

Going 3D with Blender: A room with toys



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About the author:

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Abstract:

In this third article of our series about Blender we will place the toy train that we have modeled last time in a kid's room and also model a few more toys. We assume that you have read the two previous articles, [Going 3D with Blender: Very first steps](#) and [Going 3D with Blender: A toy train](#) and have modeled the toy train yourself as we use it as our starting point for this article.

A room with toys

Take a look at the image above, imagine it without the two Tux penguins and the chest and you have the image we are going to create this time.

As you can see we are using our toy train again. So open Blender (the current version as of this writing is now Blender 2.28) and then open the blend file of your toy train (toytrain.blend or whatever you named it). In top view select the whole train (press b and mark the whole train, then press shift and right clicks on those objects you marked unintentionally by this) and make it a bit smaller (press s). Now having it still selected click g in front or side view and move it back down to the floor.

A new view of our toy train

If you have looked at our new image carefully you might have noticed that our viewpoint has changed a

bit compared with the last image. In side view select the camera with a right click, move it up (press g) and rotate (press r) it a bit so that the camera looks a bit downwards to the floor.

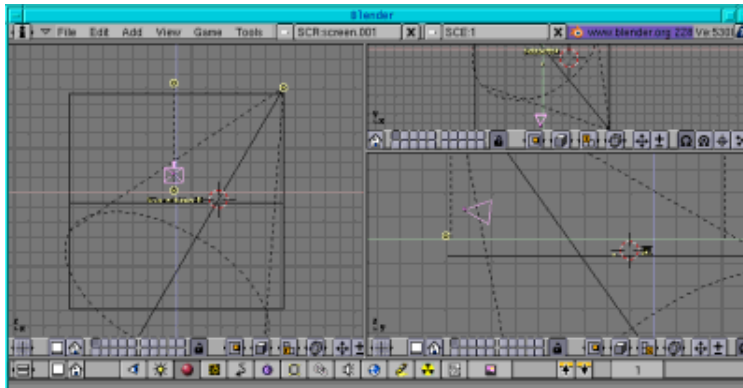


Fig.1 New camera position

Creating the room using textures

Now we will change our stage in a way that it will become a room.

The floor

For this select the green floor of our stage (right click on it, it must be highlighted in pink now) and press the texture button (the one next to the material button) followed by a click on the white button to add a new texture (as the floor already has a material we can go straight to the texture button, otherwise we had to give the floor a material first). A row of buttons with different options for textures appears now. At the moment you can see that no texture is selected. You can create many different textures in Blender yourself, e.g. a cloud like texture, a texture with rings like for woods etc. and you can take any jpg (and tga) image as your texture. This is what we are going to do: for the floor texture I took a texture from the patterns of The Gimp, filled a small image with it and saved it as wood.jpg. You can either do the same or download the image below:



Fig.2 Wooden floor texture

So click on "Image", new buttons will appear, click on "Load Image" and choose the one that you want to take as your texture. Click in the field that starts with TE: and name your texture floor.

Now you only need to click the Repeat button and set xrepeat and yrepeat to 9 and the floor is done. You can play around with the values and take the one you like best.

The walls

Next we will change the blue background of our stage. We have to make a wallpaper out of it. Again select it, press the texture and white buttons to add a new texture and press image. The image I used as the wallpaper is from my Gimp article [Playing around with Dingbats and The Gimp](#):



Fig.3 Wallpaper texture

Name the texture wallpaper. Press Repeat and set xrepeat and yrepeat to 30 and the first wallpaper is ready.

Scale both, the floor and the wallpaper up (select both by pressing shift plus right clicks with the mouse, then press s).

Now let's add the wallpaper to the right: In side view press Space -->Add-->Mesh-->Plane. Scale it up (press s) and place it (press g) to the right in front and top view. Make a render (F12) to see if it looks good or if you have placed the wallpaper too much to the right so that it isn't visible on the rendered image anymore.

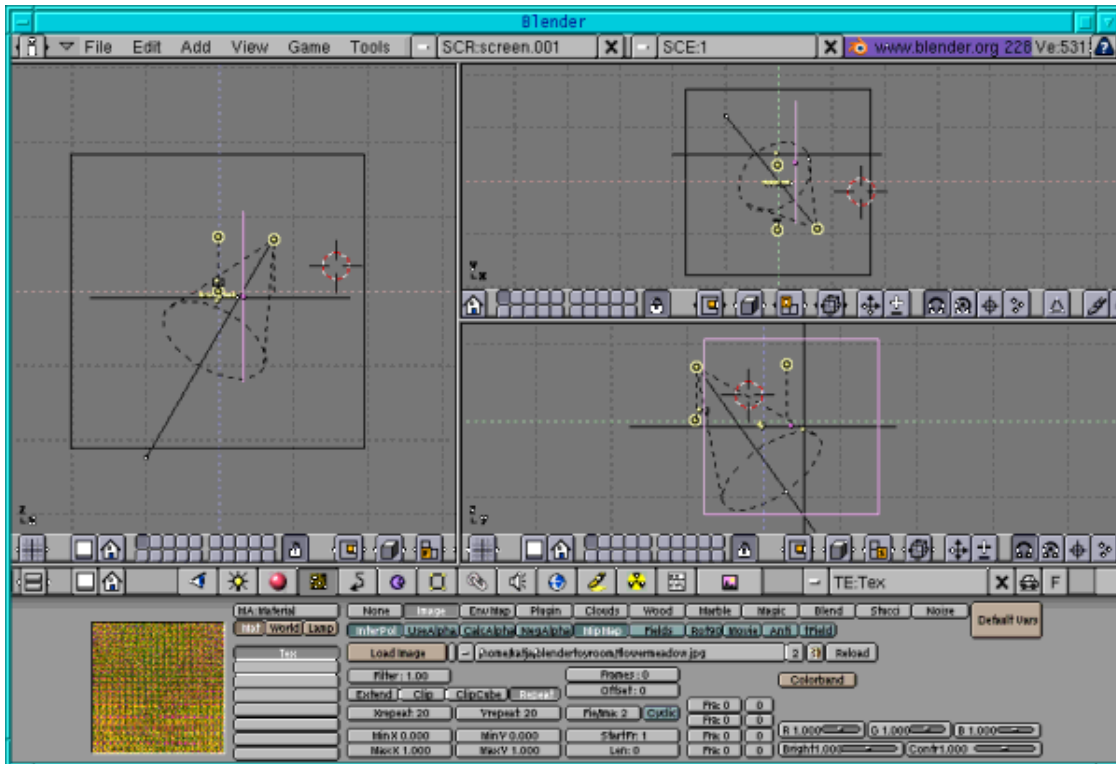


Fig.4 The walls

Now click on the material button plus the "Add new" button first before you click on the texture button and also add a new texture. An object always needs to have a material first before a texture can be assigned to it. Add the flower meadow as texture again (but as a new texture). Click repeat and change xrepeat and yrepeat to 20. Name the texture wallpaperside. The room is ready.

The door

To create the door select the plane that is used as right wallpaper in top view and duplicate it (shift +d). Then scale it down (press s) a bit and in top view move it a bit to the left. Click on the material button and the white button and add a new material. Change the colour to yellow (R=1, G=1, B=0) or whatever colour your door should have. Then go to the texture button and white button to add a new texture as well but click "none" (as we copied it it has the texture of the wallpaper and only if we give it a new texture we can take this texture away. If we change the "old" texture the wallpaper loses its texture). If you now make a render the plane that will become the door is visible in yellow. Now that you can see your door scale its height up and its width down by pressing s and the middle mouse button to restrain the scaling. When you are satisfied with the outline and with the door being still selected click tab followed by a and then extrude (press e) the plane in top view a bit.

If an object is in edit mode and you want to select all points you can do this by simply pressing a. If some points are selected and you want all points to be unselected you can press a too.

For the door mounting duplicate the door (shift +d) and in side view scale it down (press s) and move it (press g) to its place in the left middle of the door. Now just choose a pink (or a different) colour (R=1, G=0, B=1) and make sure that in top and front view the door mounting looks a bit out of the door.

For the door knob I simply squeezed a sphere. Hit Space, Add-->Mesh-->UVSphere and let the segments and rings at their default value of 32, click tab to leave edit mode. Then in side view press s and by pressing the middle mouse button restrain the scaling to the horizontal side. Then go to top view and again press s and hold the middle mouse button down and scale it vertically. When it has the form of a door knob scale it down so that it fits to the door and give it a black colour (R,B and G =0).

For the keyhole I took a Bezier Circle (in side view hit Space, Add-->Curves-->Bezier Circle, then press tab to leave edit mode), converted it into a Mesh object (alt +c) and extruded (select it, press tab followed by a, then press e) it a little bit in top or front view. Then I gave it a black colour (R,B and G =0). When it is scaled down (press s) and placed (press g) on the door mounting it looks like a keyhole.

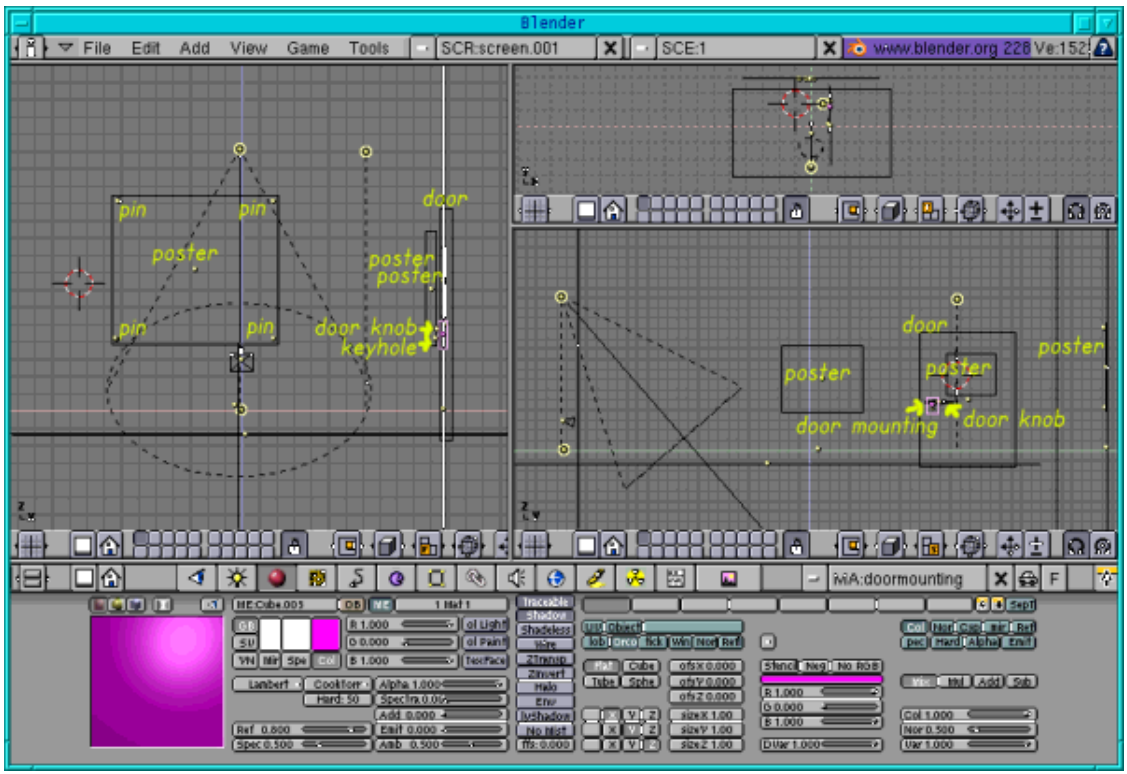


Fig. 5 Where to place the door and posters

The posters

Okay, now for the posters. I simply copied the planes of the wallpapers and the door respectively, scaled them down, moved them out a bit, moved them to their place (take a look at the figure above to see where to place them) and gave them the textures (see below). The same procedure as for the door. For the poster on the wallpaper you can directly see I chose this picture as texture:

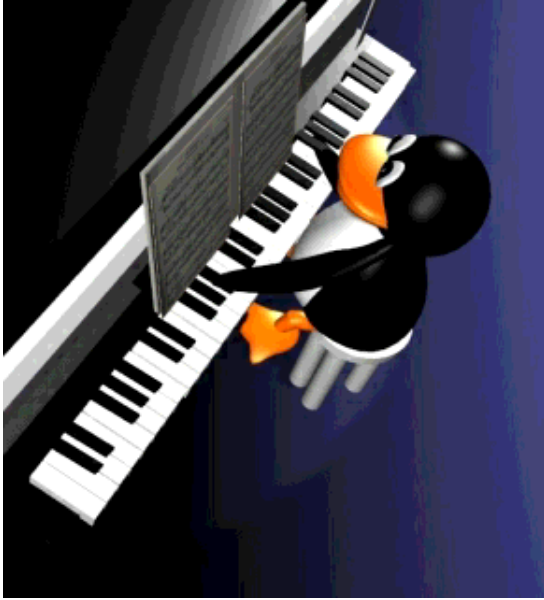


Fig.6 Poster texture

The pins are Bezier circles (hit Space, Add-->Curves-->Bezier Circle) that were converted to mesh (alt +c) and extruded (press e) again. For the poster on the door I chose this:



Fig.7 Poster texture on door

and finally for the wallpaper to the right I took this one:

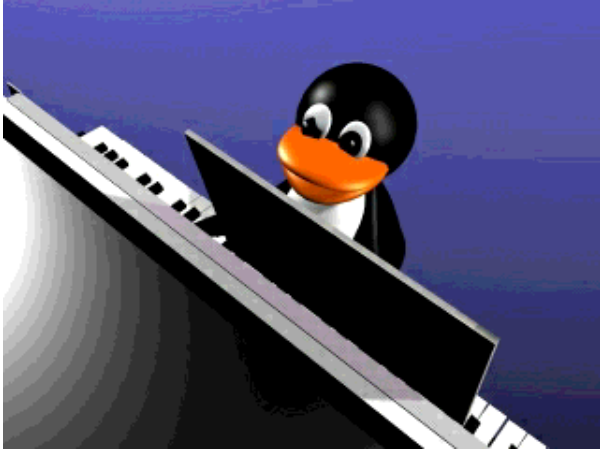


Fig.8 Poster texture on side

The room itself is ready now. Congratulations! Time to create the toy objects in the room:

Layers

As it will become rather crowded it might be a good idea to model our toys on different layers. If you haven't played around with the layers you probably have modeled everything in the first layer so far. But there are 20 possible layers in Blender.



Fig.9 Layer buttons

Only the layers whose layer buttons are pressed down are rendered. So if you want to see a scene with or without an object just put it in a separate layer and select or unselect this layer respectively. I usually have the lamps and the stage in layer one and model the other objects in different layers. This way I can model an object separately from the other objects and by selecting the first layer as well for rendering I can easily see it in a rendered picture without being distracted by other objects.

You can very easily move objects from one layer to another. Just select the object(s) you want to move and press shift+m. A pop up menu appears that shows you the 20 layer buttons with the one(s) pressed down your selected object(s) is lying in. Now you only need to click with the mouse on the layer you want the object(s) to be in and it is moved to it.

Let's move our train to layer2. Select all parts that belong to the train, press shift + m and then press on the second layer in the pop up menu, only the second layer button should be pressed now, then click okay. If you now only render the first layer you will only get the room. To make the train visible again too you have to press down the second layer (shift plus click with the mouse) in the menu below the three windows as well.

Creating the toys

The rails

Let's now add the rails for our toy train. In top view add a circle (hit Space key, then Add-->Mesh-->Circle (leave the vertices at the default of 32). With all points of the circle selected (they are yellow) press e in top view followed by a left mouse click. Now a click on s to scale them up a tiny little bit. Hit a to unselect the points and tab to get out of edit mode.

Give it a black colour (R,G,B=0). Then duplicate it with shift + d and scale the new circle up a bit.

Next add a cube to the scene and give it a black colour as well. Fit its length and height (it must become rather flat, e.g go in top view and restrain the scaling so that you get a small width, then go to front view to scale down the height and finally back in top view scale the whole cube down) so that it fits between the two circles. We will duplicate and spin it now around the two circles. To do this go to the edit button (F9). Change the Degree field to 360 and the Steps field to 36. With the cube placed between the circles and selected press tab and then a to select all single points. Place the red and white cursor at the center of the two circles (by a left mouse click) and then press Spin Dup and click on top view. The cube is duplicated so that it exists 36 times and the duplicates are spun around 360 degrees. Now you select the cubes and the two circles and scale them in such a way that they become a bit of an oval.

The rails are ready now and we only have to place the toy train on them. To do this first select the whole train. Move, scale and rotate it so that the locomotive fits well on the rails. Next deselect all the parts of the locomotive (you can either right click on every part or you can press b and draw a square around the locomotive while pressing the right mouse button (and not the left one as before for selecting)) and by placing the red and white cursor between the locomotive and the first waggon and using it as rotation center (you must also have clicked it in the menu bar as your rotation center) move and rotate the rest of the train such that the first waggon is well placed on the rails. Then deselect it, move the red and white cursor between it and the waggon behind and do the same again. Repeat this until all waggons ride nicely on the rails.

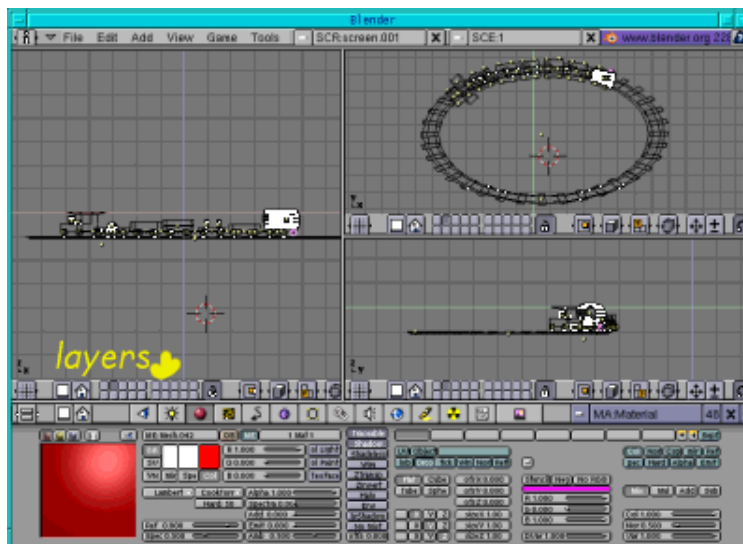


Fig.10 Rails with toy train

The coins

For the coins just duplicate (shift +d) a red wheel from the train in side view and rotate it (press r and rotate it in side and front view). Place (press g) it in the middle of the rails. Then duplicate (shift +d) this one as often as you like (look in top and front view to see how to place it). As the original wheel is in layer 2 the duplicated wheels are also there.

The three balls

Let's now add the big ball in layer 3. Click on the third layer, then add a sphere in front view (hit Space, Add-->Mesh-->UVSphere, leave the segments and rings at their default value of 32, click tab to leave edit mode), give it a material and then a new texture where you load the illustration image of my Playing around with Dingbats and The Gimp or any other picture you like as texture image. Now go to the edit buttons (F9) and click on "Set Smooth". Duplicate the ball twice, move them inside the rail oval and scale each appropriately.

The three cubes

Now let's create the three cubes on the right side. In front view hit space, Add--> Mesh --> Cube, click tab to leave edit mode, scale it (press s) and place it (press g) where you see it in the picture, finally give it a material. Then give it a texture. I again used images from my Playing around with Dingbats and The Gimp article. But again you can use any image you like. Duplicate the cube twice and change the texture by first adding a new material and then going to the texture and white button, "Add new" and choose a different image. Note that for the rightmost cube I chose that the texture should be placed on a cube surface. In the material buttons menu you can find 4 boxes "Flat", "Cube", "Tube" and "Sphere". The default is "Flat". With this setting the picture is shown on one side of the cube while the other sides display the colours of the edges of the image. With "Cube" selected the texture image is shown on every side of the cube.

The pens and the picture

Next let's create the pens and the picture in layer 4. Select the 4th layer. For the picture with the sunflower I simply added a plane (Space-->Add-->Mesh-->Plane) in top view and placed (press g) it where you can see it. I gave it a colour (material) and chose the sunflower from my Playing around with Dingbats and The Gimp article as image texture. For the pens I added a Bezier Circle (hit Space-->Add-->Curve-->Bezier Circle, then tab to leave edit mode) in side view, converted it to a mesh (alt+c) and extruded it (press e) in front view until I had a tube like object. Then I extruded it again on one end and scaled it a bit smaller. On the other end I extruded it four times and made it a bit smaller each time. The last time it should be so small that all points meet in one spot. Now give it a white colour (r,G,B=1). Next select the second and third line as seen from right as well as the first three lines seen from the left. Then go to the edit buttons and press "New" and "Select". Go to the material buttons, add a new material and give it a red colour (R=1. G,B=0). Go back to the edit buttons and click "Assign". The first pencil is ready. Now you copy the pen 4 times, change their colour (the white parts are the same for all pencils so you can leave them as they are and only need to change the other two parts. Select the appropriate lines so that they appear in yellow, then press "New" and "Select" in the edit buttons, go to

the material buttons, click "Add new" and change the colour, then go back and click "Assign") and finally place them as you can see in the picture.

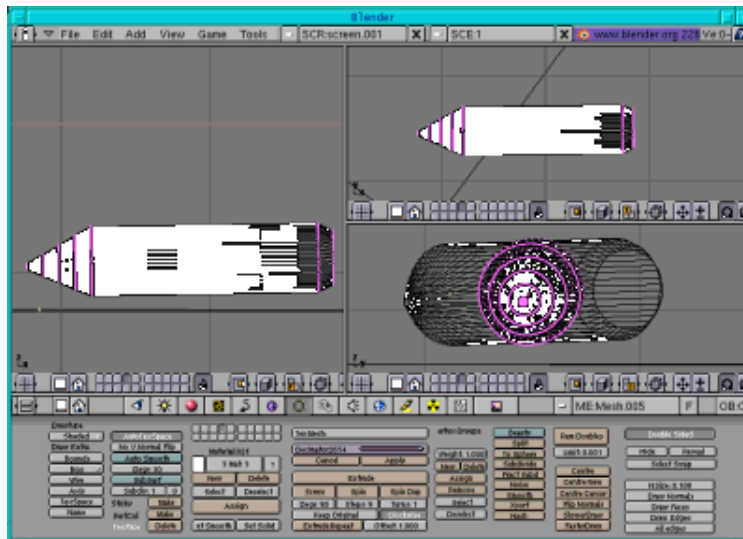


Fig.11 The pencil

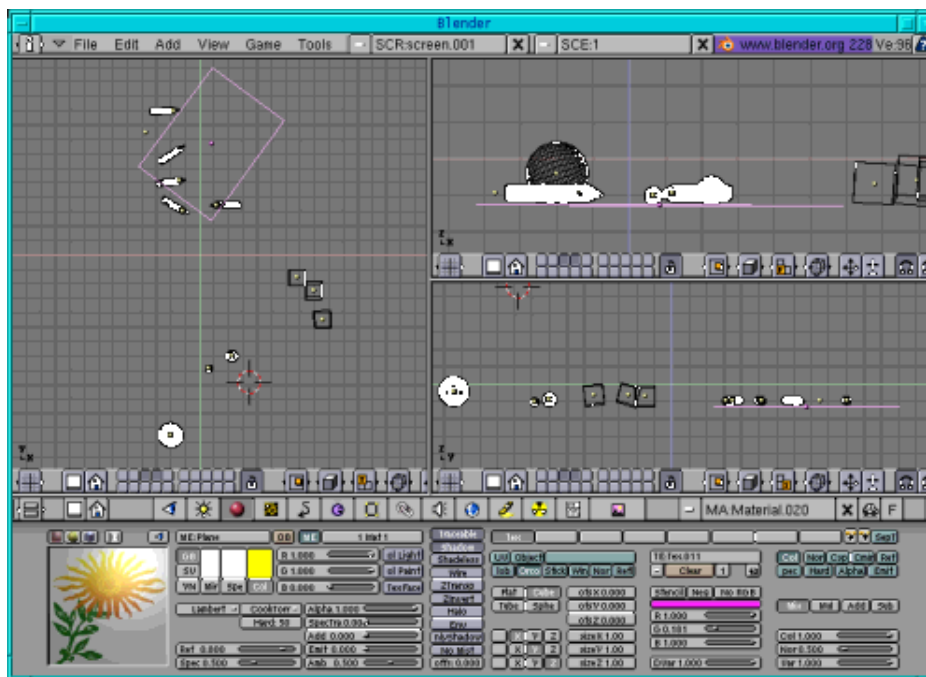


Fig.12 Pencil, paper, balls and boxes

The building blocks

Now for the building blocks. For those cylinder like pieces you can just add a cylinder in top view by clicking Space --> Add --> Mesh --> Cylinder (leave the vertices at their default value of 32) and rescale them. For the square looking ones you add a cube and lower its height. For the lengthy looking ones you take just the square looking ones and change their length. And finally for the ones that can be used as a roof you take one of the square looking ones again and select the points on the upper half. Then press s and resize them so that all points will end in one point. Now you have to give all of them a material and in case you want to place them exactly as I did you can take a look at the picture.

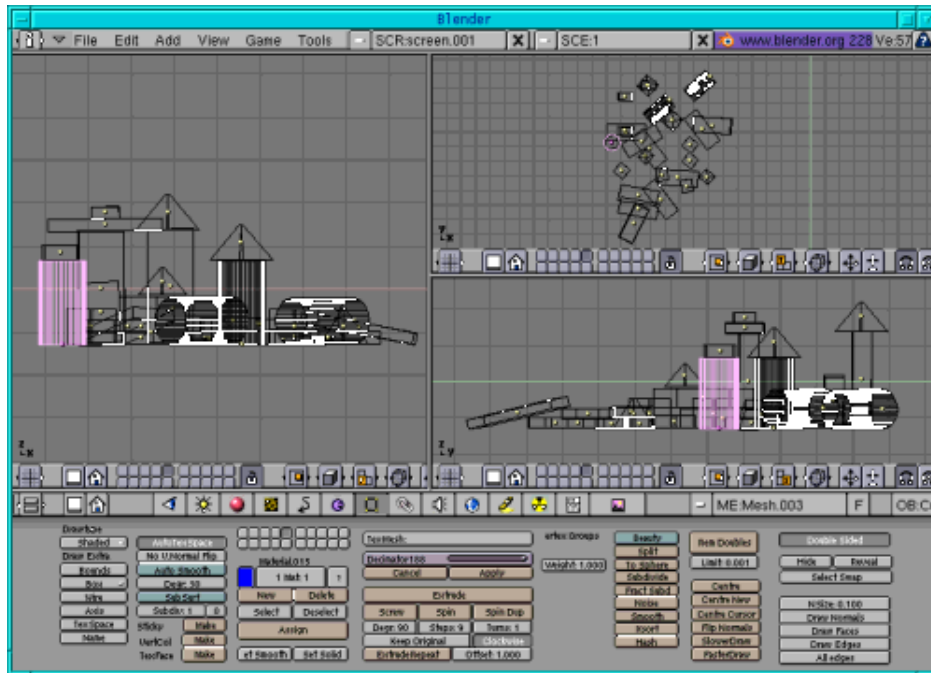


Fig.13 The building blocks

Let there be light

Finally I changed the lights a bit. Take a look at figure 14 to see how the lights are placed now. For the spot light make sure that the boxes "Shadows" and "Square" are pressed. If you make a render now you see the square already. Now go to the texture button and click "add new". We will give our light a texture now. Open The Gimp and open a new image with a white background. With black as foreground colour select a brush and draw some horizontal lines. Save it as lighttex.jpg. Now go back to Blender and load the image lighttex.jpg as your texture. For the other two lights I used a hemi light. Just take the two lights that have been lamps and click on Hemi in the lights buttons menu.

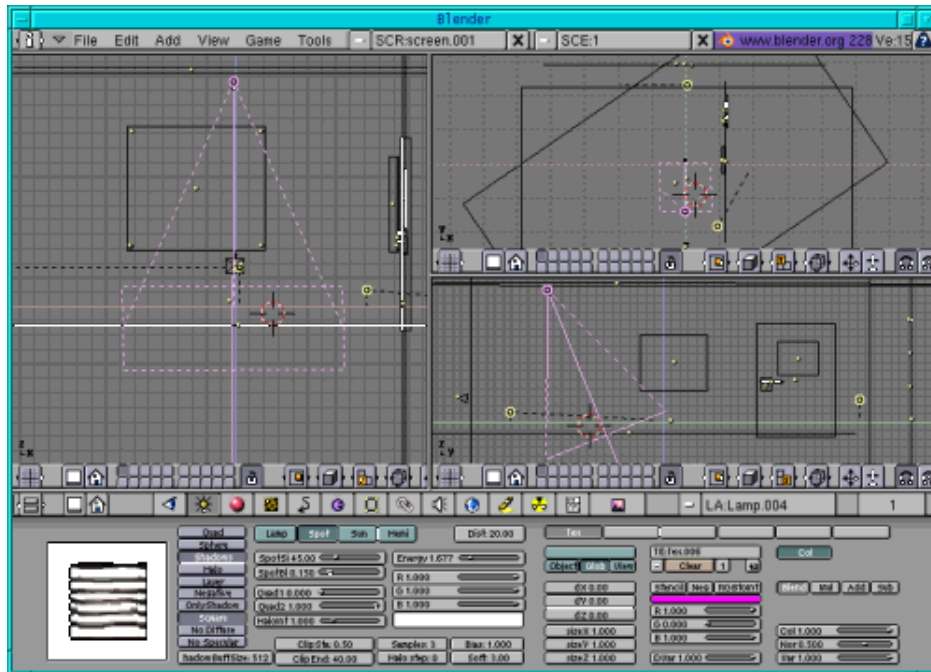


Fig.14 The lights

In this article we only learnt a few new techniques but still you see that we can create a very nice image with just the techniques that you know by now. So go on practising your skills!

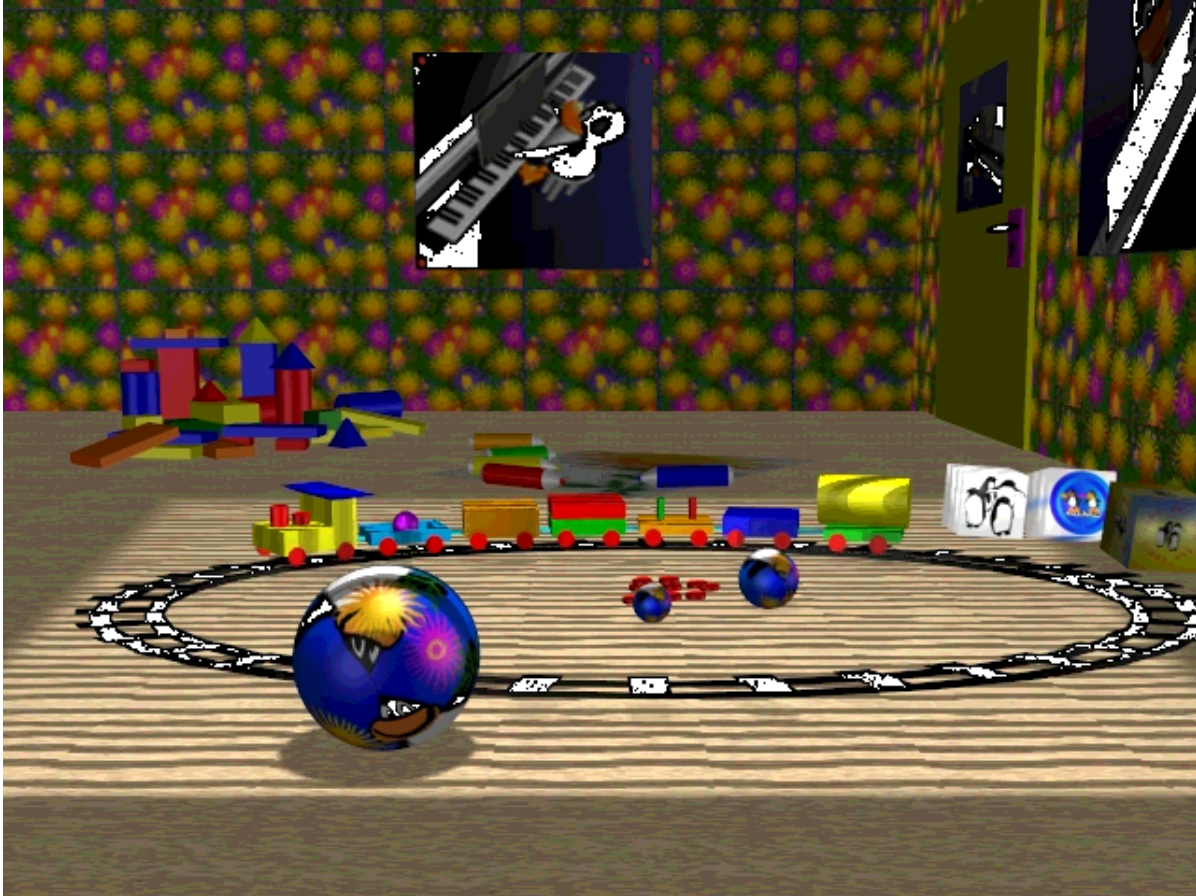


Fig.15 The final kid room

Have fun and happy blending! :)

References

- The Official Blender site (here you get the latest information about the further development of Blender, you can download it, there are tutorials ..): <http://www.blender.org>
 - Blender cafe (in English and French):<http://www.linuxgraphic.org/section3d/blender/pages/index-ang.php>
 - General articles about 3D graphics and animation: <http://webreference.com/3d/>
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