Using ZBrush to Create Models for 3D Print
Posted by Marco CM - 2011/11/09 12:01

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ZBrush is not only a powerful modeling package. The latest versions include plug-ins designed to make exporting models for 3d print easier.

First we will cover the "3D Print Exporter" found under the "Zplugin" drop-down menu. This tool is very straight forward and easy to understand. When your ztool (model) is ready for export. Click "Zplugin", and click "3D Print Exporter" to open it's controls.

Choose the units of scale for your 3D print by selecting "inch" or "mm". You can now enter the desired scale of your model in one or all 3 axis. Now press "update ratios" button to compute the print's final scale. At any time you can click the "R" button located to the right to reset your model's original scale.

Once you have set the proper scale for your 3D Print. Now choose what format you'd like the export in. Choose from STL or VRML. These are the two most widely accepted formats for 3d printing. There are two flavors of .stl to choose from (Binary, & Ascii). There is not much difference between the two forms of .stl, so this is of little concern to the typical artist.

Stl will NOT hold UV color map information. So it is best for non-color model prints.
Vrml WILL hold a single UV color map. Clicking "ExpColors" will set ZBrush to export a color map along with the model file.

Now click "VRML" or "STL" to export and save your 3d print. I recommend saving your .VRML to a folder in order to keep the model file and the exported image map together. You will notice the actual exported format from VRML is (.wrl).

Kraftwurx.com accepts many file formats for 3d print including .wrl and .stl.

You if you have questions or comments about the 3D Print export tools in ZBrush. Feel free to express them here. http://www.kraftwurx.com/images/fbfiles/images/ZB_3DPRINTEXPORTER.jpg

Full Color 3D Prints start at only $16.00 on Kraftwurx.com Sign-up to order a print and sell your models http://www.kraftwurx.com/sell

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Re:Using ZBrush to Create Models for 3D Print
Posted by Marco CM - 2012/01/04 15:59

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Here is an image of my character I exported from ZBrush for full color 3d print.
http://www.kraftwurx.com/images/fbfiles/images/_MG_626333_web2.jpg

Total cost for this character print was only $16.00 on Kraftwurx.com

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Re:Using ZBrush to Create Models for 3D Print
Posted by m0delista - 2012/01/09 13:12

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Great Tutorial Marco !! Thanks for share !!

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Re:Using ZBrush to Create Models for 3D Print
Posted by Dan Bolivar - 2012/03/10 00:04

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Marco CM wrote:
Here is an image of my character I exported from ZBrush for full color 3d print.
http://www.kraftwurx.com/images/fbfiles/images/_MG_626333_web2.jpg

Total cost for this character print was only $16.00 on Kraftwurx.com

Marco, what material was it printed in? In other words, is there more than one full color 3d printing option/material?

It looks awesome by the way!

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Re:Using ZBrush to Create Models for 3D Print
Posted by Marco CM - 2012/03/12 10:43

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This item was 3d printed with Multicolor Sandstone material.

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Re:Using ZBrush to Create Models for 3D Print
Posted by jeremy@homevideostudio.com - 2012/04/19 12:01

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I have added a step by step and some more detailed info for Zbrush users. This should be all you need to know for Zbrush 4R2 :lol:

This is what worked for me as a Zbrush artist. These are tips that I learned in the process that I could not find on the site easily. This is geared towards just zbrush users.

1. Remember when you are modeling to hollow out the major part of your model. Ie. If you are doing a head—hollow out the head a bit. If you are doing a full body—hollow out the body. Use the Dyna mesh-Create Shell feature. There are a number of tutorials on this. Remember the less area you take up the less the model will cost.   For my model I used a thickness of 4 on the create shell option. I think that is considered thin actually. (depends on how small your model is) You do not have to hollow out every piece just the big ones or you can just pay more and not hollow it out. I would say the price difference is considerable for hollow to non hollow models.
2. Also if you are running out of memory doing this create shell process (which I did) go to preferences –

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mem and set the compact memory to a gig. Initially zbrush starts out with only 256mb of ram.
3. Be sure to make a base for your model or a stand. Remember that thin poles that are supports can fail
in the printing process. This is something that I did not take into consideration when building my model. I
just stuck some poles though the model to stand up like a table. Since they were thin (They got thin
when I scaled my model down to 24mm high.) of course if my model was 5 inches high like it was on my
screen those poles would have been thick enough. Supports should be strong and big.
4. Materials- Kraftwurx offers a bunch of materials. But not all can be "color" printed. Multi-Color
Sandstone is probly the best and offers the ability to color at the same time. It's also one of the
cheapest materials as far as price!
5. Zbrush users remember to scale your model before you upload it. Set the scale of your model in the
zplugins-3dprint exporter. Set to mm and set your model dimensions.
6. Saving to export- Use the zplugins – 3d export to save as a VRML file. Remember to check
EXPCOLORS too. this will add the UV info to your file. Otherwise if you just export an .OBJ file you will
have to export and upload a UV map later. Both options will work though. Other options exists I am just
focusing on these 2.
7. So you are done and ready to upload First make sure your model is less than a million polys and is
under 200mb. Both of these are restrictions. If you have too many polys just use the decimation master
to knock that poly count down.
8. If you upload and get an error such as "surface area must be greater than 0" or "Model volume equal
0". These are generic errors that tell you there is a hole in your mesh somewhere. This is not the hole
you did to hollow out the model. These are some polygons somewhere that for some reason have
disappeared. No problem though. Go through all your tools one at a time and in the geometry palette
menu select "close holes". If this does not work you may have to use a 3rd party program such as
http://www.netfabb.com/basic.php
This is an easy program to use … just do the repair functions and that will close the holes. BE AWARE
though that after you use this program it might strip your UV maps. So this really is a last step to close
those holes. If that happens just import the model back into zbrush and re-apply UV's (I used "merge
similar groups" to polygroups. This helped me separate everything and re-apply UV's to each polygroup
really fast.)

9. Upload your model and look at the scale. This is why it is important to set the scale inside zbrush. This
way when you upload and select the material. It gives you the price right off hand of what you really
wanted. You can use the sliders to adjust the scale, although just use either the percent scale OR typing
in new dimensions for your model in one of the boxes. It will re-adjust the other dimensions for you. This
way is probly more accurate as I did encounter some errors with just using the percent scale. It does
take some time to recalculate your price so be patient.

10. If you want to save your models online at Kraftwurx you will need a paypal account to set up your
account. If not once you purchase your model you will be asked to enter in a username and password so
that you can get back in and check to see what the progress is on your order.

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Re:Using ZBrush to Create Models for 3D Print
Posted by m0delista - 2012/05/25 08:02

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How to i send the 2 files the .wrl and .png to print? use .zip ?

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Re:Using ZBrush to Create Models for 3D Print

Posted by jeremy@homevideostudio.com - 2012/05/25 09:57

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you should have the material embeded inside the WRL file. if not you can always email it to the guys at kraftwurx here after you upload. just upload your file and then call or email them to make sure it looks ok to them. unfortunately you can't see your model once you upload it unless you sign up to be a seller then you can see your models when you upload them. These guys are great! and if you have a question about your model then just contact them and they will open it and see. remember if you are having issues uploading it.. it is probly because you have holes in your geometry.

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Re:Using ZBrush to Create Models for 3D Print

Posted by Marco CM - 2012/05/25 10:10

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When you upload a model. .wrl files can hold solid color information without a color map. That is called "Poly Coloring".

But for texture maps with detailed colors you have the option to add a texture map image file in the model publisher window. There you can add the .jpg, .bmp. or .png image file for your model.

Upload you model first. Then select material as Multi-Color Sandstone. Then click publish model. There you can upload a texture map.

Let me know if this helps.

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Re:Using ZBrush to Create Models for 3D Print

Posted by jeremy@homevideostudio.com - 2012/05/25 10:13

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ahhhh good info here. my model was just solid colors so that is why it worked for me :) Thanks Marco!

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Re:Using ZBrush to Create Models for 3D Print

Posted by nateowens - 2012/08/13 16:28

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Good, Marco... I did this process initially, but apparently had too much density on the model, making it huge. Perhaps some guidelines for Kraftwurx parameters for size, density would be good... if they are here someplace, a link would be great.

http://www.artpixelstudios.com/9images/sculpt/BuggedProto.jpg

Above:

The only color print I did, about 5 years ago.
Modeled in Hexagon, printed from vrml file to zcorp
I prefer the bronze feel, particularly for the western stuff

http://www.artpixelstudios.com/9images/sculpt/HorsemanSteps.jpg

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Re:Using ZBrush to Create Models for 3D Print
Posted by Marco CM - 2012/08/13 16:36

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It is very hard to determine a good set of guidelines for how much shelling a model should have.
Because this is based on the given size of the model in zbrush. As a rule of thumb. I typically start with a
low number like 10 for the shell thickness. It is a trial and error sort process.

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Re:Using ZBrush to Create Models for 3D Print
Posted by nateowens - 2012/08/13 16:45

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Marco CM wrote:
It is very hard to determine a good set of guidelines for how much shelling a model should have.
Because this is based on the given size of the model in zbrush. As a rule of thumb. I typically start with a
low number like 10 for the shell thickness. It is a trial and error sort process.

I see.... actually I was referring to the general parameters for your equipment, what you prefer, what you
can handle comfortably in way of size (without cutting up and putting together) and file sizes B)

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Re:Using ZBrush to Create Models for 3D Print
Posted by Marco CM - 2012/08/13 16:50

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In Multicolor Sandstone prints. Our print bed is 12"x10"x8". Each material has it's own specs. You can
learn more here:
http://www.kraftwurx.com/3d-printing-support/3d-printing-materials-finishes/category/materials-2

We 3d print our full color models on a Zcorp 650 and post process them with the highest quality supplies
to produce the brightest whites and vivid colors.

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