

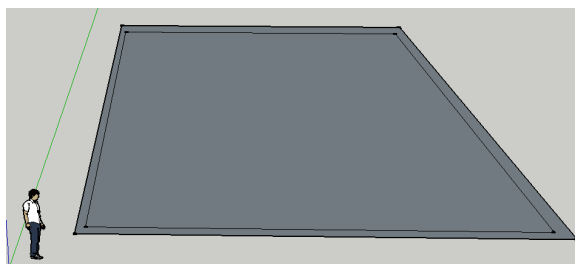
Creating a sample scene in SkIndigo

This tutorial goes over generating a simple scene and lighting it a few different ways. The scene will be a typical German apartment with white walls, wood flooring and some furniture from Ikea. We won't be modelling the garage with an Audi, dog called Schatzi and traditional lederhosen.

This tutorial was done for SketchUp 7 free version, your SketchUp may look slightly different. A basic level of knowledge of using SketchUp is required.

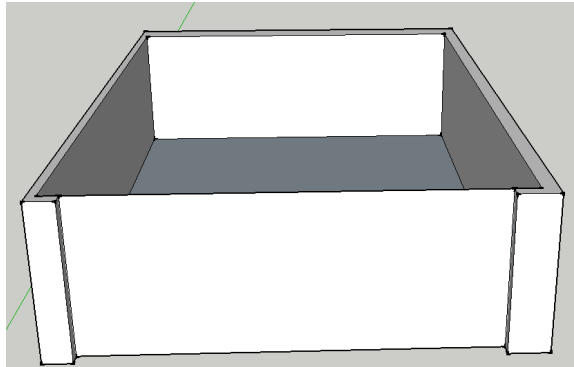
Step 1. Create the basic room

First up we will model the room. Start by drawing a rectangle  on the ground and another rectangle just inside it. Your rectangle should be 12 metres by 12 metres, look at the dimensions box in the bottom right of your window to see the size as you drag the box out.



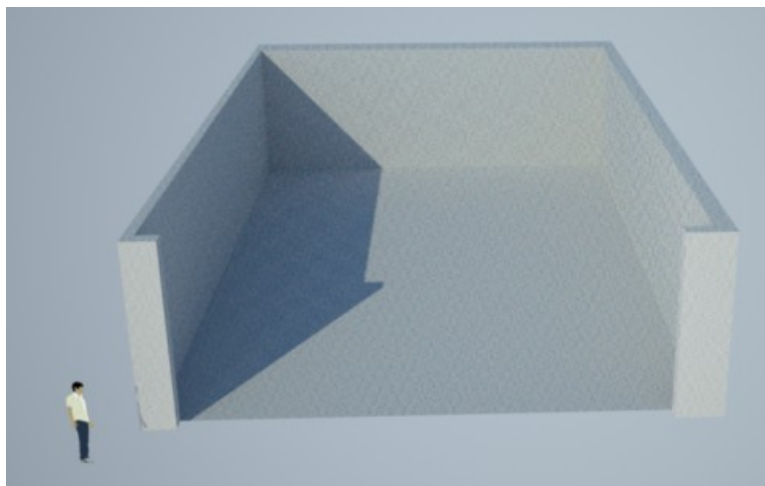
The ground plan of our room

Next, use the push/pull tool  to make the walls 4 metres high. We won't put a roof on the box just yet so that we can see inside it. Next step is to put a big floor-to-ceiling window at the front of our box. Use the rectangle tool to draw a rectangle on the front of the box, then use the push / pull tool to push the new rectangle inwards until the wall is paper thin.



Our room with a paper thin front wall.

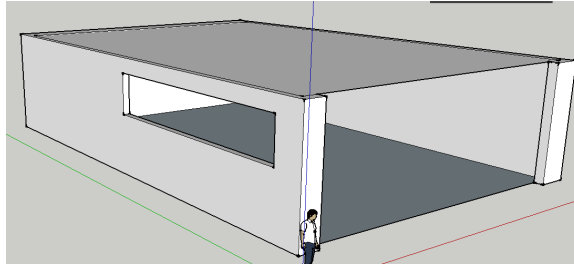
Now click on the paper thin wall and delete it. Don't delete the line at the top of your room, we'll need that in a second. Now press **Plugins** → **Skindigo** → **Render** and you will get a render like this:



Bryce standing outside his new house

Step 2. Add window and roof

For the next step, we will add a roof and a window and set a wooden texture on the floor and a glass window. Start by using the rectangle tool to enclose the roof. Then draw a rectangle on the wall of the left hand side and use the push / pull tool to push the rectangle through to the inside. Delete the paper thin wall that is left and you should have a window hole like so:



Our box room with a window and a roof.

As a final step, use the Move tool  to put Bryce somewhere side your house.

Step 3. Back faces and Front faces

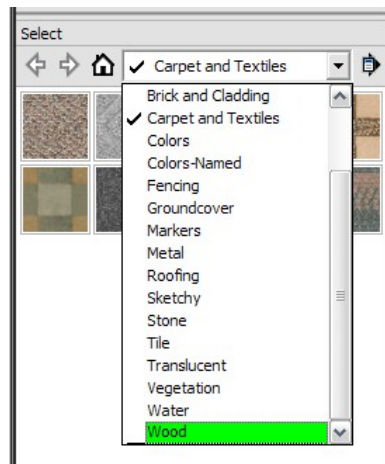
Here is a **trap** for young players. Notice that the floor is a very dark color? That is because it is upside down. The '**front face**' of the floor is facing down into the ground. The dark grey color you are seeing is the '**back face**' of the floor.

Indigo will not render textures applied to the '**back face**' of a surface, it will instead render a plain white color, and you will become very frustrated trying to understand what went wrong.

To correct the faces, right click on the floor and select '**Reverse Faces**'. Now you can continue to Step 4.

Step 4. Paint a wood texture on the floor

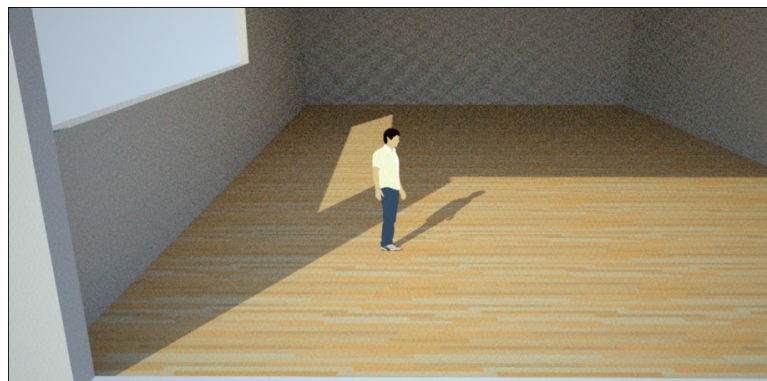
Next, press the Paint Bucket tool  and the SketchUp materials dialog will open. Select wood from the selection box:



Selecting the wood textures that come with SketchUp

Now choose **wood_floor_light**  as a texture. Then click on the floor.

Your floor will now be textured. Zoom in the camera a little and hit render – your house should look like this:



Bryce in his new house with a roof, window and a floor.

Now right click on the floor and select **Texture → Position**. Rotate the wood texture 90°. You can also scale the wood texture if you want.

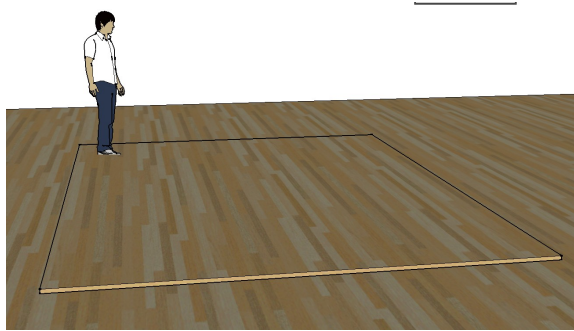
Step 5. Add some carpet

Carpet is a tricky thing to model because it has so many individual fibres. The best way of creating a carpet in SkIndigo is to use what is called a **displacement map**.

Start by drawing a rectangle on the floor and using push/pull to make it into a box of 3cm height. Then use the select tool  to select the top and 4 sides

of the box and select **Edit → Make Group**.

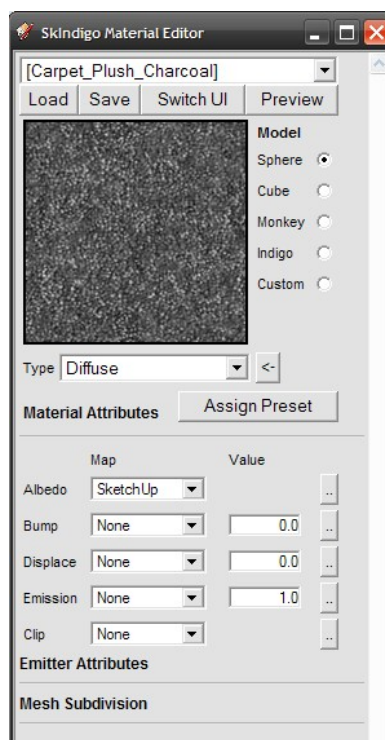
When we add a displacement map, it will make our 'carpet box' very bumpy, which means the edges of the box won't line up. To prevent gaps appearing, right click on the carpet and select **Soften / Smooth Edges**, choose a value of 80' between normals and press enter.



Our carpet box ready to texture map.

Now using the paintbrush tool, select the **Carpets and Textiles** set and the **Carpet_Plush_Charcoal** texture. Apply it to the carpet box. Right click on the carpet box and choose **SkIndigo → Edit [Carpet_Plush_Charcoal]**.

The SkIndigo Material Editor will open.



SketchUp material editor

Note that the **Albedo channel** (which means the color of the material) is already set to the SketchUp carpet texture.

Click on the drop down next to Displace, and change None to SketchUp. This will make the displacement map use the same carpet texture. Set the value to 0.03 – this sets the height of the carpet to 3cm.

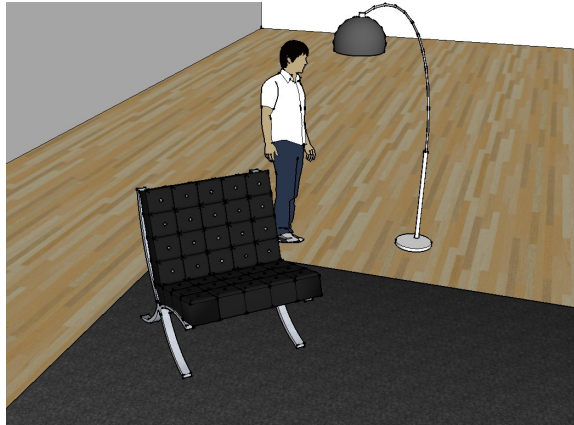
Press **Plugins → Skindigo → Render Scene**, you will note that the carpet looks all triangulated and bumpy. You need to increase the 'detail' of the carpet. Back in the SkIndigo Material Editor, under **Mesh Subdivision**, increase **Max Subdivisions** from 6 to 8. Render the scene again.



Bryce admires his nice grey carpet

Step 6. Add a chair and lamp

Use **Windows → Components** menu to show the components window. Search for **Barcelona chair** and insert one into the scene. Then search for **Kare 5701** (a lamp) and insert it into the scene too.



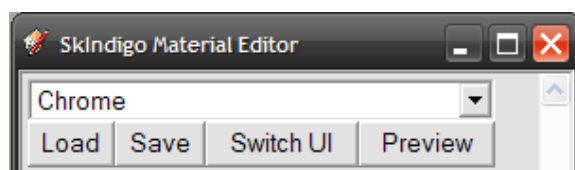
Scene with a lamp and chair added.

Double click on the lamp to edit it – then in the Material Window click **New Material**  to create a new material. Name this material 'Chrome' and apply it to all of the surfaces of the lamp (Use **Edit** → **Select All**, then use the Paint Tool to apply the material).

Right click on the lamp and select **SkIndigo** → **Edit [Chrome]**. We will use an external Indigo material on the lamp. Load the following URL in your web browser:

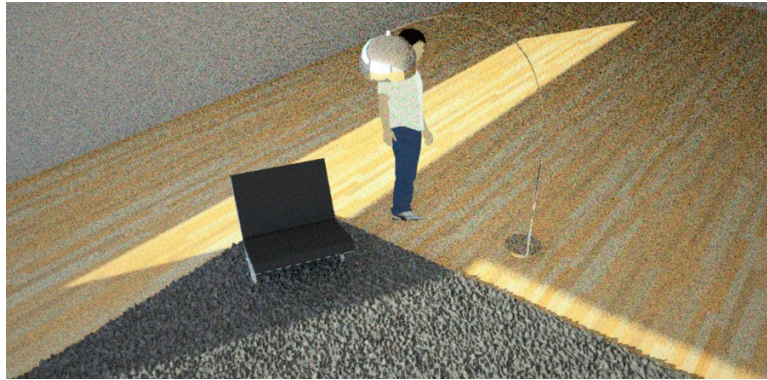
>> <http://indigorenderer.com/materials/materials/55>

Download the material to your Desktop, then go back to the **SkIndigo Material Editor** and press **Load**.



Load button is on the left.

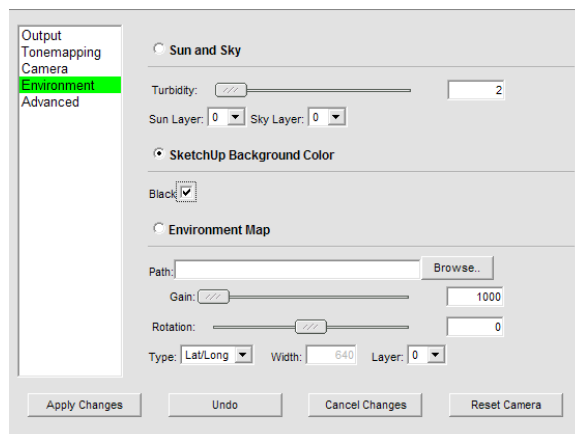
Browse to the Brushed_Metal.pigm file you just downloaded and select it. Now render the scene – it should look like this:



Lamp has a shiny material applied.

Step 7. Adding nighttime lighting

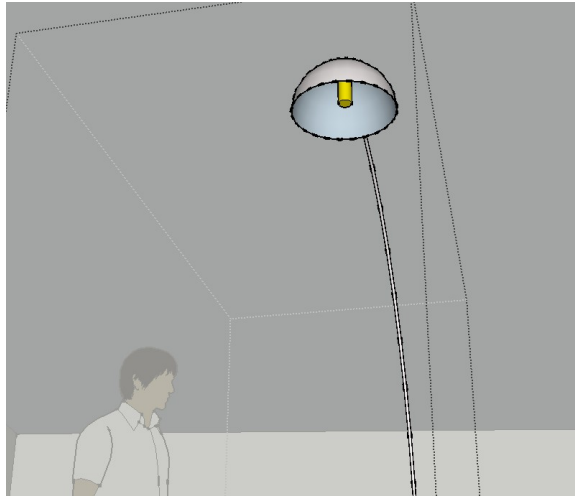
Now we will try adding a lightbulb inside the lamp and taking a night scene. Start by turning off the sun by going to **Plugins** → **SkIndigo** → **Render Settings**, then Environment. Select SketchUp background color and make sure Black is selected like so:



Setting SkIndigo to render a night scene

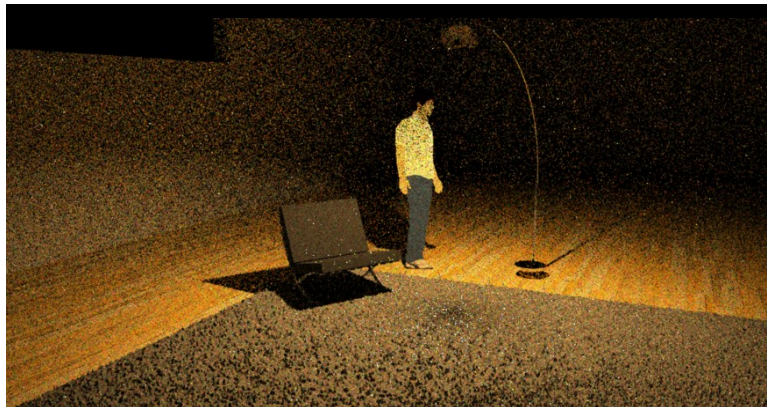
Now we need to add a light inside the lamp. Double click the lamp to edit it, then look inside the lampshade and create or select the lightbulb inside it (your lamp may look slightly different, you may have to create the lightbulb yourself).

Create a new material called **LightBulb**.



Lightbulb with a yellow LightBulb material applied to it.

Right click on the bulb **SkIndigo** → **Edit [LightBulb] material**, then click **'Assign Preset'** and scroll down to the bottom of the list of preset materials. Select the 100W incandescent bulb and close the 'presets' window. You can change the power of the bulb under the 'emissions' section of the SkIndigo Material Editor.



Physically correct lighting, this is how a 50 Watt bulb would look.

Step 8. Finetuning

The trick to getting really realistic renders from SketchUp + Indigo is to spend time tweaking your materials until they look just right. In this example I have used models from the Google Warehouse that are relatively low in polygon count, so don't look ultra realistic, but by carefully editing the materials used on the models you can make the scene look better and better.

One of the advantages of Indigo is that if you set a 100 Watt lightbulb in a

lamp, you can see how the light will fall off around the room, useful for doing lighting analysis – will you need more light fittings in the corner of the room?

To increase the realism of this scene, you could:

- Increase the **Mesh Subdivision** of the carpet to 10. This will make the carpet seem finer grained and more 'fluffy'.
- Reduce the '**exponent**' of the chrome material to make the floor lamp less reflective.
- Use the 'material type' dropdown to change the floor material to a '**phong**' material. Phong materials are 'shiny' materials, and this will make the floor look more like a laquer.
- Add a **bump map** to the floor material, of height 0.1 centimeters, to simulate the grain of the wood.
- Increase **atmospheric scattering** in the sun / sky model to make it look like a more cloudy day.

As you can see there are many options that you can tweak to get the best possible results out of Indigo.

Creating ultra realistic scenes that look like something from the real world is usually achieved by recreating all of the models in the scene with accurate geometry, and then spending 30-40% of your time modifying materials in the scene to ensure that they are as realistic as you would like them to be.

We hope you have enjoyed this brief introduction to SkIndigo.