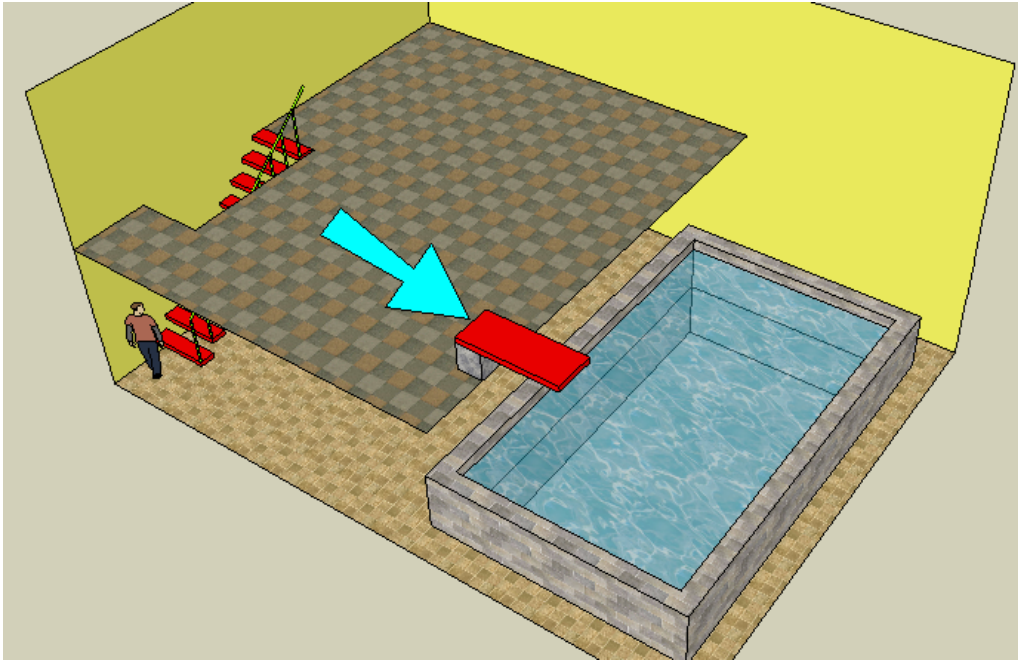
21. If you're too lazy to go down the steps to take a dip, you'll want a diving board on the loft level. Make a block like this (remember to press CTRL when you use **Push/Pull**) and paint the top the color you want to use for the board.



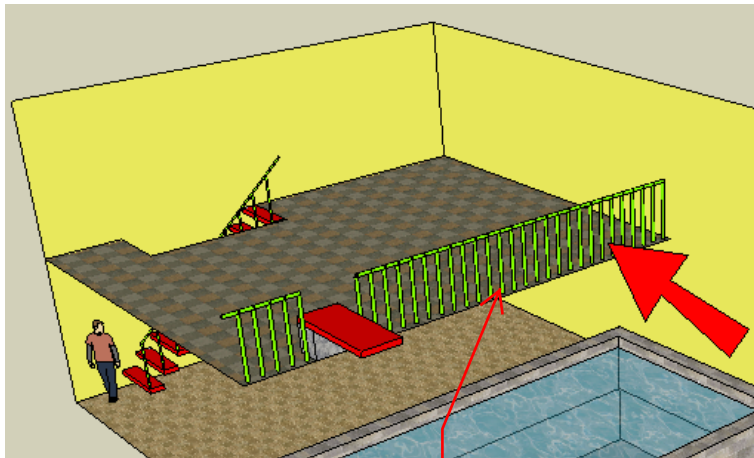
22. Start the board by pulling up a little like this (press the CTRL key to make a copy of the surface):



23. And pull the board out, making sure it hangs over the pool.



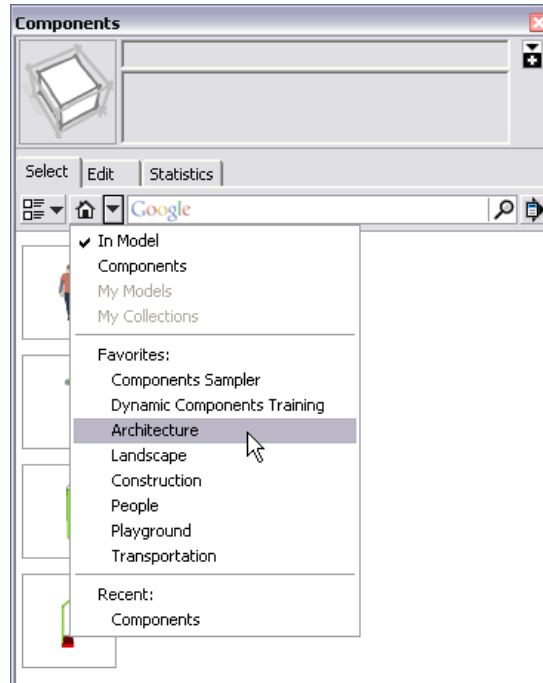
24. If you don't want to roll out of bed and fall into the pool, use components and **Follow Me** to make a railing.



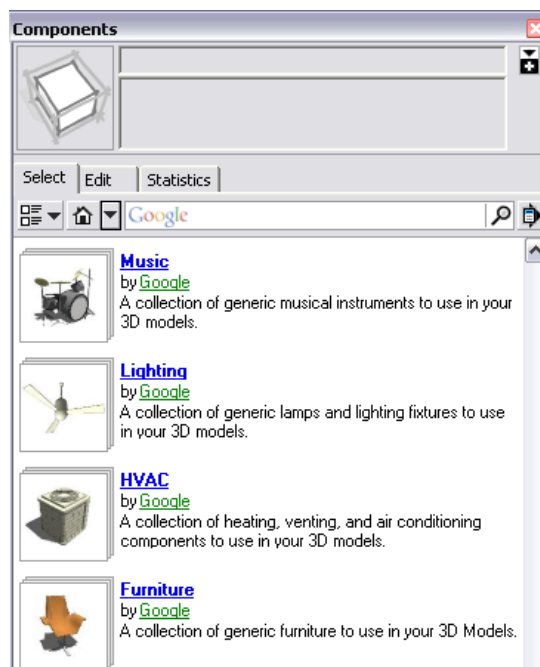
**Steps to build the railing:**

1. Draw a small circle in the corner of the second floor.  
MAKE SURE IT DOESN'T TOUCH AN EDGE.
2. Double-click to select it.
3. Right click and select Make Component.
4. Select the Move Tool
5. Press the CTRL key to go into copy mode
6. Click the circle component
7. Drag the copy to the other side of the second floor
8. Release the mouse (DON'T CLICK) and type 25/ then ENTER to copy
9. Pick the Select Tool (the arrow) and double-click the first circle to edit the component.
10. Draw a line straight up from the middle of the circle. It should snap to the blue axis.
11. Draw a line from the top of the new line to the copy of it to the right.  
If you did it correctly, you will have a very thin railing all along the top floor.
12. Using the select tool, select both parts of the railing. Hold CTRL to select both.
13. Select the Follow me tool and click the small circle. The rail should appear.
14. Delete the railing over the diving board. If you need to edit just one, make it unique first.

25. For the rest of the furniture, we'll use some models provided by Google. In the Components window, click the drop-down arrow next to the house icon, and choose **Architecture**. You can also just search the 3D Warehouse.

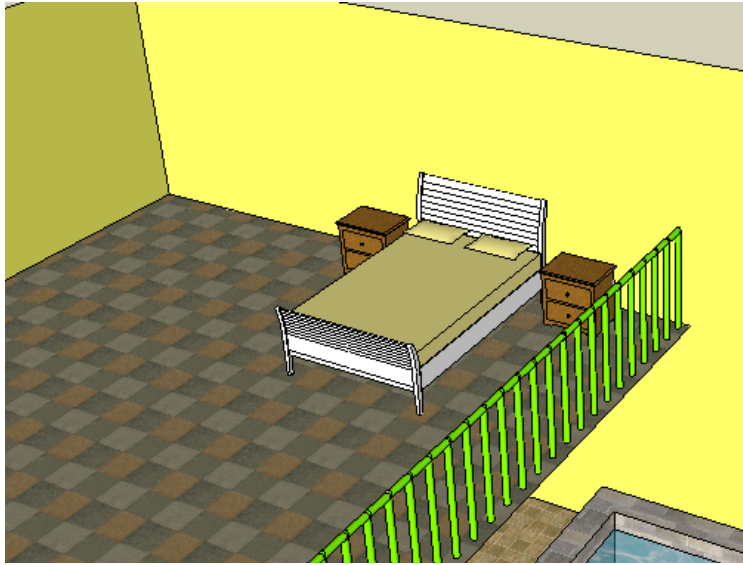


26. The “Architecture” collection contains other collections of objects like windows, plumbing, lighting, and games. Clicking the thumbnail of a collection will open the collection within the Components window. Clicking the collection name will open the collection in your Internet browser. When you open a collection and find a model you want to bring into your room, click the model’s thumbnail, and the model can be dragged right into the model.

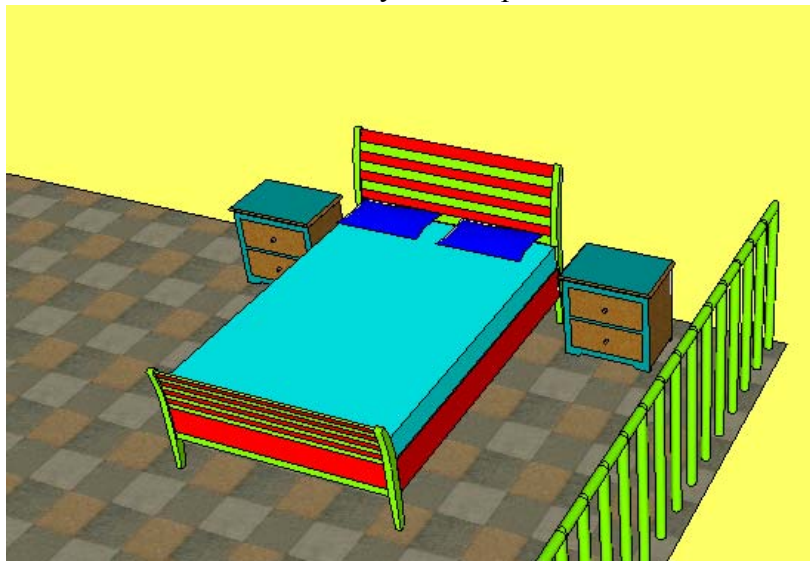


The collections you open this way contain basic, generic, models that have the correct dimensions and are modeled properly. To find other models, you can use the Search field in the Components window. But keep in mind that some models in the 3D Warehouse don't have the correct scale, and the quality is not guaranteed.

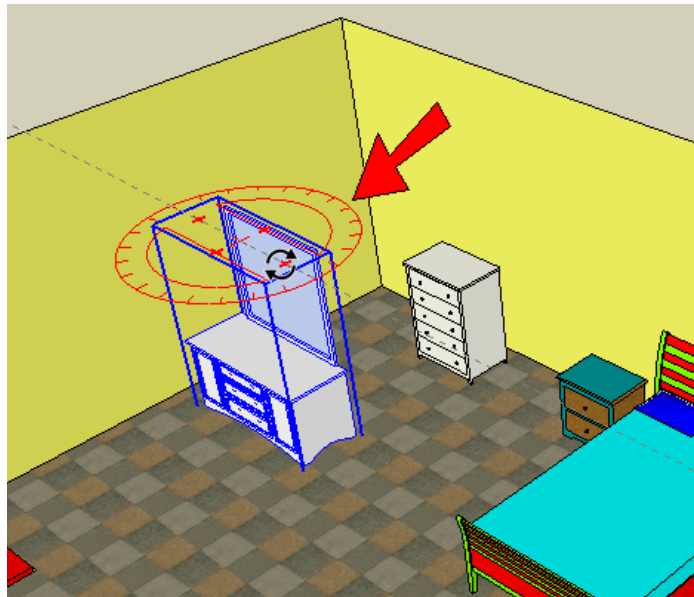
27. Fill both levels of the bedroom however you want. For example, the “Architecture” collection contains collections for beds and dressers.



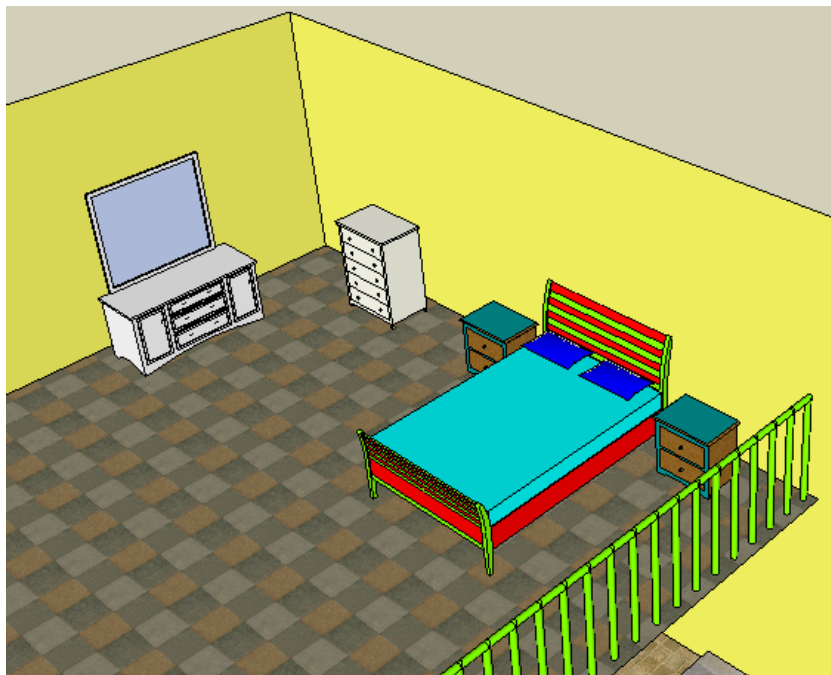
28. If you want to change any of these components, just edit them. To edit a component, simply double-click. You may have to double-click more than once if your component contains other components.



29. When you drag in a component from the **Components** window, the active tool is **Move** so that you can place the component and slide it around. If you place your cursor over one of the red “plus” signs, you can also **Rotate** your component, like the dresser below:



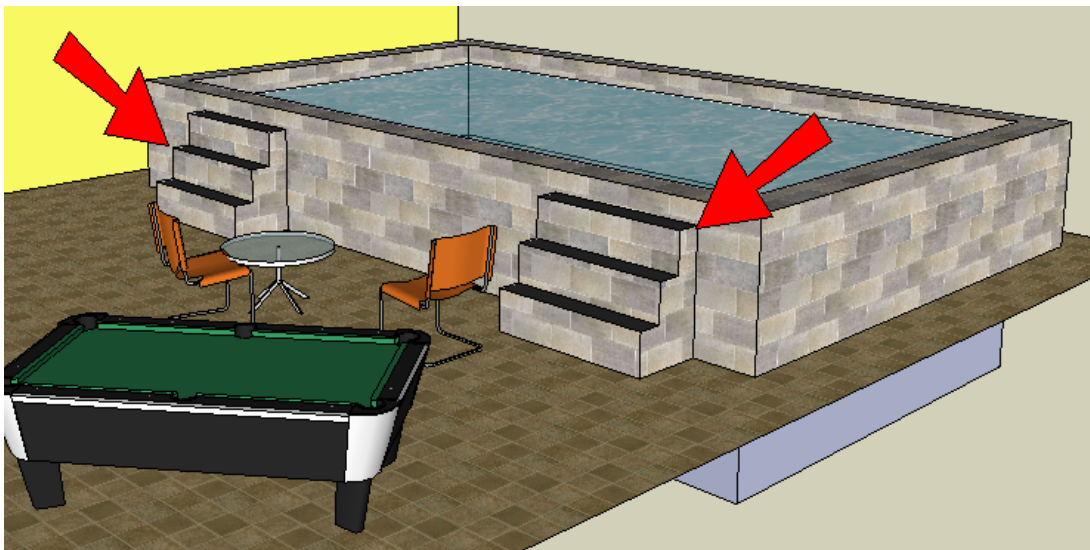
This is how my bedroom furniture looks:



30. Here's what I put downstairs, including a fridge from the "Appliances" collection, a flat-screen TV from "Electronics," and a pool table from "Games."



31. And don't forget steps to get up to the pool.



32. Finish up by adding some windows.



33. If you want to hide the bottom of the pool, add a large square and paint it a grass texture (the material is in the “Vegetation” folder).

