

The Snowman of Doom

A Beginner's Guide to 3D Modeling

for Neverwinter Nights

by TheBarbarian

Part 1.2 - UV Mapping & Texturing

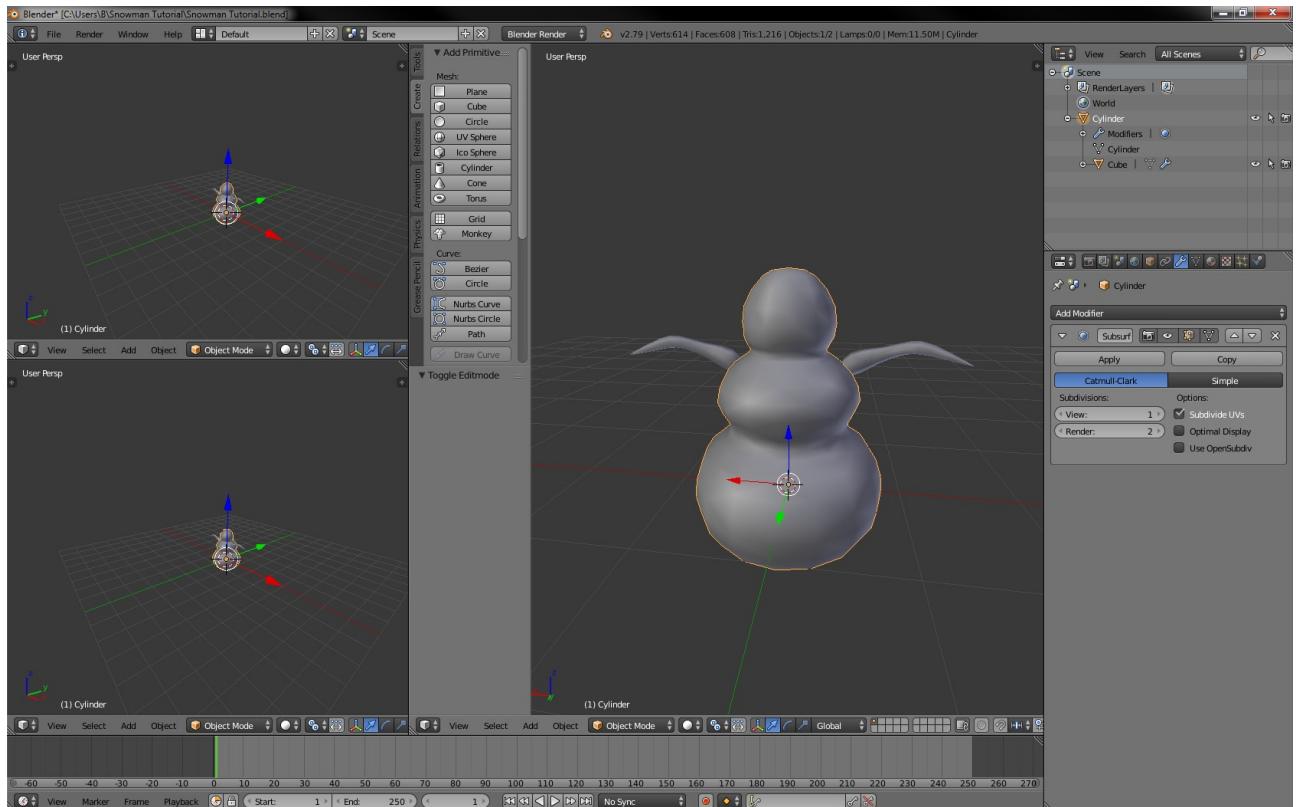
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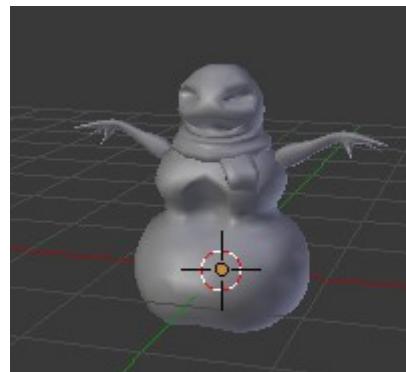
- Intro Page / Resuming

OK! Starting where we left off last time, we should have a basic snowman figure now. But it's just a gray blob - no materials, no texture, no nothing. That won't do. Let's do something about that.

I'm going to use the plain snowman from the last part for the UV mapping / texturing part of the tutorial. I've mentioned that you can add your own details to your snowman, though; your mesh needn't necessarily look like this one.



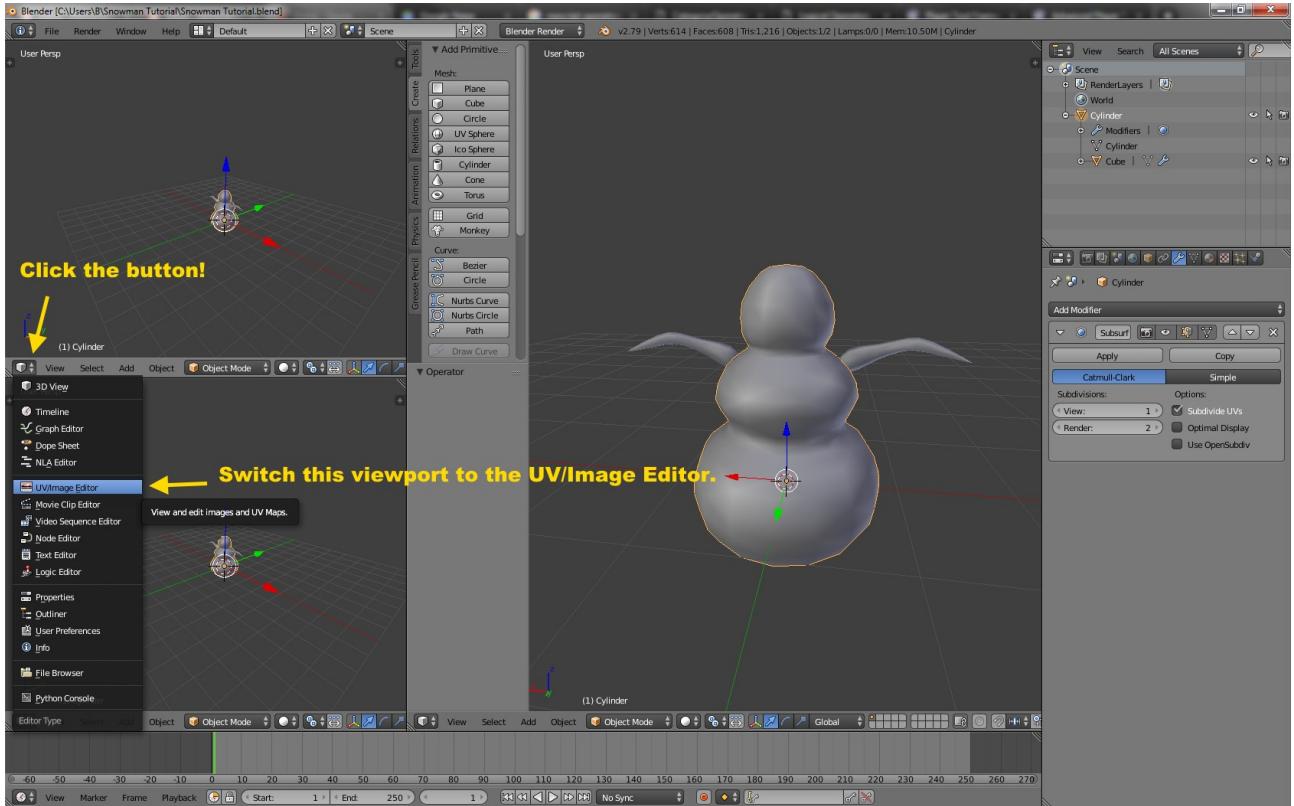
For the purposes of the tutorial, I figure it's probably pretty sensible to mainly work with the plainest possible variant, though. I'll post a few pictures of my more detailed snowman mesh every now and then as we go along. Mentioning this ahead of time, so you won't be surprised when it happens.



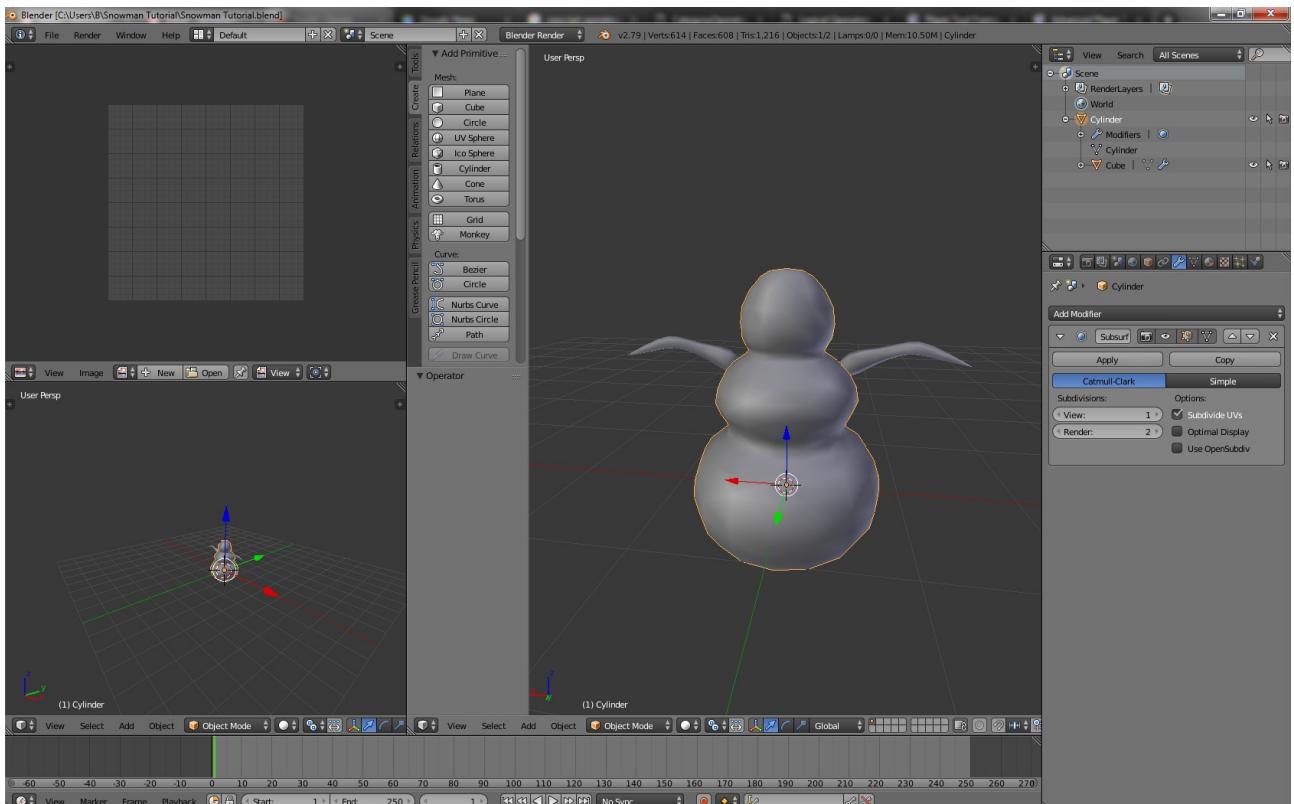
The .blend files for the more complex and the plain snowman are available on the NeverwinterVault project page, so if you'd like to use either of them instead of making your own mesh, that's an option. :-)

- UV Mapping - Switching a Viewport to the Image Editor

At long last, having multiple viewports open really gets to shine! Time to click some buttons.



You can switch your viewports to a whole bunch of different modes. Right here, right now, we want the UV/Image Editor.

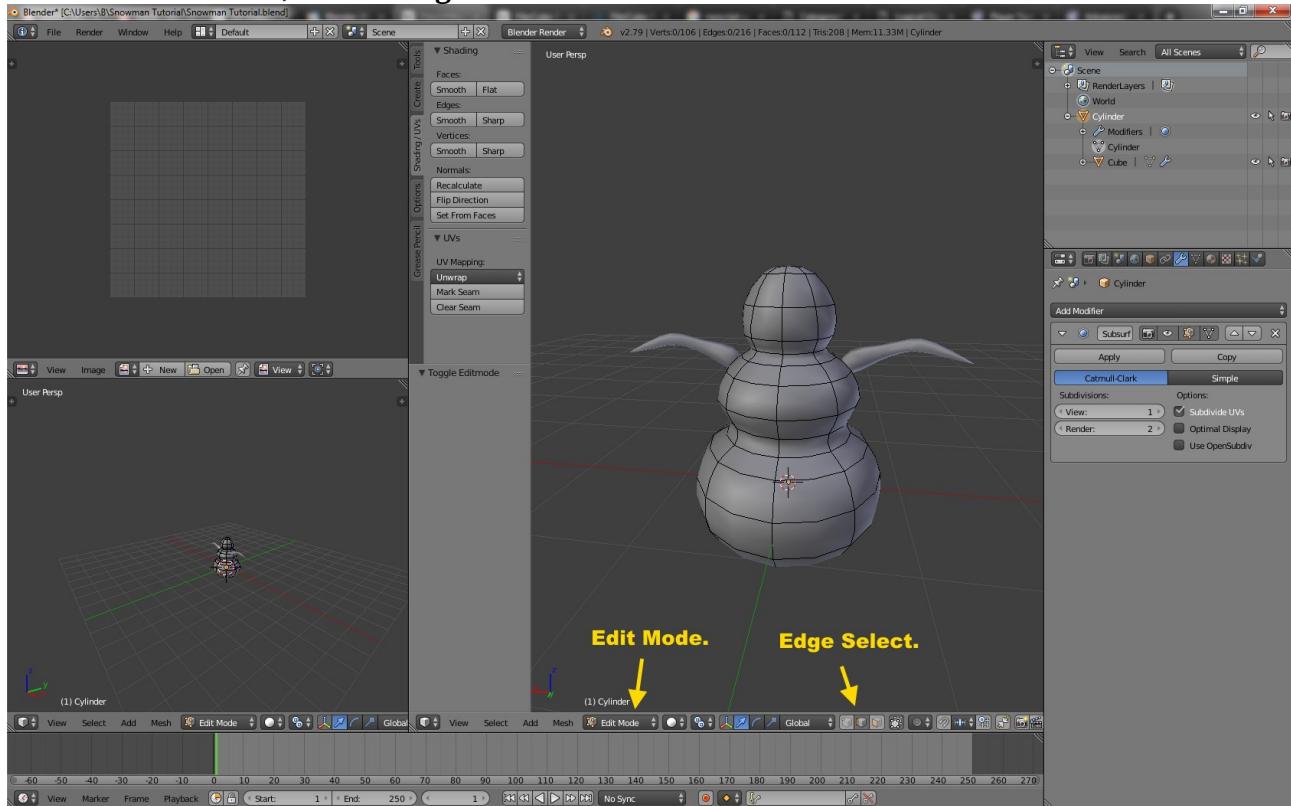


There we go. That was pretty easy.

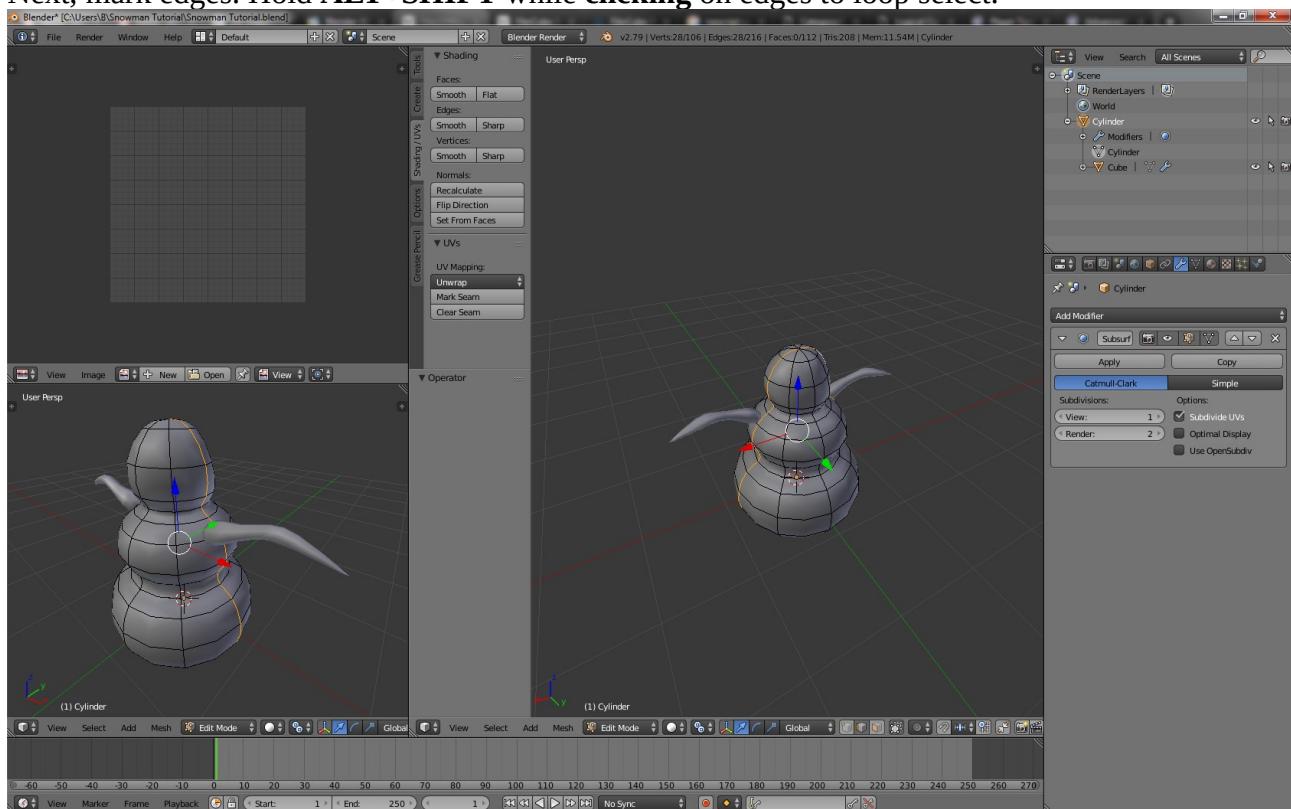
- UV Mapping - Marking the Seams

Right now, we've got a three-dimensional shape. Now, we're going to mark sections of the snowman as not being connected (marking seams), and then unwrap it to get a two-dimensional version of the mesh. This will leave us with the layout that all our texture files for the snowman are going to share.

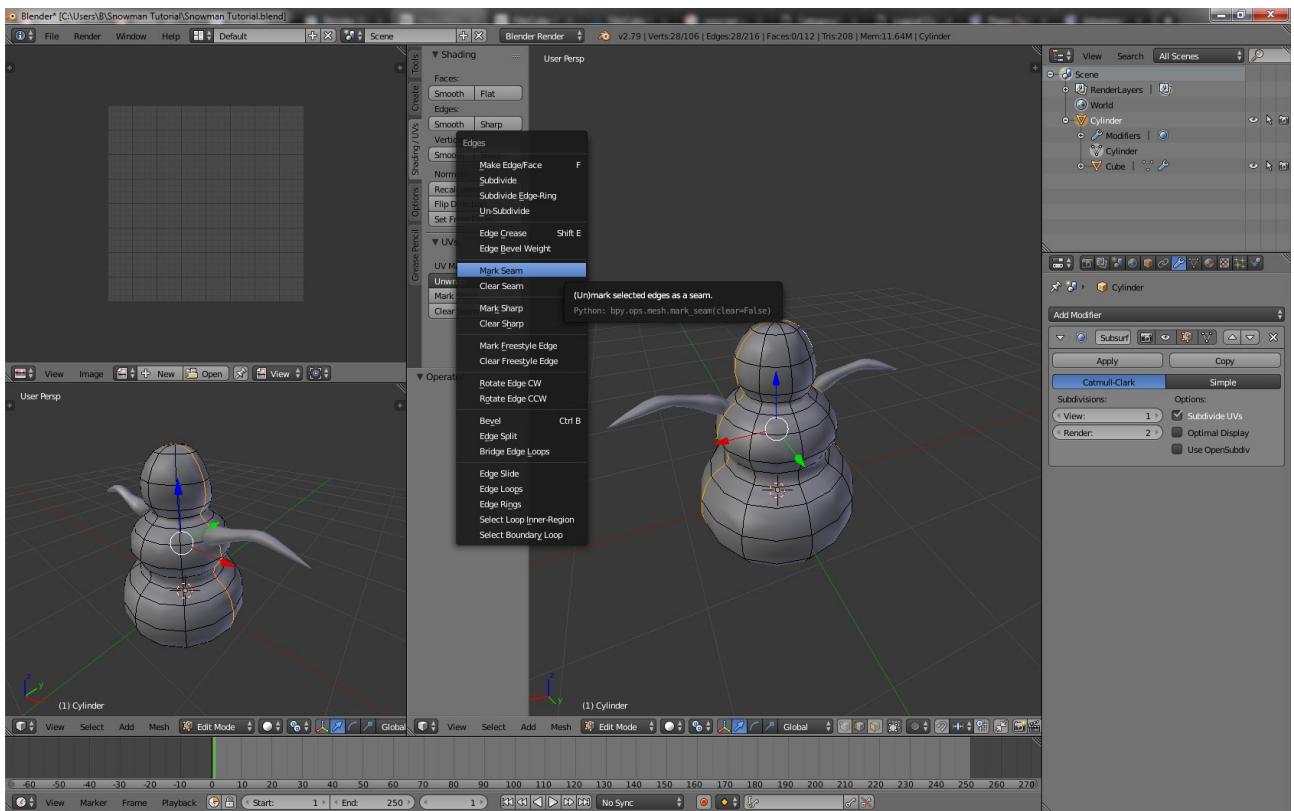
Switch to **Edit Mode**, and set **Edge Select** active.



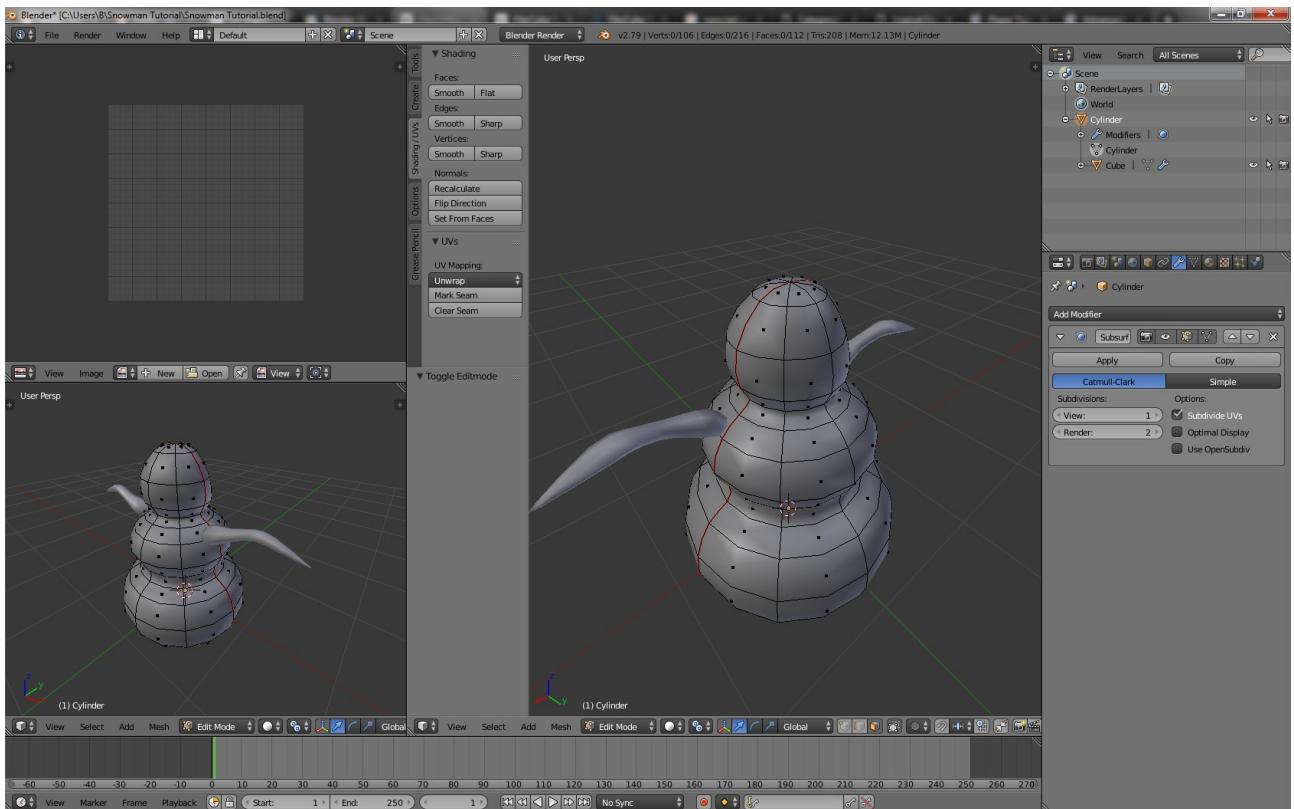
Next, mark edges. Hold **ALT+SHIFT** while clicking on edges to loop select.



Remember: If something goes wrong, **CTRL+Z** is **undo**.



With the edges selected, hit **CTRL+E** and then **A** to mark the selected edges as being seams.



If everything went right, these edges will now stay marked red even if you switch into other selection modes (vertex, face).

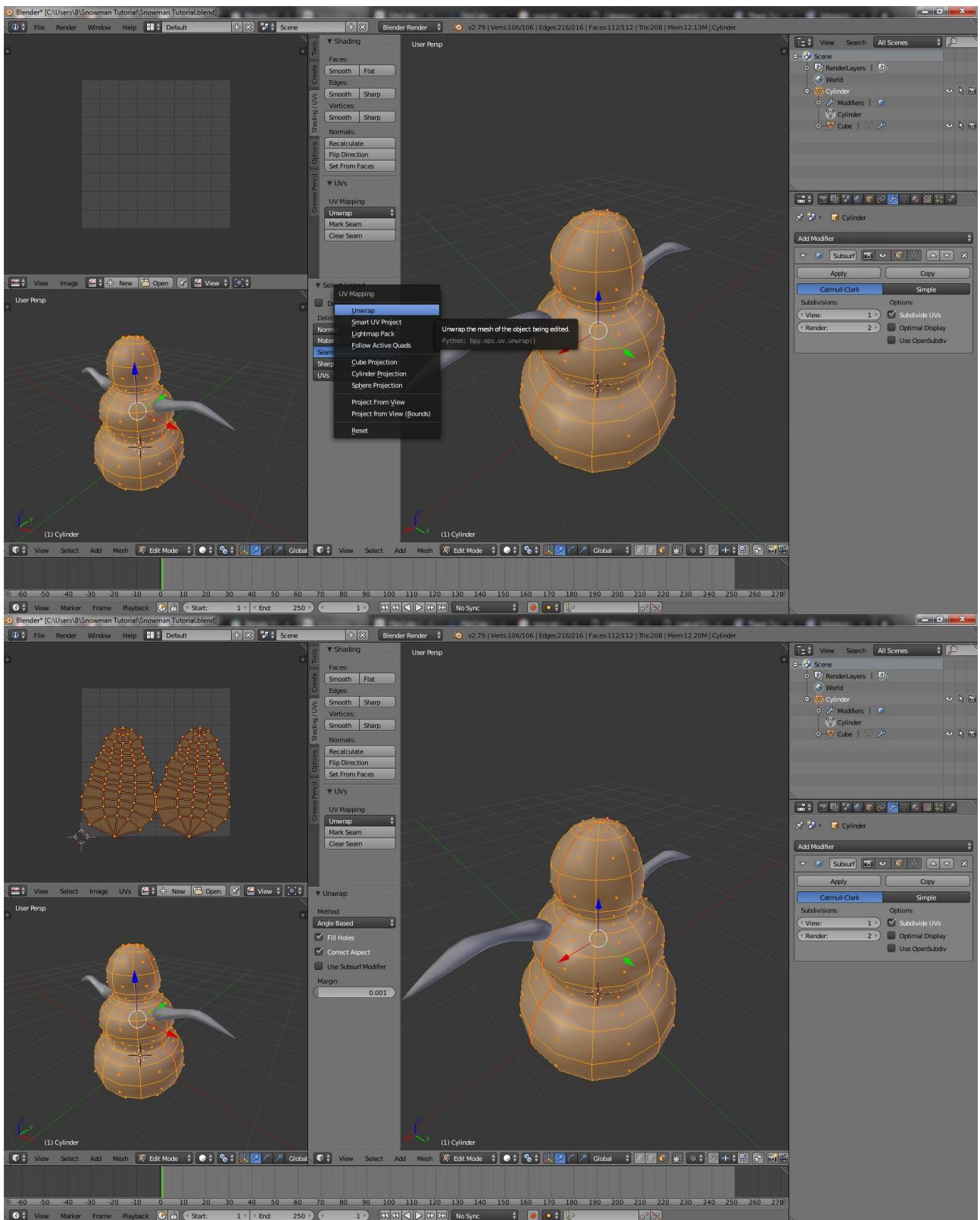
These edges are now seams, and they signify that the mesh is, far as unwrapping or selecting goes, no longer meant to be connected in these spots.

- UV Mapping - Unwrapping

With the seams marked, select the entire mesh. Point your mouse at it, and hit L to select linked. Watch out - if you're currently using Face Select, then the seams count as borders, and you may need to select linked twice!



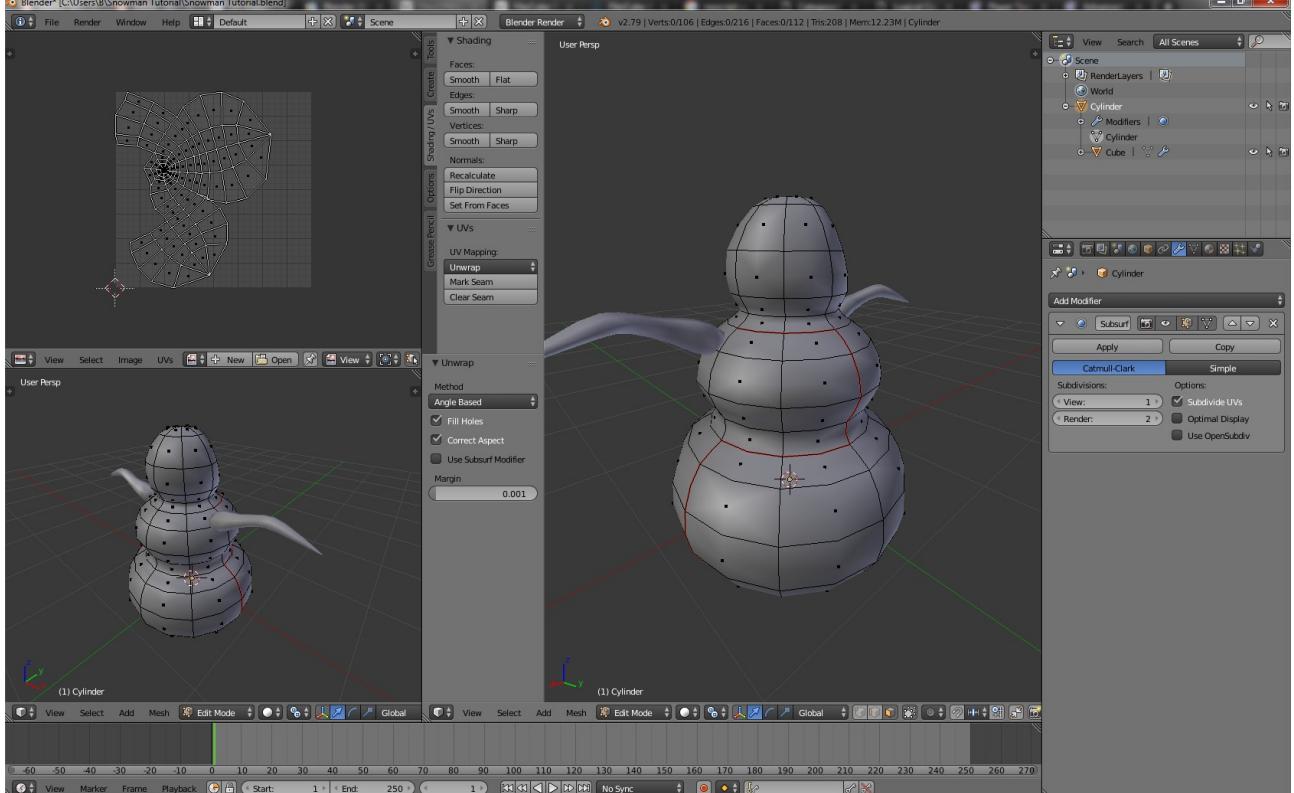
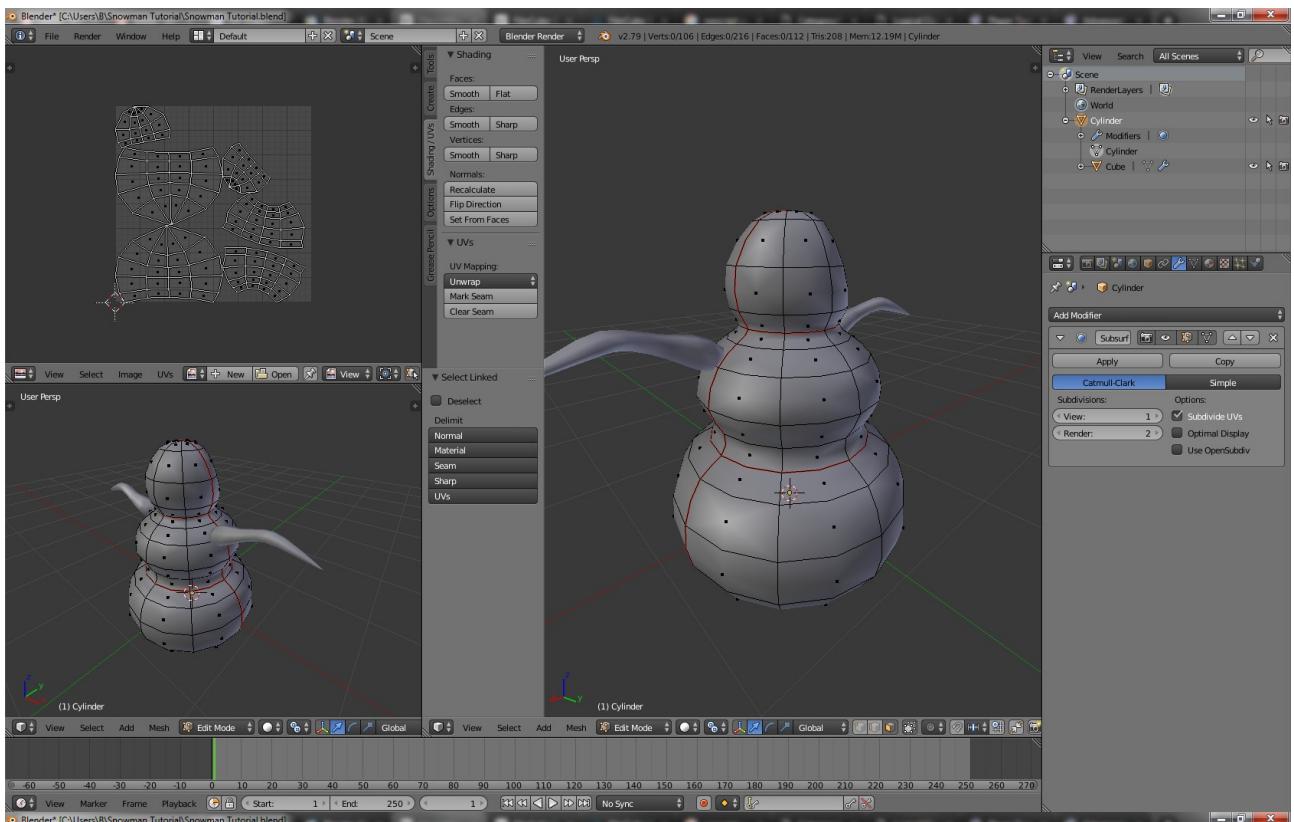
This is the state we want. Now for something completely different... hit **U**, and then **U** again!



Behold! We have Unwrapped the snowman body, creating two-dimensional pieces whose shape is defined by the position of the seams!

Word to the wise: You can make sewing patterns for plushies by doing this. :-)

For the giggles and the general educational value, I'm going to show you what would happen if the seams were laid differently. Take a look at the following images, but don't try to follow along:

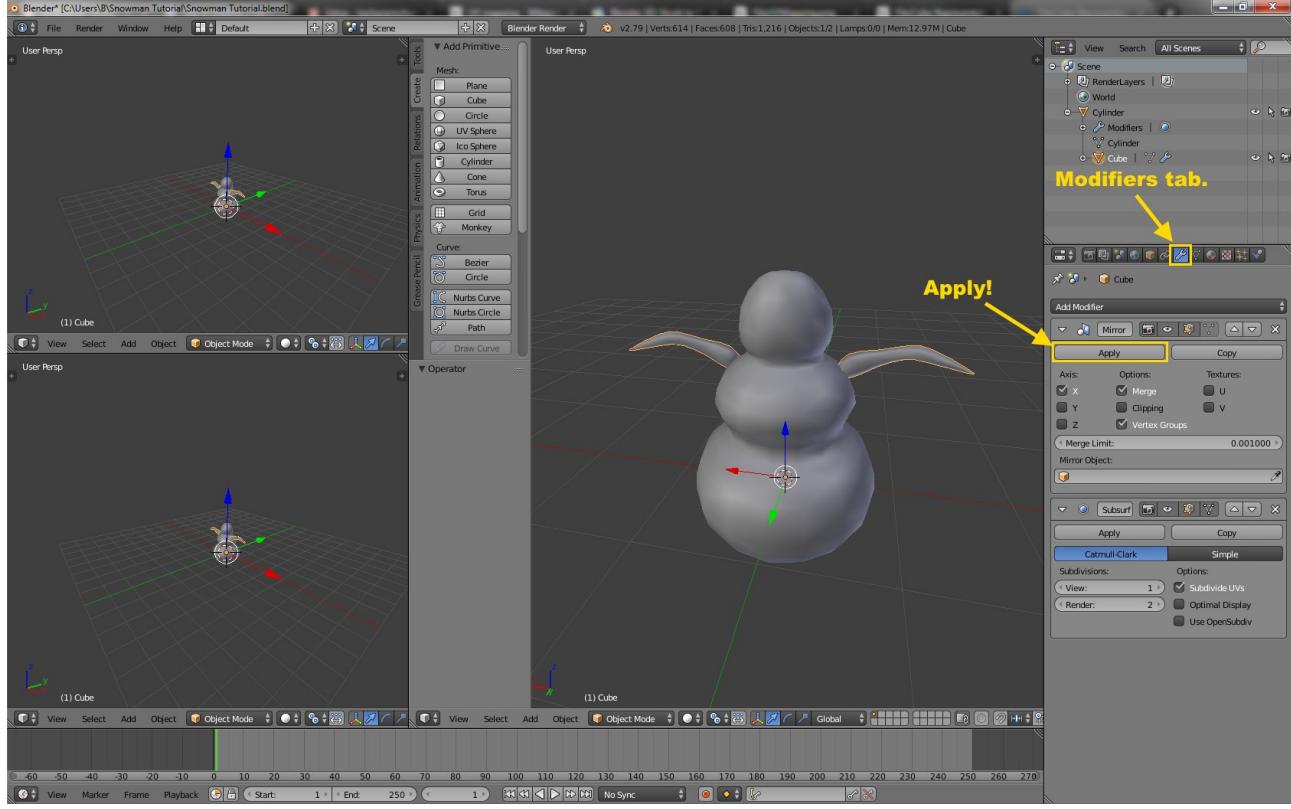


Saying something terribly vague and unhelpful now: Generally speaking, you want to place the seams *somewhere where they make sense*. This is going to vary from mesh to mesh. Sometimes it makes sense to keep the UV map in one piece, sometimes it makes sense to cut it into multiple ones. Horizontal seams, vertical seams... what matters is that, optimally, all the pieces of your snowman fit onto the same texture, **without overlapping one another**.

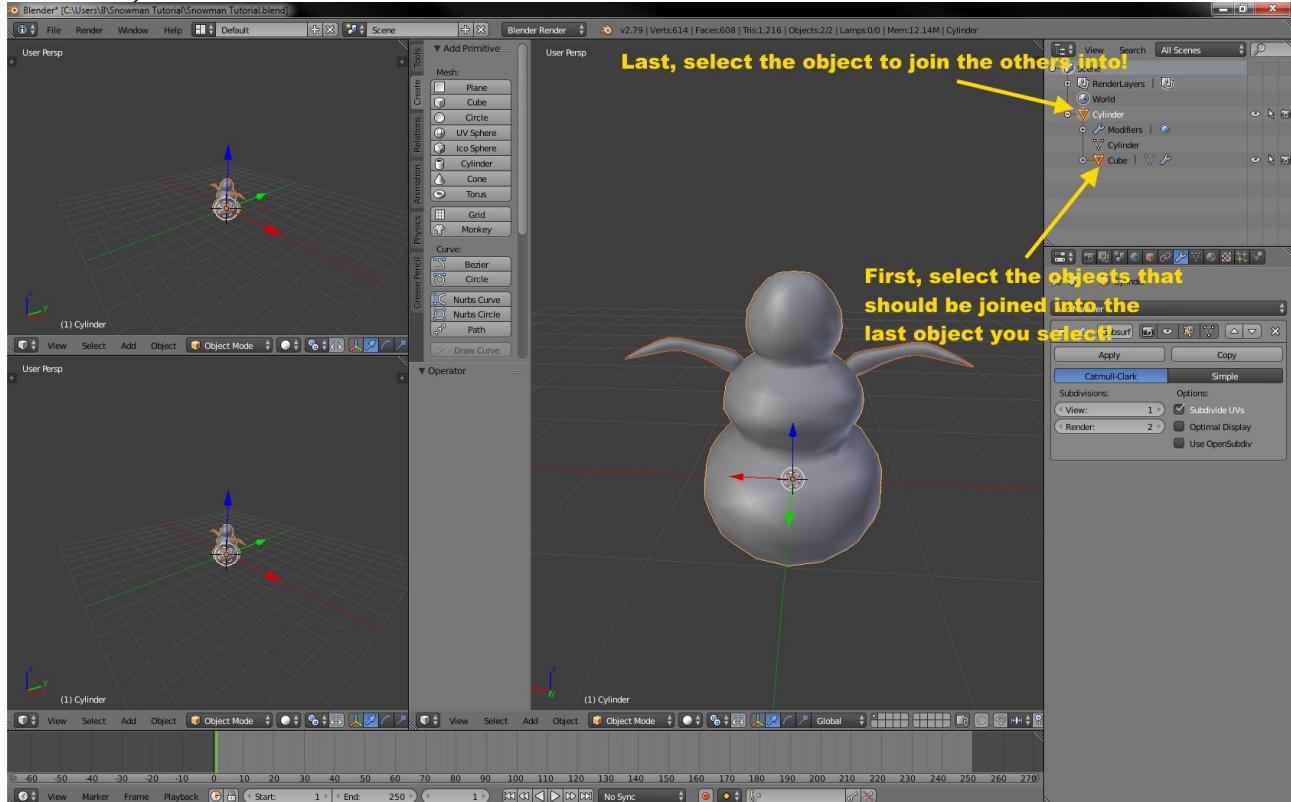
To make this easier, I'll show you a new trick: Joining objects. Here's the part where you start following along again.

- UV Mapping - Joining Objects & Unwrapping Everything at Once

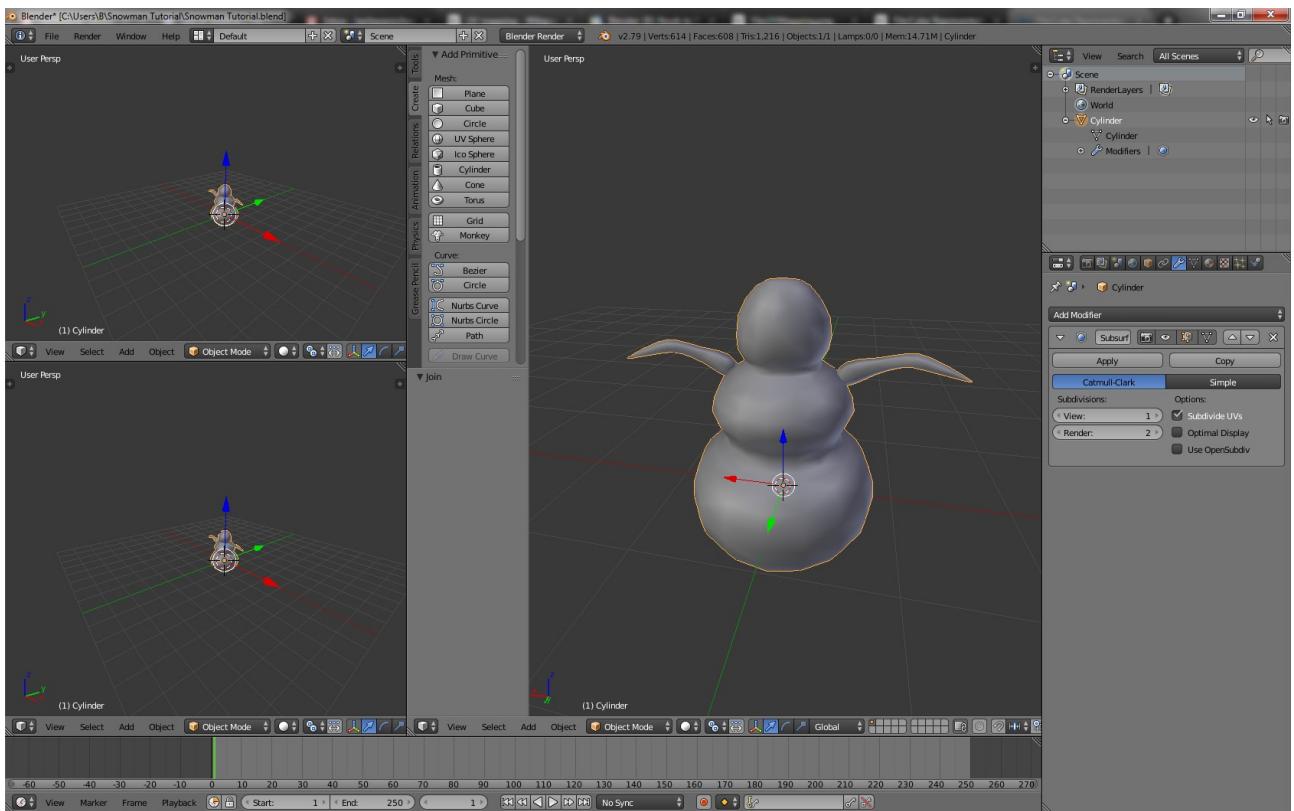
OK, now, we're going to join two (or more) objects that have mesh parts together. First, if you've still got objects active that have the Mirror modifier on (like the arms), Apply the Mirror modifier.



Now click the first object, then hold SHIFT while clicking the others. Finish with the object that you want to join the others into, i.e., the object that will remain at the end (containing the parts of all the others).

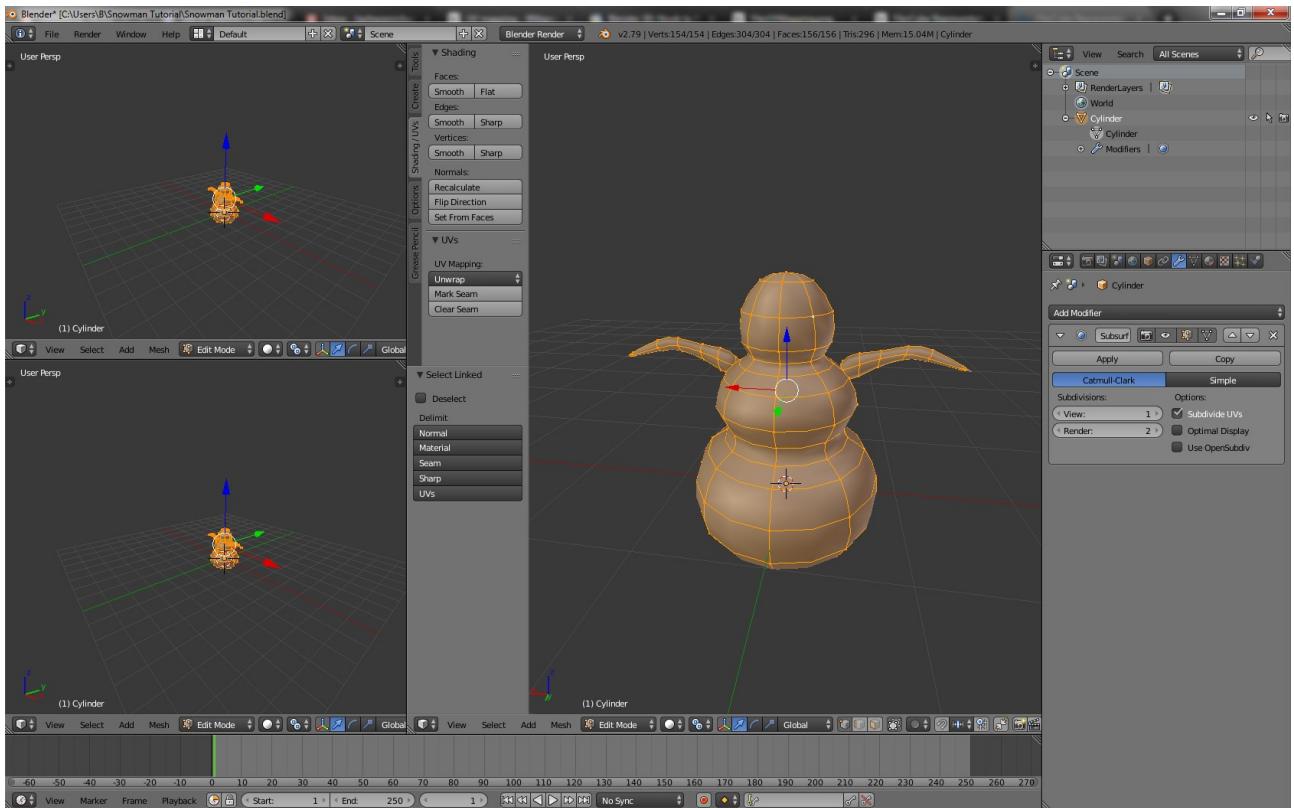


And now... hit **CTRL+J**, to join all selected objects into the *last* selected object.

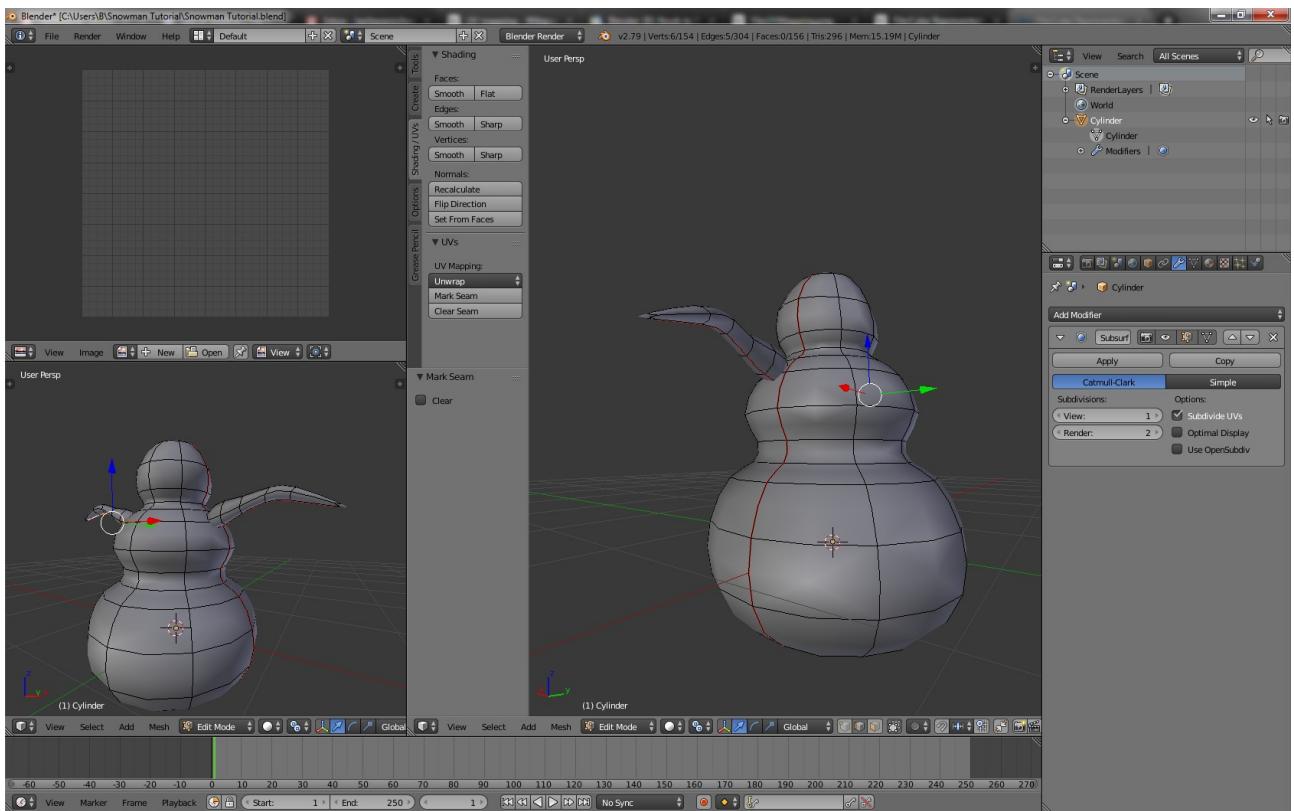


If everything went as intended, you'll be left with a single object that contains all the mesh parts of the others. (ps you should be saving regularly)

If a Mirror modifier was still active, like on the arms, then the mirrored arm will have vanished, at this point. Backtrack and Apply it, if you have!



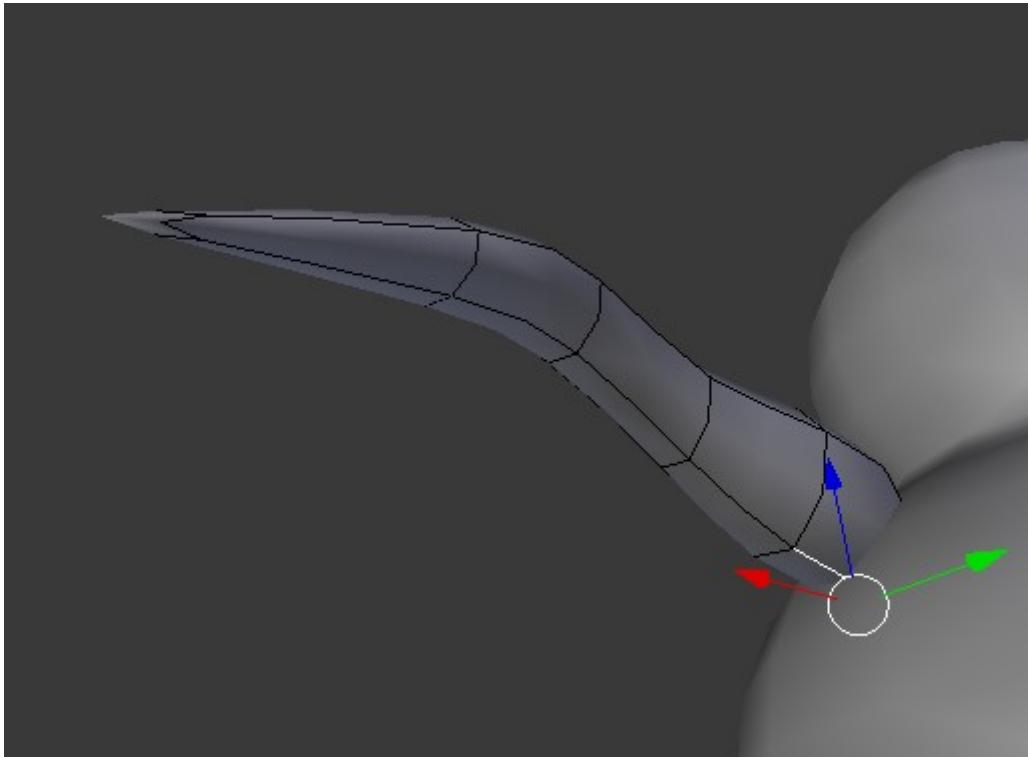
Switching to Edit Mode again, you'll see that all the mesh parts are selectable at once, now.



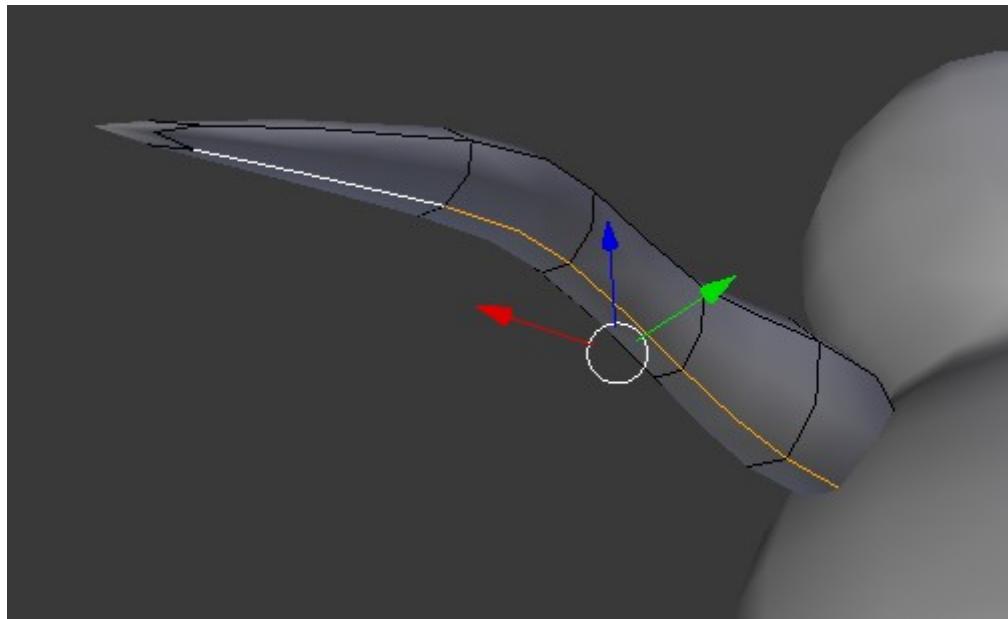
Make sure that you've got seams on the arms, too. I'll show you another way to select edges (or verts, or faces), for this, as loop selecting may not be reliable here.

There's another good way to select edges for marking seams.

First, select a single edge:



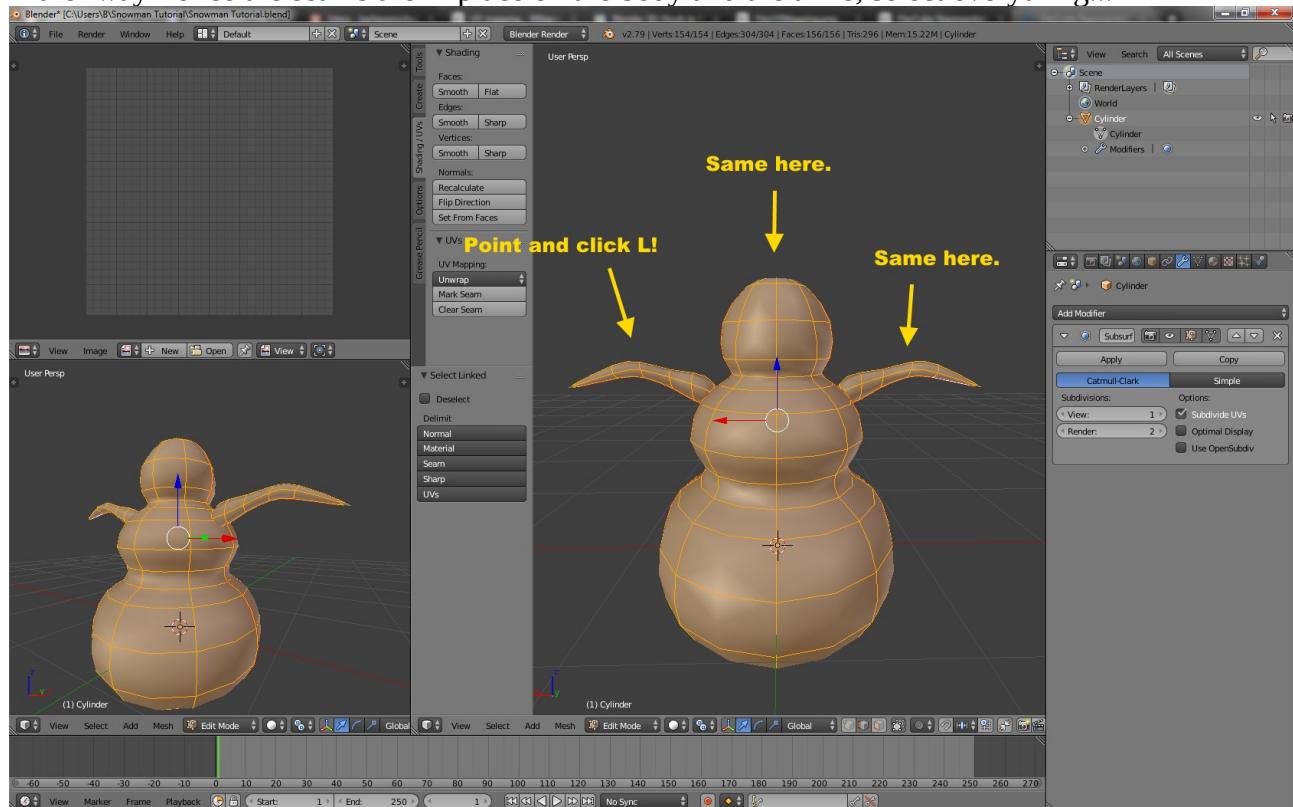
... and then **hold CTRL** while you click on another edge, to select the shortest path from here to there.



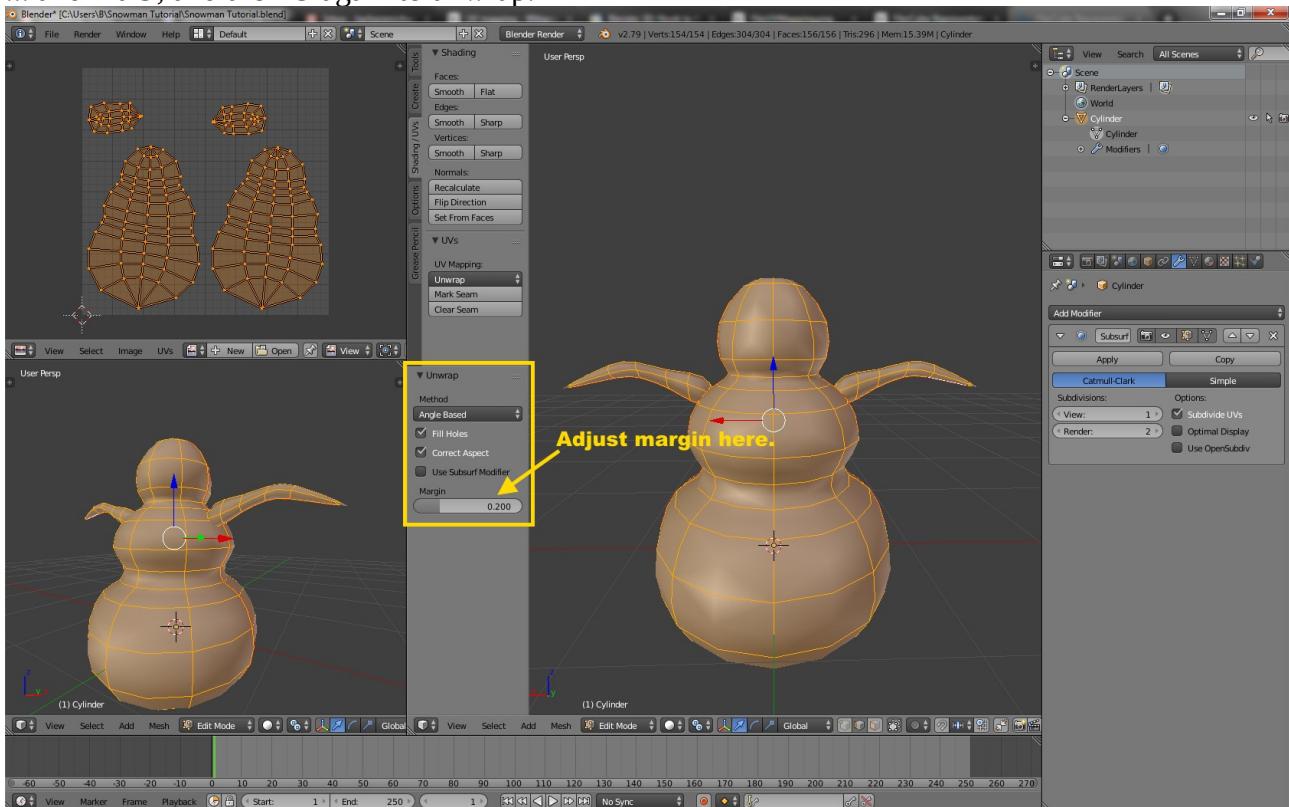
This works for verts and faces, too. :-)

Note on the side: If you mark seams **before** applying the Mirror modifier, then you will be marking identical seams on "both" arms at the same time. For comparison, if you apply the Mirror modifier first, then the arms are separate pieces and will need to be marked individually. I'm letting you run into this "problem" face-first for the learning value. ;-) No regrets. You know where the Undo-button is.

Either way - once the seams are in place on the body and the arms, select everything...

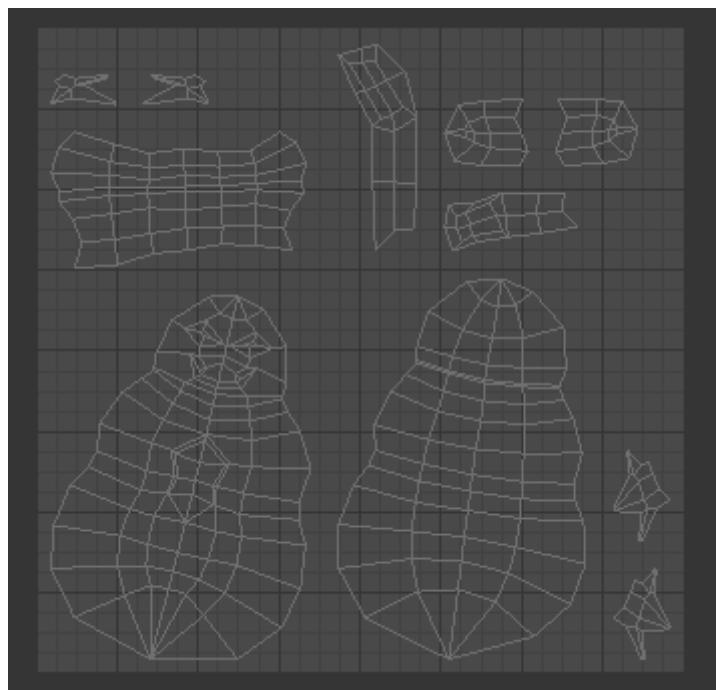


... and hit **U**, and then **U** again to unwrap.

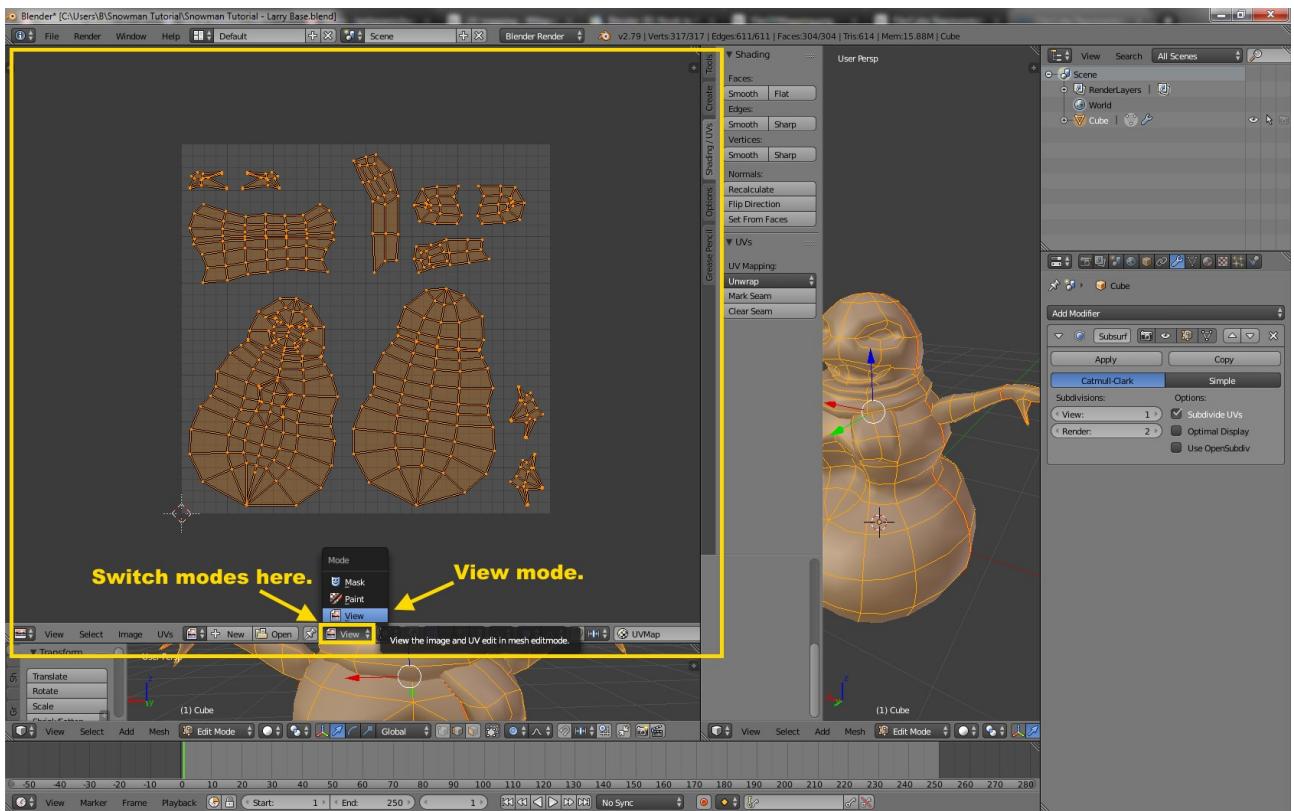


Now, adjust the **margin** a little; to, say, **0.2**, so there'll be some buffer space between the individual pieces. This is because the paint will be bleeding over the edges a little later on, and it shouldn't wind up on any pieces where it doesn't belong. Aaand... that'll do. :-)

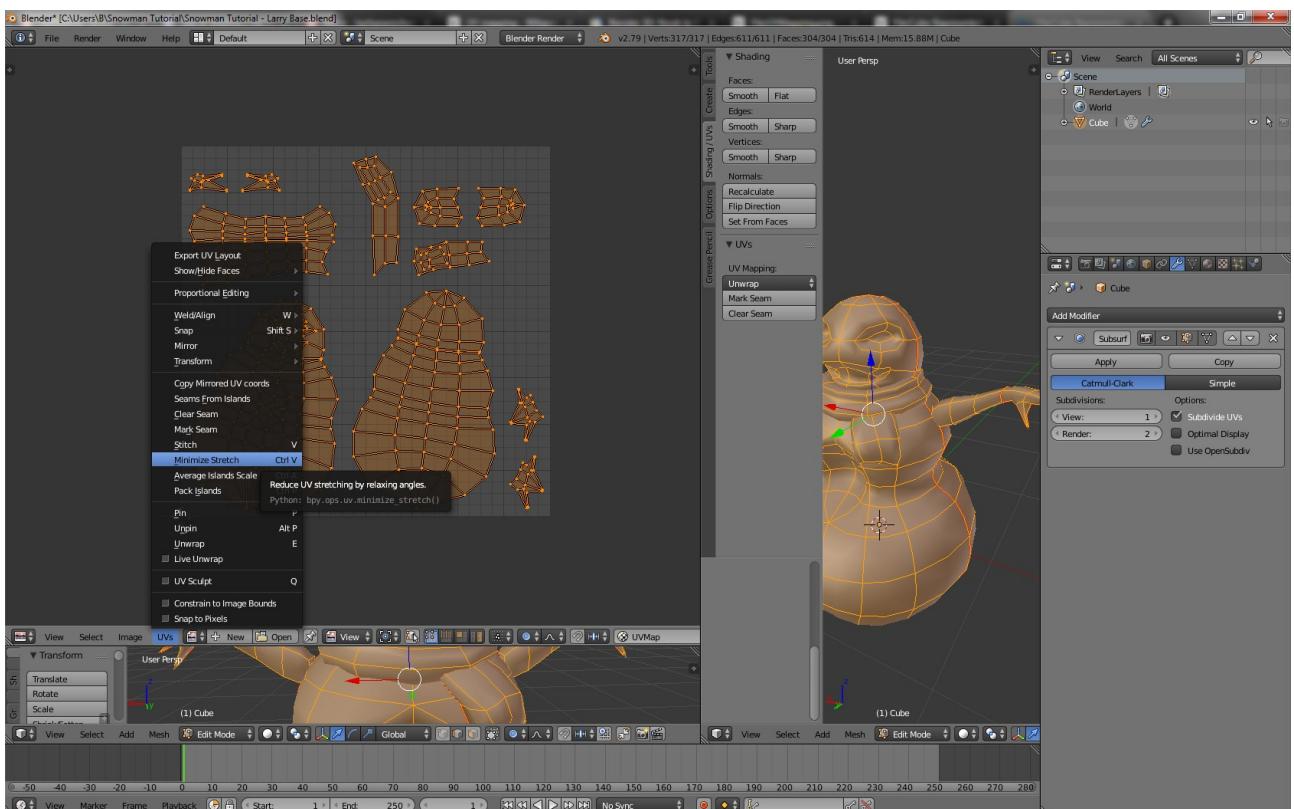
The exact result of this depends on your mesh, and on the additional items you've created for your snowman. For comparison, I'll show you the UV map of my more complex snowman model:



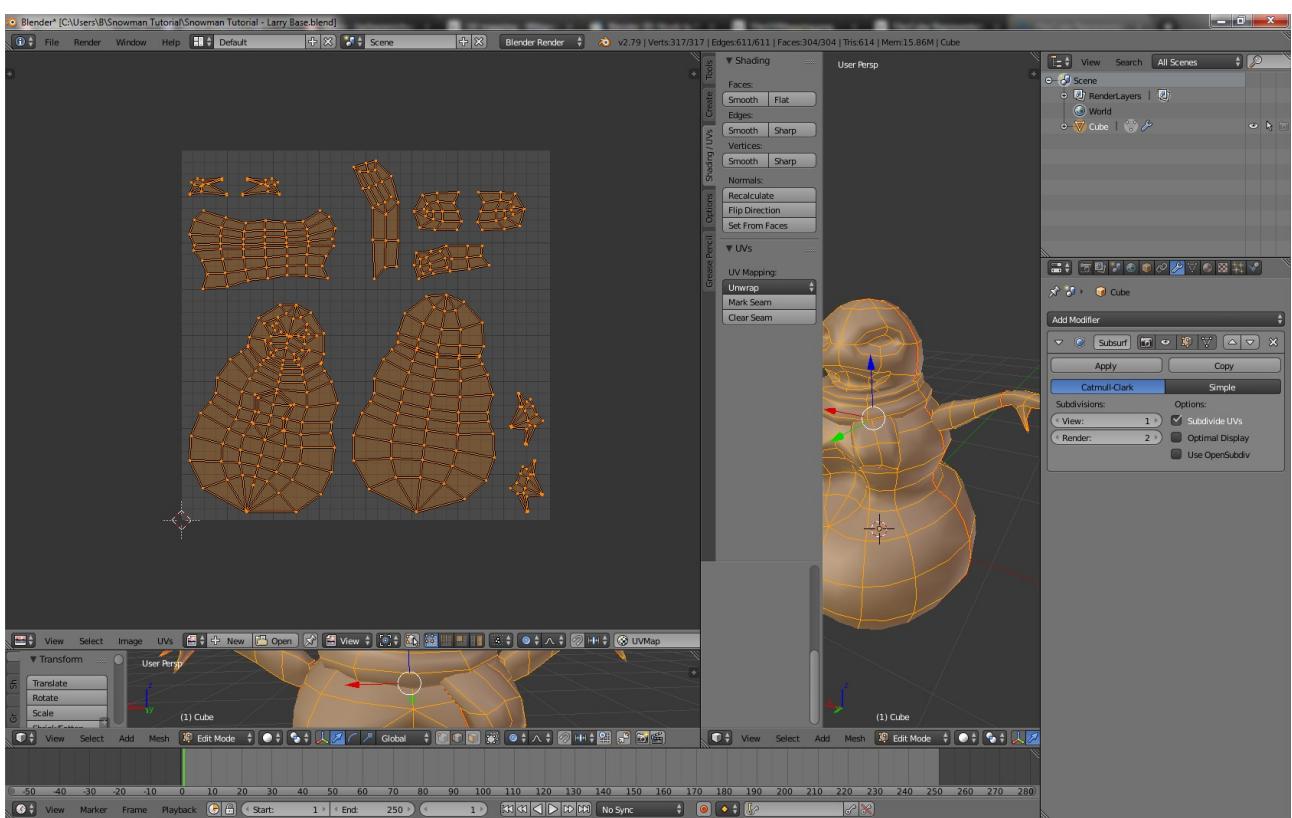
When you've got your mesh unwrapped into individual parts, similar to this, then make sure your UV/Image Editor is set to View, and select all the pieces.



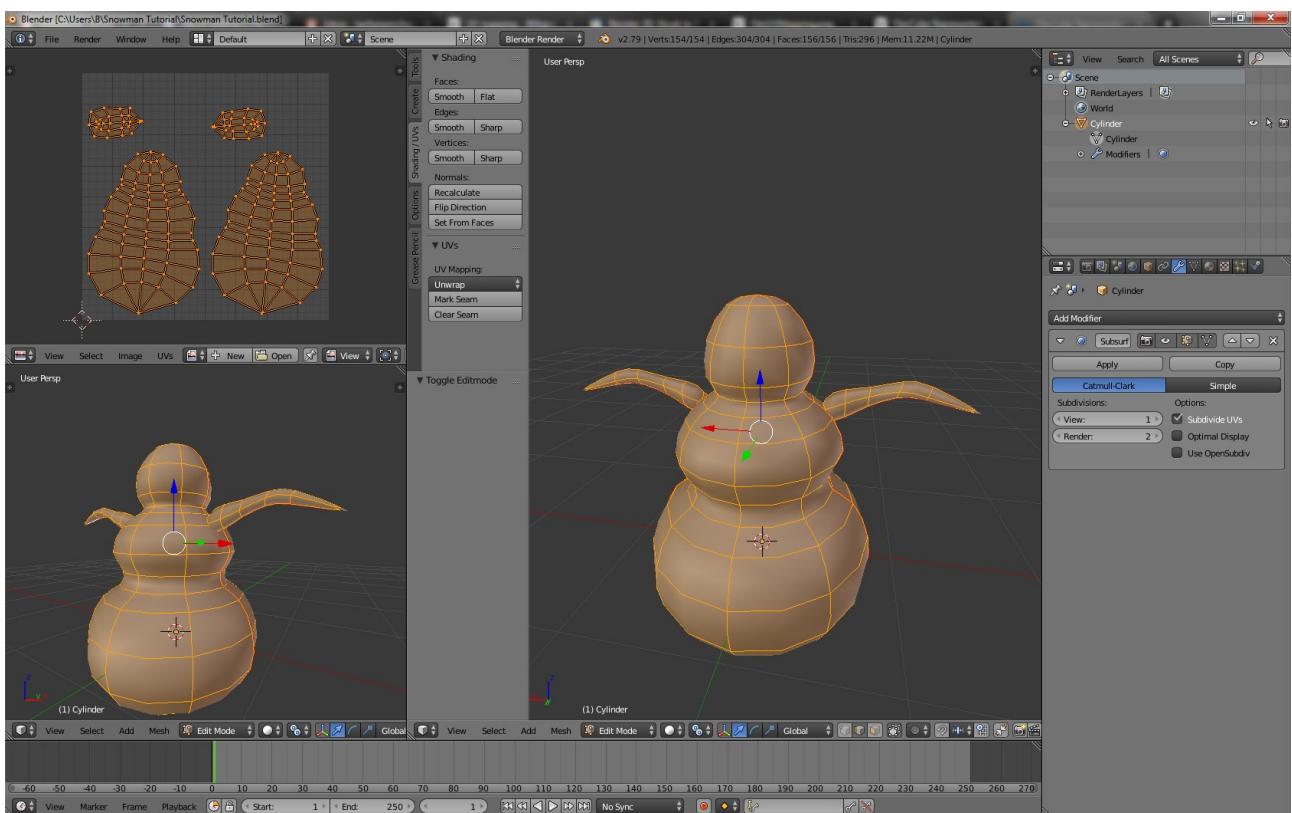
In this mode, select all the pieces. Then, from the UVs menu, select **Minimize Stretch** and scroll your mouse wheel to adjust the intensity to, say, **0.50**.



(on another sidenote, you are still supposed to be saving your progress in regular intervals)



Fin! Or, in the case of the plain snowman:



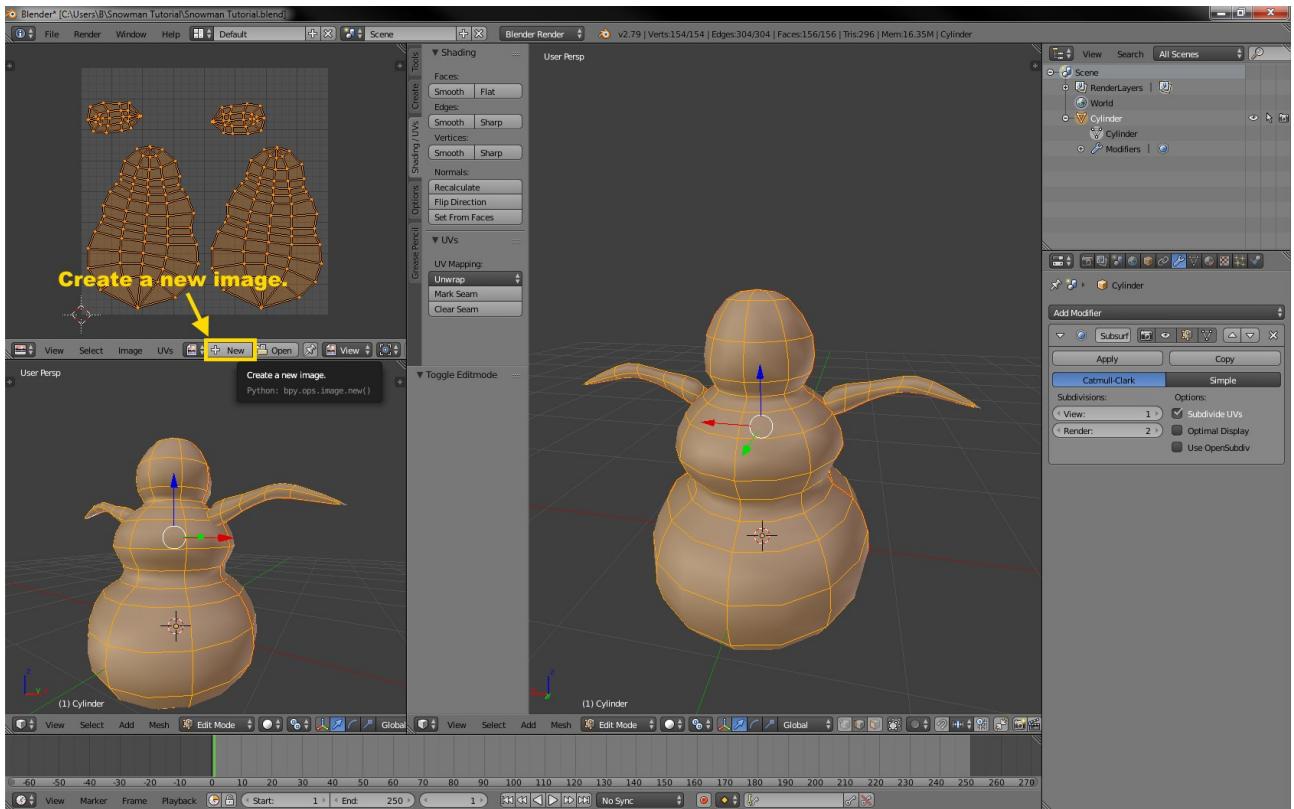
... done. We've got a UV-mapped mesh now, and we can start texturing it.

Note that you should generally try to let your textures make good use of the available space, but they shouldn't overlap one another, and there should be some space between individual pieces (**islands**) of the mesh.

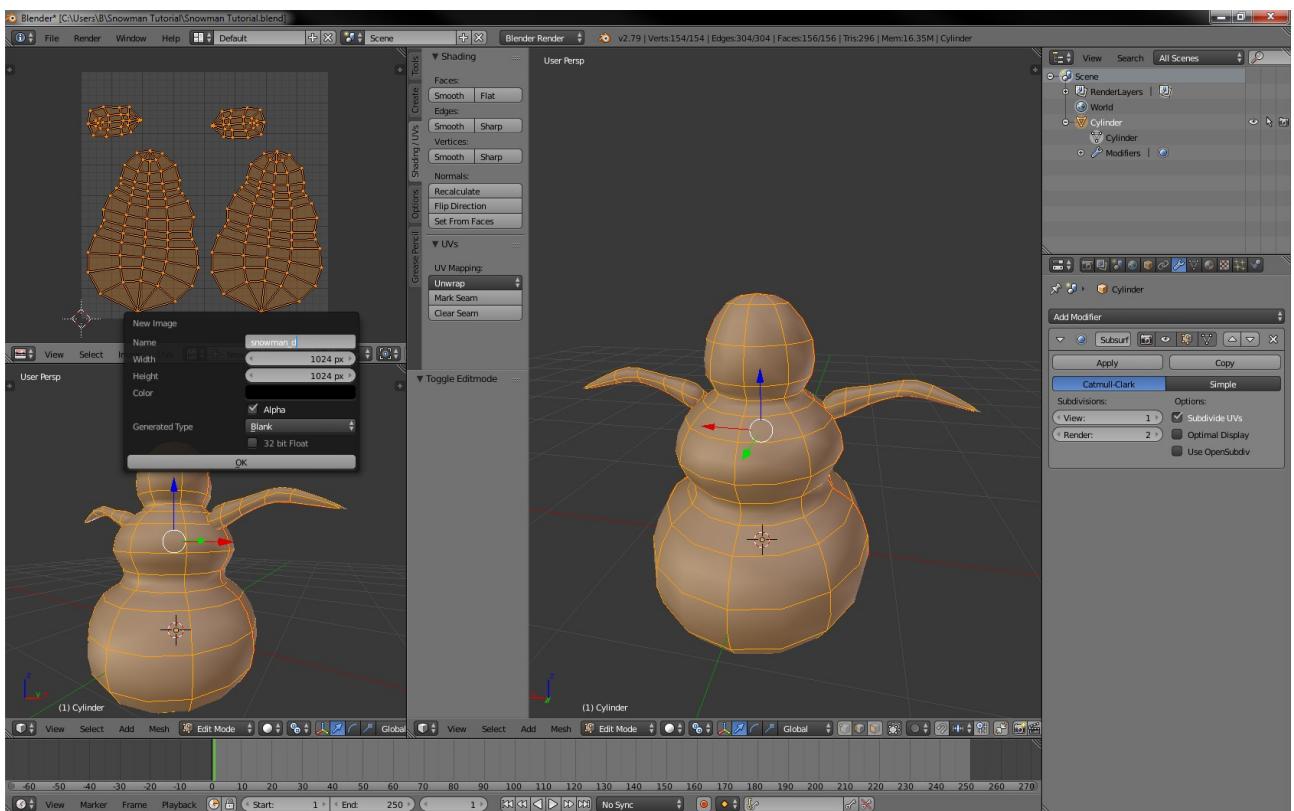
(ps people who neurotically save every other few seconds are cool)

- Texturing - Adding a New Image

You can create new images in the UV/Image Editor.



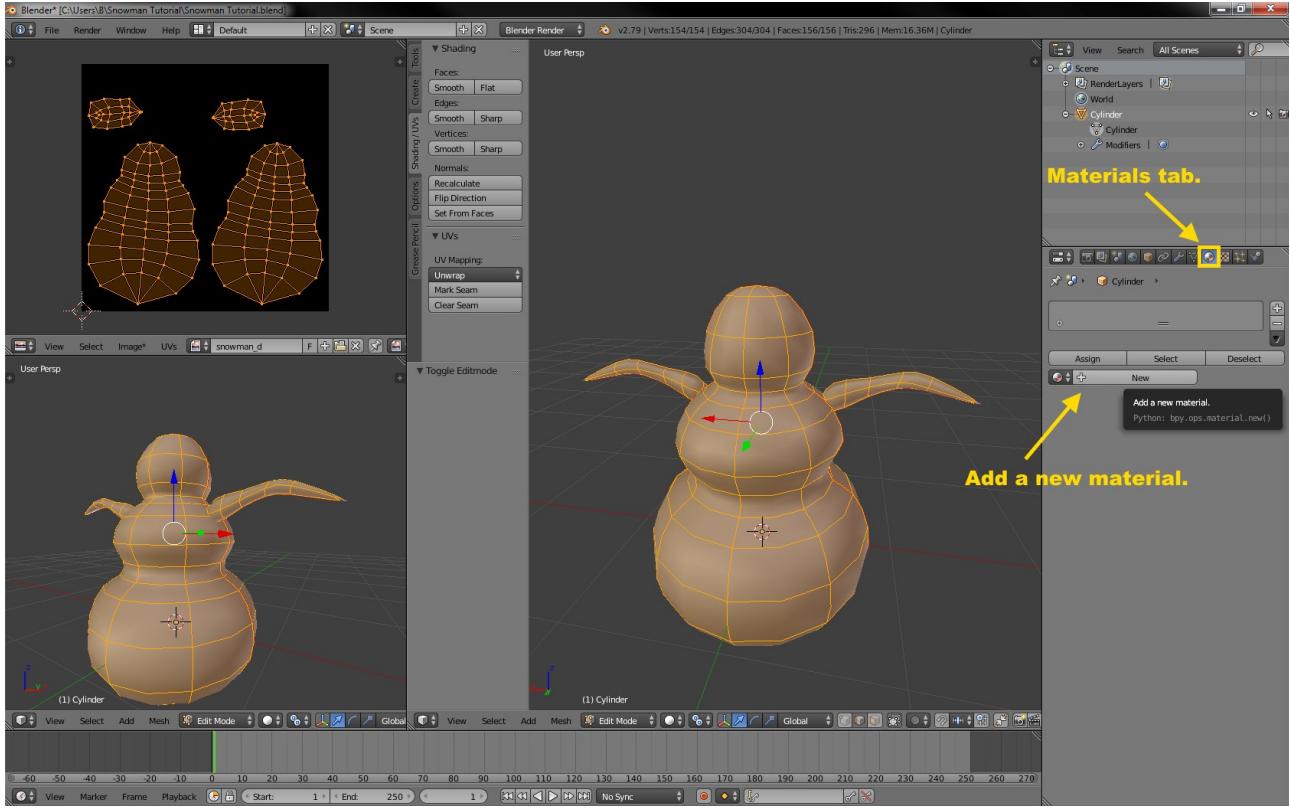
Let's call this image "snowman_d", as it'll be our diffuse texture.



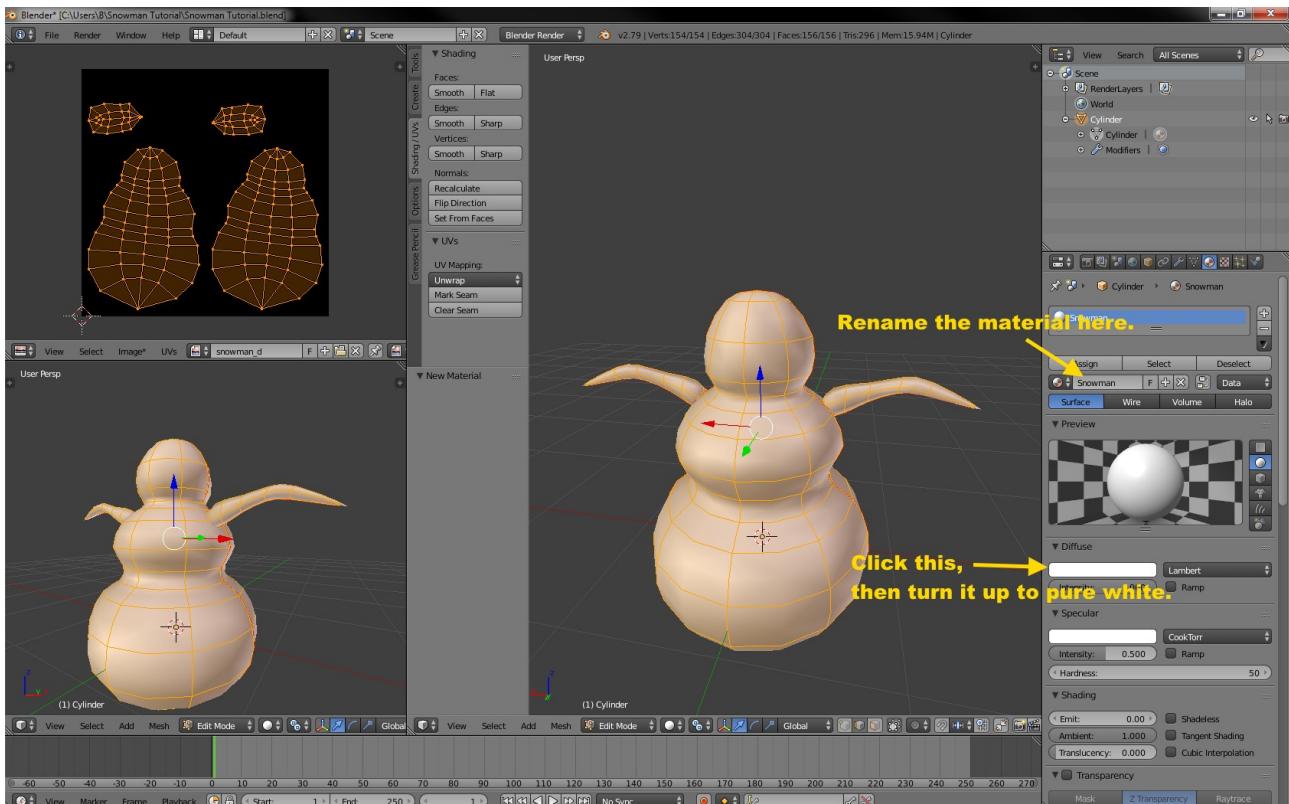
Hit OK when you're done.

- Texturing - Adding a New Material

OK, we've got an image. Let's create a new material.



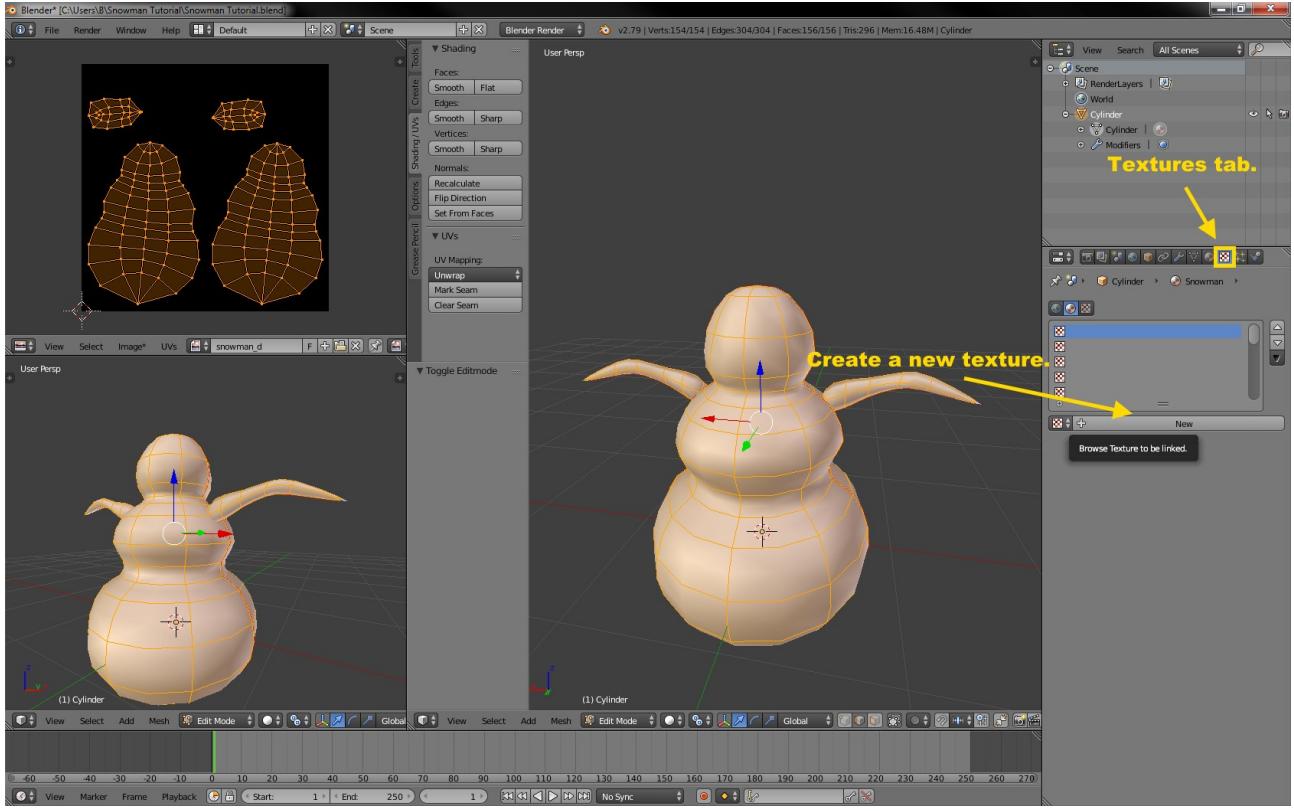
Go to the Materials tab, then click the New button.



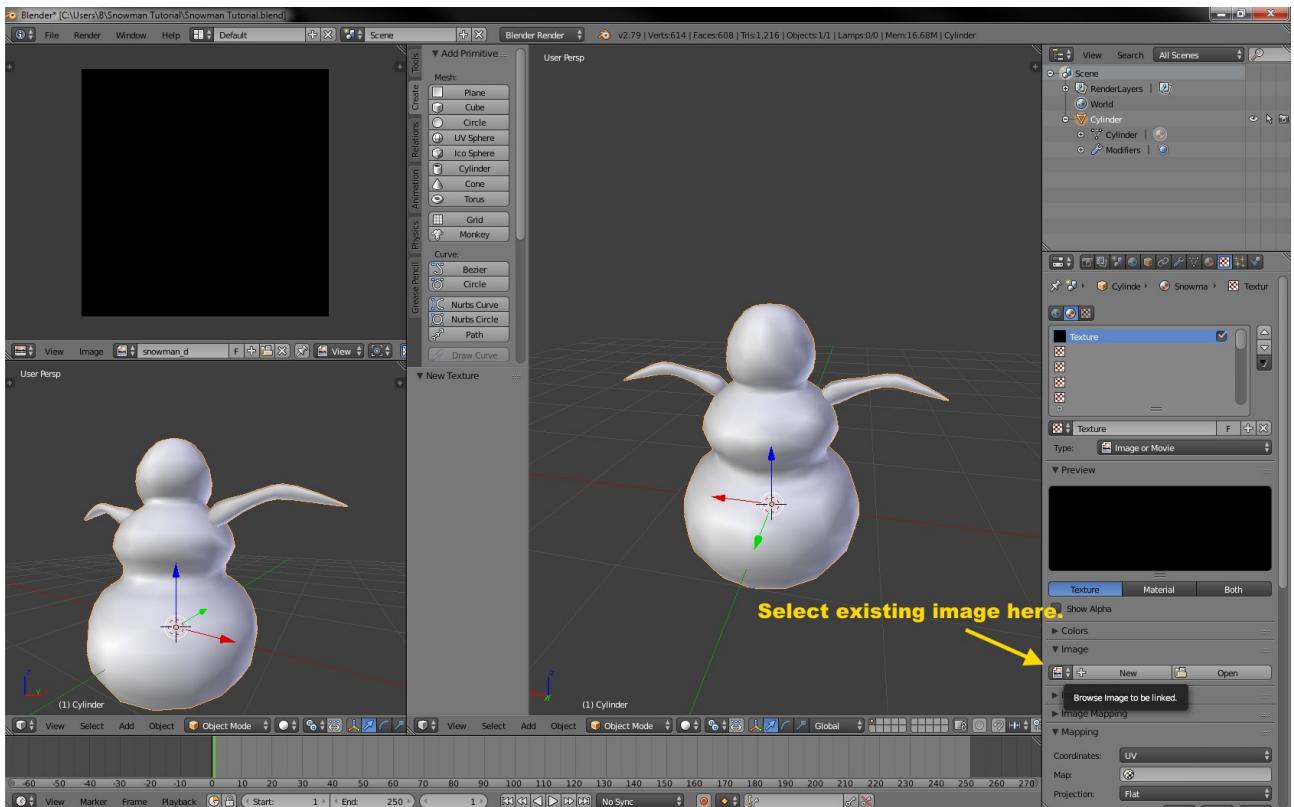
There, now we've got a material. We'll be doing this a lot, so try to remember this step.

- Texturing - Adding an Image to a Material

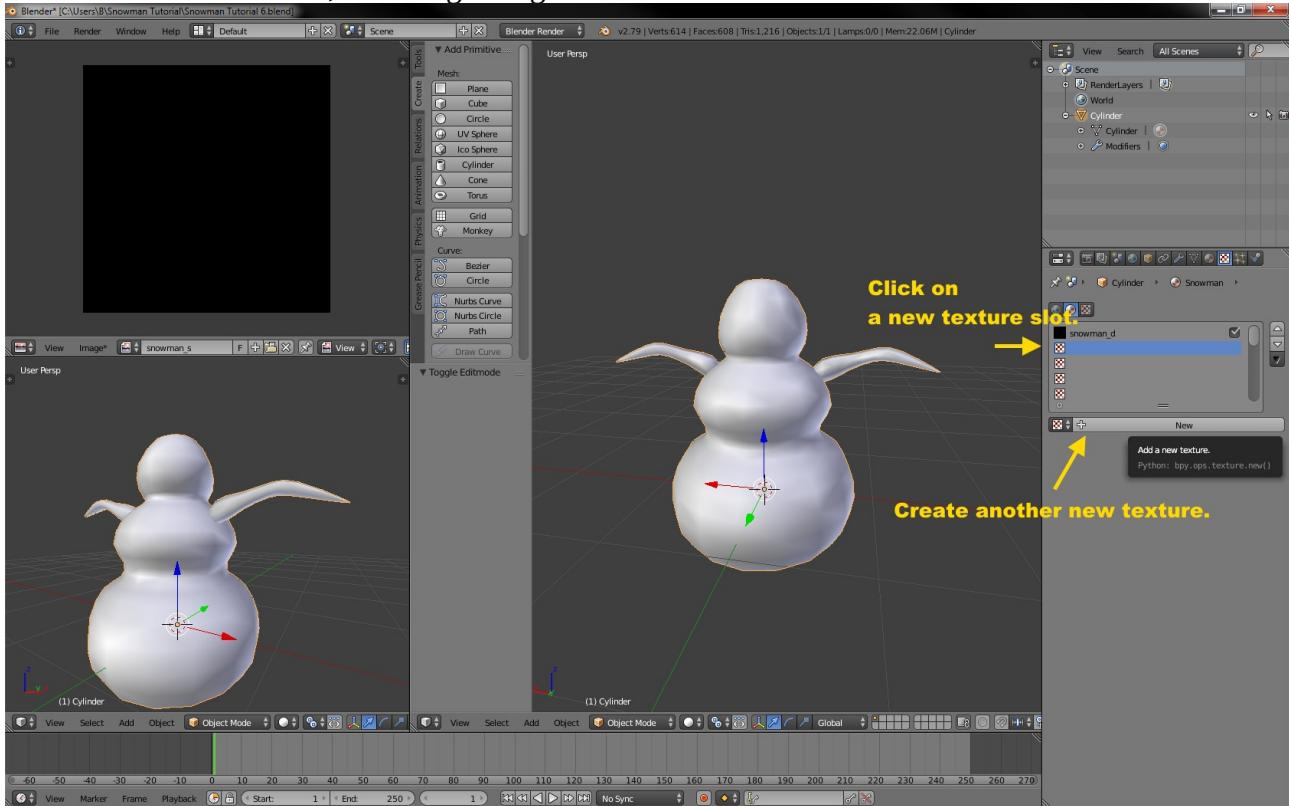
With the newly-created material active, go to the Textures tab, and create a new texture.



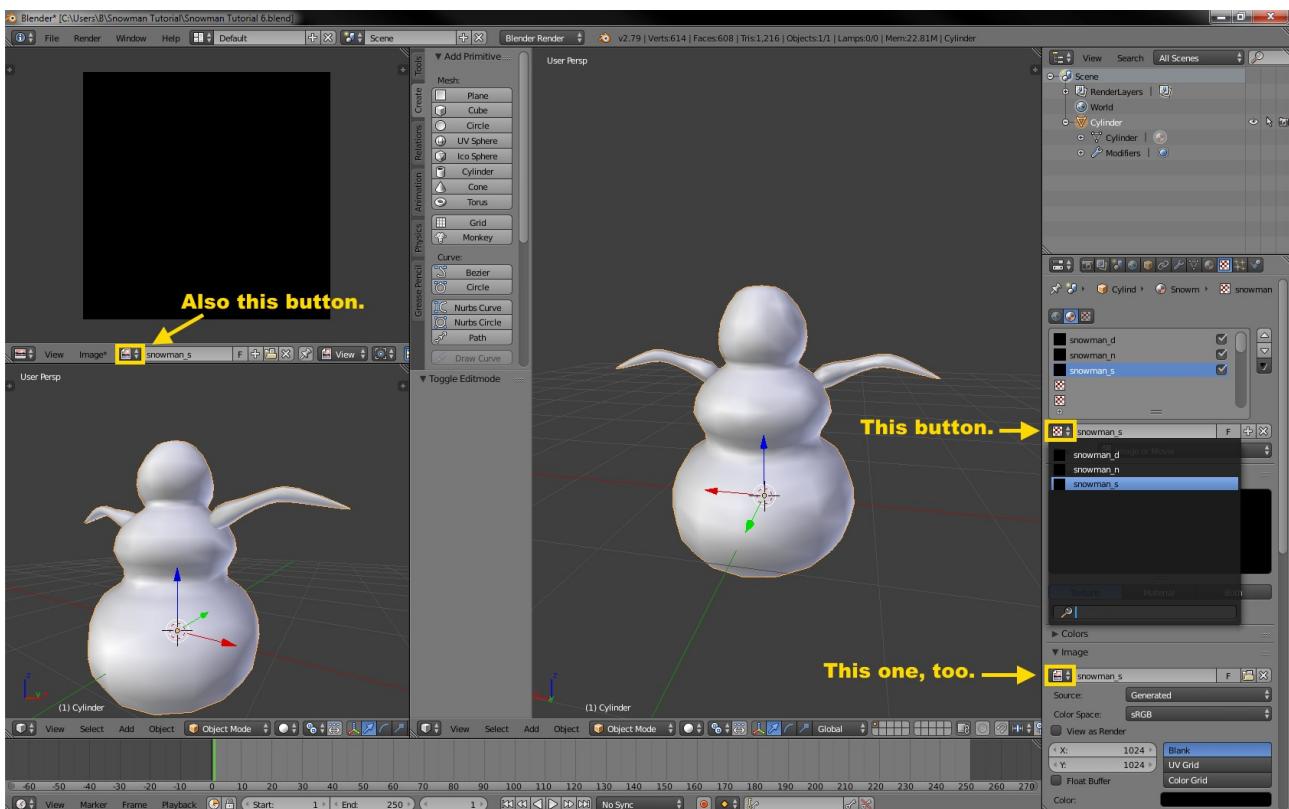
Under Image, select the Browse Image to be linked button, and choose the image we made.



Create two more textures, and images to go with them. As follows:



Note also that, with images, materials, textures, or pretty much anything else, you can click the button to the left of the "new" button to open a dropdown list of the images/materials/textures/etc that you've previously set up.



Doing this, you can switch materials/images/textures/etc out quickly.



The three textures of this material, and their linked image files, should be:

snowman_d
snowman_n
snowman_s

This material is our "final" material for the snowman. We'll be switching to other materials a couple of times yet, but in the end, this one is what we're going to come back to when we export the snowman.

At this point, all we need for our snowman placeable is the three textures, plus setup of the use/impact nodes and the walkmesh.

There are many ways to texture a model, and not a single one of them is THE ULTIMATE WAY. I'm going to smush different methods together, jump around from method to method a bit, show you the basics of the available tools.

This way, at the end of the tutorial, you'll have a general idea of how to hand paint, how to render a diffuse base, and how to render a tangent space normalmap from a heightmap. Starting from there, all other internet tutorials you could read should be useful to you.

If you're seriously interested in the craft, then researching how to *bake from high-poly to low-poly* should be a worthwhile side project. :-)

WARNING! WARNING! IMPORTANT NOTICE!

As one serious sidenote, now that we're handling images:

Images are not automatically saved along with the scene. When you save via CTRL+S or CTRL+ALT+S, or CTRL+SHIFT+S, or via the File menu, you are saving the .blend file, and this does not automatically save the image files along with it. You need to watch out that you save your image files when you alter them, from this point on.

The keyboard shortcut to save an image file is **ALT+S**. The button to do this is in the UV / Image Editor. Click on **Image -> Save Image**, or **Save As Image**, then give the file a name.

If the file type is wrong, we can reload and export it as a different filetype later. But if the paint we've loving lathered onto that thing is gone, we will need to redo it. From. Scratch.

You need to save your image files separately, and regularly.

I'm serious.

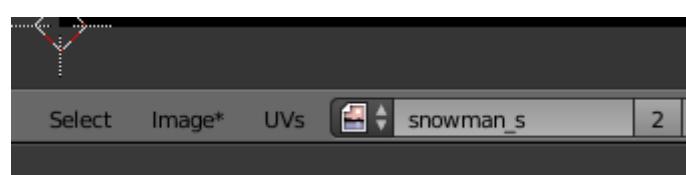
When you close Blender, unsaved progress on open image files will be lost.

So pay attention to your images. Save them. Love them. Latch on to something that you really don't want to lose, like... I don't know.

Something you really don't want to lose, anyway.

Note also that Blender can only *load a saved image* file if you actually **saved** the image first, creating a file for it.

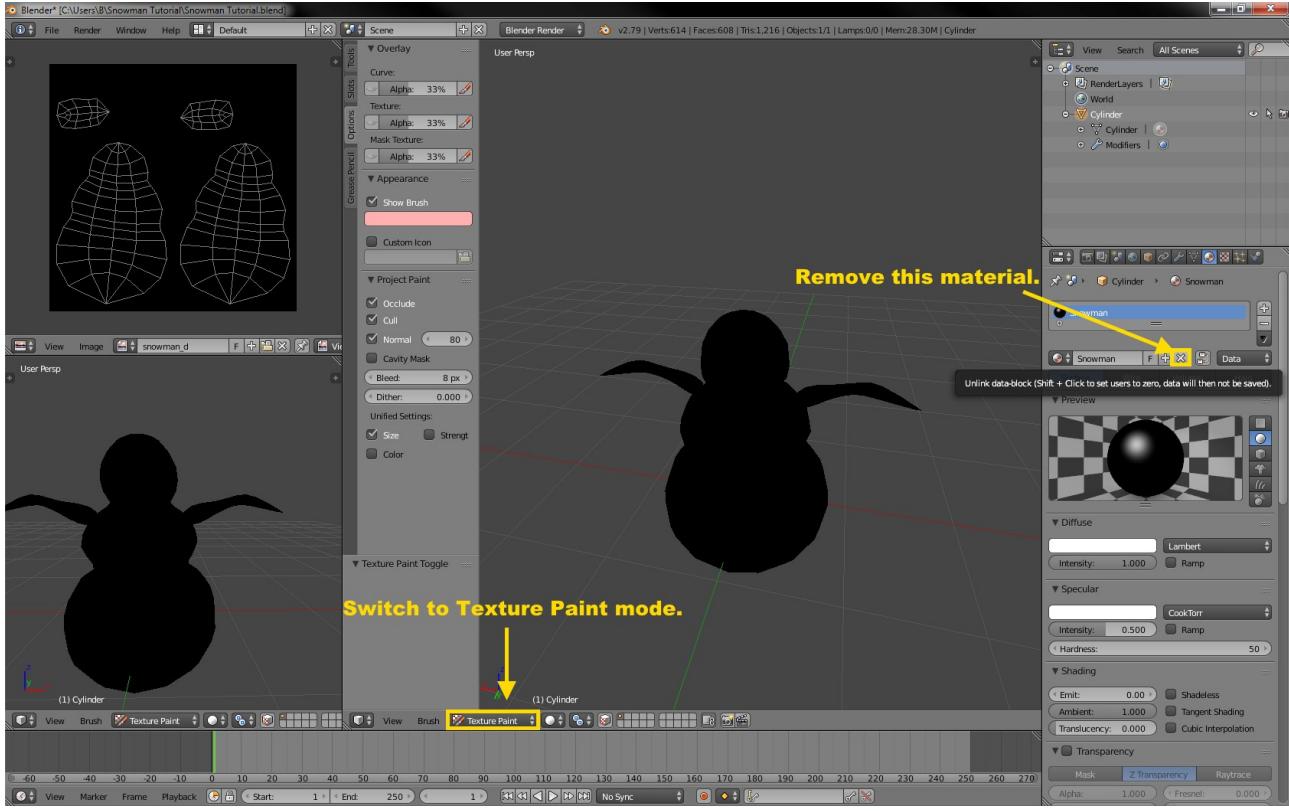
The asterisk (*) after "Image" means that an image has unsaved changes.



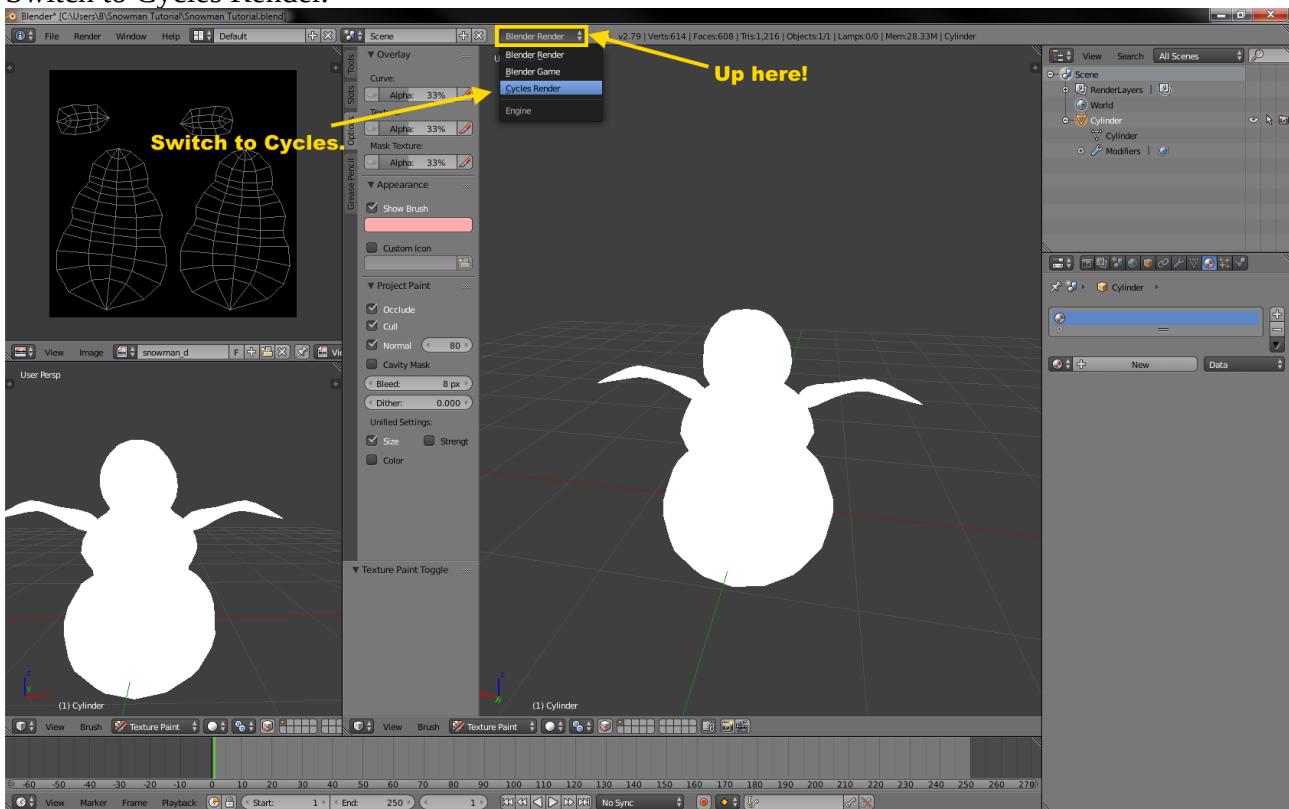
So, recommendation: Save all your shiny new images now, creating an actual file for them that Blender can reload when it starts up the blendfile. :-) The correct format is TGA (Targa), but you can save as PNG, too, if you like. We'll cover the file format setup in Part 1.3 again, once it's immediately relevant for getting the snowman into the game.

- Texturing - Rendering a Diffuse Base

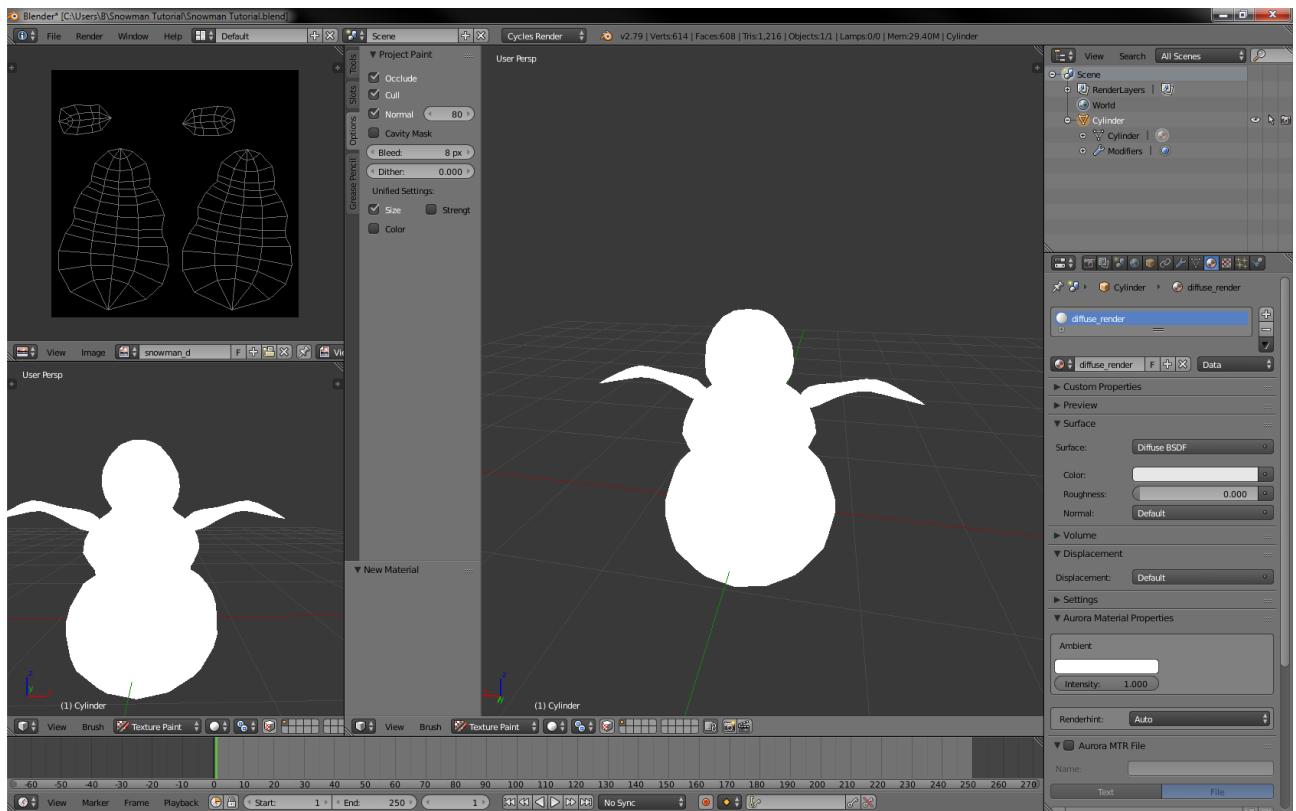
Let's get started with the diffuse texture. Remove the Snowman material and switch to Texture Paint mode:



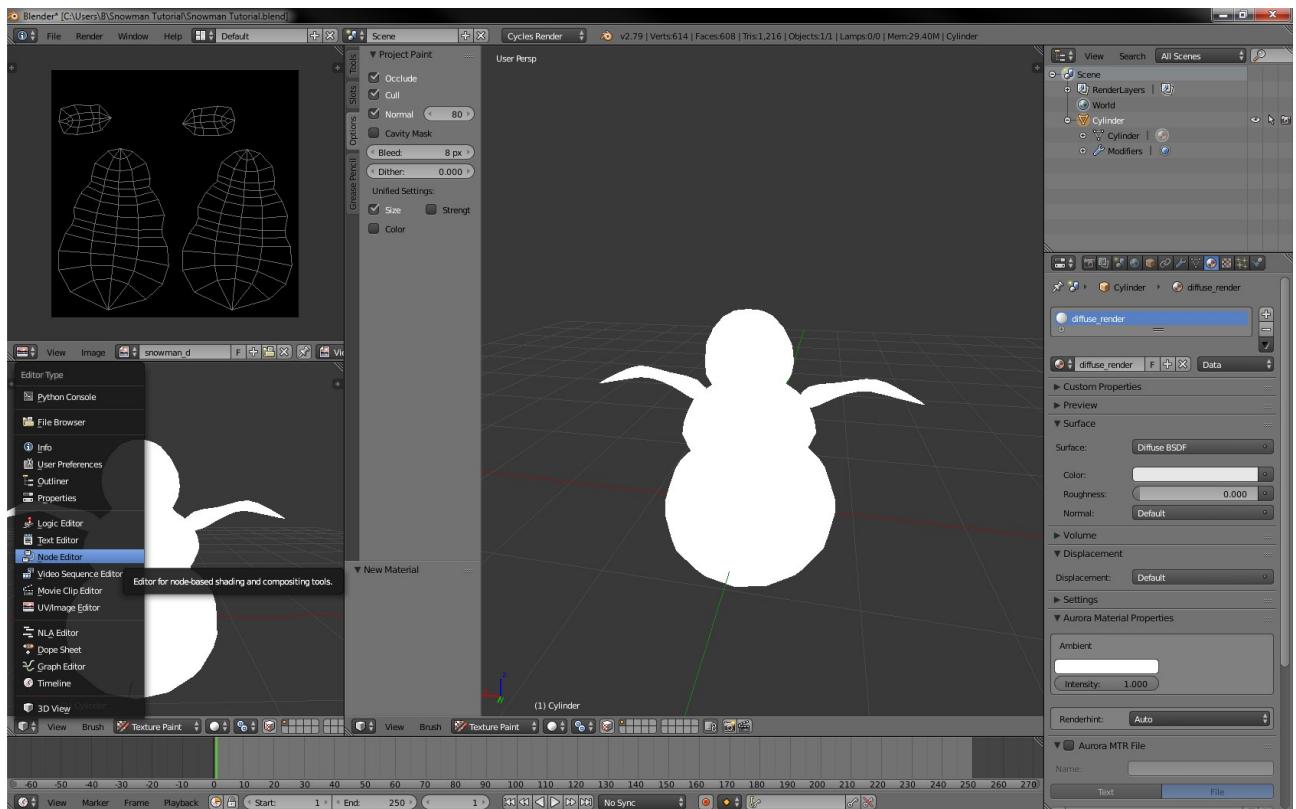
Switch to Cycles Render.



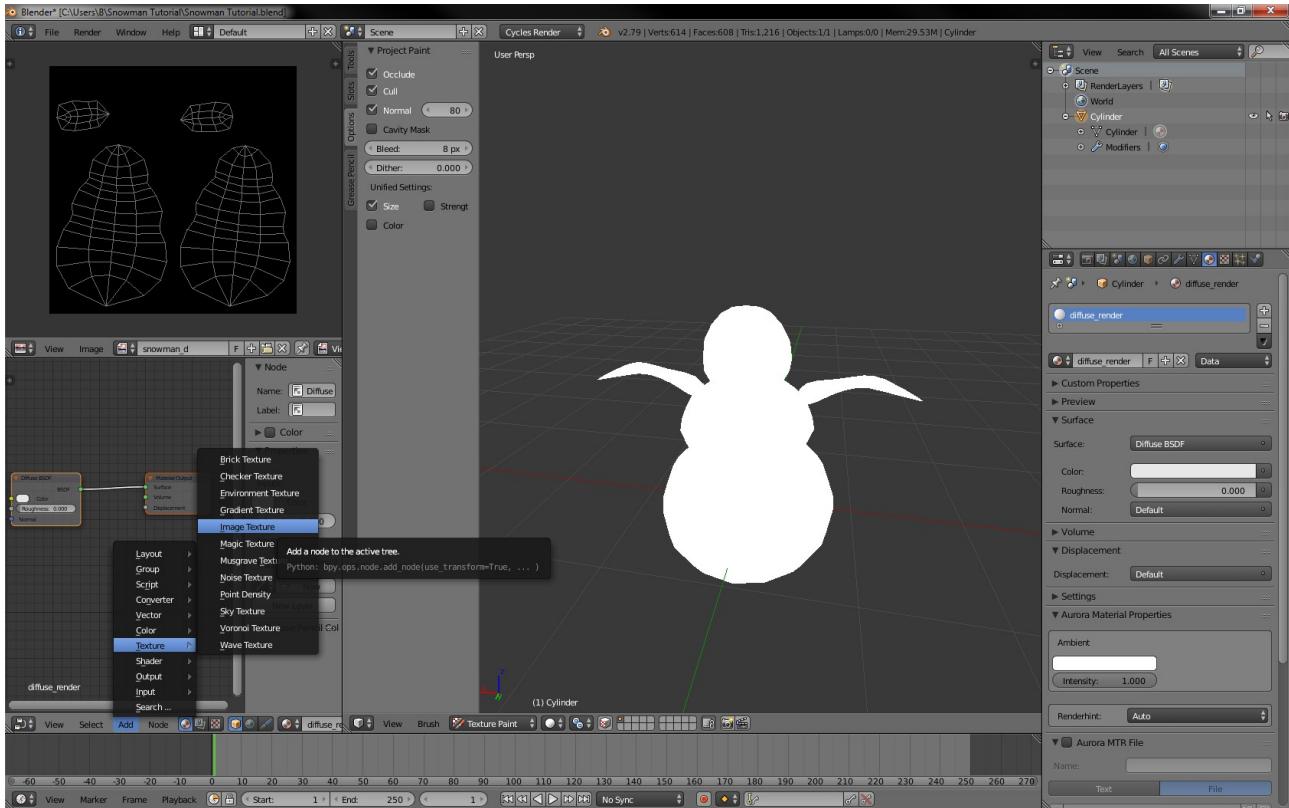
Create a new material, and call it, say, "diffuse_render". The name isn't vitally important for anything, it's just so we know what the material is for.



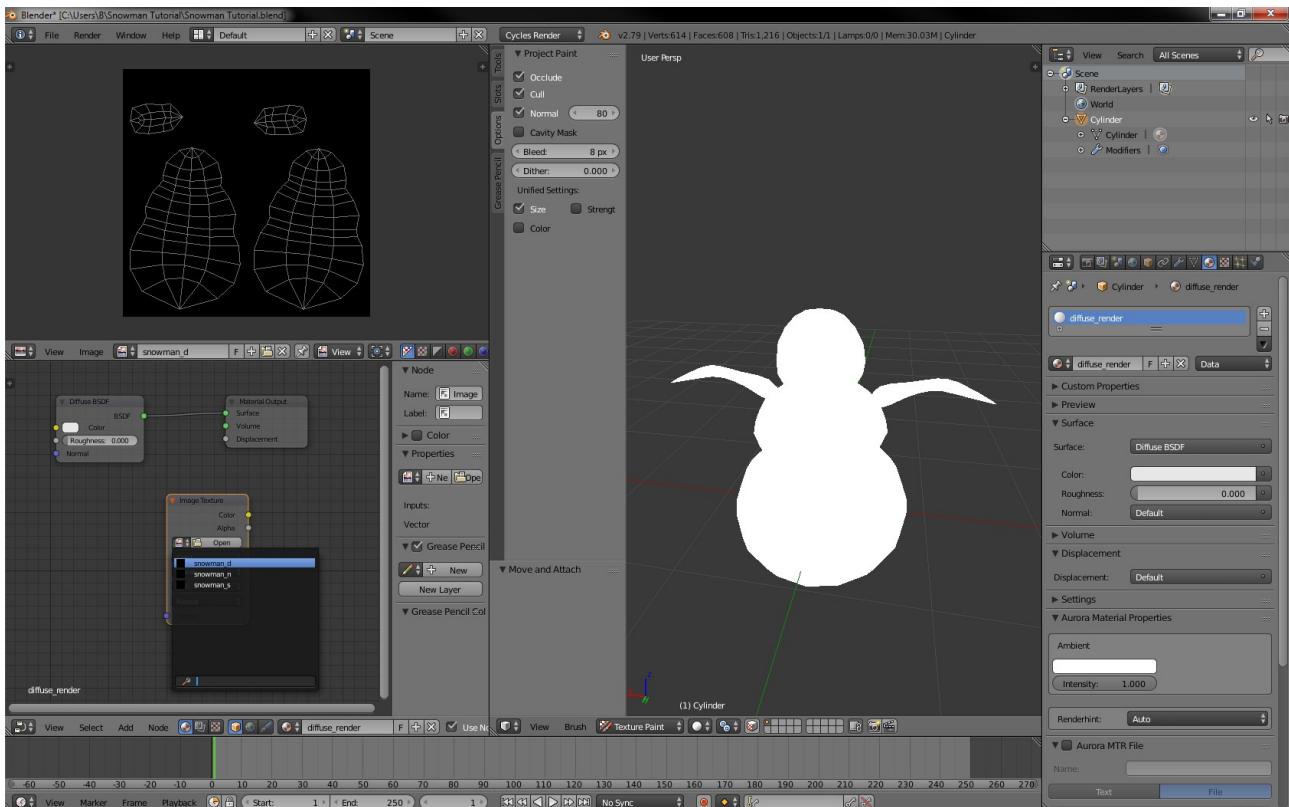
Switch one of the viewports to the Node Editor.



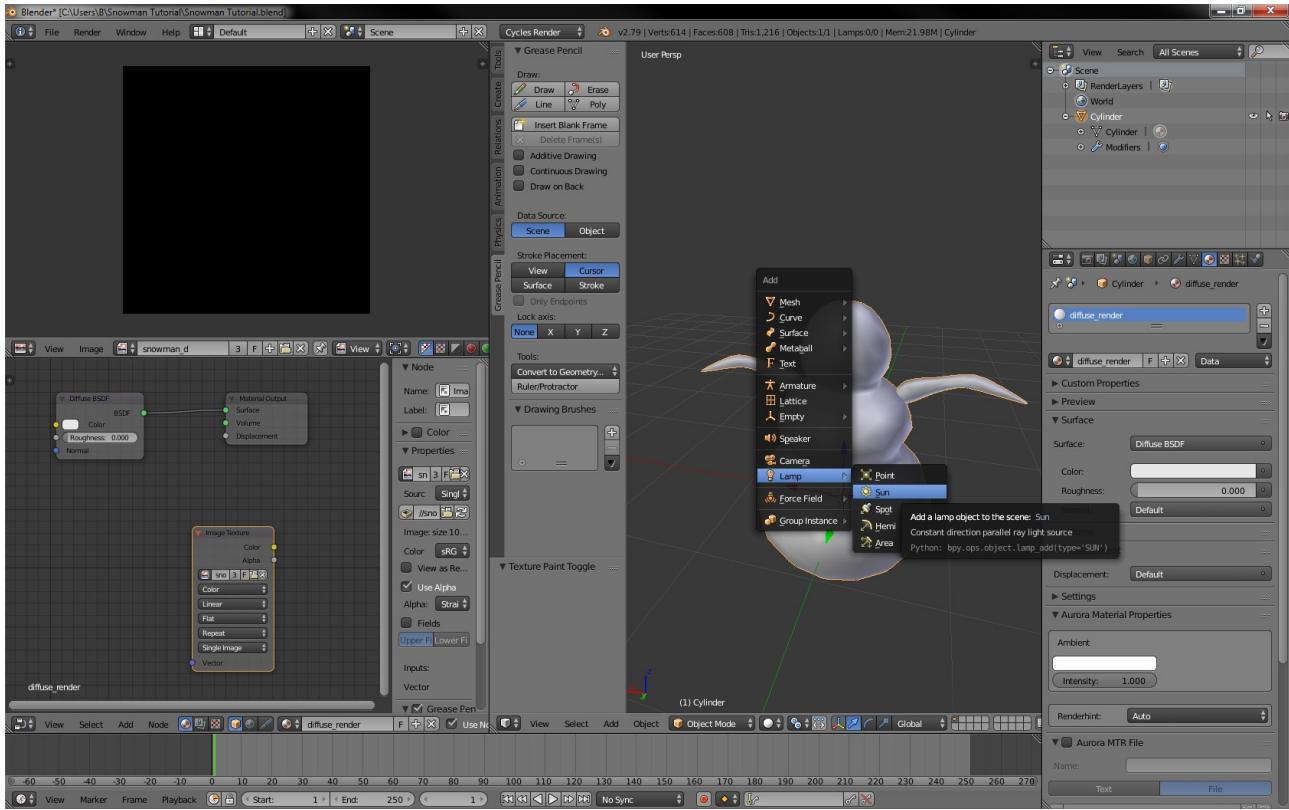
In the Node Editor, click Add -> Texture -> Image Texture, and click to place it down.



Switch the new Image Texture node to use the image **snowman_d**, which we'd previously created.

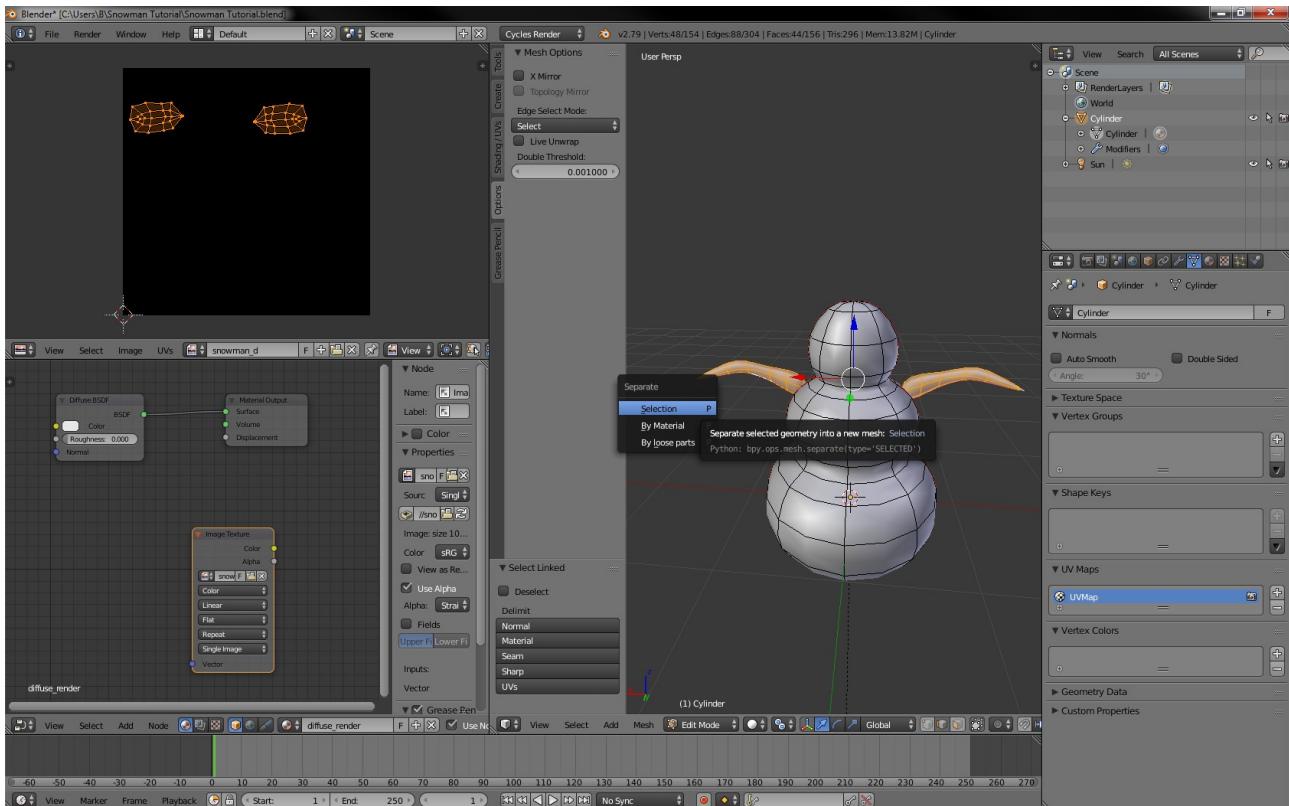


Switch to Object Mode and use **SHIFT+A** to open the Add menu, then create a Lamp -> **Sun**.



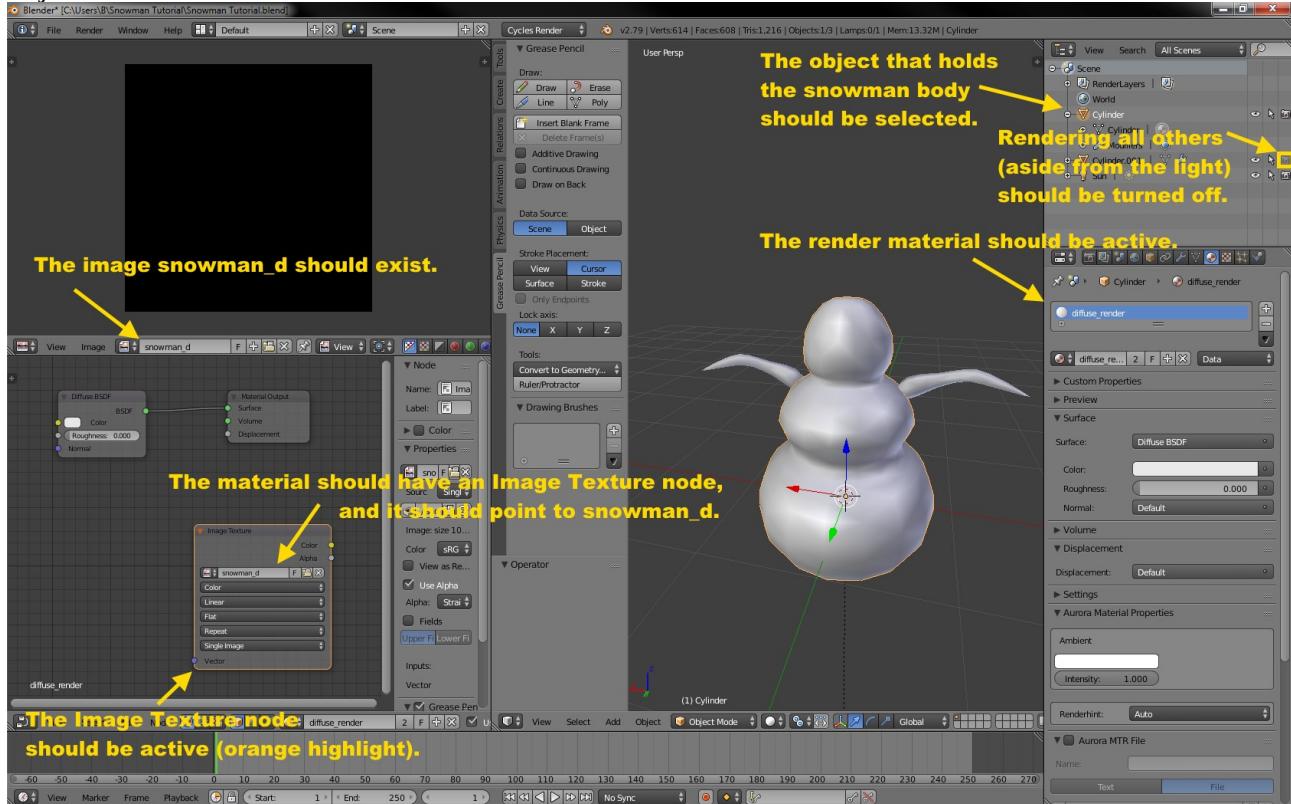
Set the **Strength** of the lamp down to **0.5**.

Next, separate the arms from the body again.

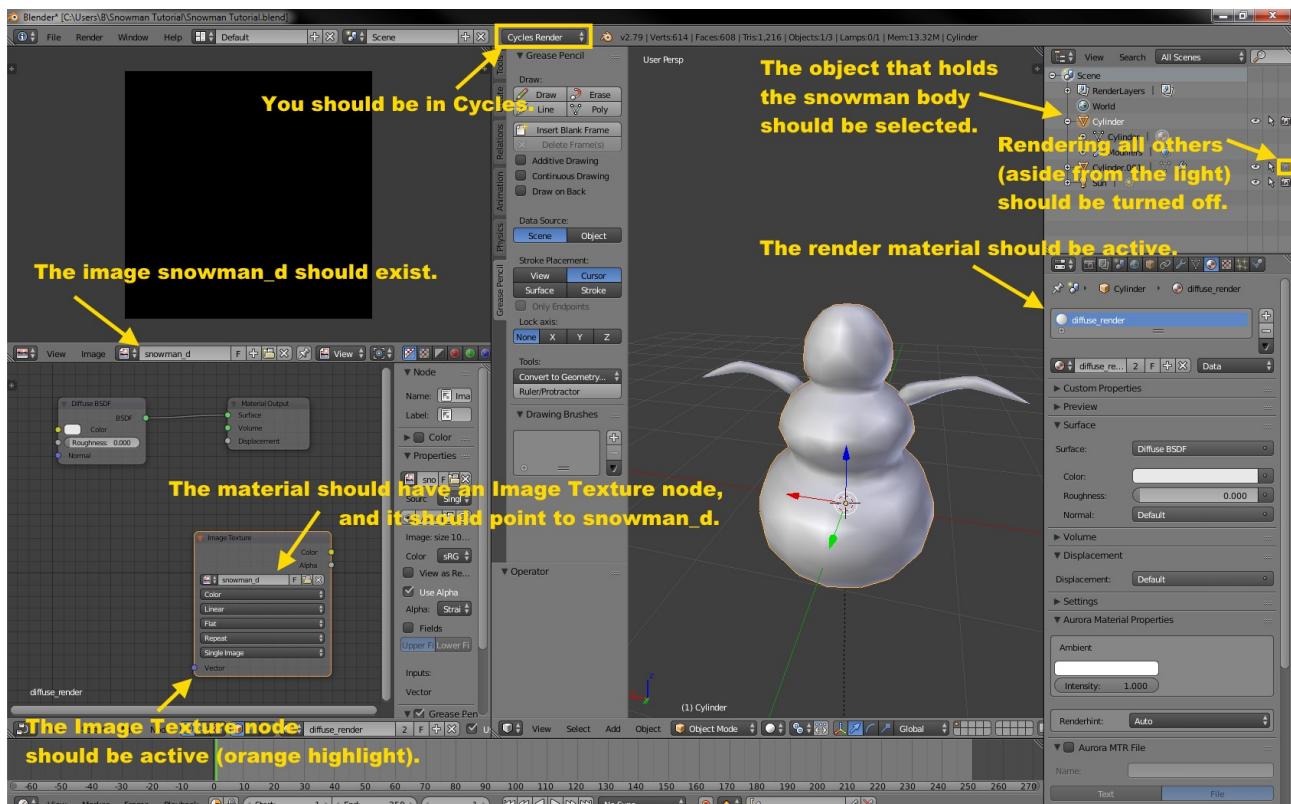


In Edit Mode, select the arms, and hit **P**, then **S**. If you have more extra parts, separate them, too.

Turn Rendering on the object that now holds the arms of the mesh off. It's the camera button; each object has its own.

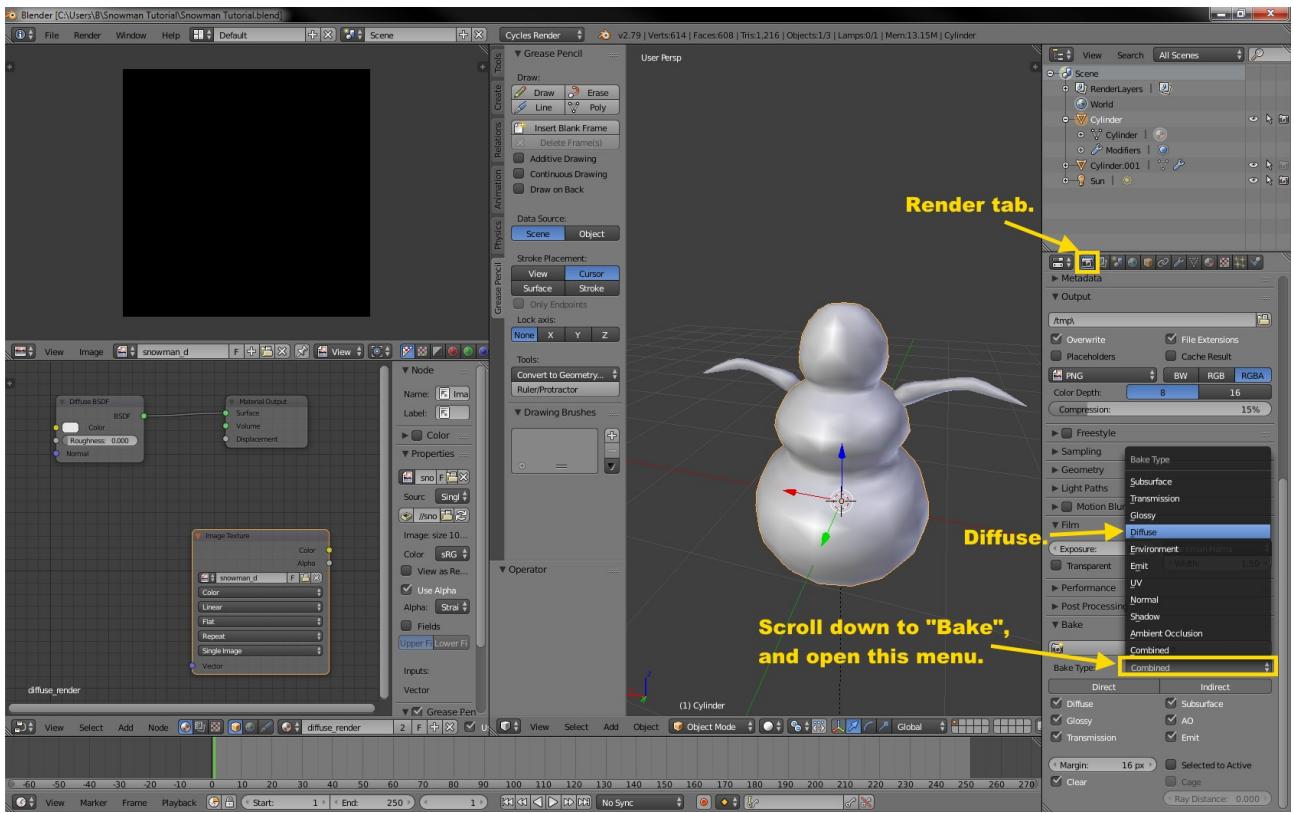


Next, select the body of the snowman. Make sure that the following settings are all present:



Note: Only the snowman body and the sun should be getting rendered. (Camera button!). It's one quick way to make sure they don't cast a shadow onto the other parts, when you're baking the diffuse texture.

Now, we'll move to another all-new section. Go to Render!



In the Render tab, scroll all the way down, and open the Bake section.



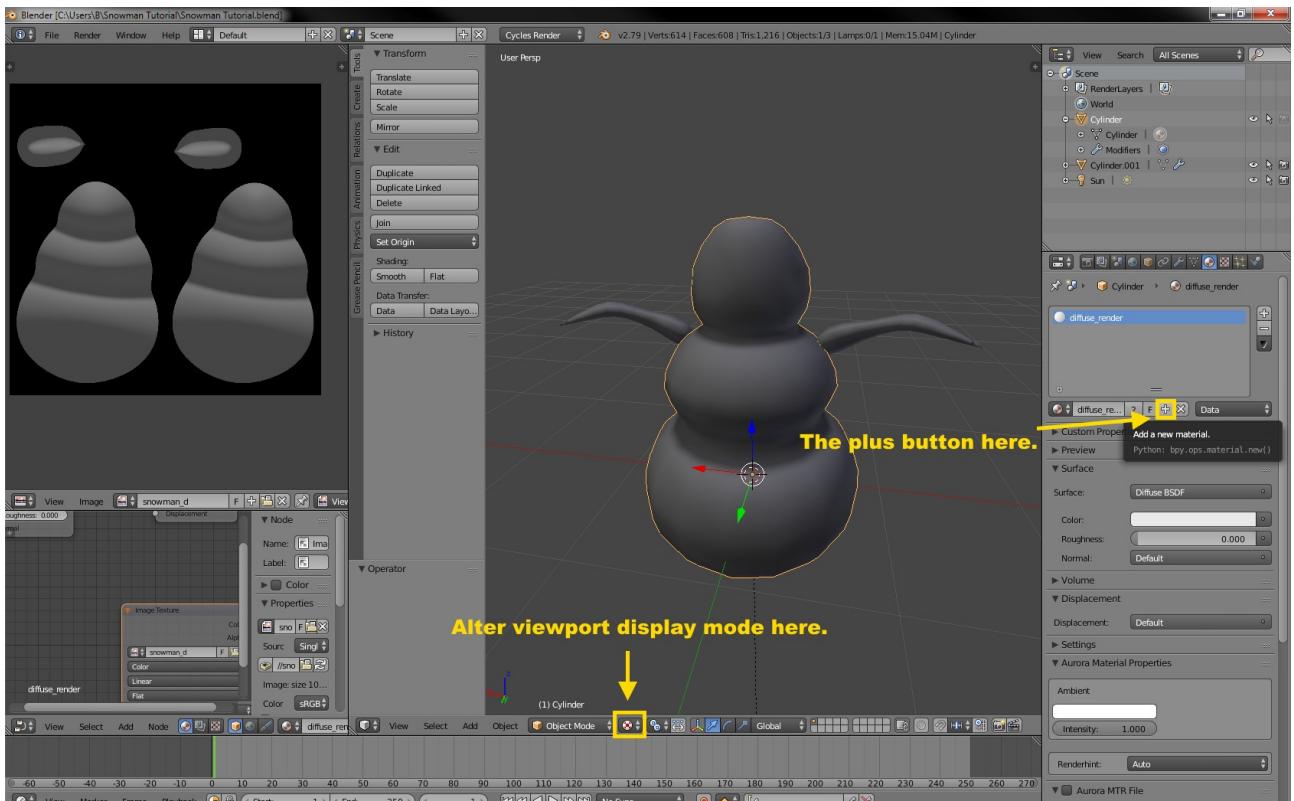
Untick "Clear", set the Margin down to, say, 8, and then hit **Bake...** and wait. There's a progress bar at the top that'll let you know when it's done.



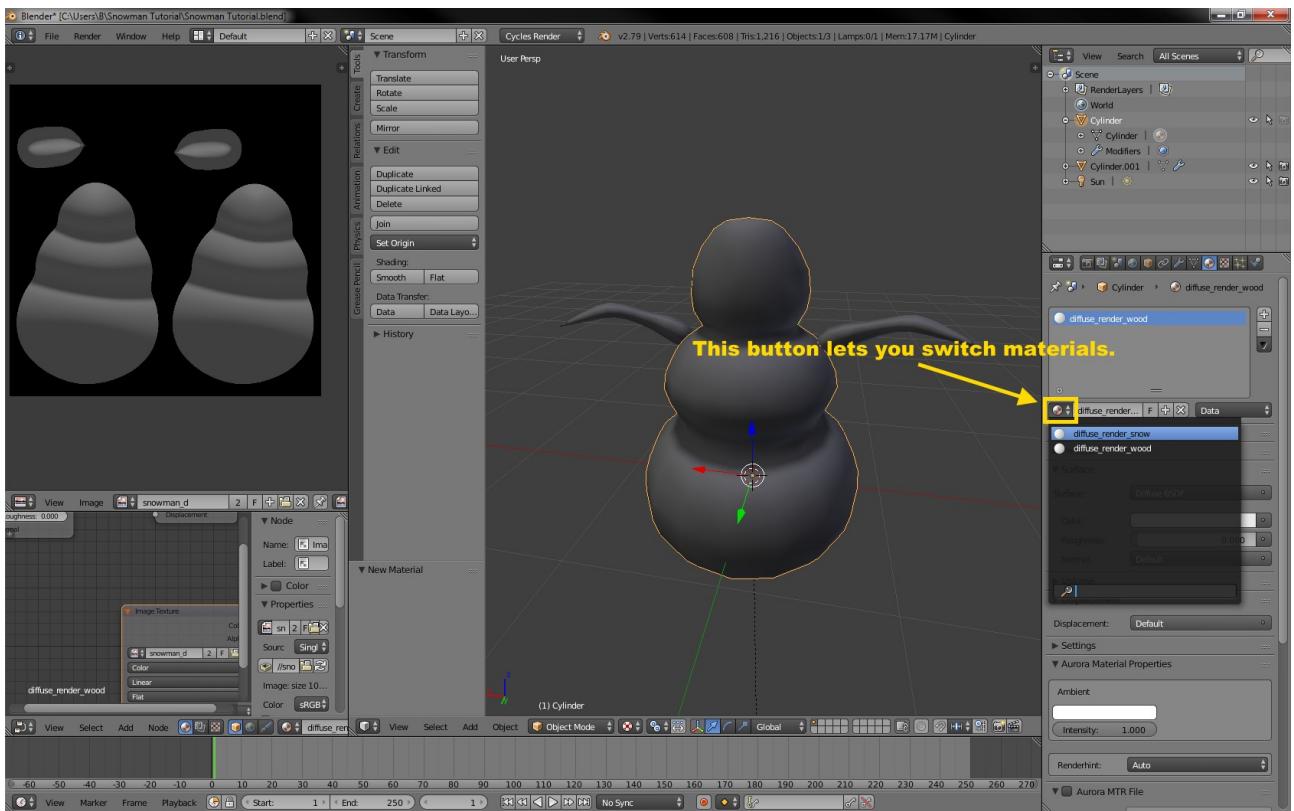
Hooray! We have rendered a little something.

As a sidenote on something that we won't be getting into during this tutorial - if you're interested in the craft, then look up "Baking from high-poly to low-poly" on the internet sometime.

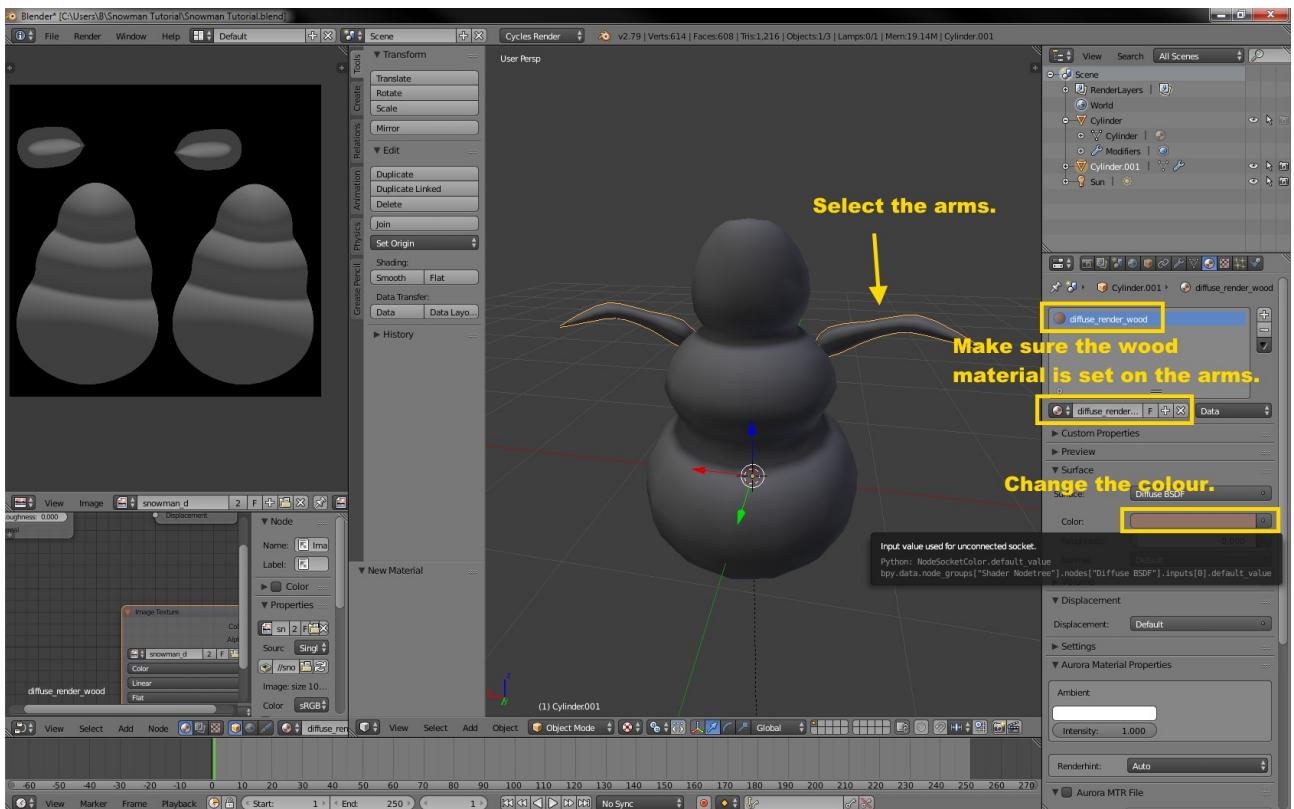
But wait, there's more! Duplicate your diffuse_render material by clicking this button:



(Also, switch the viewport display mode to Texture to see the texture on the model. :-D)



I've got two materials here, now: `diffuse_render_snow`, and `diffuse_render_wood`. Guess what? We can give them different colours. :-D

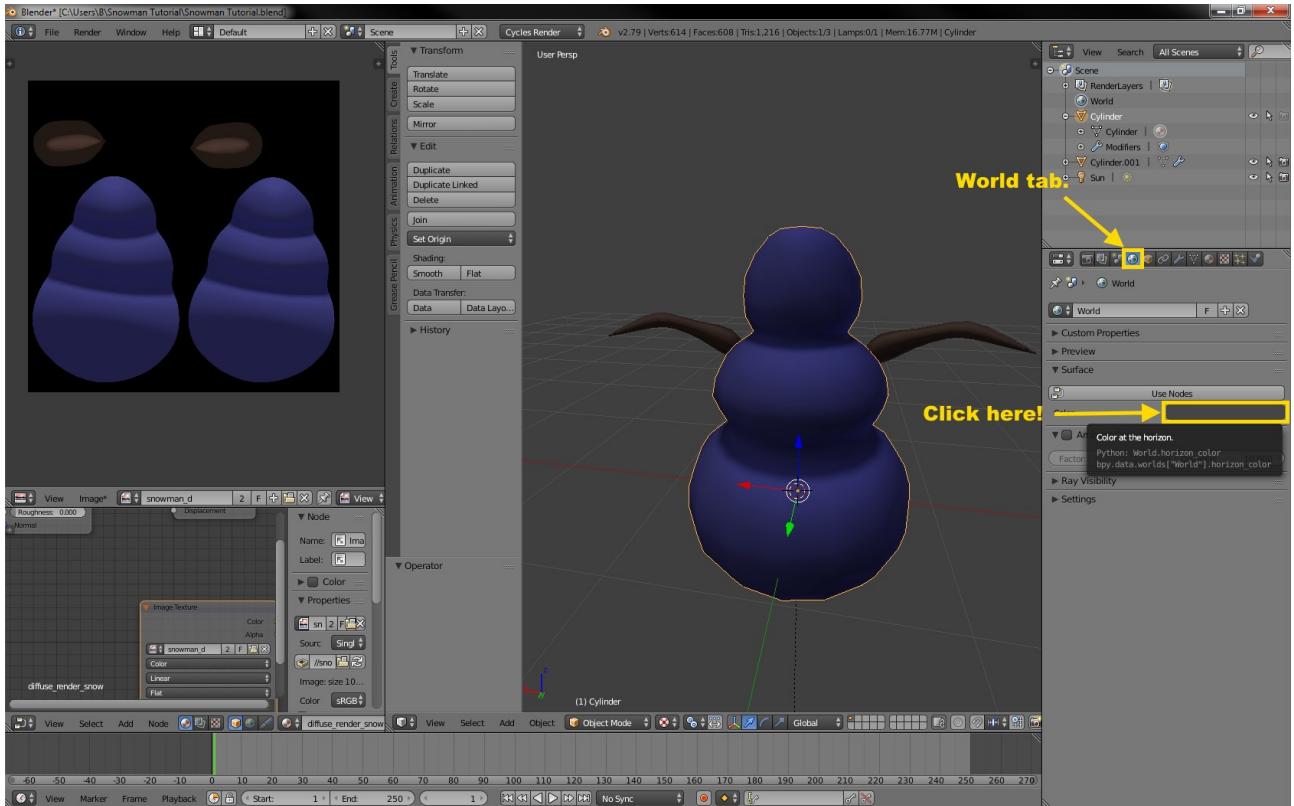


If you alter the colors of the materials, you can immediately bake the diffuse base as that color.

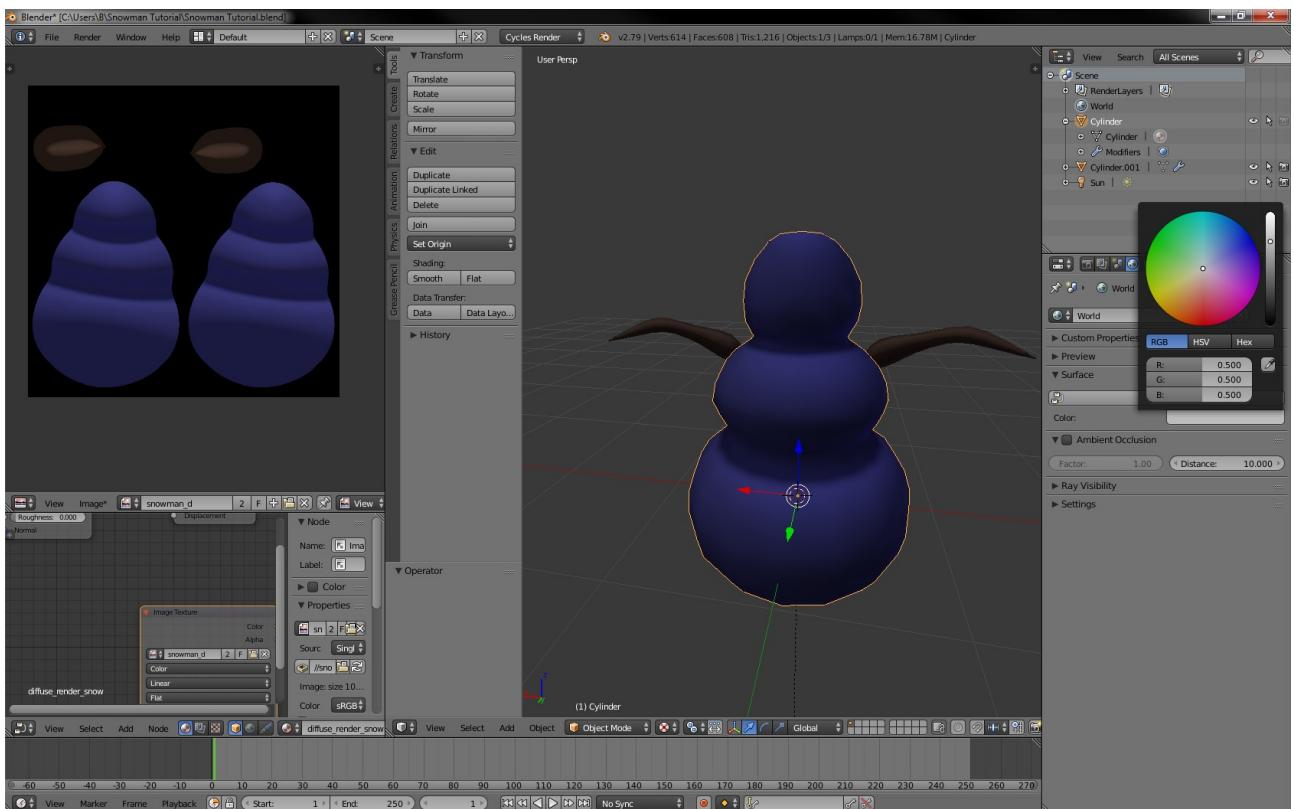
Materials can be altered in a whole lot of different ways, affecting the render results wildly. If you're interested, research **nodes in Cycles**.

Here's a blue one, for instance.

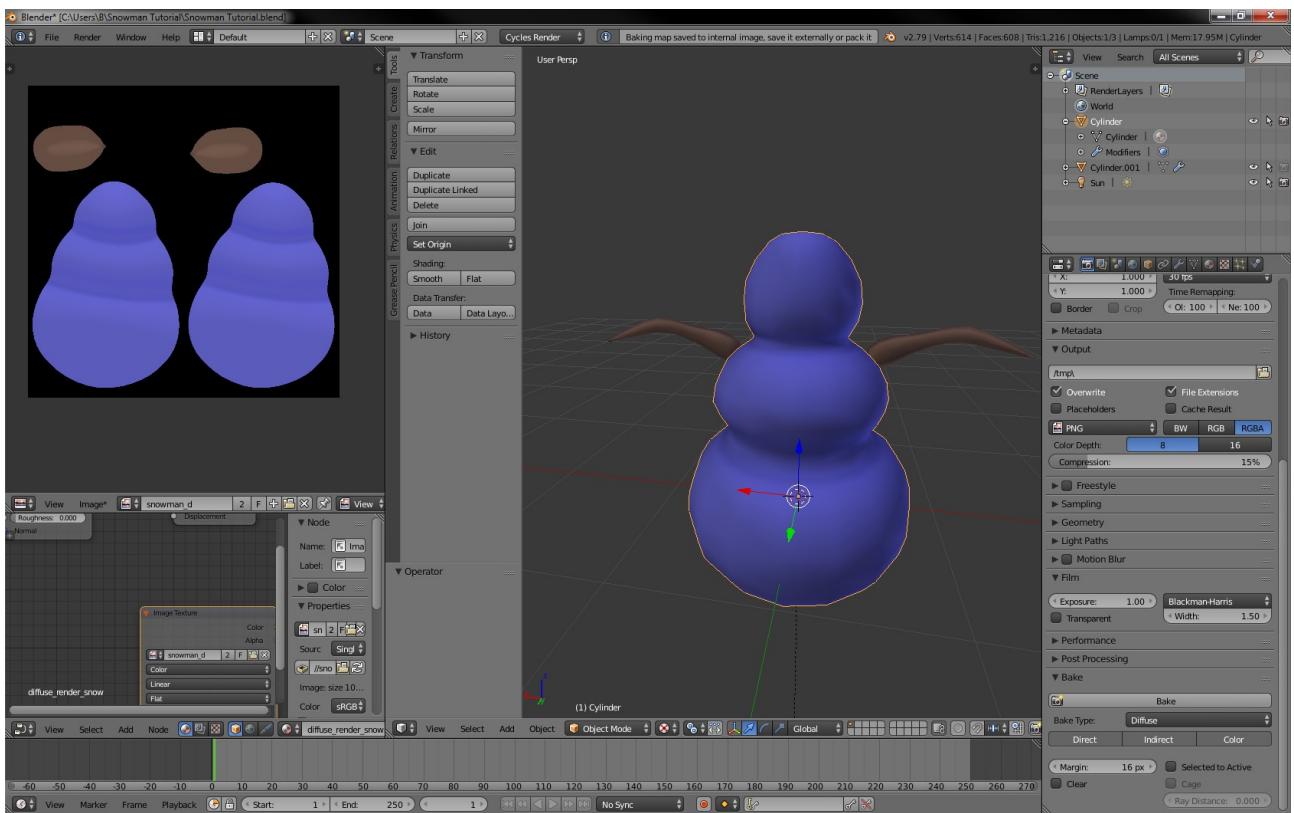
This is all a little dark, though. Let's ramp up our environment lighting!



Turn this up to, say, 0.5, 0.5, 0.5.

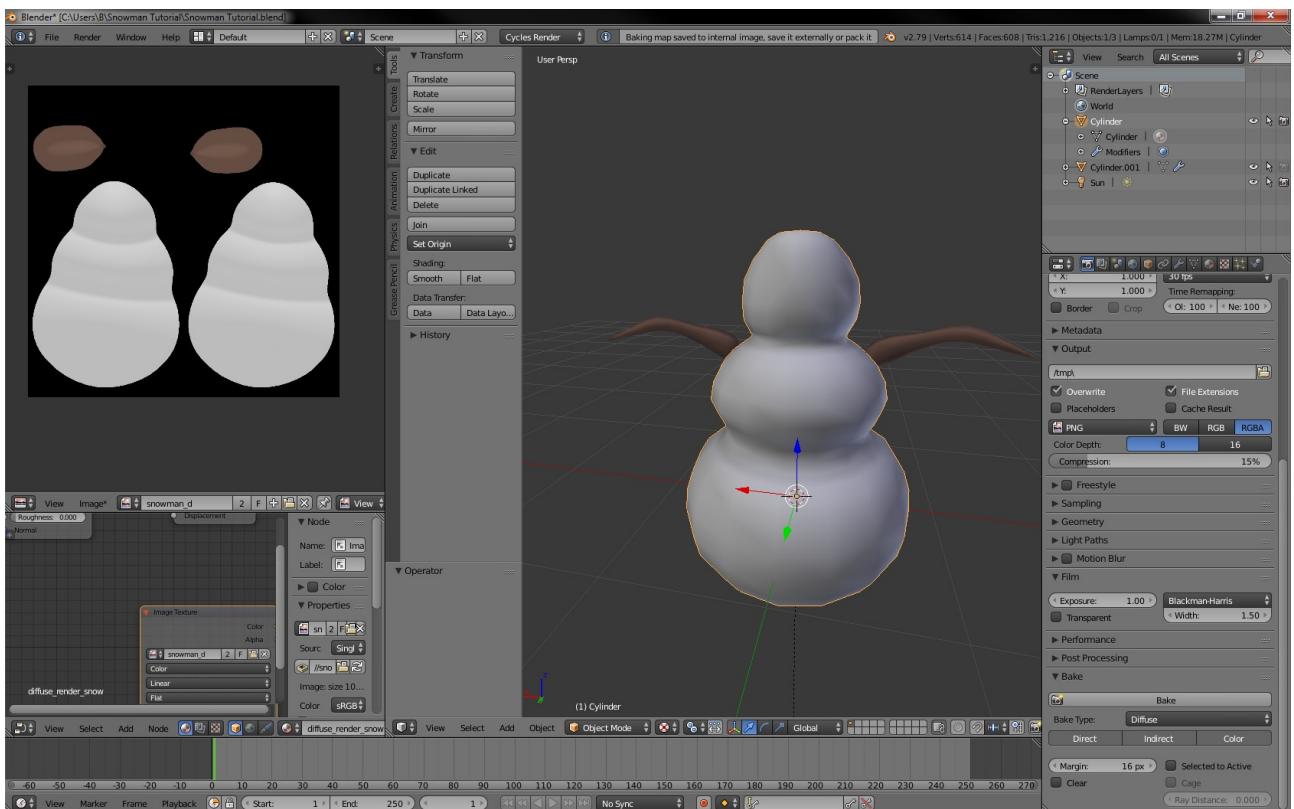


Now, bake the parts again.



Fwoompfh!

I'll just turn that so-called "snow" material white, though. Fits the bill better.



So, this is roughly the baking result you should be aiming for. **SAVE THIS IMAGE!**

For comparison, I'll show you my more complex snowman, UV mapped and with a baked diffuse base:



You're going to need a separate material for each differently-colored (or otherwise differently-structured) part. I've got three materials set up here.

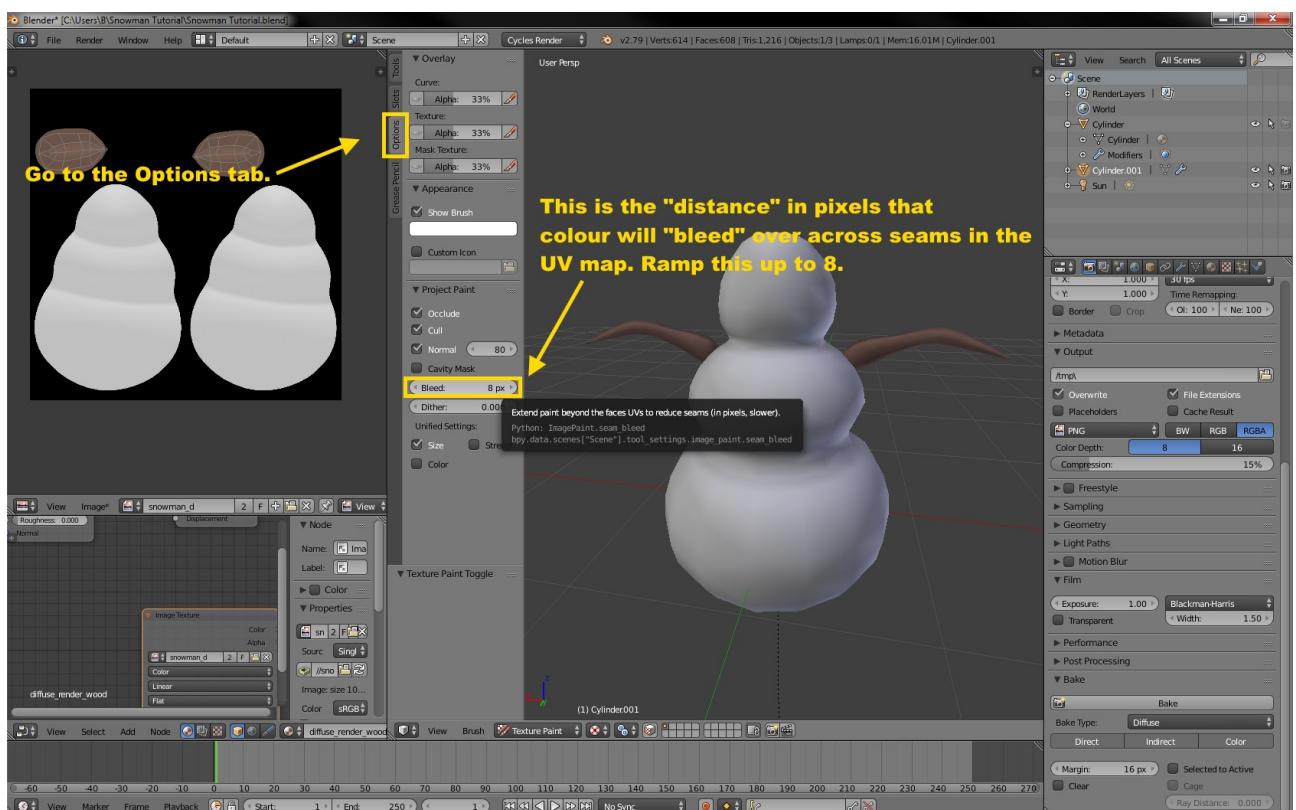
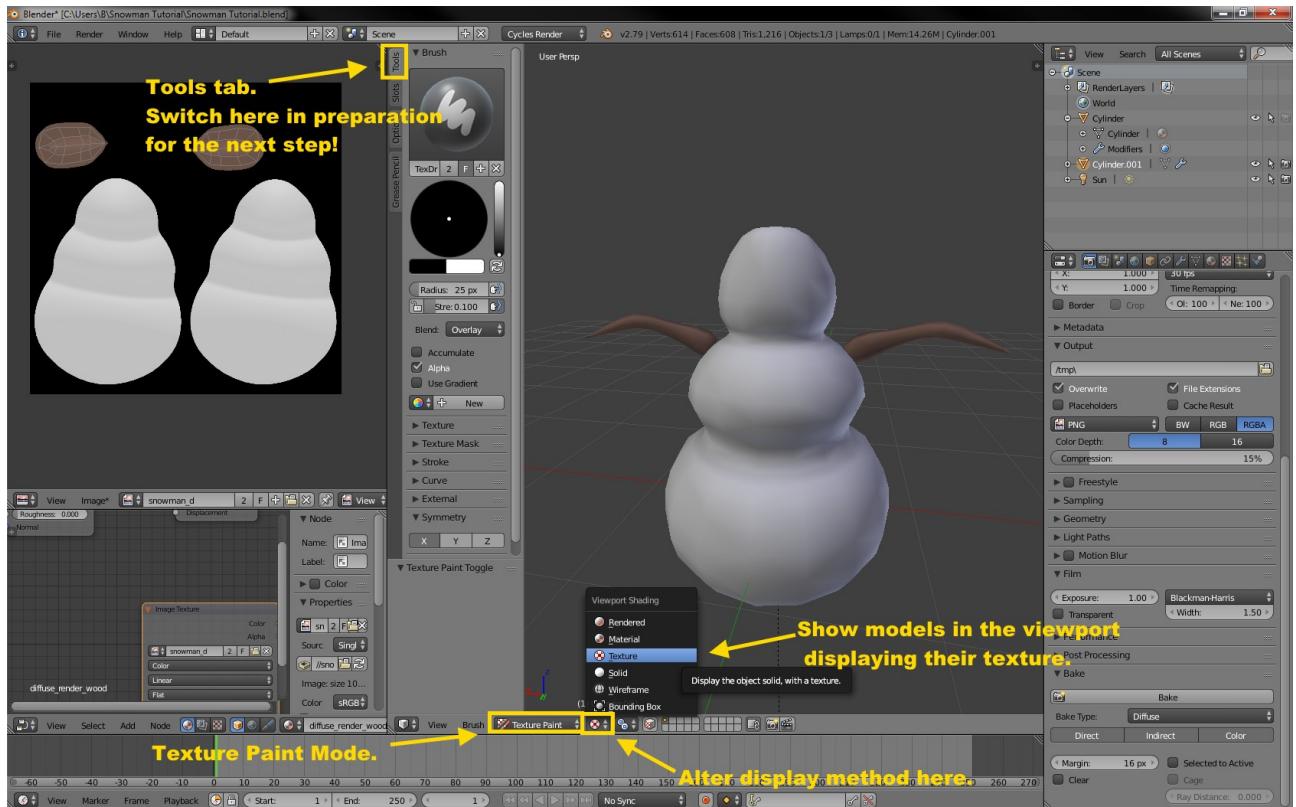
It's also possible to assign materials to individual faces of the same mesh, and bake a texture from that. Not gonna get into this during this tutorial, but - it's possible, and it's very convenient.



Let's go get acquainted with Texture Paint mode for now, though.

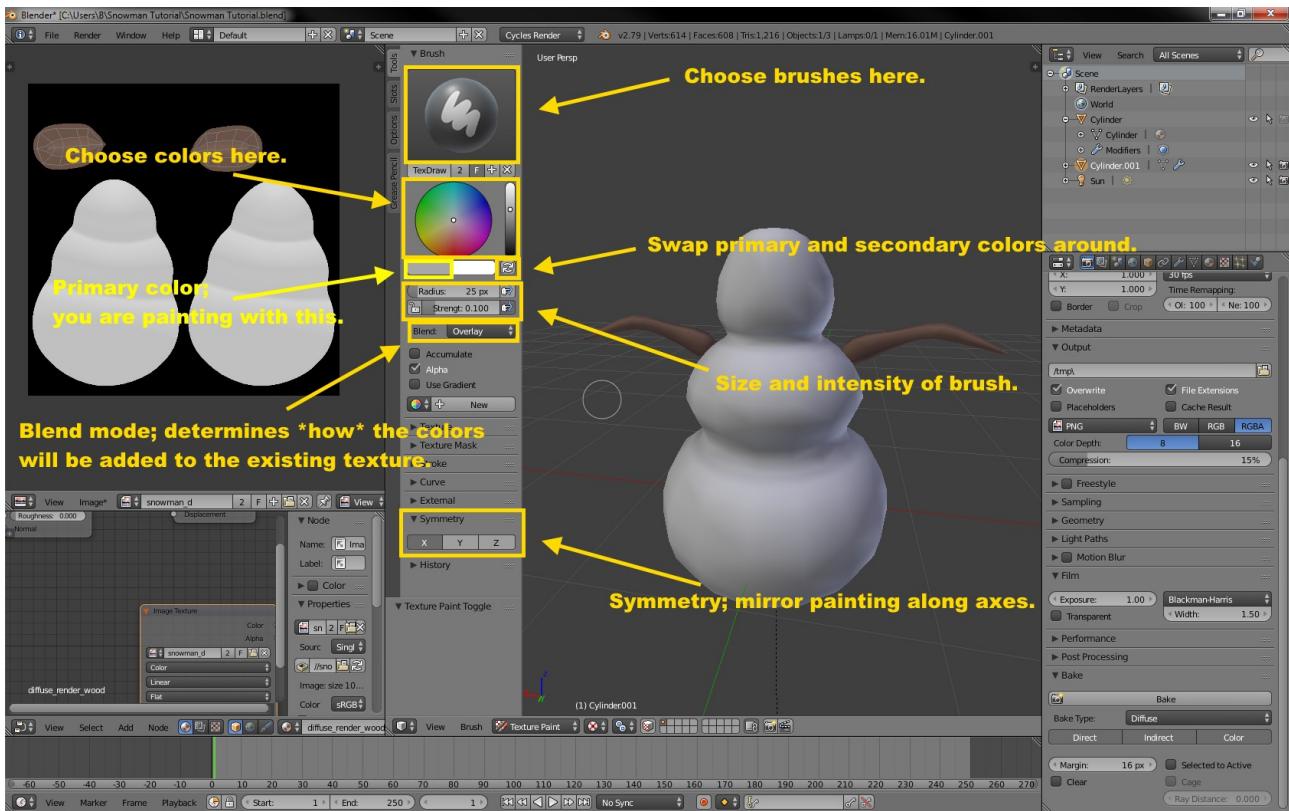
- Texturing - Hand-Painting a Diffuse Map

Switch into Texture Paint Mode, down where all the mode-switching happens. Also set the viewport render method to Texture.



In the Options tab, increase **Bleed** to **8**.

OK, tiny Tools tab overview:



You can draw directly on the 3d model itself, just point your mouse and click (and, if you want to, drag).

As a general guideline - make sure that the camera is always facing at the spot you're painting on. Rotate and zoom in and out as needed. By default, you can only paint on faces that are within eighty degrees of the camera perspective; paint that hits faces beyond this angle will break off sharply along the edges to those faces.

For my part, I'm just going to paint eyes, and a mouth, and some mild detail onto this snowman. In the Extras part for the texturing tutorial, I'll take you along the texturing of the more complex snowman - but this part of the tutorial is just "How do we get through this as simply as possible, and without being *super boring*?".

Serious words before we get started - if this is the first time you're doing this, then for the love of cake, do **NOT** expect the result to be *uTimATE pErFectIoN(TM)*, and do **NOT** be discouraged if it doesn't turn out the way you want it to. People get better at things that we practice. If you *stop practicing* new skills because you're not good at them yet, then you're never gonna *keep practicing* long enough to **get** good at them.

I'm going to show you a couple of tricks for getting decent results, across the next few pages. But, keep in mind: Drawing is a skill that takes firsthand experience, i.e. practice. If you wind up unhappy with your results, then I want you to look at them, smile, and say "This is the best I've ever made". No matter how crummy you think it is.

Reward yourself (feel good!) for practicing. If you punish yourself (feel bad!) for it, it will become an unpleasant chore that you subconsciously try to avoid, and you will hinder your own progress considerably.

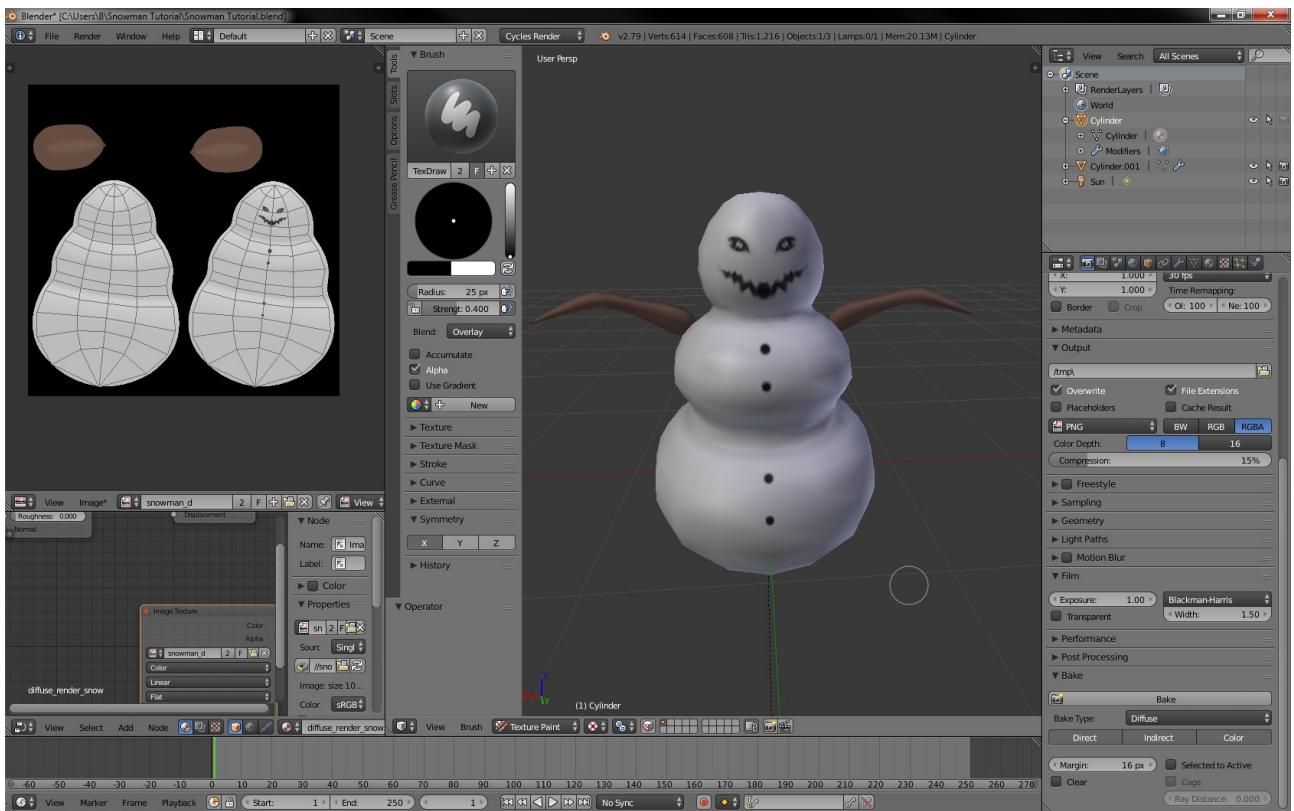
Also, SAVE THE IMAGE FREQUENTLY WHILE YOU PAINT!

Tip Nr. 1:

Lay out basic shapes at very low strength/opacity, and increase the opacity layer by layer. This gives you more control over the final result.



Tip Nr. 2: While drawing, go with what makes *what you've got* look better. Don't cling too tightly to your original vision. Let the painting/texturing/drawing/model unfold the way that's best for it: don't force it to be something that it isn't.



Tip Nr. 3: When shading skin, work at very low opacity levels, and alternate between light and dark shading. Less is more, sometimes.



Tip Nr. 4: Regularly zoom out and take a look at the overall piece again. Reevaluate where something needs to be added or altered.

Also, save the image. **UV / Image Editor, Image -> Save Image.**

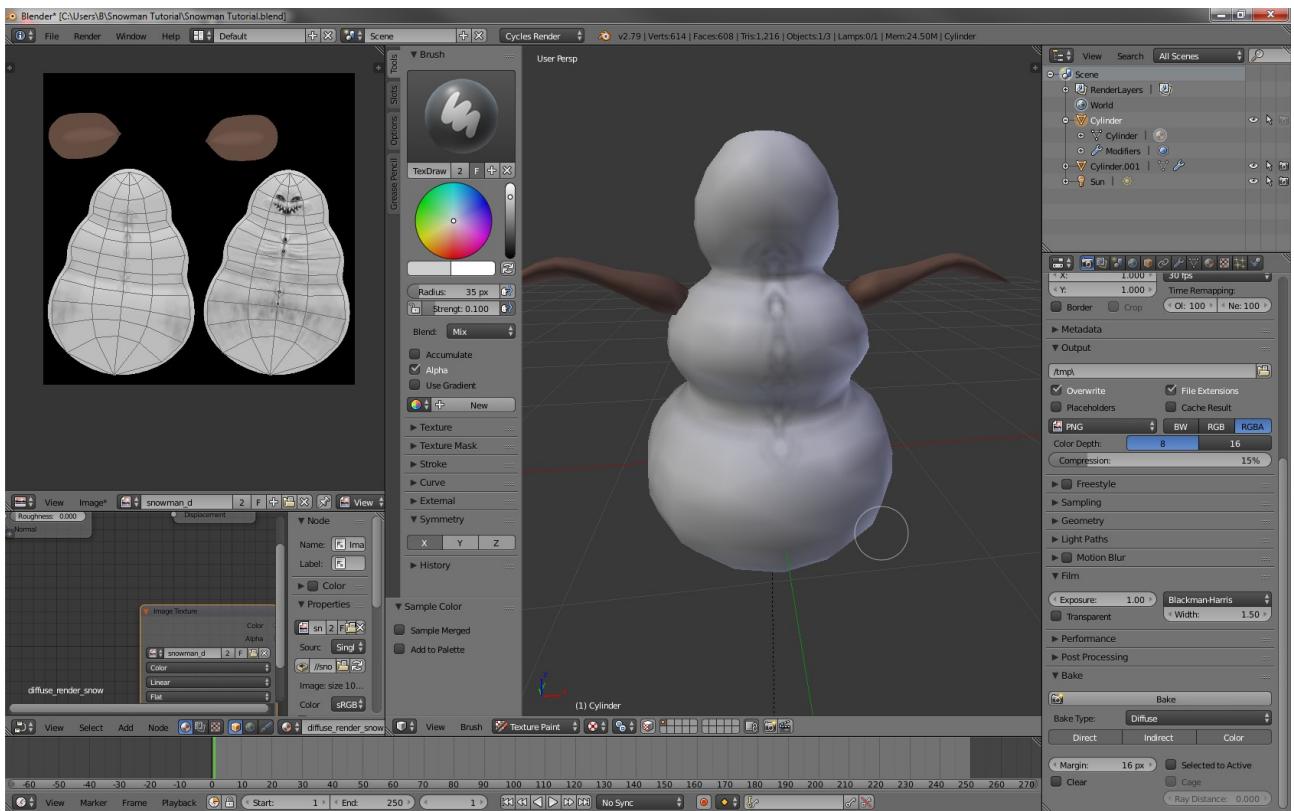
Tip Nr. 5: In Texture Paint Mode, you can **point at any part of the mesh** and hit **S** to select the color there. **Mix** blend mode is a good one for smoothing unwanted edits back out again.



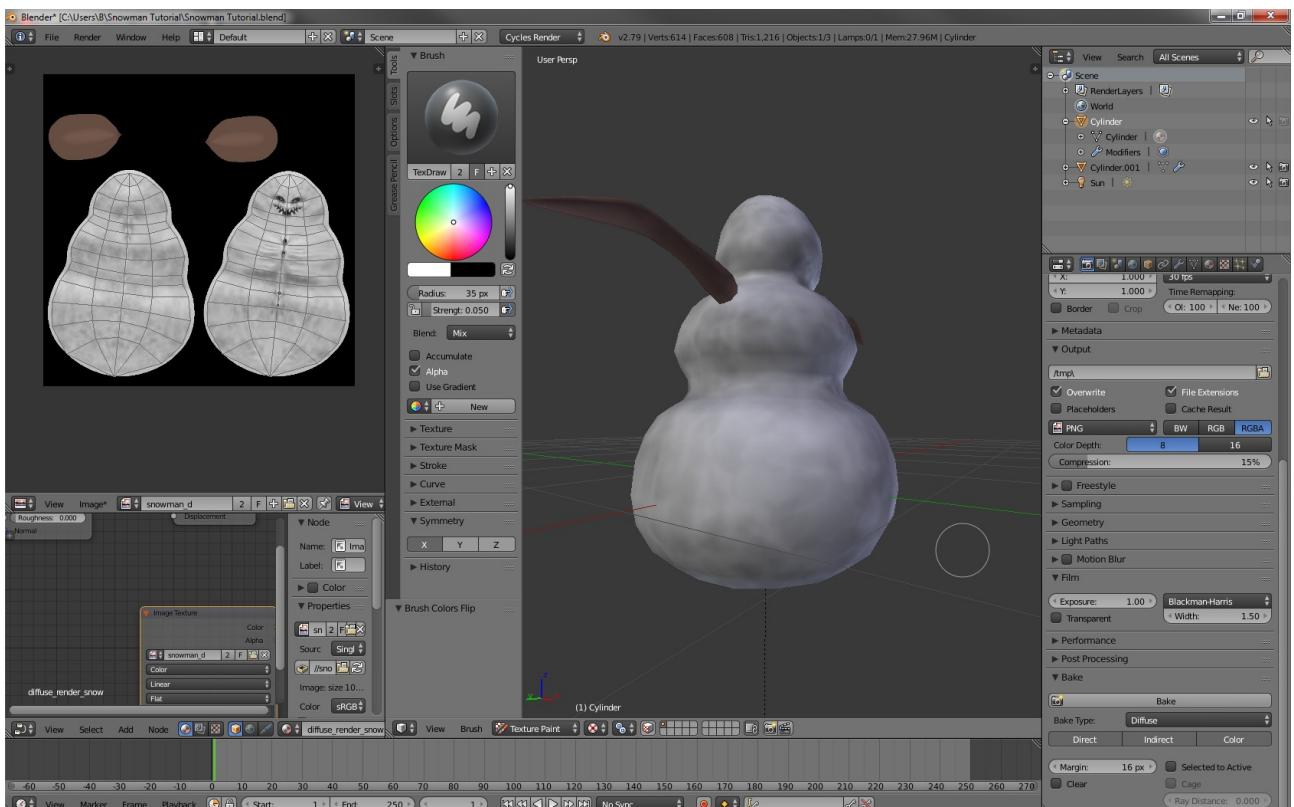
Tip Nr. 6: Regularly take the time to listen to the sadly departed Bob Ross's soothing voice and mumble to yourself about how *we don't make mistakes, we just have happy accidents*.



Tip Nr. 7: Don't be afraid to lay down darker borders. You can paint over them again lighter.



Tip Nr. 8: If you're going for something gritty or (semi-)realistic, then make sure to place at least a tiny little bit of shading absolutely *everywhere*. Smooth flawlessness looks incomplete more often than not.



Don't forget to save the image (not just the scene!). Make it reflex. Muscle memory. **Instinctive action.**

Saving is serious business.

Tip Nr. 9: When the basics are done, turn off Symmetry and add some asymmetric detail.



Tip Nr. 10: It's never too late to change something crucial about the overall design.



(There are several blend modes that work well for adding color. If you've got the time, experiment a little! I'm using Hard Light, Overlay, and Mix a fair amount, here.)

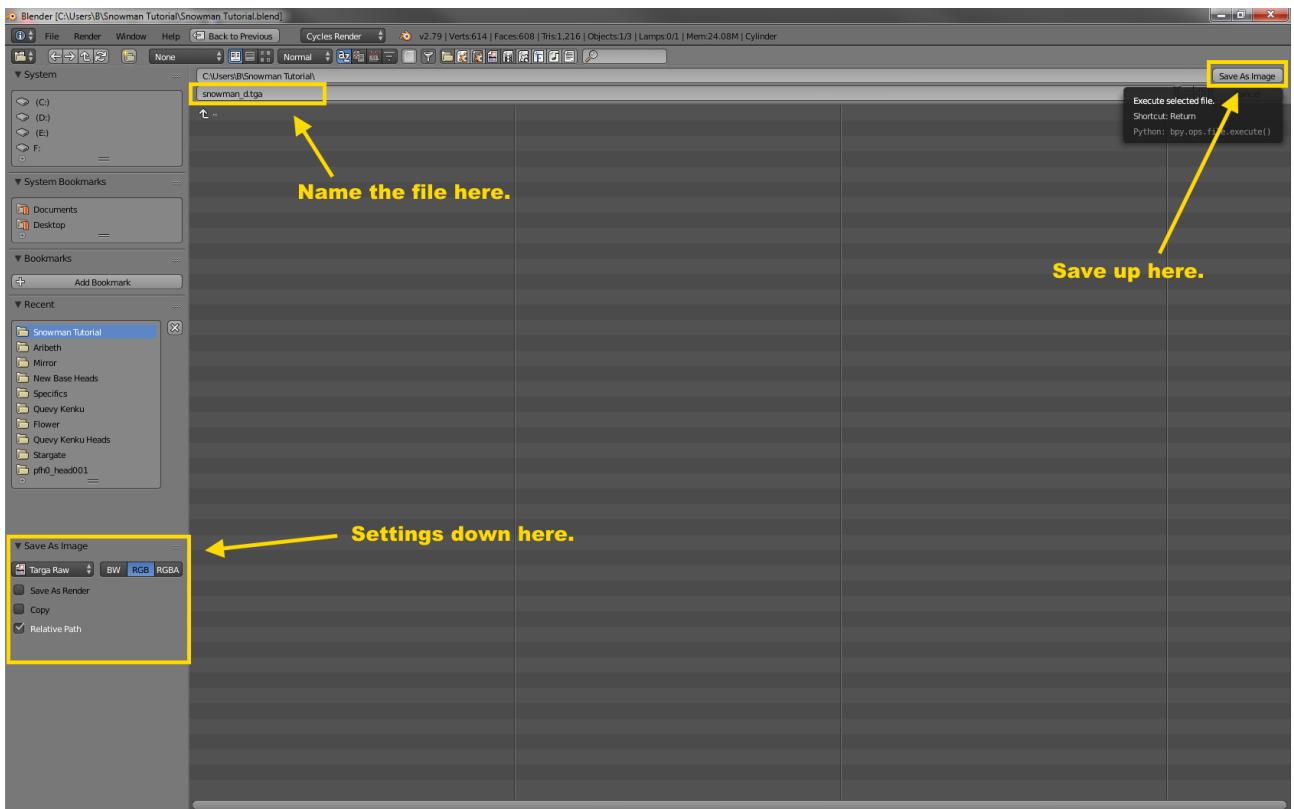


There we go. I'm content with this. And you thought the plain snowman base was boring, didn't you?! I choose to believe that you did think that. WELL, YOU WERE WRONG.

When you're satisfied with yours (it doesn't have to look **anything** like this one; you get to make your own snowman!), save the edited image.



KEEP THE RESULTING FILE SAFE. MAKE BACKUPS.



Save the image as a Targa Raw (.TGA) file.

Here's an important thing to note: When Blender starts up the scene, it will load the texture from the saved file. In-progress edits to textures won't be saved automatically; you need to save the file.

SAVE FREQUENTLY AND. MAKE. BACKUPS. Of the textures, and of the .blend files alike.

I mean it. Sooner or later, you're going to forget to make backups, even just once, and you will lose hours and hours of work, and you're going to wish you had listened to me.

I reserve for myself the right to tell you "I told you so" when it happens. MARK ME WORDS. I'm going to laugh at you when it happens. There will be no pity, no sympathy, just laughter.

Alright, we are now proud owners of a mesh and a diffuse texture. Both of the biggest timesinks of Part 1 of this tutorial are behind us, now.

What we still need are the tangent space normalmap, and the specular map.

So, let's go bake us a normalmap.

- Texturing - Baking a Tangent-Space Normalmap, Using the Diffuse Texture as a Base

OK, info: We're going to bake a tangent-space normalmap now. In theory, we should be drawing a separate heightmap up for this, or create a subdivided high-poly version of the mesh and sculpt that one, then bake from high-poly to low-poly, but we're not gonna do either. Instead, we're going to do something *unbelievably* lazy. For serious, we're being so lazy here, somebody ought to kick us for it. Repeatedly. *That's* how lazy this is.

We're going to use the diffuse texture as a stand-in for a real heightmap - just to save time, because I figure that after drawing this diffuse, chances are you're just about sick of drawing. You're welcome. Yes, I am indeed very merciful.

Pros: It'll be over quickly. Cons: It's not good form, and the results will never be as beautiful as they could be if one took the time to do it properly.

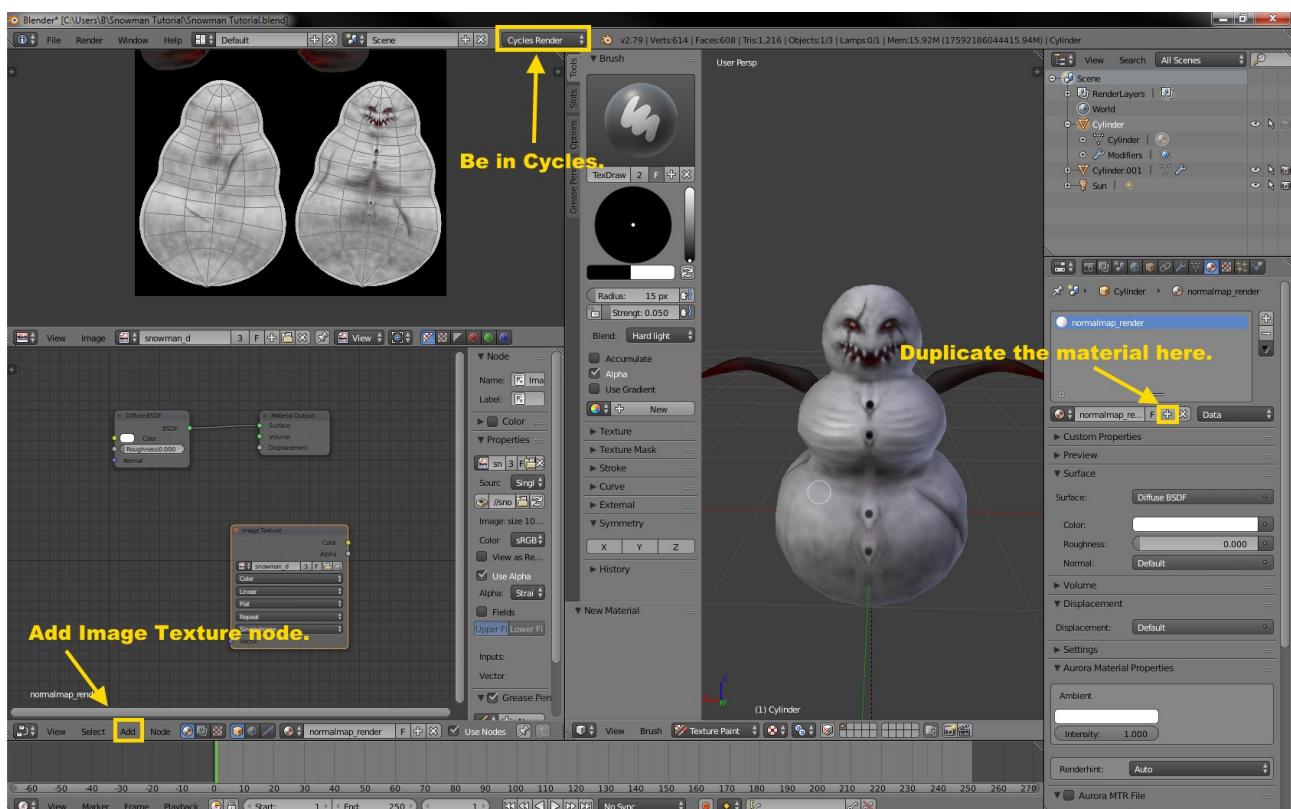
As a general FYI moment - a height map is a normally just plain grayscale image in which lighter shades signify greater heights, and darker shades signify lower heights. Here are two Wikipedia links, in case you're interested:

https://en.wikipedia.org/wiki/Normal_mapping

<https://en.wikipedia.org/wiki/Heightmap>

OK, let's go:

Duplicate the diffuse_render material again and name the new one normalmap_render. Name's still not important; it's just so we know which material is for what purpose.



Add another Image Texture node to the new material. This is going to be the node that links our diffuse map into the active material.

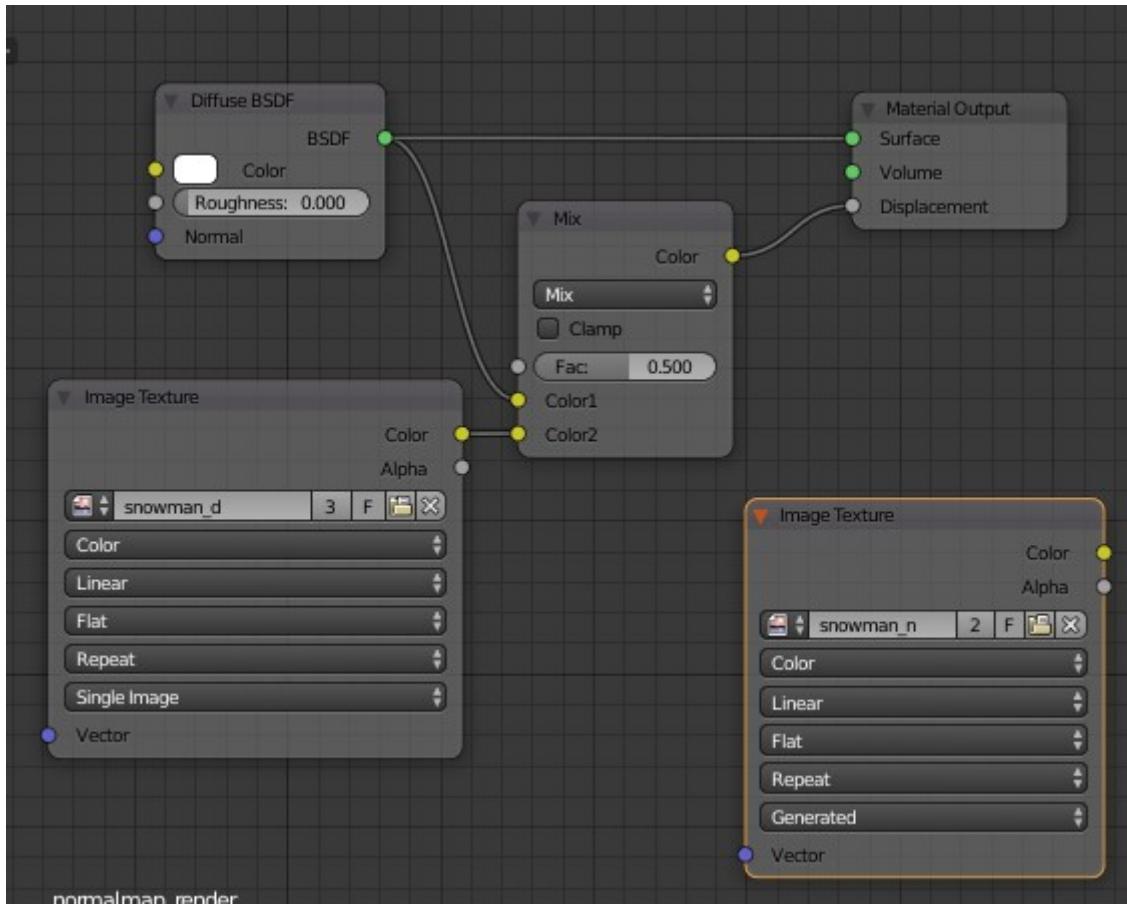


If the image **snowman_n** no longer exists, create it anew via the plus icon in the UV/ Image Editor.



Add a **MixRGB** node.

Next, link the nodes in the following way. You can grab the colored dots at the right-side borders, and drag them into the colored dots at the left-side borders of other nodes.



This is the way the nodes should be linked. Diffuse BSDF and the Image Texture node with the image snowman_d should go into Color1 and Color2 of the MixRGB node, which goes into the material surface output.

The loose Image Texture node is active (orange border), and is the target texture that we will be baking onto.

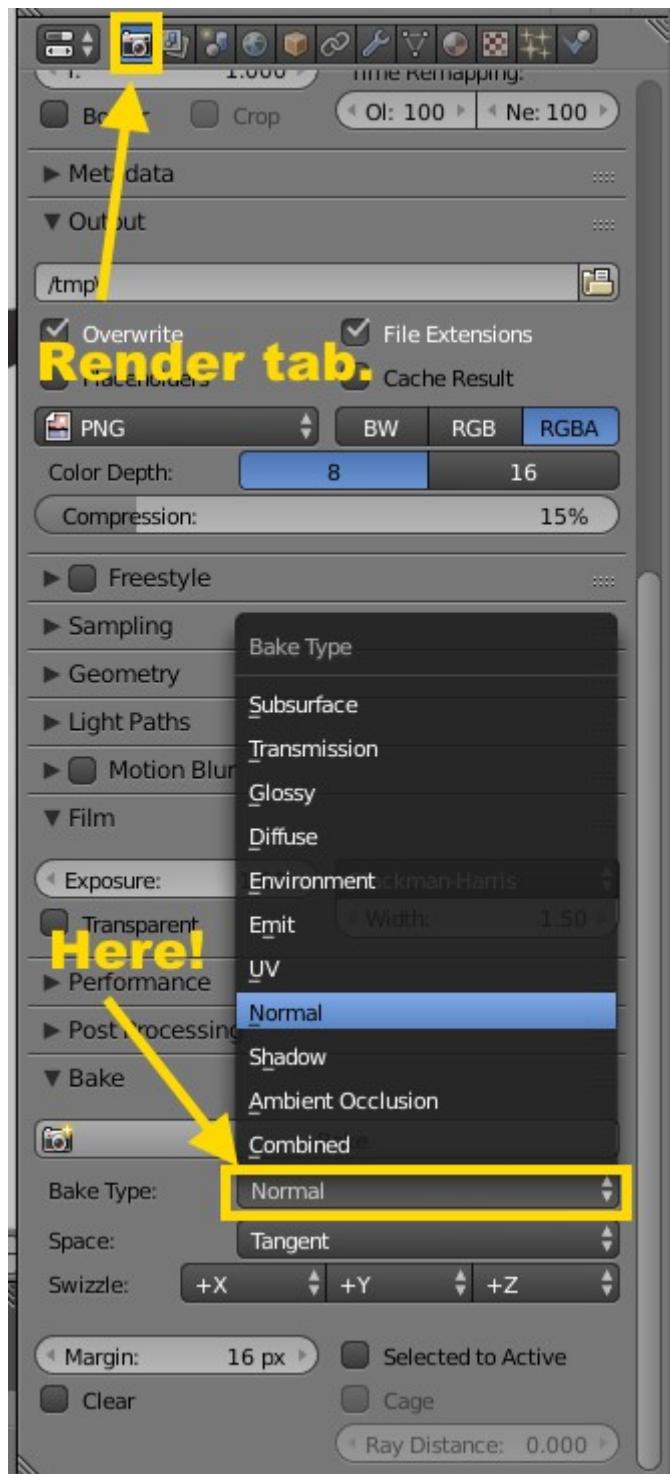
OK, I'mma show you something neat now.

Switch to the Rendered display method.



Booyah! OK, say hi to Rendered, and say hi to the height map that is currently affecting the material output. These are the bumps and ridges that will be getting baked into the normalmap.

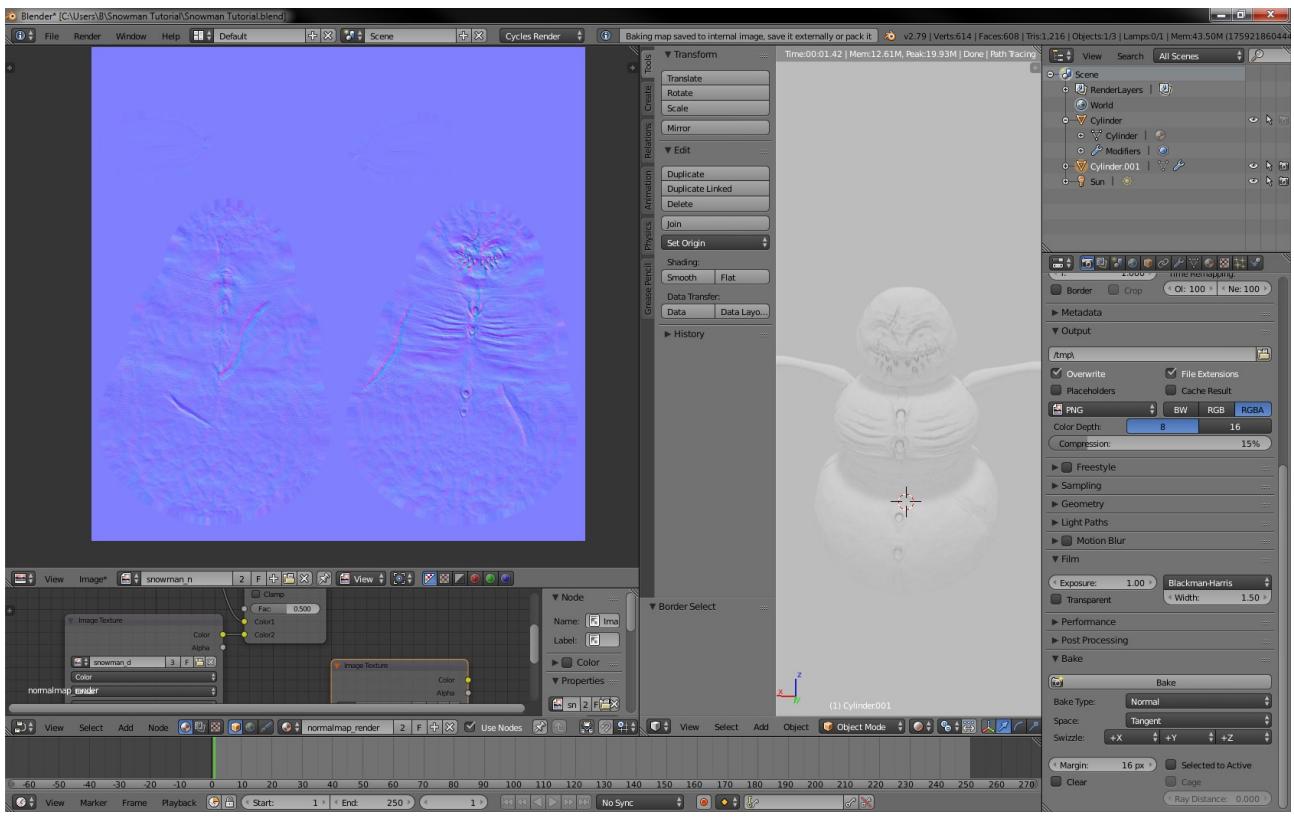
So, hey, let's bake that thing. **Make sure that snowman_d is the active (orange-highlighted) material in the Nodes Editor**, then go to the Render tab, scroll down to Bake, and select Normal.



Hey, on another sidenote - have you been saving? You should have been saving. I will laugh at you if you lose all your progress because you haven't been saving.

Actually... no, don't save. I'll get to laugh if you don't save. Laughing is nice. I'm cool with this.

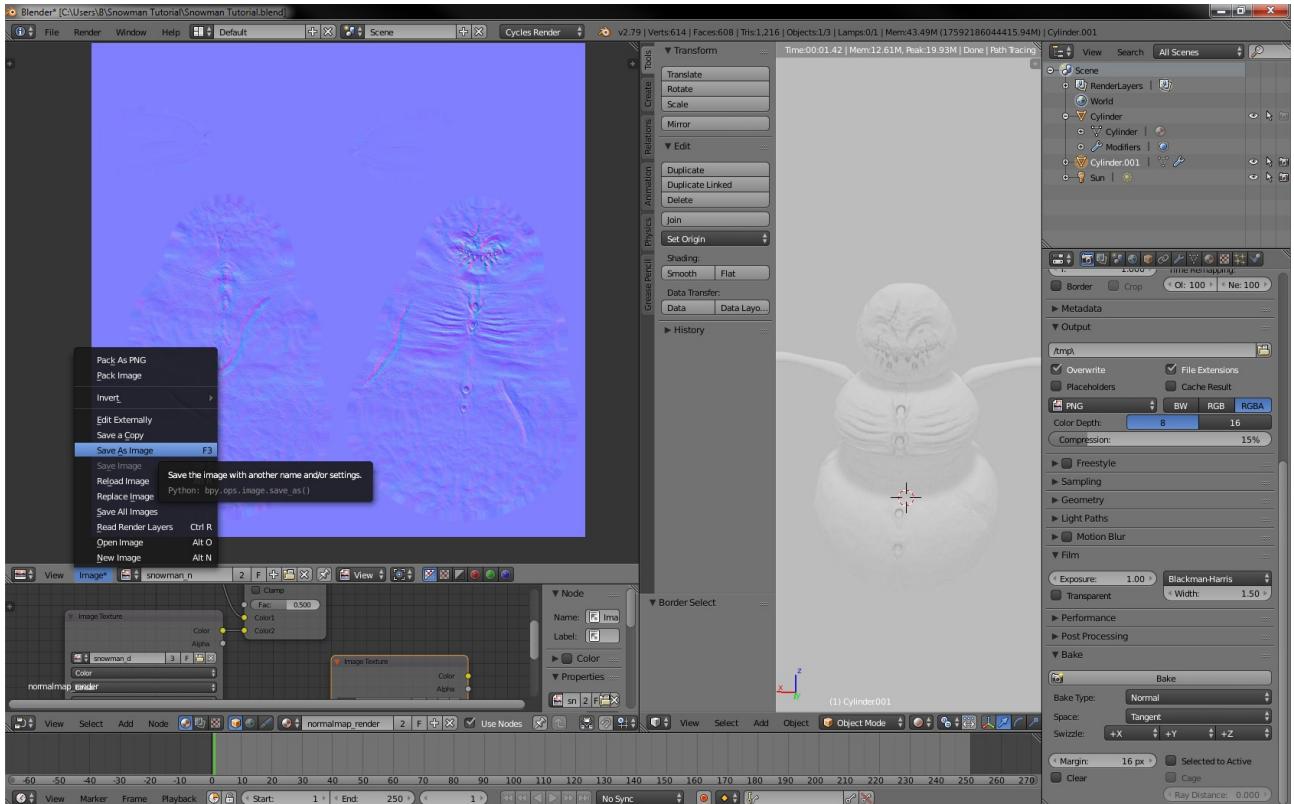
And now... bake a tangent space normalmap. :-) Clickity-click, and wait for it to finish baking.



Isn't it beautiful? That's a low-poly mesh that's trying to pretend to be a high-poly one, right there.

Do the arms, too. Switch their material to the `normalmap_render` material, hit Bake.

Save the normalmap as `snowman_n.tga`.

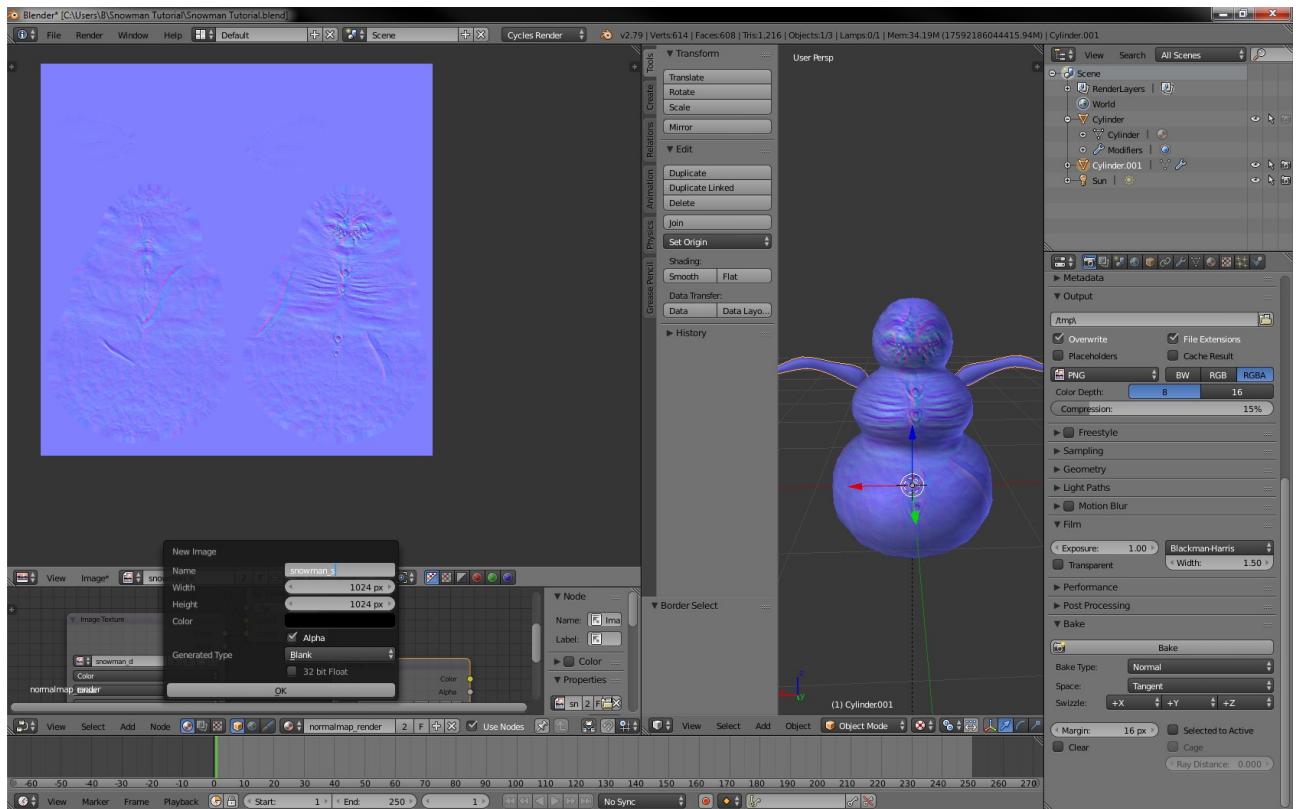


- Texturing - Hand-Painting a Specular Map.

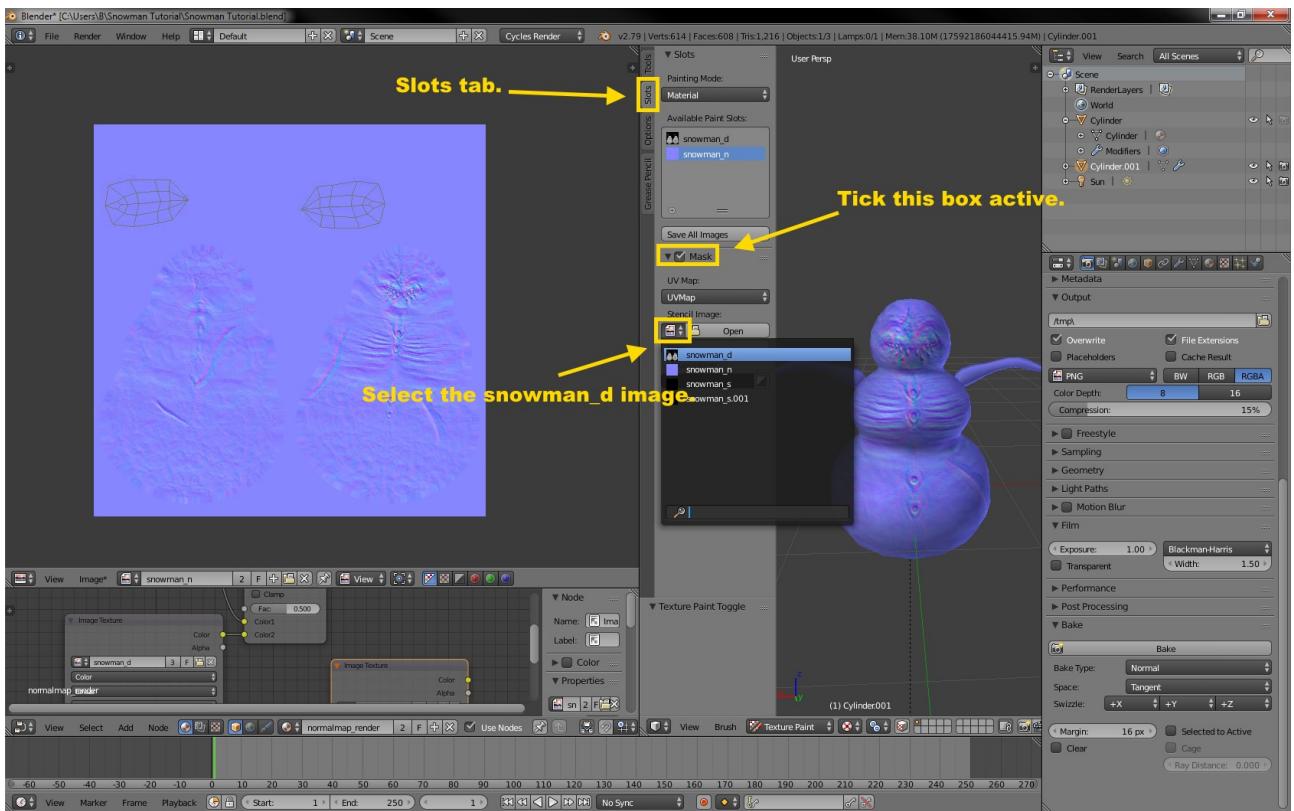
Now, we're almost done texturing. The last one we want is the specular map. This one determines which parts of the texture are *shiny*.

I regrettably don't know any good ways to get an even semi-satisfying specular map without hand-painting it. Normally, I do this in GIMP or Paint.Net rather than in Blender, too. So, to be honest, this is going to be a pretty poor excuse for a tutorial section. Back to Texture Paint Mode!

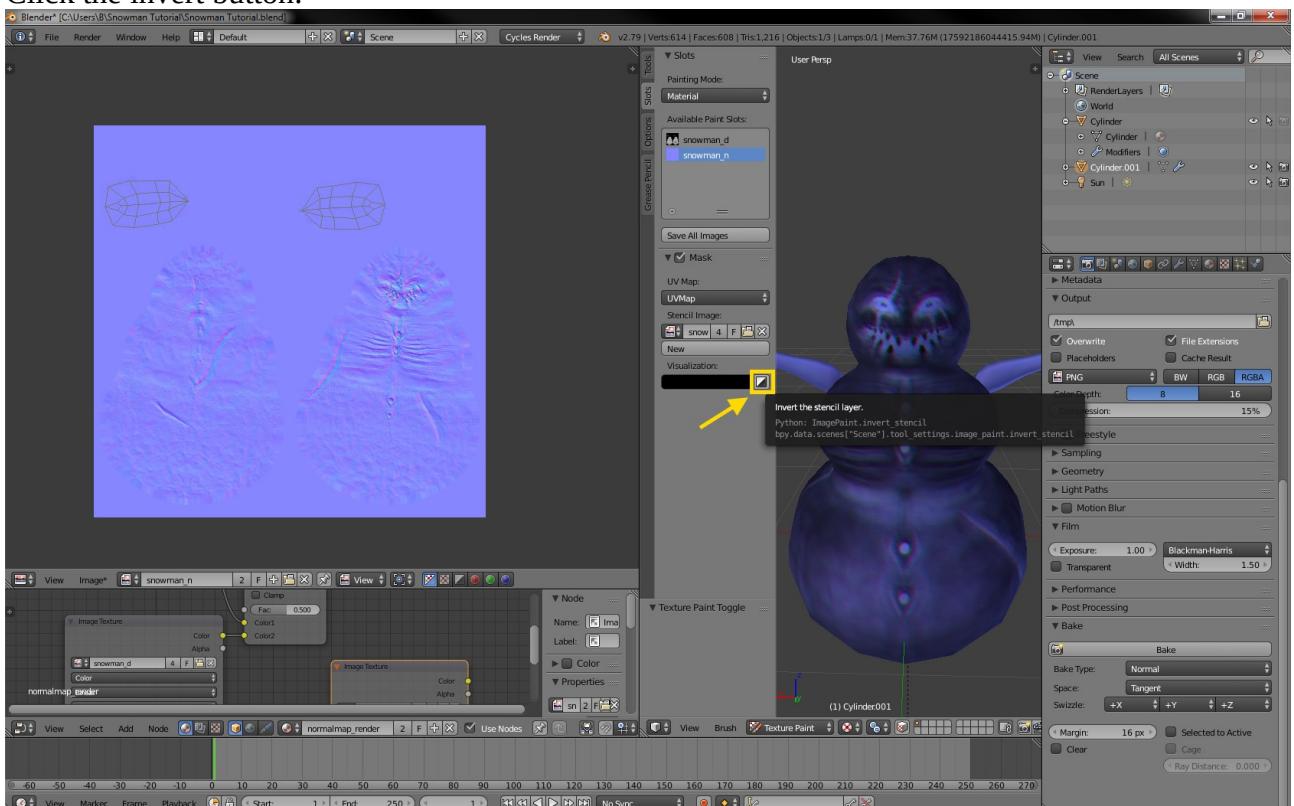
If you don't have one already, then create a new image, and call it **snowman_s**.



Next up, we're going to use our diffuse texture `snowman_d` as a mask, overlaying it onto `snowman_s`.

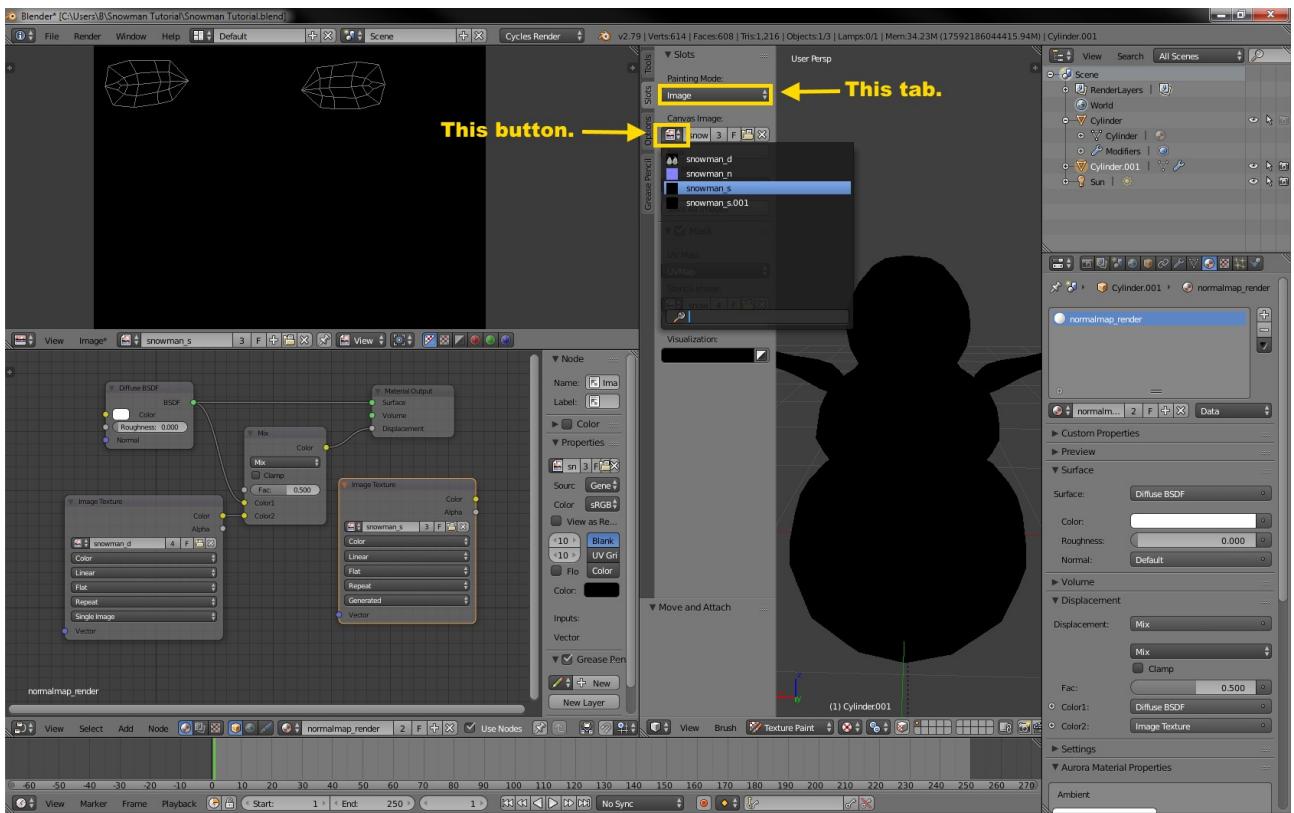


Click the invert button:

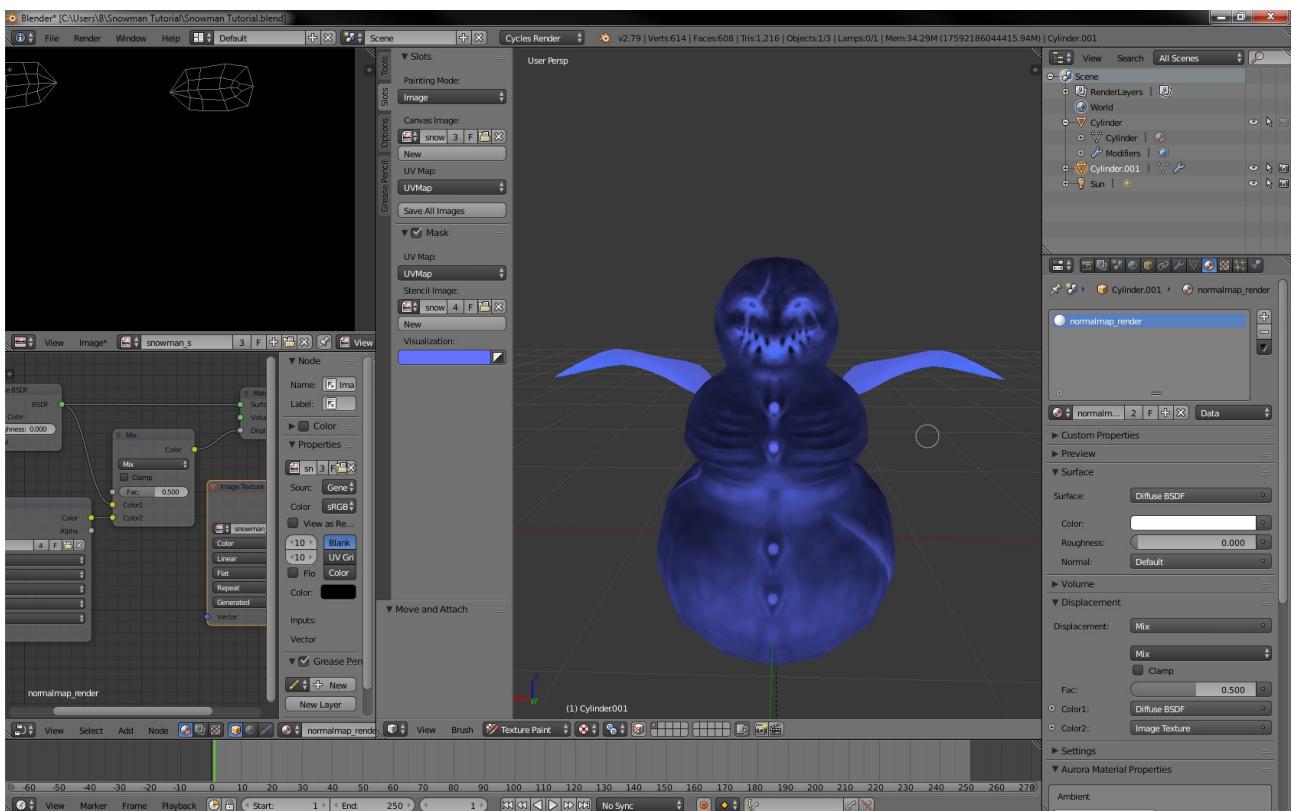


The mask image will render parts of the texture underneath it unpaintable. The black colour in the Visualization field next to the invert button is the colour that will be overlaid onto masked parts of the mesh.

At the top of the Slots tab, switch into Painting Mode: Image, and select snowman_s as your canvas image.



Now, alter the Visualization color of the mask image.



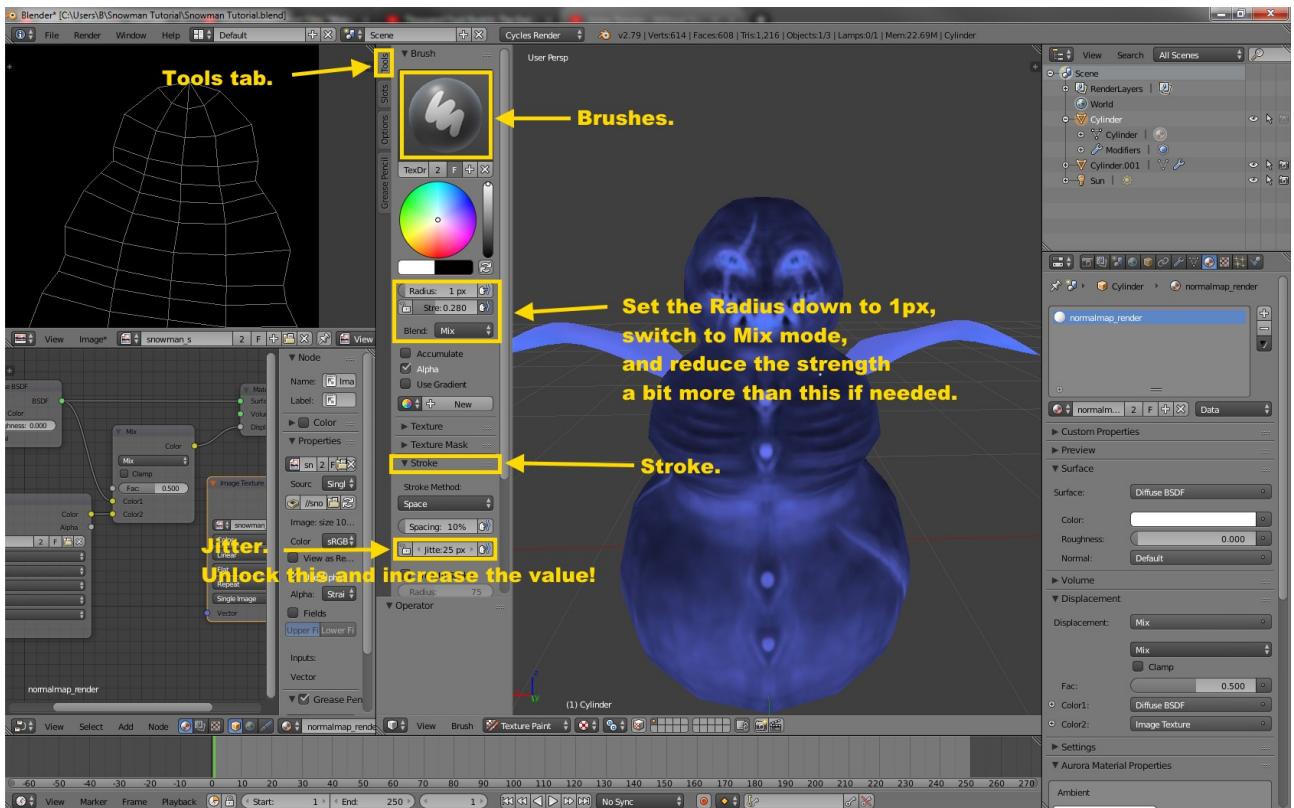
I'm going to go with this lovely purplish-blue, myself. It looks decently visible, here.

Now, I can paint on the black parts of the mesh. The parts overlaid with colour are masked; if I try to paint on them, the amount of colour that reaches the texture will be "filtered" according to the intensity of the mask in that spot. Where the mask is stronger, the paint will be applied to the texture beneath the mask less. If the mask is at full strength in a spot, then that spot cannot be painted on at all.

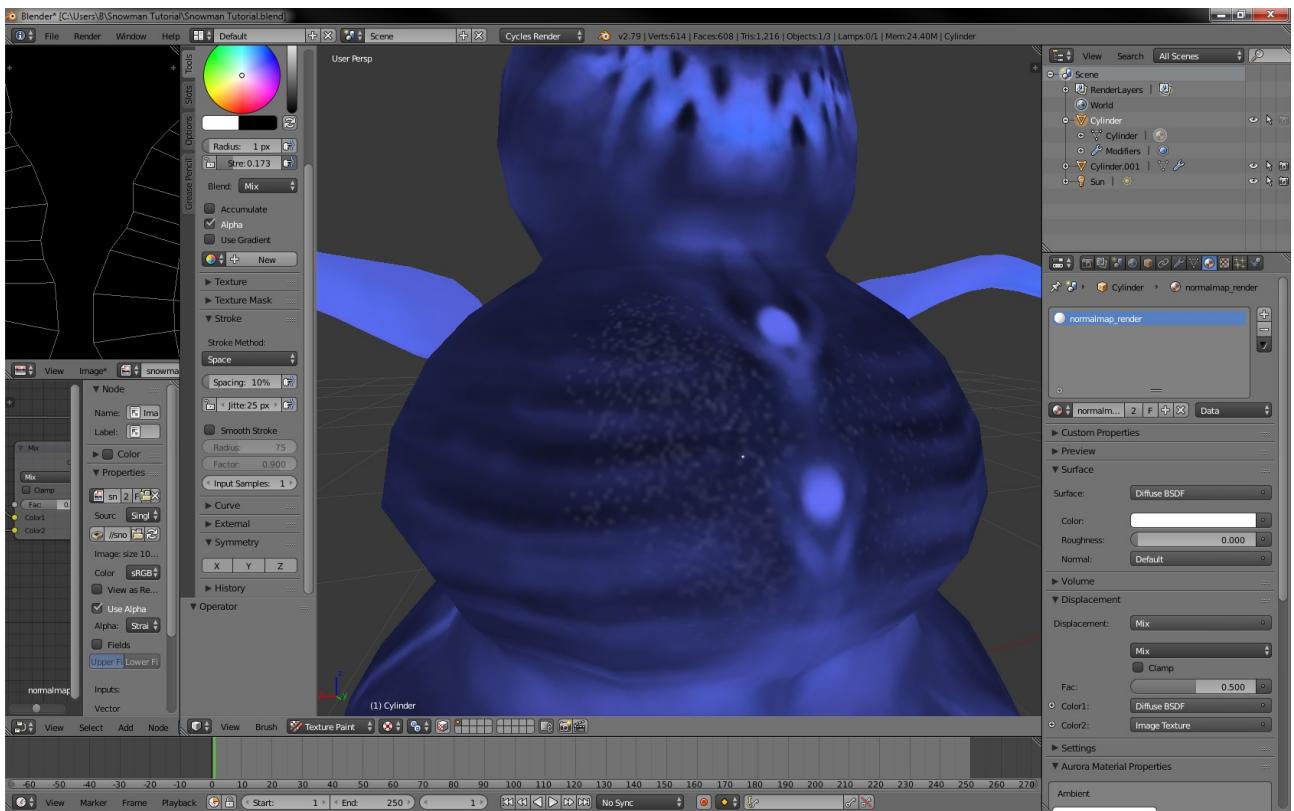
In the case of the above screenshot, the inside of the mouth and eyes are masked, but not *completely* so. This is something you need to watch out for when using masks; if the mask is not solid, then it does not offer complete protection to the texture below.

'kay. Time to show you another trick; spray painting via jittering the brush. Switch back to the Tools tab, where the brushes are.

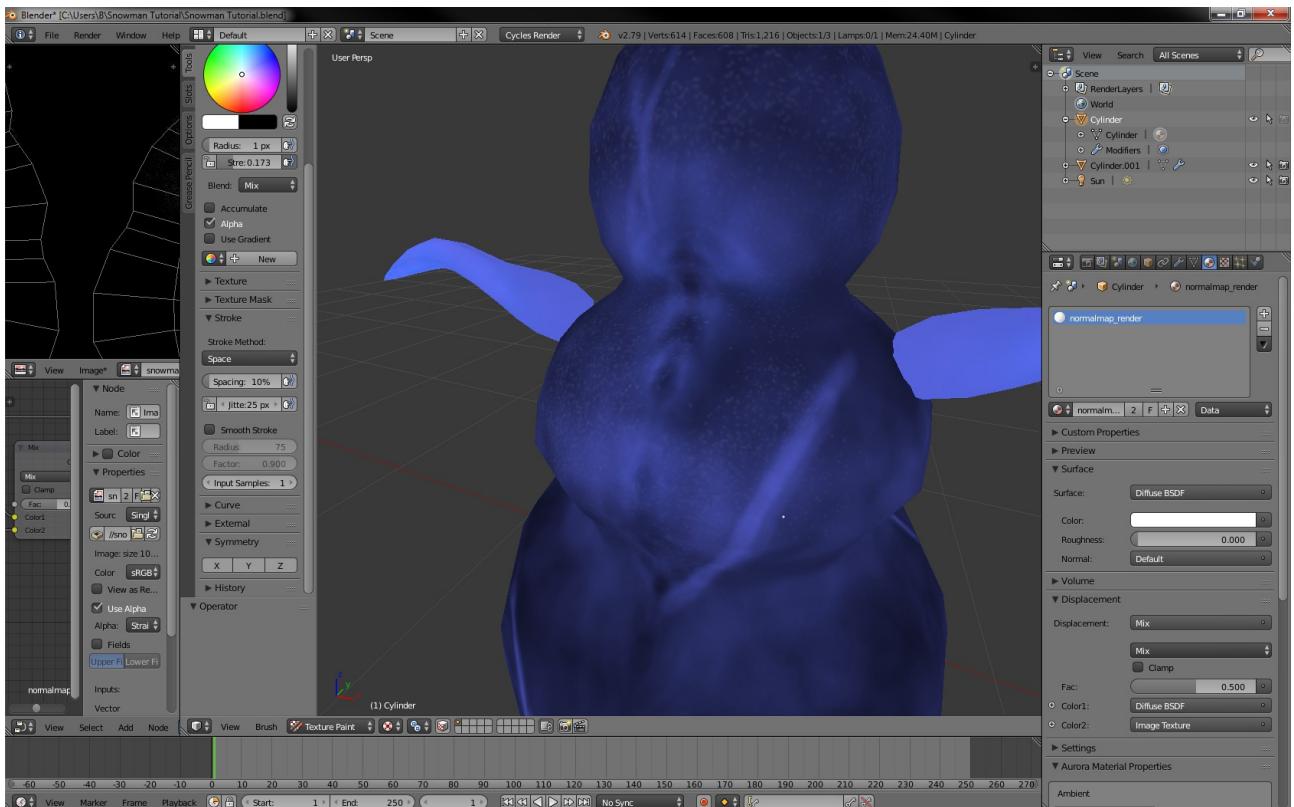
Make sure you've got the TexDraw brush active, and open the Stroke dropdown.



Jittering displaces the brush within the jitter radius of the point you're clicking on. By doing this, we'll be "spray-painting" 1px dots on to the specular map, creating little shiny sprinkles on the snowman.

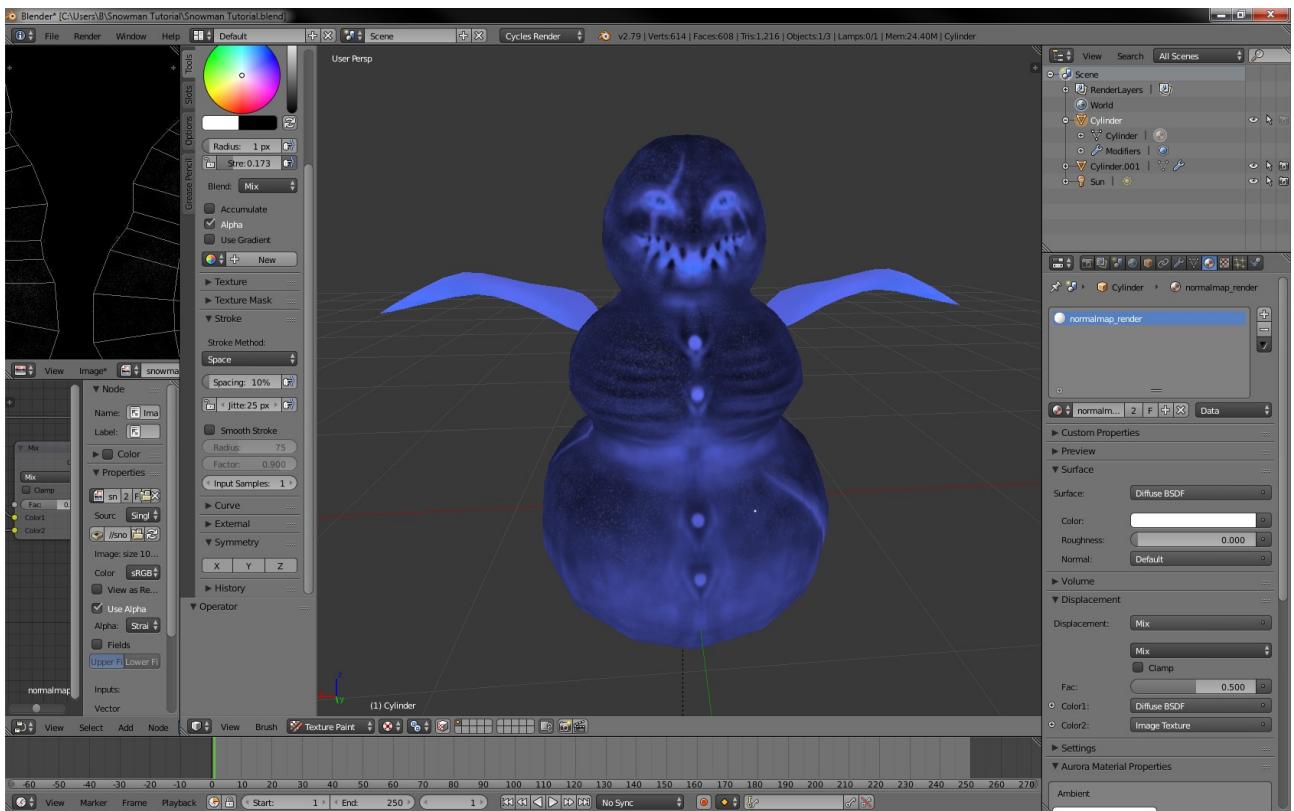


Now, just gently sprinkle the snowman all over. Make sure to turn the camera as you go along.

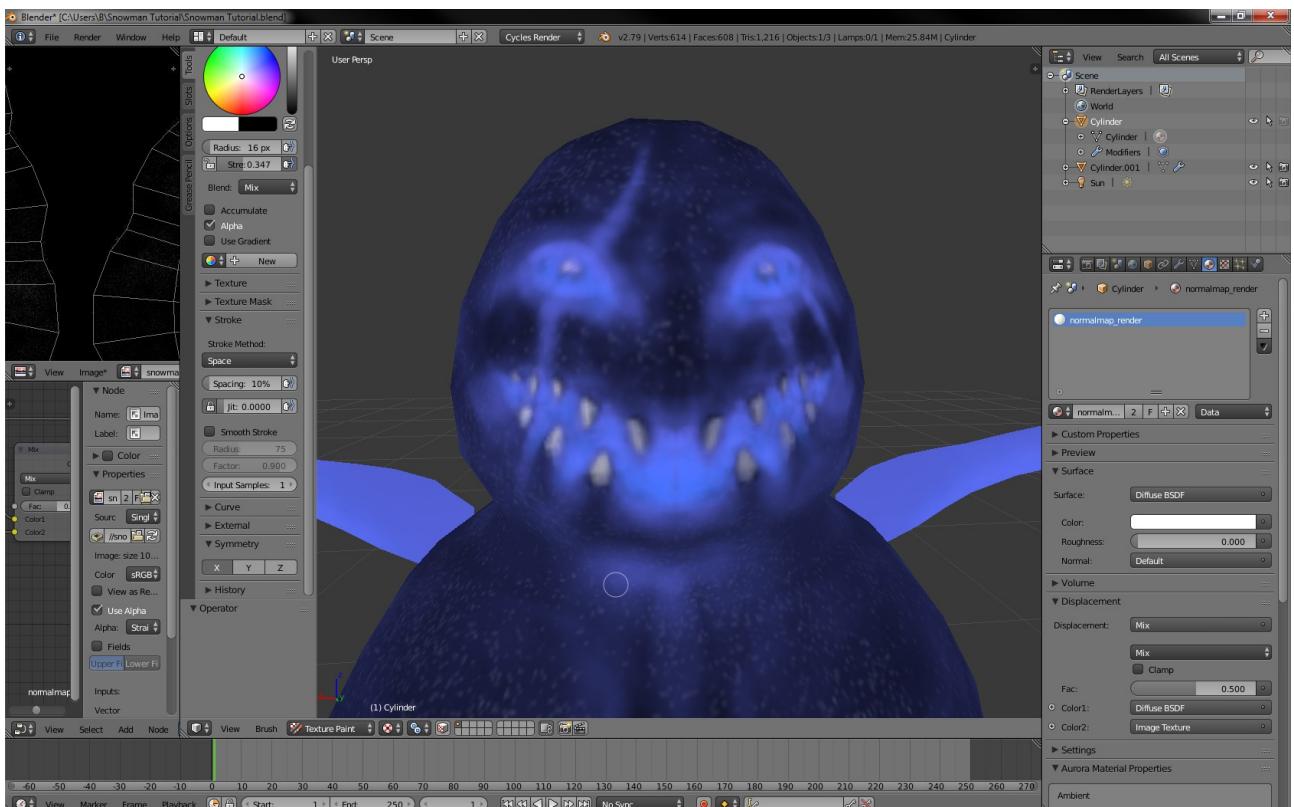


... this is why I like the blue colour for the mask. It's like painting stars. :-)

By the way... **SAVE YOUR TEXTURES.**

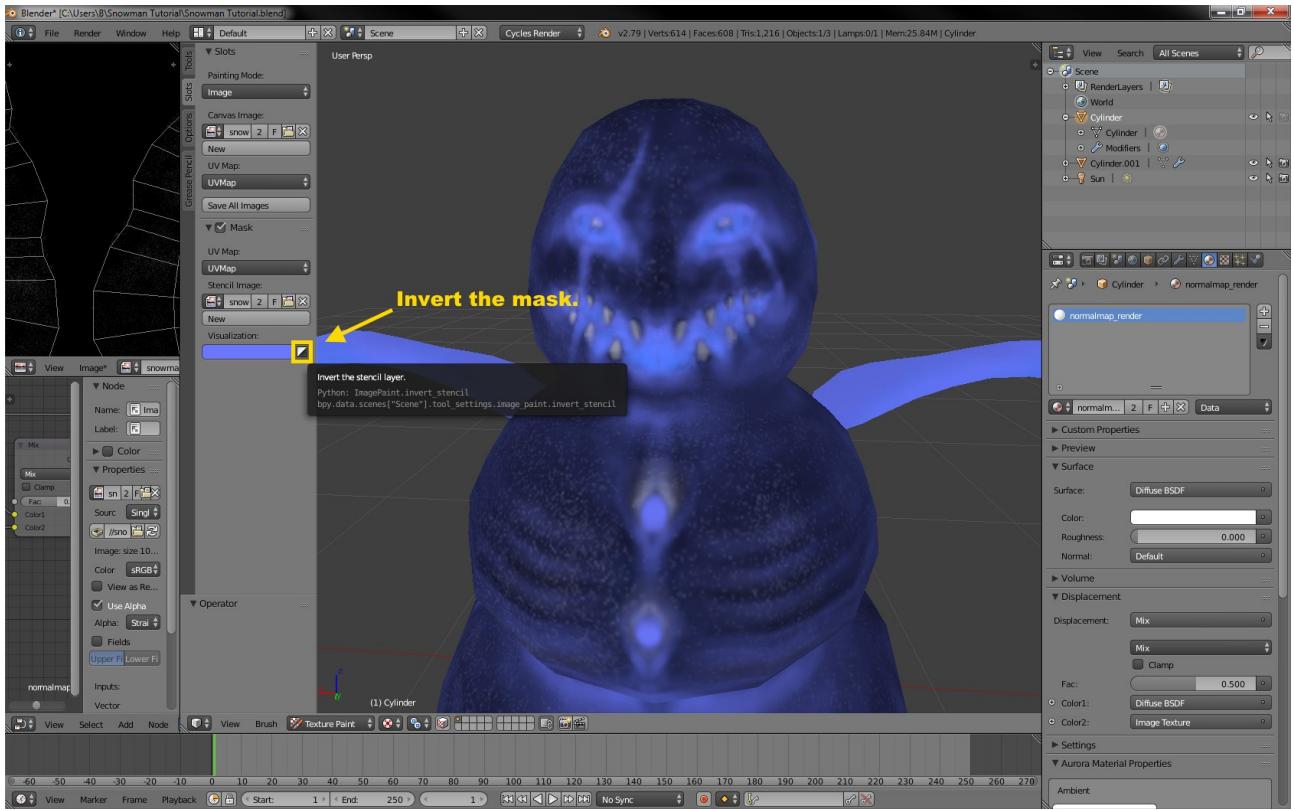


When the snowman has been sprinkled all over, deactivate Jitter again, and add some highlights where needed. Again, the spots we are painting now will be shiny ingame. In my case, that means I'll want to paint the teeth and the eyes, activating Symmetry along the X-axis again.



I'll add some gentle highlights in some other spots, too, like along the bony ridges in the front and back. Where you want to paint depends 100% on what your snowman looks like, and which parts you want to be shiny.

Next, I'll invert the mask, back in the Slots tab.

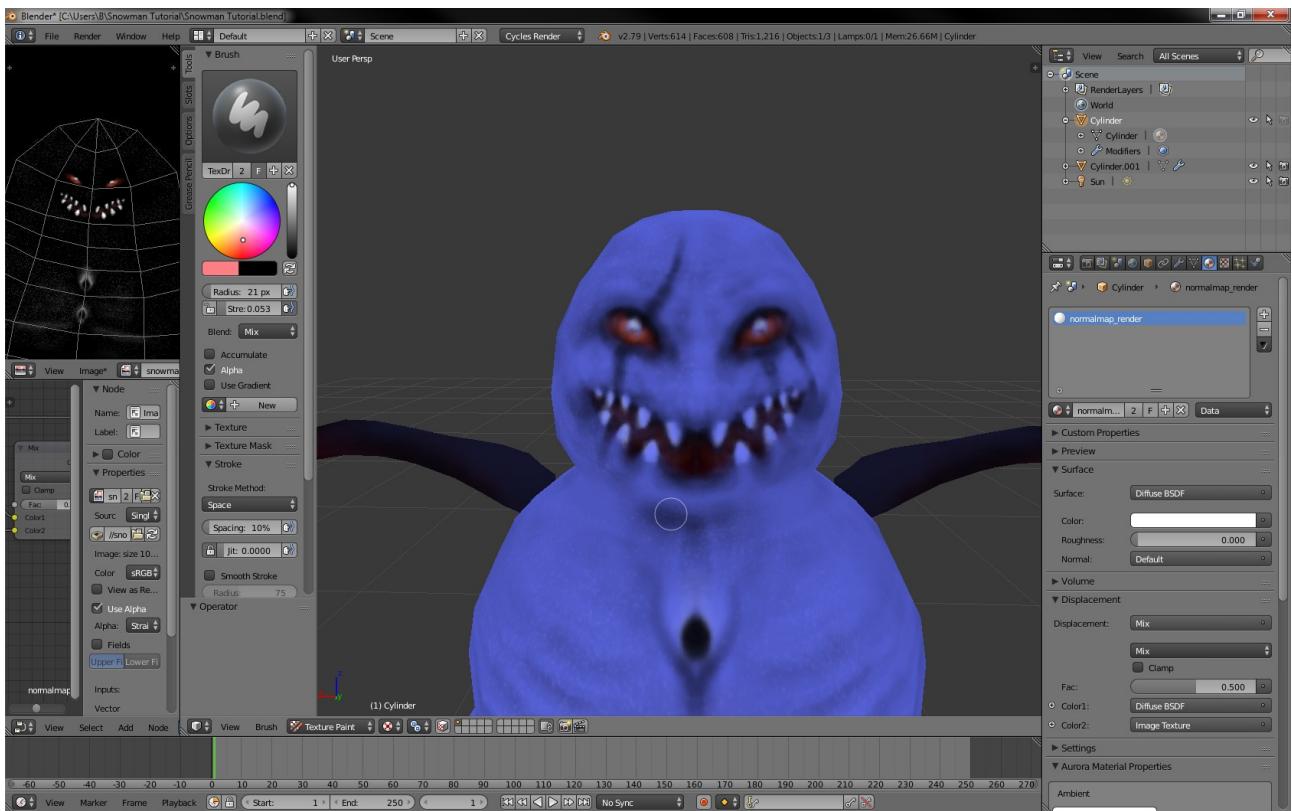


(Also, REMEMBER TO SAVE! The texture, not just the .blend file!)

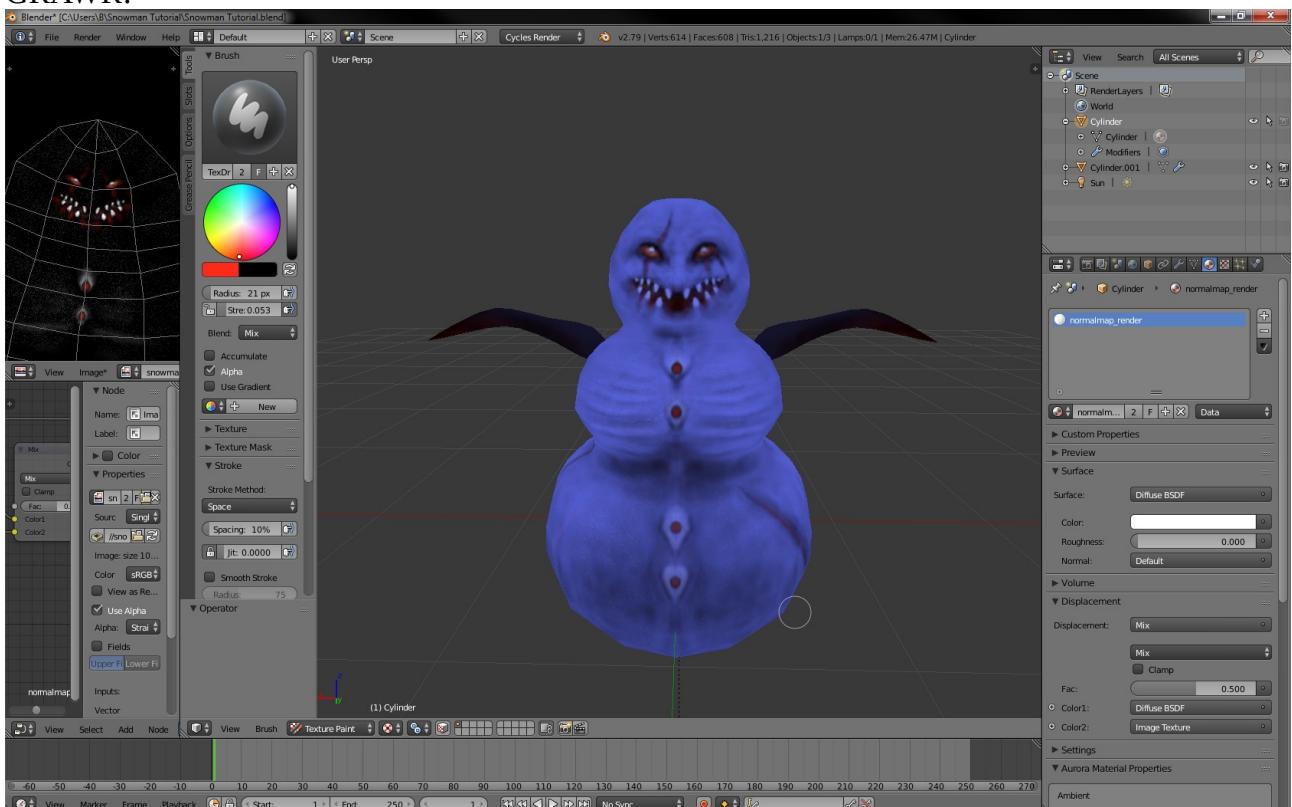


Now, the spots that were paintable before are masked, and the previously masked spots no longer are. I can add shininess to the buttons, and the scars, and the eyeballs, and the interior of the mouth, now, if I want.

And it turns out, I do want to do that! Woo!



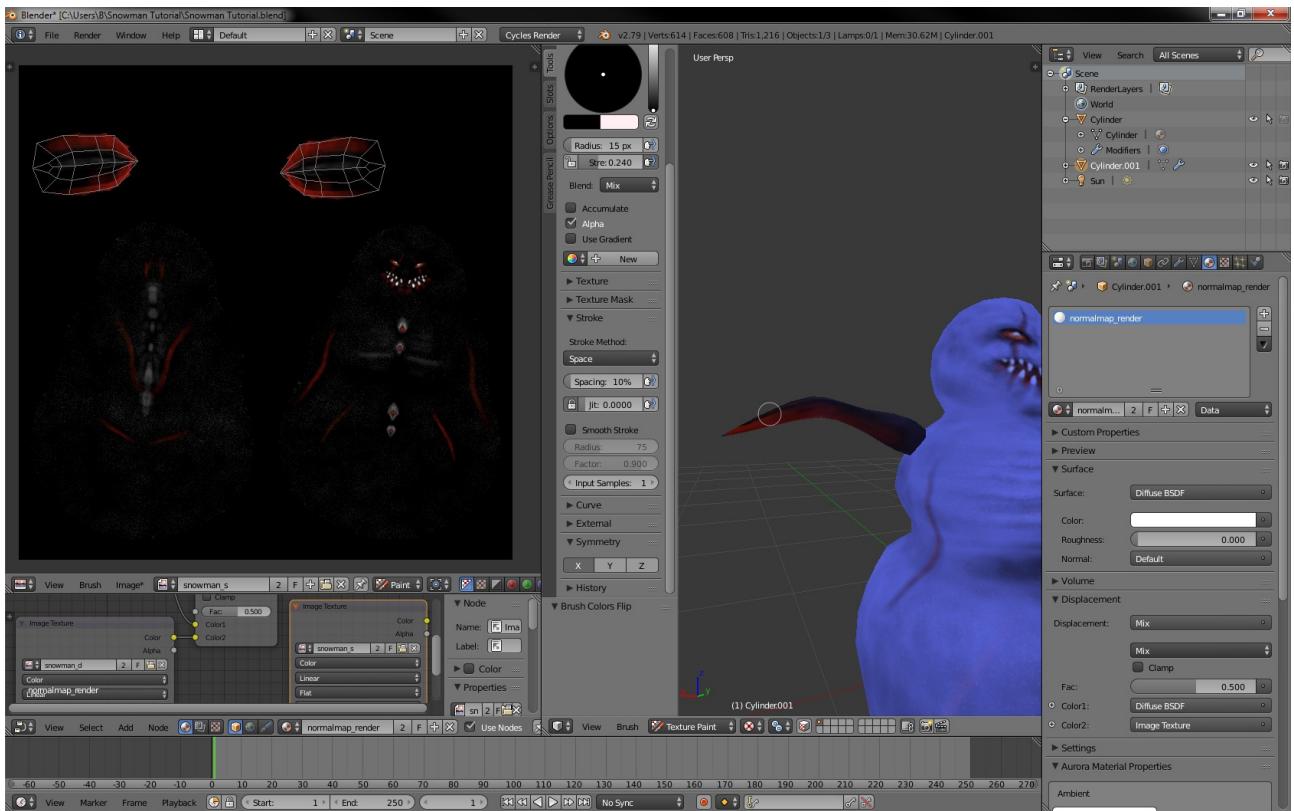
GRAWR!



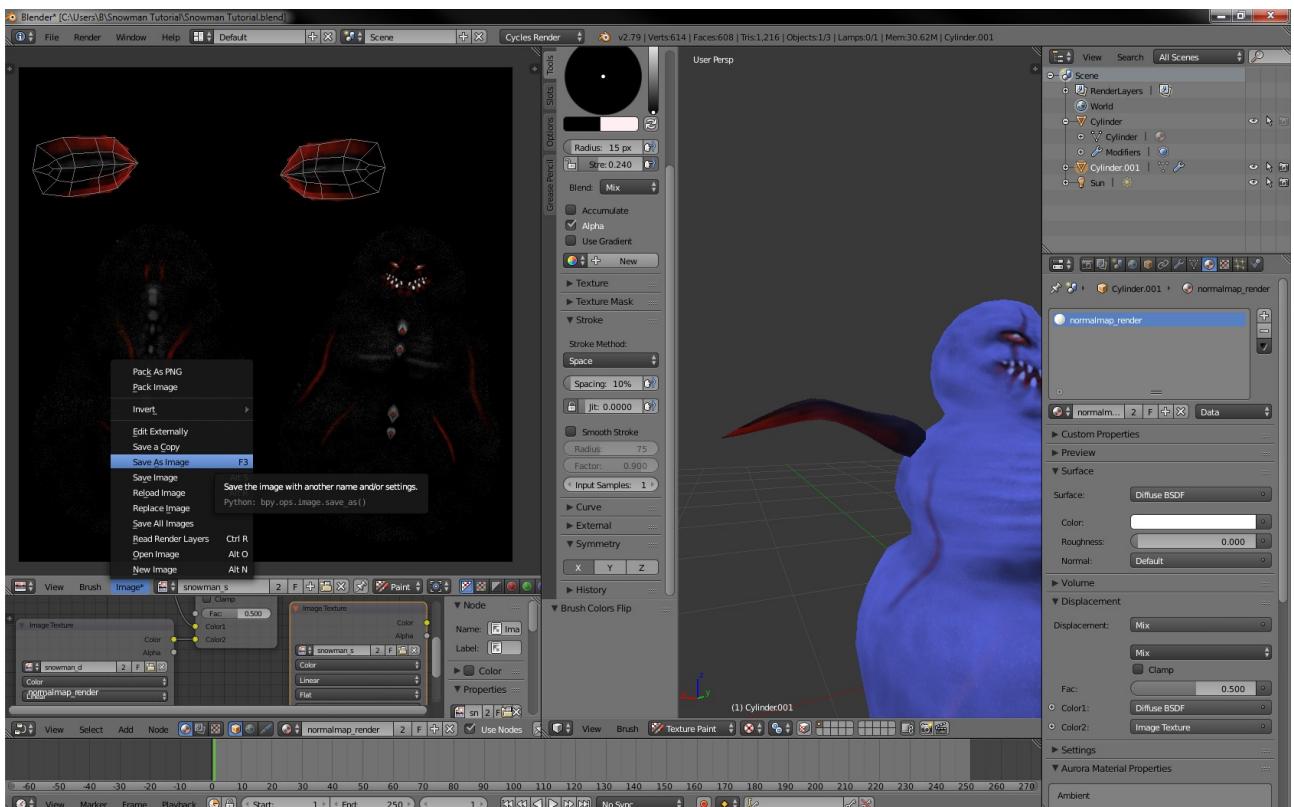
GWROARRRR!!

Be aware that although I'm painting in red, here, the color won't make a difference ingame. The **brightness** (from all black to all white) of the pixels determines their effect; the color is irrelevant in this case. I'm pretty much just doing this because the red color is more visible.

Don't forget to give the arms some love, too:



And... ta-daah! It's a specular map. SAVE THAT THING.



Have you grown to love the smooth, silky feeling of saving, yet? I have.

Aaaand now... guess what? We're done texturing. We have a diffuse texture, a normalmap, and a specular map. We're ready to set up the snowman for export as a placeable, and get it into the game.

The thing left for you to do at this point is to **save everything**, make sure that every texture as well as the .blend file with the mesh are present in duplicate and *for serious* as safe as they can possibly be because you will want to bite yourself in your own butt if you wind up losing the hours and hours of work that go into this kind of thing.

A couple of solemn things on the side before we move on: Don't expect your work to be "perfect", and **do not** kick yourself if you're not happy with the way it turns out. Importing, scanning for flaws, and then editing the model again is normal part of the procedure. It's very likely that this normalmap will be too intense, and you will want to bake a milder one, or even hand-paint a custom height map to bake the normalmap from, rather than using the diffuse texture. Or you may find that you don't like the coloring, or find spots that are too shiny or too uneven or not shiny enough or not even enough. So: The very first draft is next to **never** the final one. Don't expect it to be.

If you aren't happy with how a model is turning out, then just keep fiddling with it - or call it done, and chalk it down to experience. Even if you're not 100% happy with a mesh, or a painting, or ... whatever kind of creative project it is, really - keep in mind, you've gained valuable experience for the next one. And remember: **Criticism is more valuable than praise. Criticism begets improvement; praise begets stagnation. So always be gracious and appreciative towards your critics.** It *really* annoys the ones who're just trying to upset you, too. ;-)



Like many other skills in life, crafting 3D art is a very long process of *incessant skillgrinding*. Be aware that you cannot continue to improve at something if you let yourself get frustrated to a point where you stop practicing it.

So, most important of all - make sure that you're having **fun** with what you do, and always take the time to appreciate *the progress you've made* more than the distance you *think* you've yet to go. That's **the** way to keep yourself motivated enough to manage muddling your way through the years and years of practice it takes to reach "mastery". :-) (or so I keep telling myself, anyway x_X)

Next up: PART I, SECTION 3 - EXPORTING AS A PLACEABLE