



# Veteran Animation

## Workshop - Day 1 Advanced Modeling

# Essential Shortcuts review

## Keyboard Shortcuts

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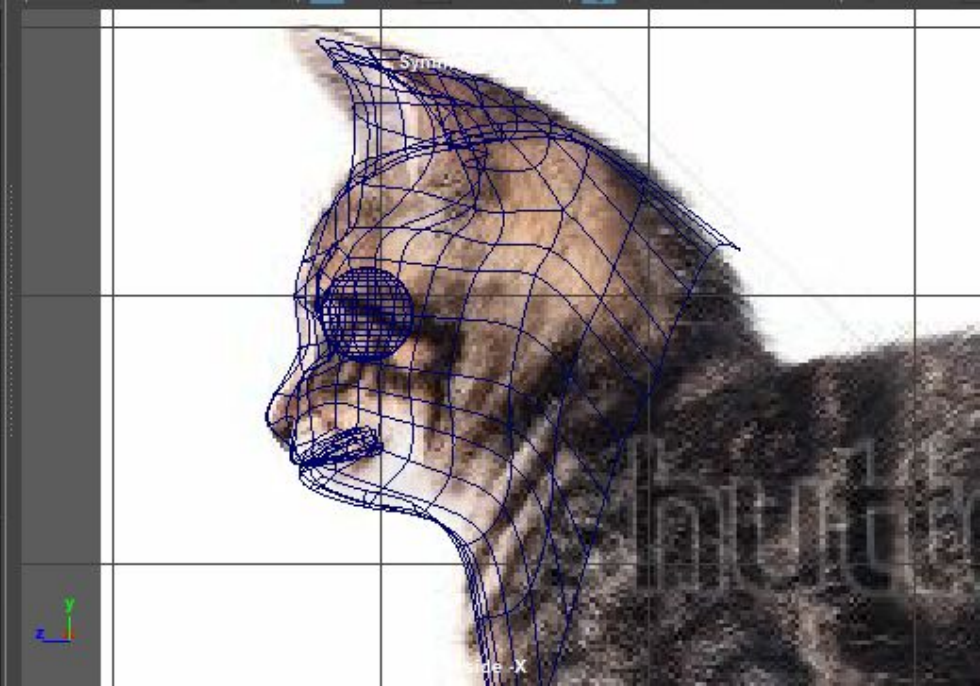
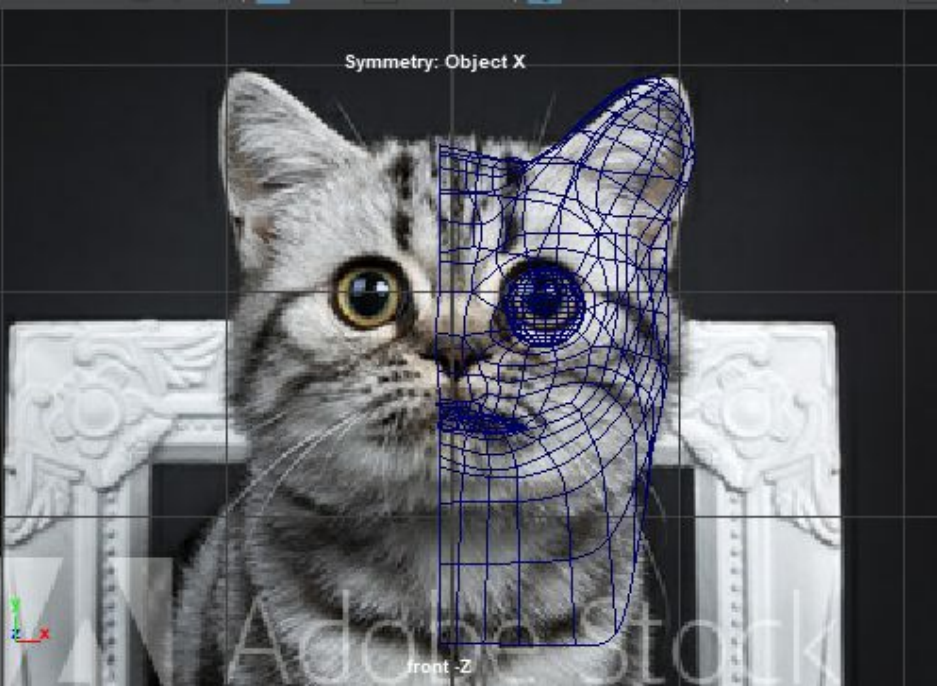
<b>Q</b>	Selection Tool	<b>A</b>	Frame All	<b>1</b>	Low Quality Display
<b>W</b>	Move Tool	<b>F</b>	Focus in View	<b>2</b>	Medium Quality
<b>E</b>	Rotate Tool	<b>G</b>	Repeat Last Action	<b>3</b>	High Quality Display
<b>R</b>	Scale Tool	<b>X</b>	Snap to Grid	<b>4</b>	Wireframe
<b>T</b>	Manipulator Tool	<b>C</b>	Snap to Curve	<b>5</b>	Display Shaded
<b>Y</b>	Activate Last Tool	<b>V</b>	Snap to Point	<b>6</b>	Texture Mode
<b>S</b>	Set Keyframe All	<b>P</b>	Parent	<b>7</b>	View in Light Mode

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<b>Ctrl+A</b>	Attribute Editor	<b>Spacebar (tap)</b>	Change Views
<b>z, Ctrl+z</b>	Undo	<b>Spacebar (hold)</b>	Hot Box
<b>Shift+z</b>	Redo	<b>ctrl-E</b>	Extrude

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# Modeling from front/side ref

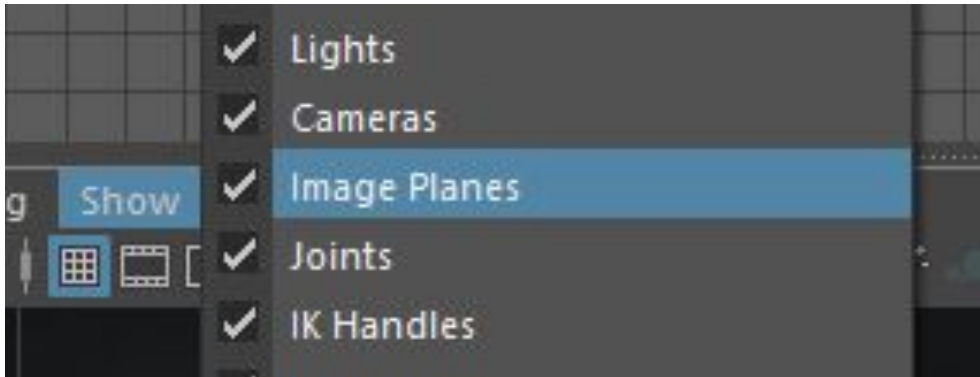


# Adding image reference

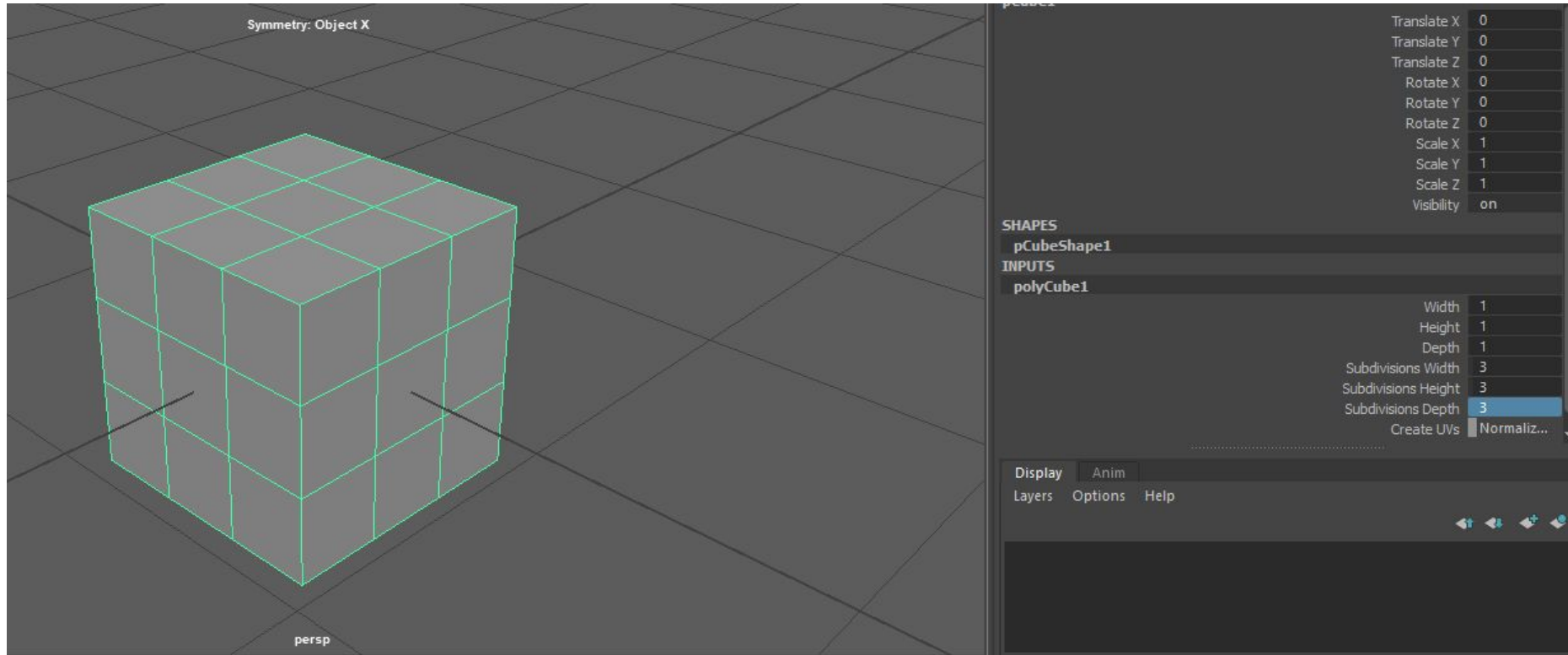
View > image plane > import image

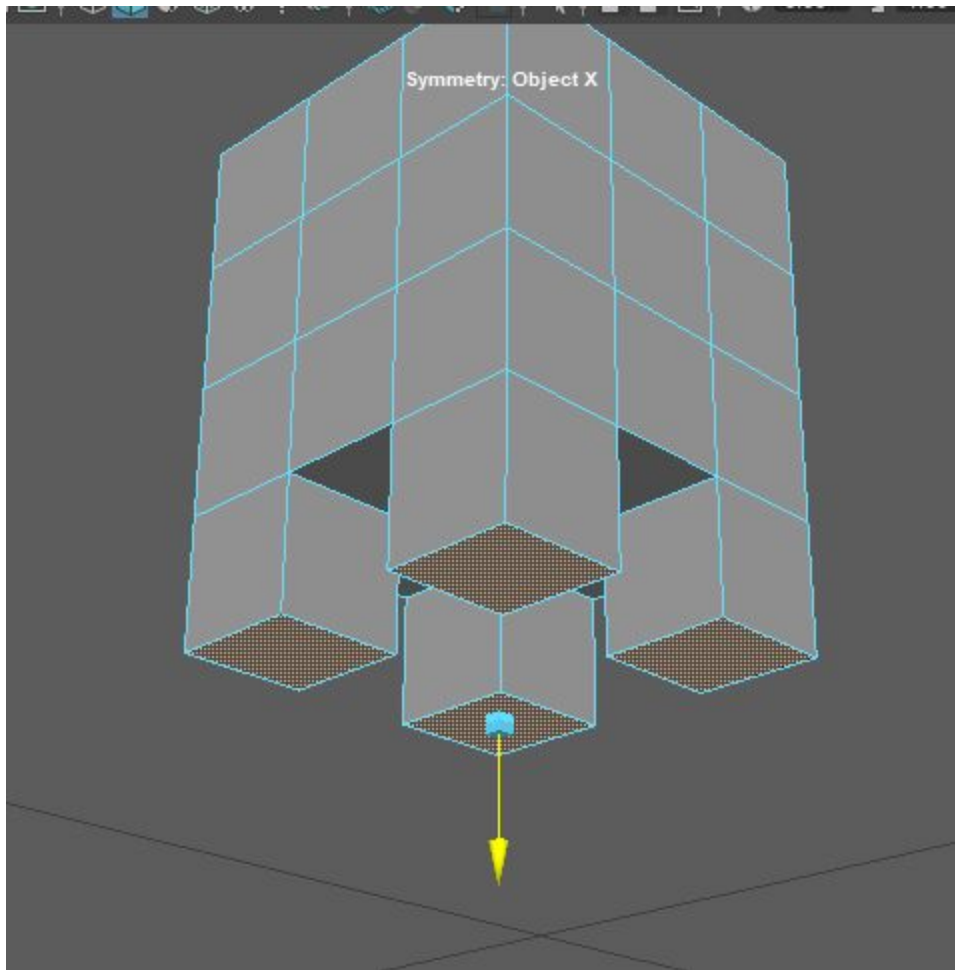
# Removing image ref from persp

Show > uncheck image planes

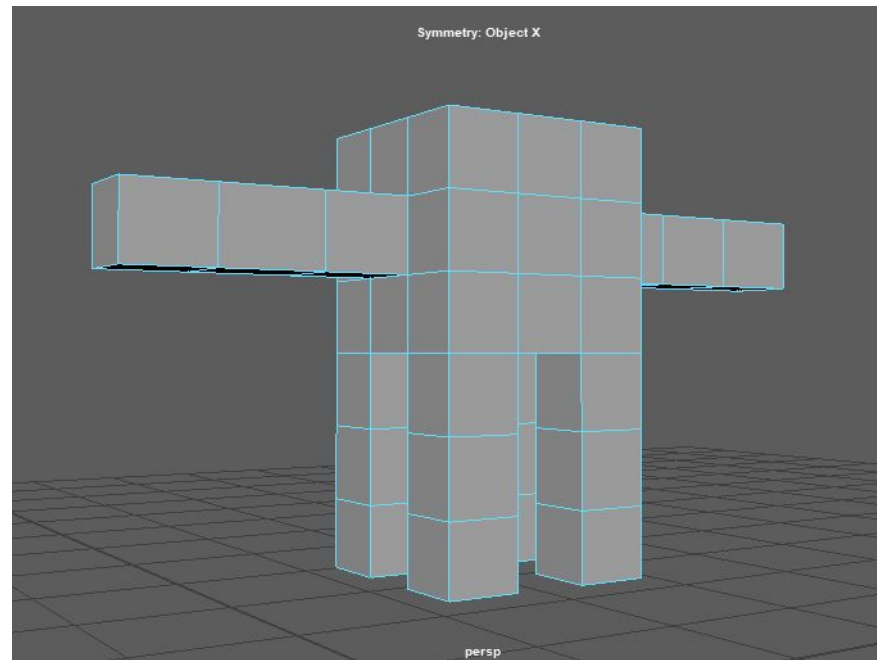


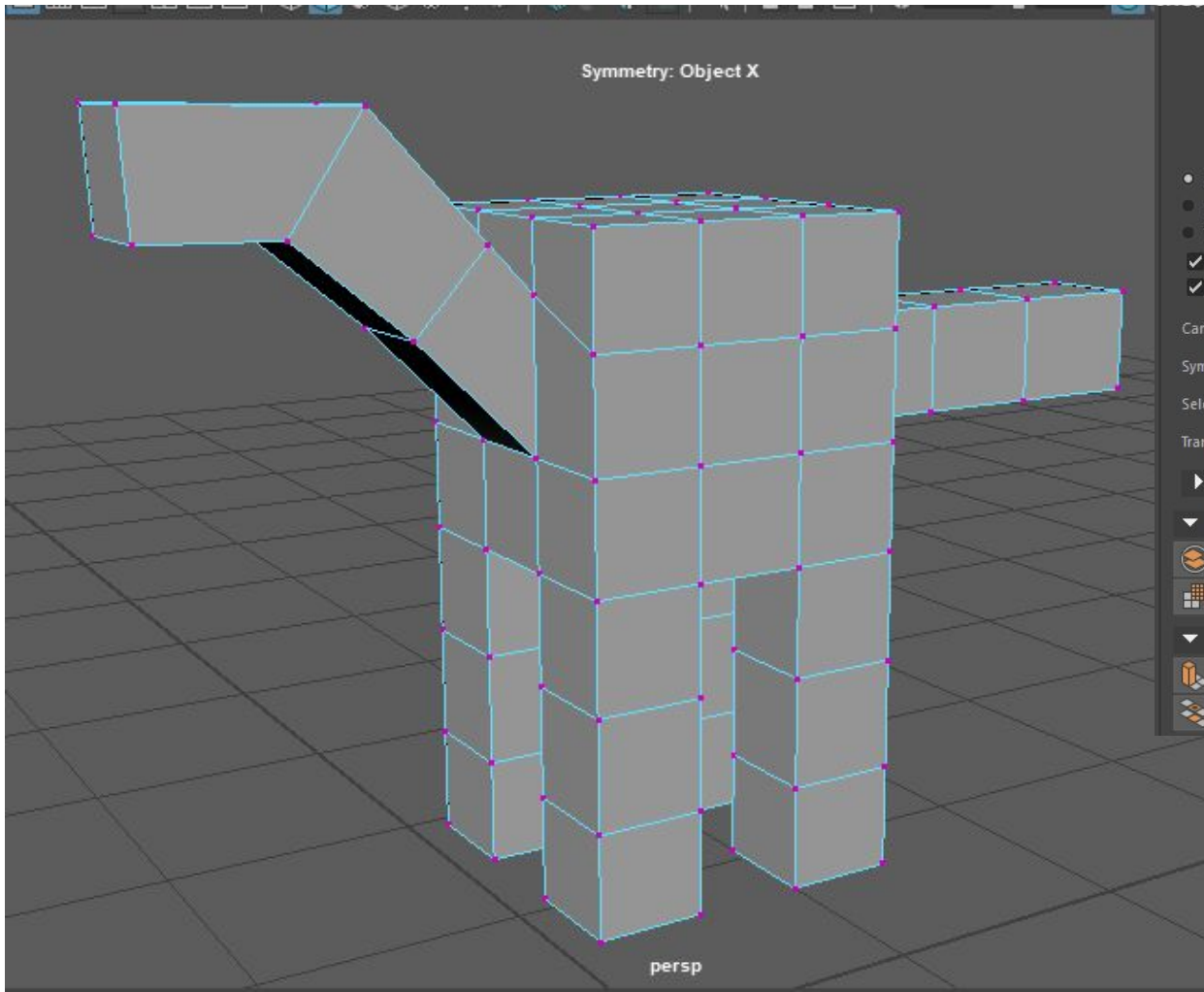
Let's create the base of a four legged animal!





Select 4 corner faces and ctrl-E to extrude





Channel Box / Layer Editor | Modeling Toolkit | Attribute Editor

Multi-Component

- Pick/Marquee
- Drag
- Tweak/Marquee
- Highlight Backfaces
- Highlight Nearest Component

Camera Based Selection ▾ Off

Symmetry ▾ Object X

Selection Constraint ▾ Off 0

Transform Constraint ▾ Off

▶ Soft Selection

▼ Mesh

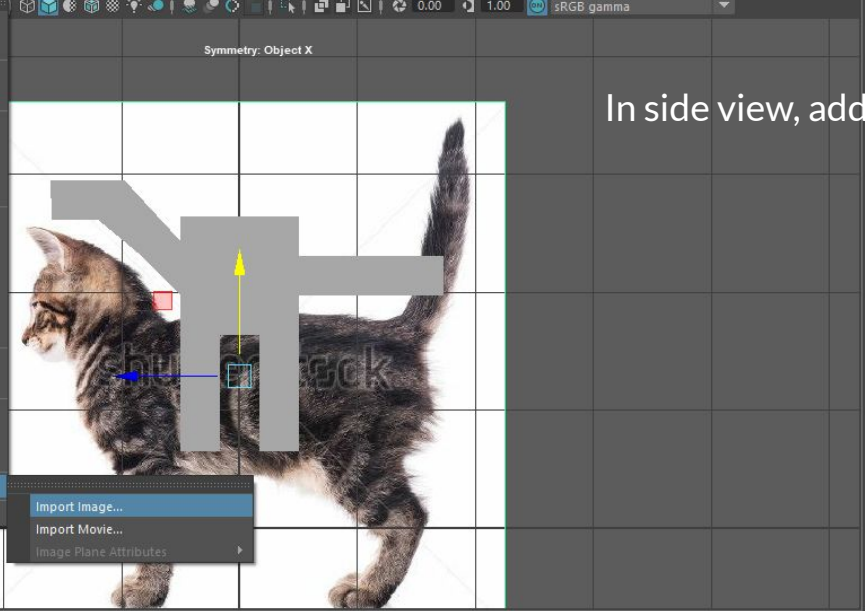
Combine	Separate
Smooth	Boolean

▼ Components

Extrude	Bevel
Bridge	Add Divisions

Turning on Symmetry will help

- Select Camera
- Lock Camera
- Create Camera From View Ctrl+Shift+C
- Cycle Through Cameras
- Undo View Change Alt+Z
- Redo View Change Alt+Y
- Default View Alt+Home
- View Along Axis
- Look at Selection
- Center View of Selection
- Frame All
- Frame Selection F
- Frame Selection with Children Ctrl+F
- Align Camera To Polygon
- Predefined Bookmarks
- Bookmarks
- Camera Settings
- Camera Attribute Editor...
- Camera Tools
- Image Plane**
  - Import Image...
  - Import Movie...
  - Image Plane Attributes
- View Sequence Time



In side view, add a side image plane

Object Help

Multi-Component

- Pick/Marquee
- Drag
- Tweak/Marquee
- Highlight Backfaces
- Highlight Nearest Component

Camera Based Selection Off

Symmetry Object X

Selection Constraint Off 0

Transform Constraint Off

Soft Selection

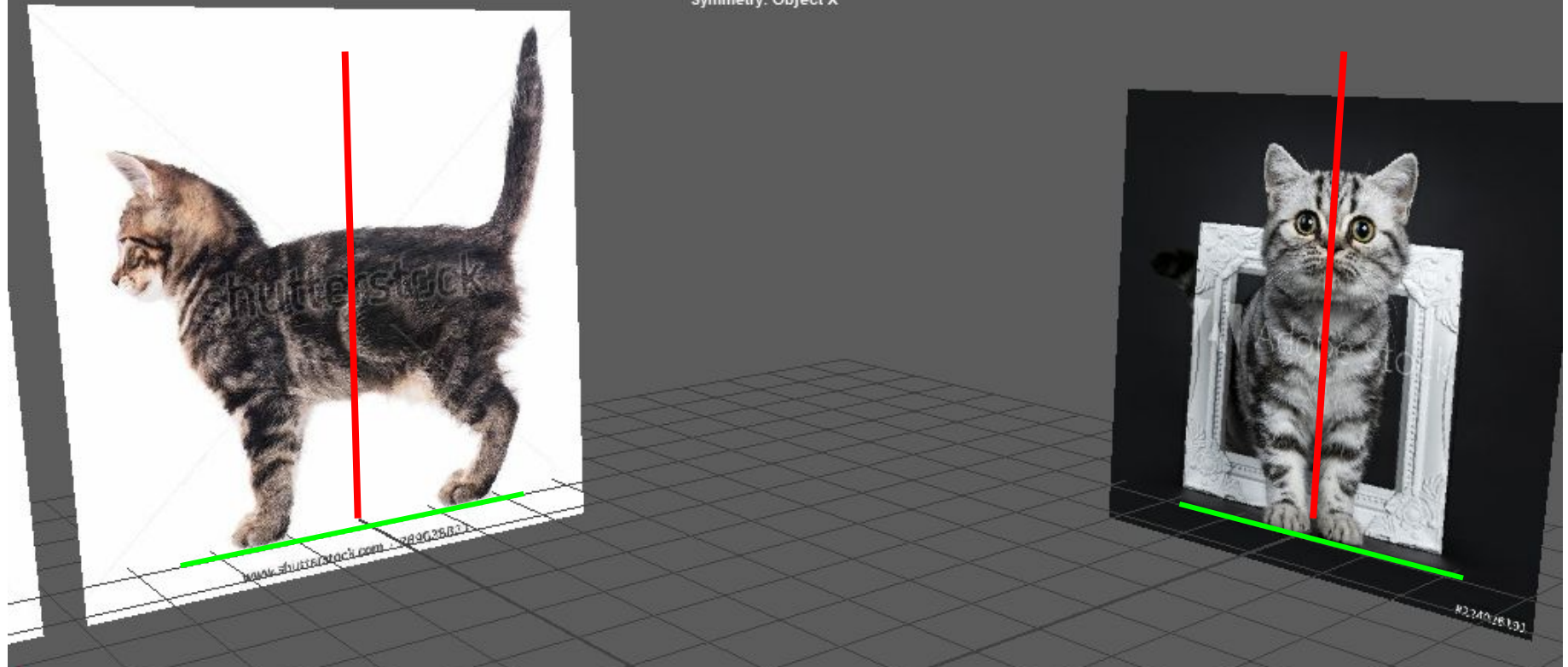
Mesh

- Combine
- Smooth
- Separate
- Boolean

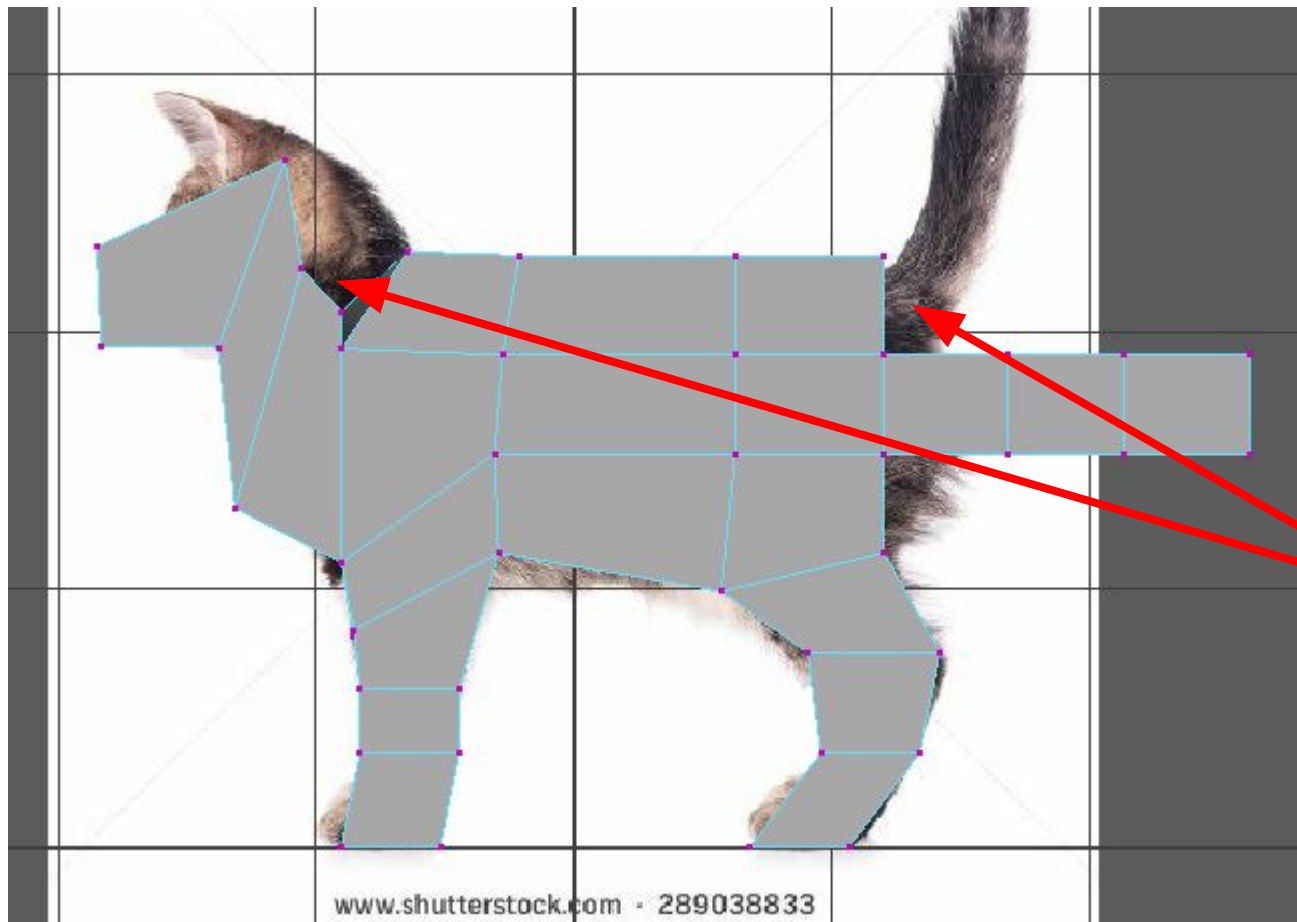
Components

- Extrude
- Bridge
- Bevel
- Add Divisions





Position your image so that the center line is in the center on each axis  
Remember: space bar to go to split four view, it's important it matches up in scale and height



Start moving the vertices!

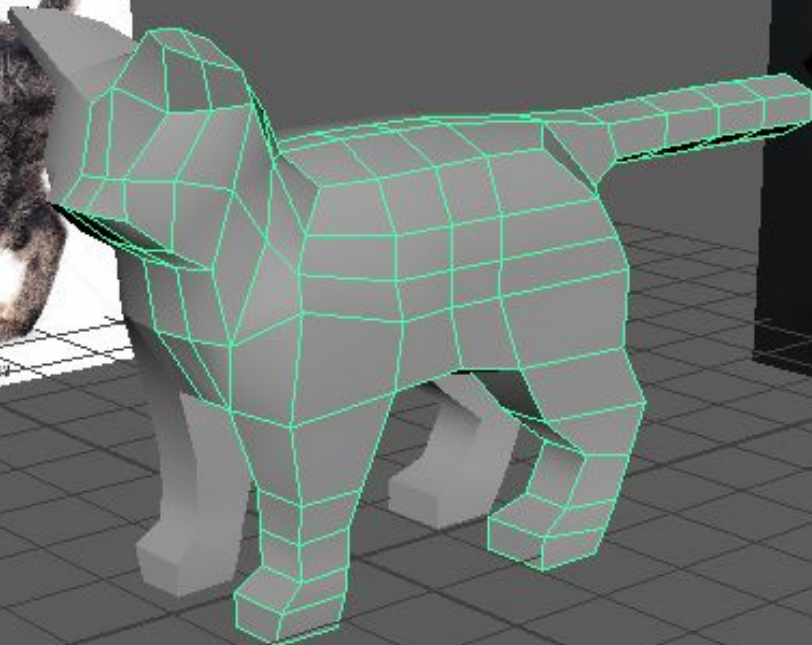
Where you need more detail, add edge loops, but don't over-do it!

You may encounter some problems, like for example with a cat the head and tail are pretty high so it would've been better to extrude the head and tail at the top face

Tip, use box select so you don't accidentally miss vertices you don't see

Symmetry: Object X

Notice the lines are either vertical or horizontal for the most part, not all over the place



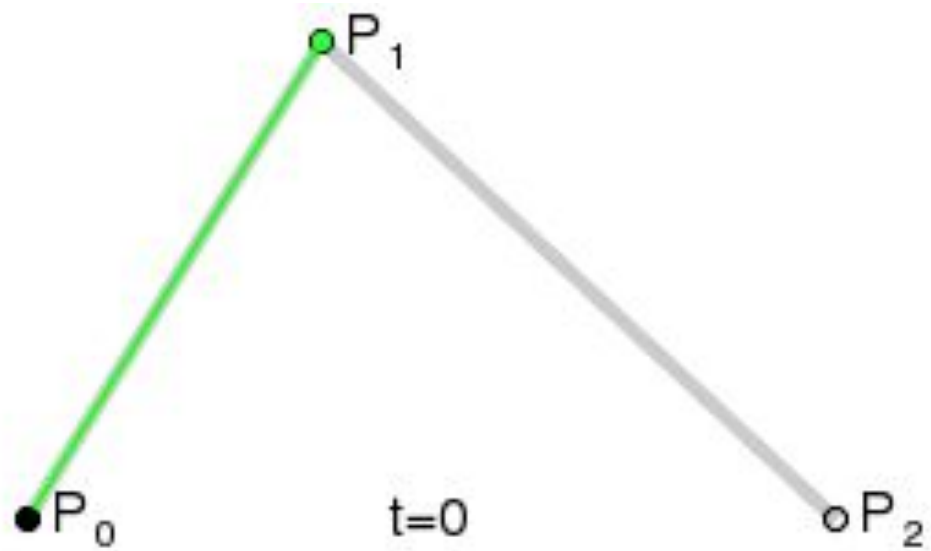
Once you've done some of the side, go check from perspective and side. Your goal is to end up with something like this

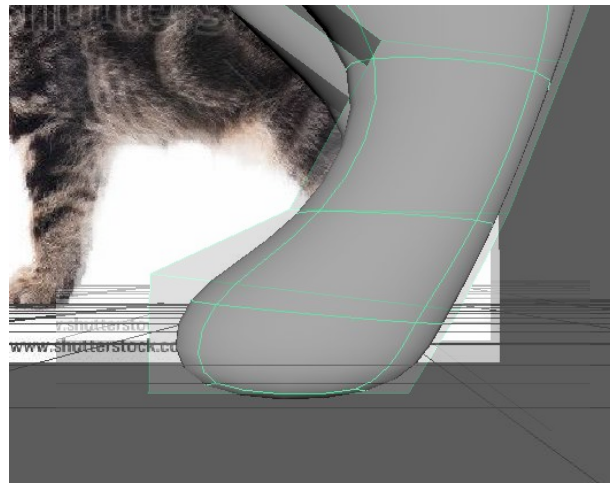
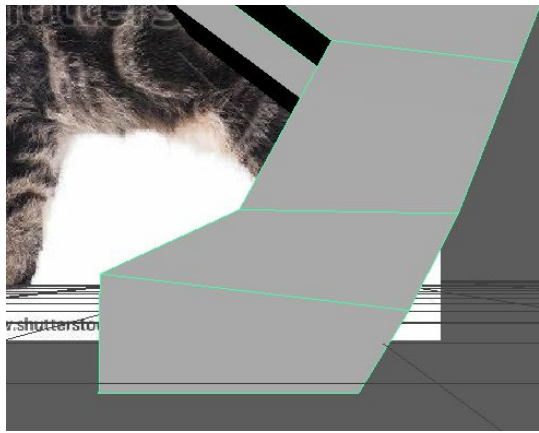
# Lesson 1: Smooth tool

Select mesh, hit 3 (smooth activate)

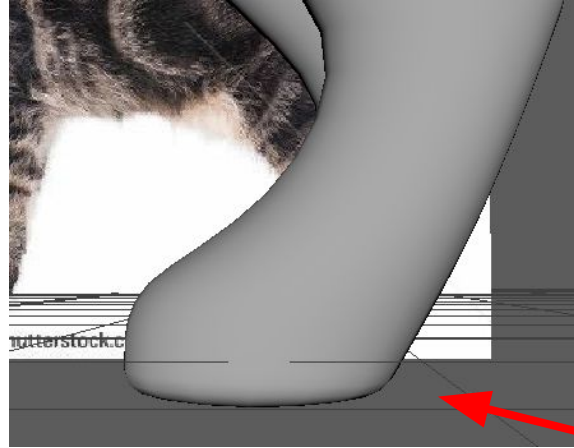
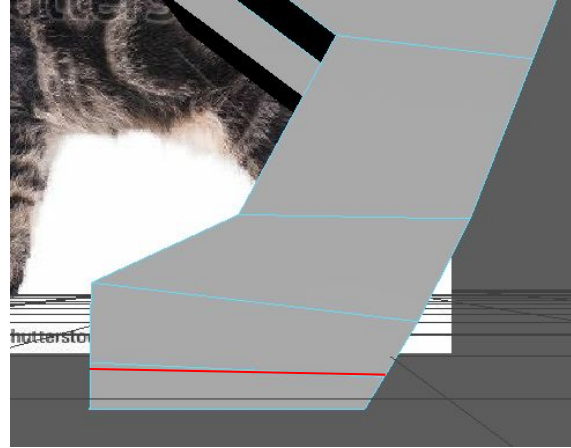
Select mesh, hit 1 (smooth deactivate)

Hitting 3 is a PREVIEW, to make it permanently smooth (non reversible) for exporting you have to go to mesh > smooth





More edges you add, more contour you define



Flatter paw



*Vocab: holding edges*

*Vocab: topology*

# Mirror editing on a mesh

Cut mesh in half

Edit > duplicate special > scale -1, 1,1

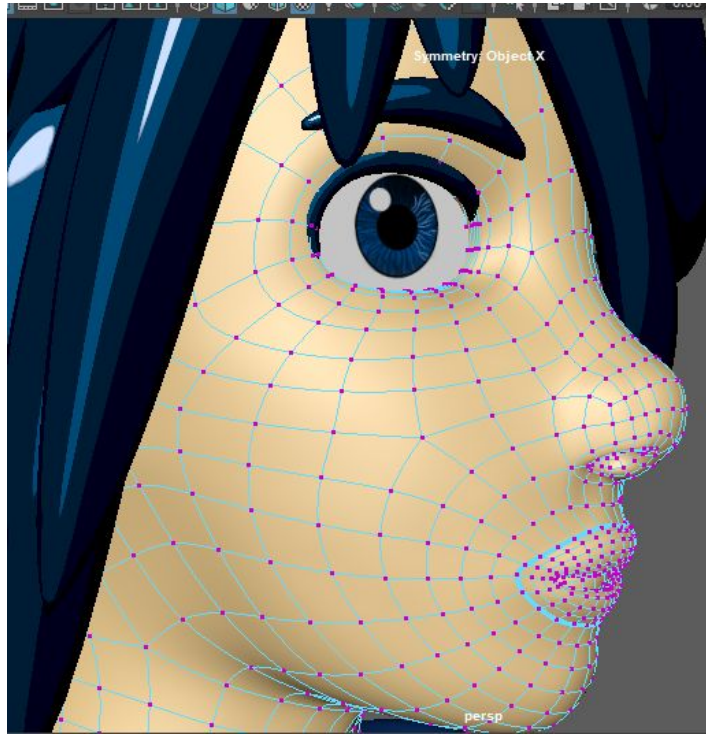
Create instance

To merge it, select both, mesh > combine

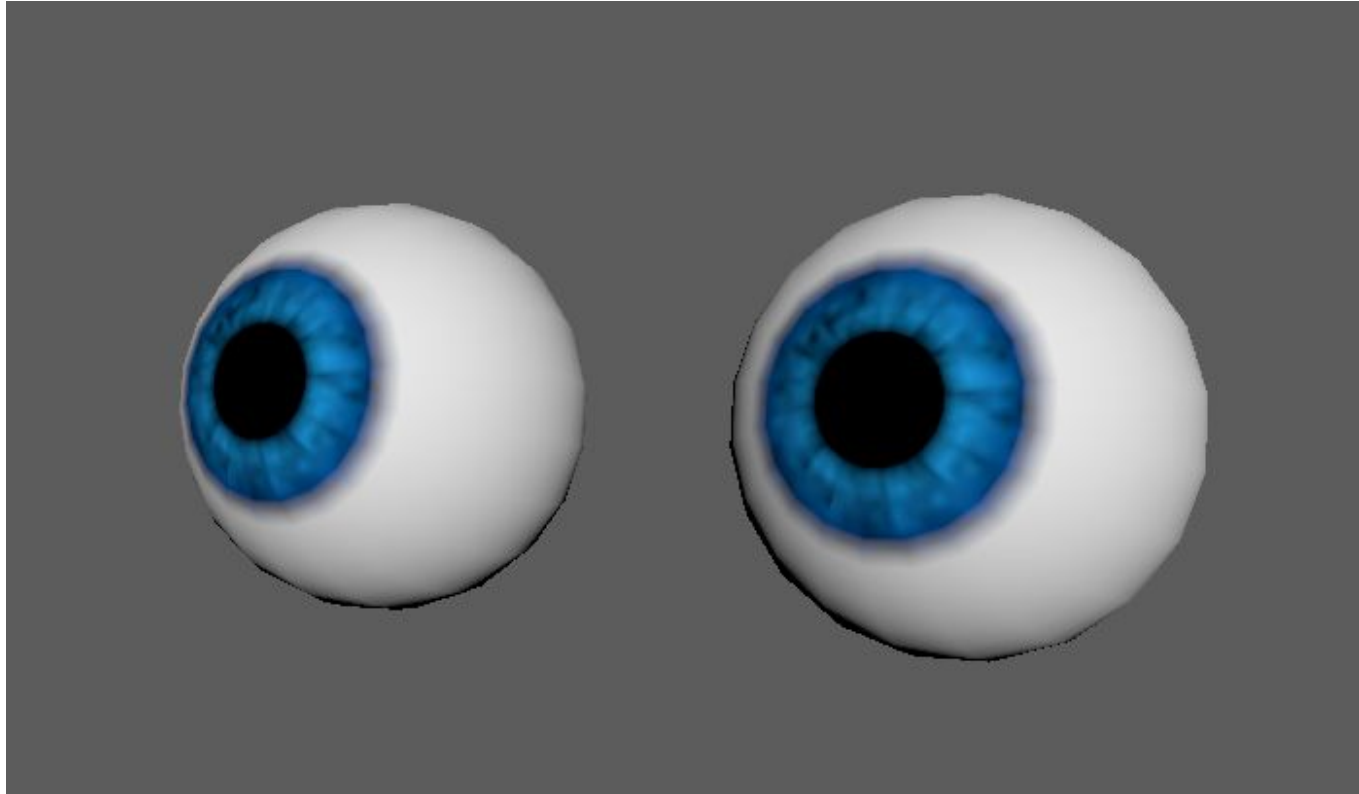
Then select all verts along the merging line and  
shift right click hold, verticies > combine

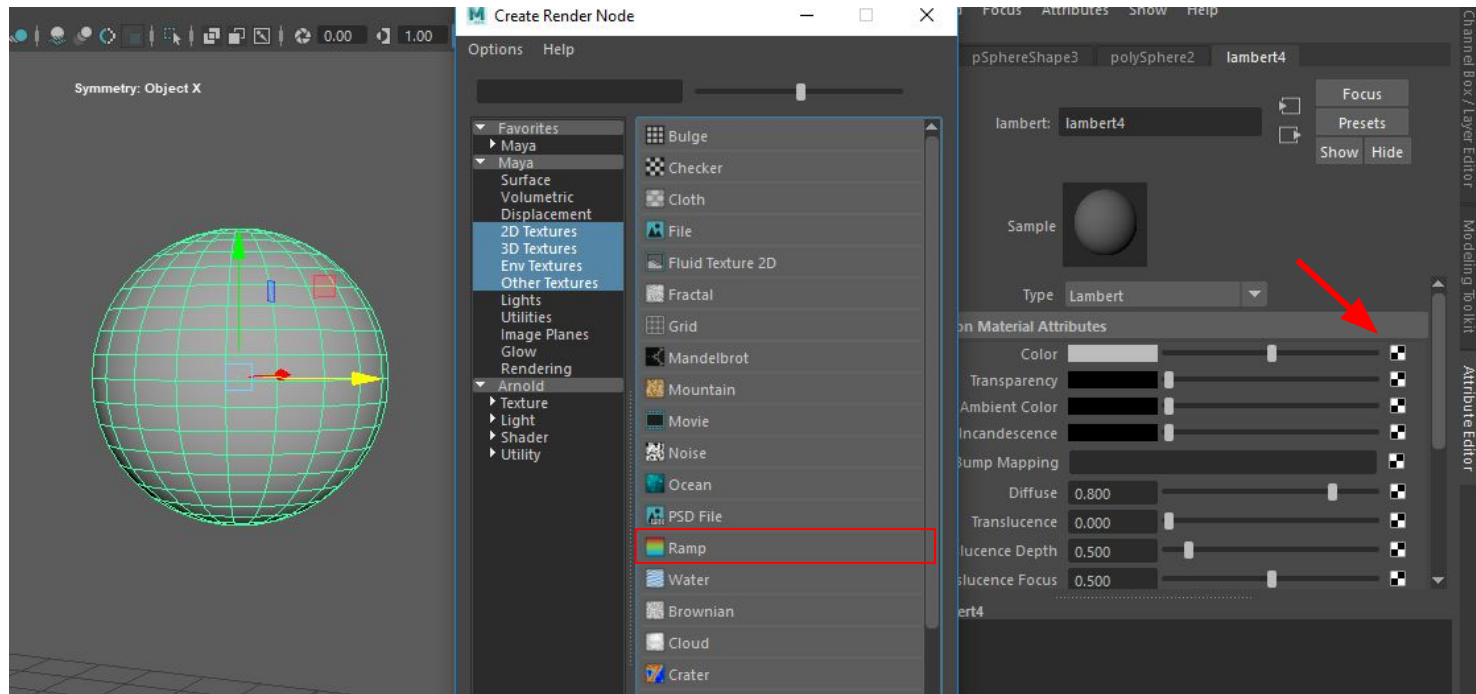
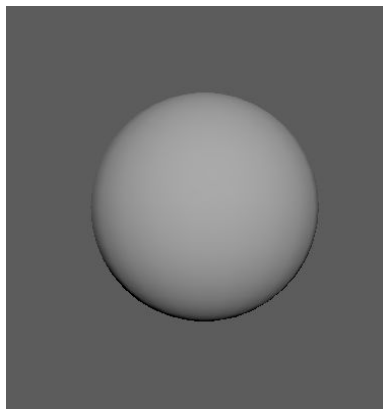


# Another model example



# Bonus - Cool Eyes





Select a ramp shader, click on the checkerboard next to color,

ramp2 place2dTexture2 fractal2 fractal1

ramp: ramp2

Add a ramp of color,

Sample

**Ramp Attributes**

Type V Ramp

Interpolation Linear

Selected Color

Selected Position 0.096

Selected Color

Selected Position 0.186

Then to the iris color click the input and add fractal

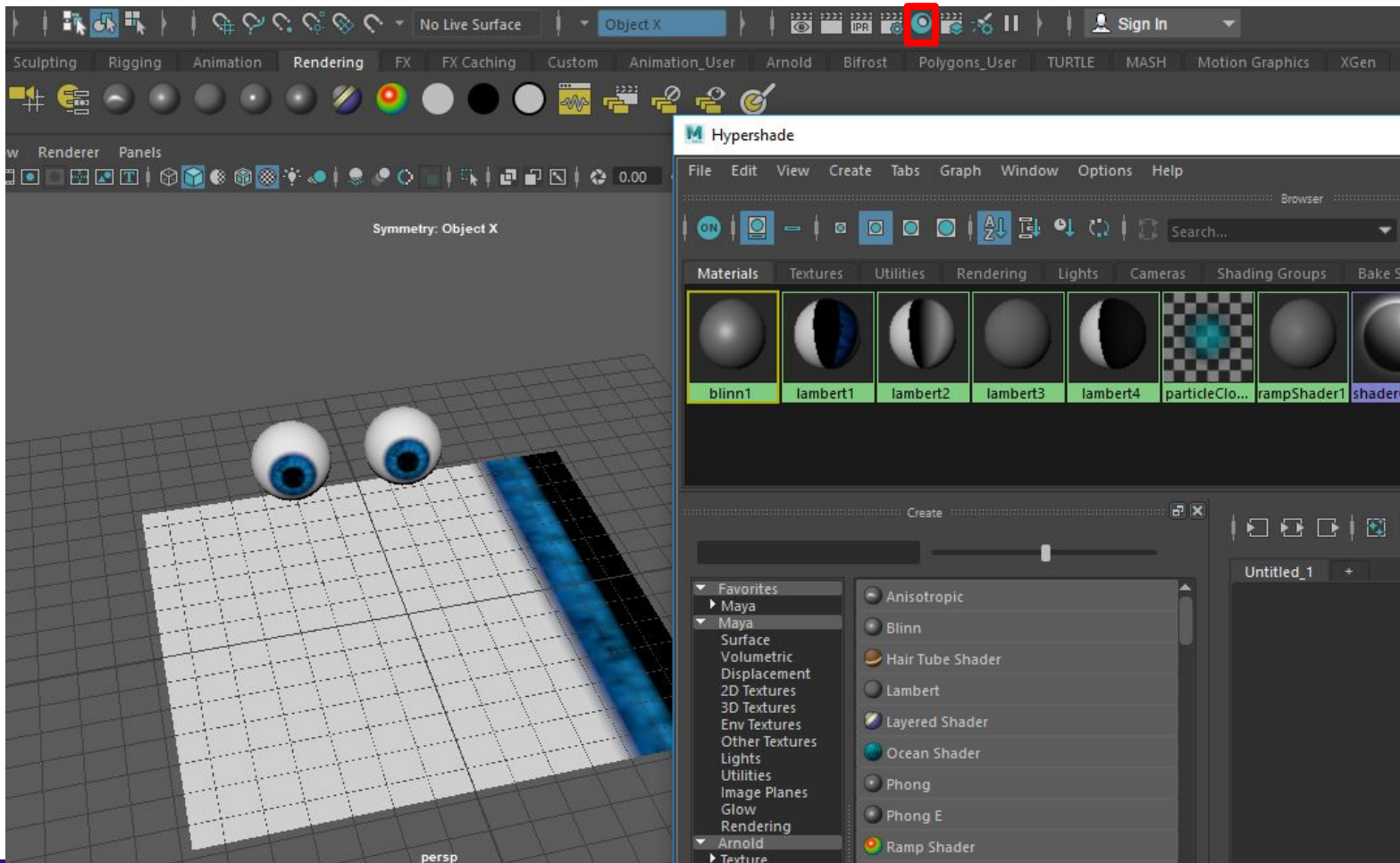
fractal: fractal1

Sample


**Fractal Attributes**

Amplitude	1.000
Threshold	0.000
Ratio	0.707
Frequency Ratio	4.687
Level Min	0.000
Level Max	9.000
Bias	0.000
Inflection	
Animated	
Time	0.000
Time Ratio	2.000



Tip: you can middle click drag materials from the hypershade onto objects.



# Maya shortcuts:

Terms: Holdingedge  : extra edge loop to accentuate a sharp edge in a mesh

verts: (vertices)  edges | faces: 

quads: four corner faces  of any shape 

all professional meshes should only be made of quads (with small exceptions), this ensures good animation and less lumpiness

tri: (triangles) 

n-gons: anything with more edges than quad (bad to have in a mesh!)

mesh: the edges, faces, verts that make up your model

UV: refers to the texturing and shading of your model and how a texture is wrapped onto a model.



vs.



straight  
good UV

angled, bad  
UV


(Use UV editor to adjust)

lambert: most common material attribute in Maya. Minimal shading, has no highlight

blinn: common material in Maya, has very stark highlight

## Tips:

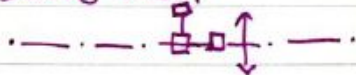
- ctrl + middle mouse : push/pull along normal
- face mode → tab (brings up paint tool)
- Transform constraint → surface slide  (found in modeling toolkit)
  - ↳ useful for obting new vertices and moving them along curved surface
- return complex object with frozen transforms to world space
  - modify > snap-together tool

(select  cube and object)  
select face and corresponding straight face on object

## Remove lumpiness

select mesh

- mesh tools > sculpting tools > relax  
(middle mouse scrub for paint tool size)
- select a lumpy edge to be straight → scale tool!



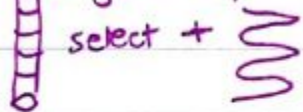
- use ambient occlusion  + blinn to see lumpiness easier

## Shoelaces:

- to create curves that conform to existing surface (i.e shoelaces)  
select → live surface  turn on last magnet
- create > curve tools > CV tool (7 degrees)

◦ create > curve tools > CV tool (7 degrees)

◦  long UV-ed cylinder    deform > curve warp > change scale



◦ Remove lumpiness #2: in modeling tool kit → multi cut tool → edit edge flow turn on ↘



ex. trying to add subdivisions to curved surface  
or loop ~~cut~~

◦ ctrl + delete on an edge loop → deletes loop without leaving hanging vert

◦ cutting down middle on mesh

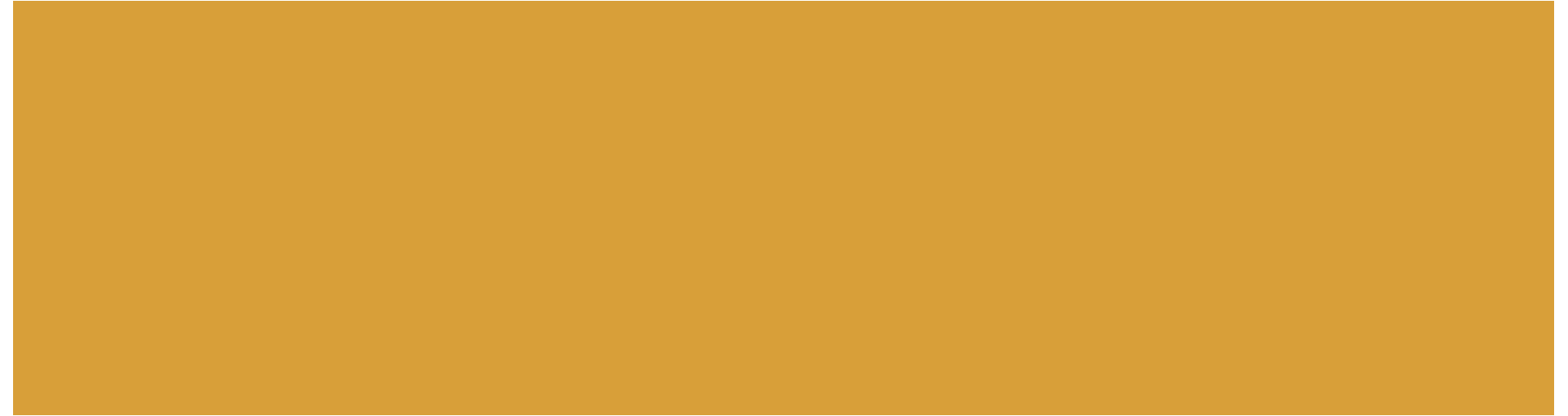


select center edges → shift right click > detach components  
select all → mesh > separate



# Veteran Animation Workshop

9/3, Post-processing, coloring



Mpeg Steamclip

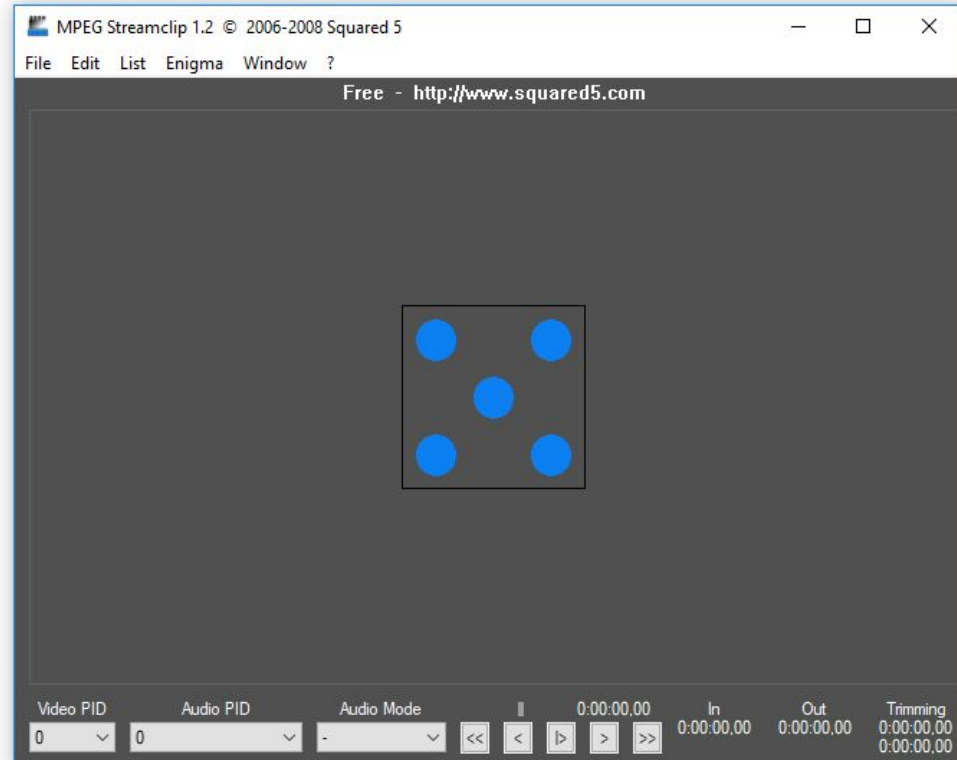


# Frames to Video

<https://stopmotionexplosion.com/blogs/tutorial/s/26861441-mpeg-streamclip-convert-frames-into-video>

Open streamclip  
File>Open files  
Shift select a  
batch of  
numbered  
frames

Name	Date modified	Type	Size
International (Italian)	9/2/2019 10:48 AM	File folder	
MPEG Streamclip Guide.pdf	9/2/2019 10:38 AM	Adobe Acrobat D...	176 KB
MPEG Streamclip Guide.rtf	9/2/2019 10:38 AM	Rich Text Format	93 KB
MPEG_Streamclip.exe	9/2/2019 10:38 AM	Application	1,059 KB
Readme First.rtf	9/2/2019 10:38 AM	Rich Text Format	4 KB



ge Tools Add-ons Help [All changes saved in Drive](#)

Source San... 18 B

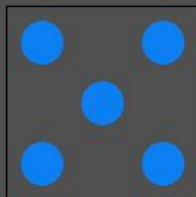
1 2 3 4 5

Name

MPEG Streamclip 1.2 © 2006-2008 Squared 5

File Edit List Enigma Window ?

Free - <http://www.squared5.com>



Video PID Audio PID Audio Mode 0:00:00

0 0 - << < > >>

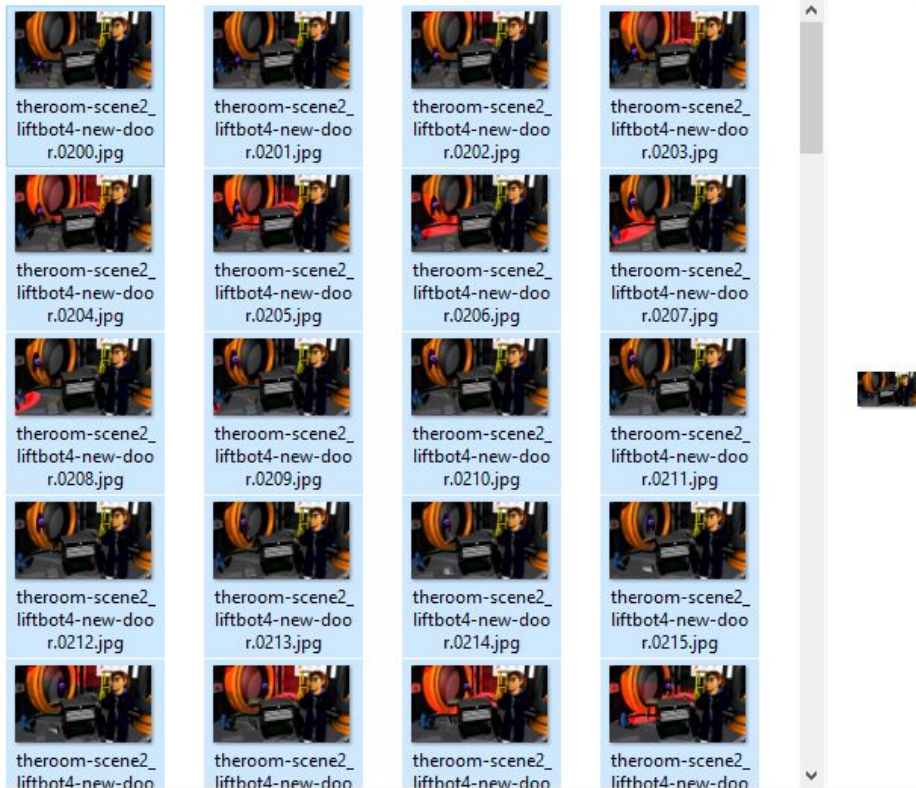
Open Files

< > << 2019 > Animation Workshops 2019 > images > 200-300

Search 200-300

Organize New folder

- Awards
- competition
- Futur\_Mocku
- apart-peice
- College\_Apps
- Downloads
- StaffShirt\_19\_20
- OneDrive
- This PC
- 3D Objects
- Desktop
- Documents
- Downloads
- Music
- Pictures
- Videos
- Local Disk (C:)
- Extra Drive (D:)
- Tormach (\\10.8
- Network



File name: "theroom-scene2\_liftbot4-new-door.0200.jpg" "theroom-scene2\_lif

Video (\*.ts;\*.ps;\*.vob;\*.mpeg;\*.i

Open

Cancel

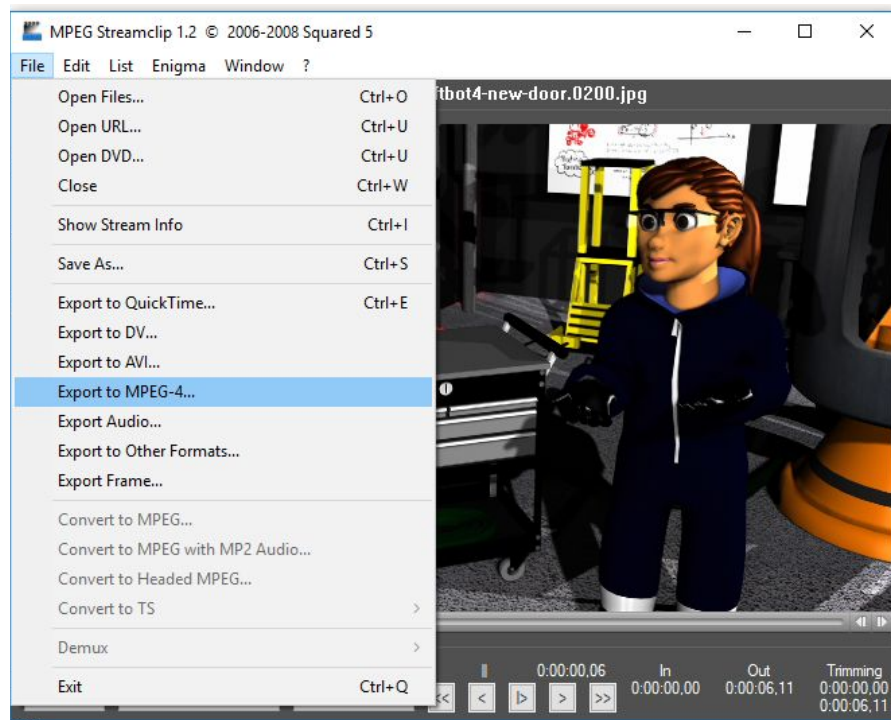
# Export as mp4!

File > export to mpeg-4

H.264 compression

Set frame rate to  
whatever you had in  
Maya

Quality should be 100%,  
choose correct size



# Painting over

If you have Adobe Animate CC: [https://youtu.be/o\\_mMLzZYjd8](https://youtu.be/o_mMLzZYjd8)

# Blender Grease Pencil

Movie demo: <https://www.youtube.com/watch?v=pKmSdY56VtY>

Tutorial <https://www.youtube.com/watch?v=pywbPQD9vYU>

Download: <https://www.blender.org/download/>

