

Creating Smear Frames

BY: TYLER BURNS

Smear Frames

AS YOU LIKELY KNOW SMEARS ARE AN EXAGGERATED, OFTEN DEFORMED, POSE USED TO BRIDGE THE GAP IN FAST PACED ANIMATION. MUCH LIKE MOTION BLUR THIS IS USED AS A WAY TO AVOID STROBING AND CHOPPINESS IN YOUR WORK, AND SHOULD BE USED TO COMPLIMENT AN ALREADY SOLID ANIMATION. THIS WAS A MUCH EASIER TASK IN TRADITIONAL ANIMATION AS YOU COULD SIMPLY DRAW YOUR CHARACTER OR OBJECT THIS WAY.

BUT THERE ARE SEVERAL WAYS TO ACHIEVE THIS IN 3D. MANY TIMES PEOPLE WILL USE THEIR RIGS TO DO THIS AS MOST HAVE STRETCHING CAPABILITIES AND SOME, MORE ADVANCED, RIGS HAVE TOOLS BUILT IN THEM TO CREATE THE DISTORTION NEEDED FOR COMPLEX SMEARS. THERE ARE ALSO SEVERAL SCRIPTING TOOLS THAT CAN BE USED, LIKE THE ONE WE WILL BE USING.



boSmear

boSmear is a Maya script tool developed by Bo Sayre

You can get this at the companion site to the “Cartoon Character Animation with Maya” Book which is where all of this information is from.

www.Bloomsbury.com/Osborn-Cartoon-Animation

1. From the main page to RESOURCES
2. Click MAYA SCRIPTS
3. Download boSmear AND ParentToSurface
4. Import the script into Maya

Important things to remember before starting is that your animation should be finished and your camera finalized for the shot. This is meant to compliment your animation not drive it.



The screenshot shows a website interface with a dark navigation bar at the top containing 'GENERAL' and 'RESOURCES' tabs. Below this is a sidebar with three menu items: 'VIDEO TUTORIALS', 'MAYA SCRIPTS' (which is highlighted), and 'MR. BUTTONS'. The main content area is titled 'Maya Scripts' and contains a paragraph: 'Click the links below to download three key Maya scripts, TweenMachine, boSmear and Parent To Surface:'. This is followed by a bulleted list: '• TweenMachine is first mentioned in chapter 4 (p.90). It is used to create breakdowns.', '• boSmear is first mentioned in chapter 6 (p.149). It is used to create smear frames.', and '• Please note that you'll need to download the Parent To Surface script in order for boSmear to function.'. Below the list is a 'Resources' section with three blue links: 'TweenMachine', 'boSmear', and 'ParentToSurface'.

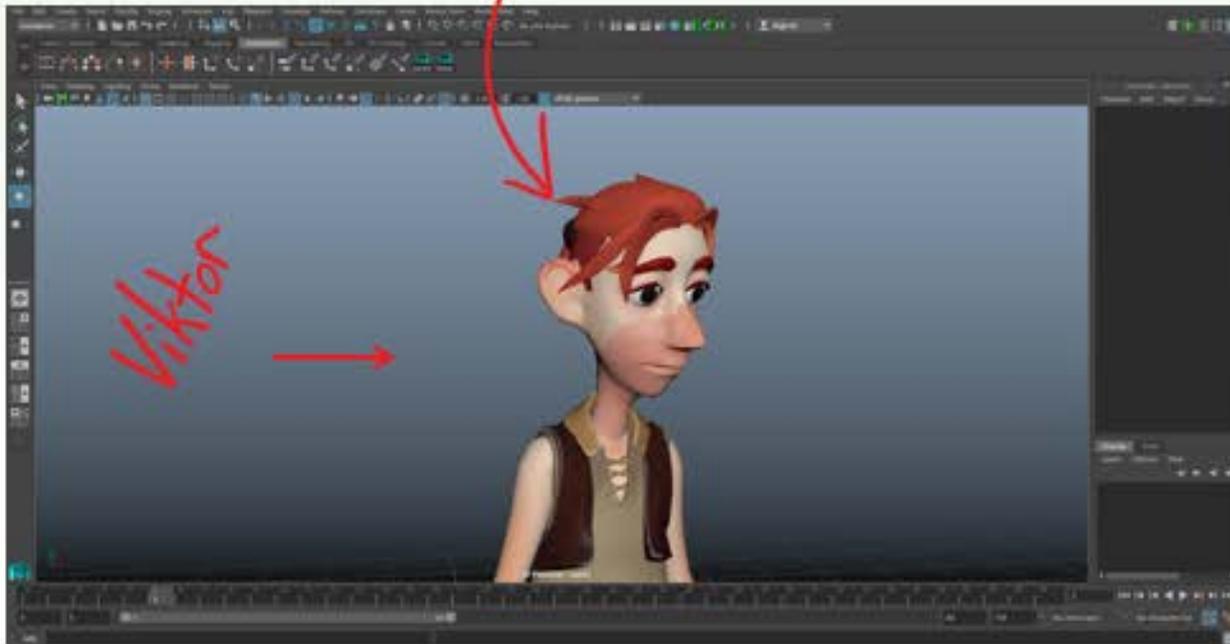
Getting Started

For this I will just be doing a simple head turn. I have finished my animation which is essentially just Viktor going from

here

to

here.



Launch!

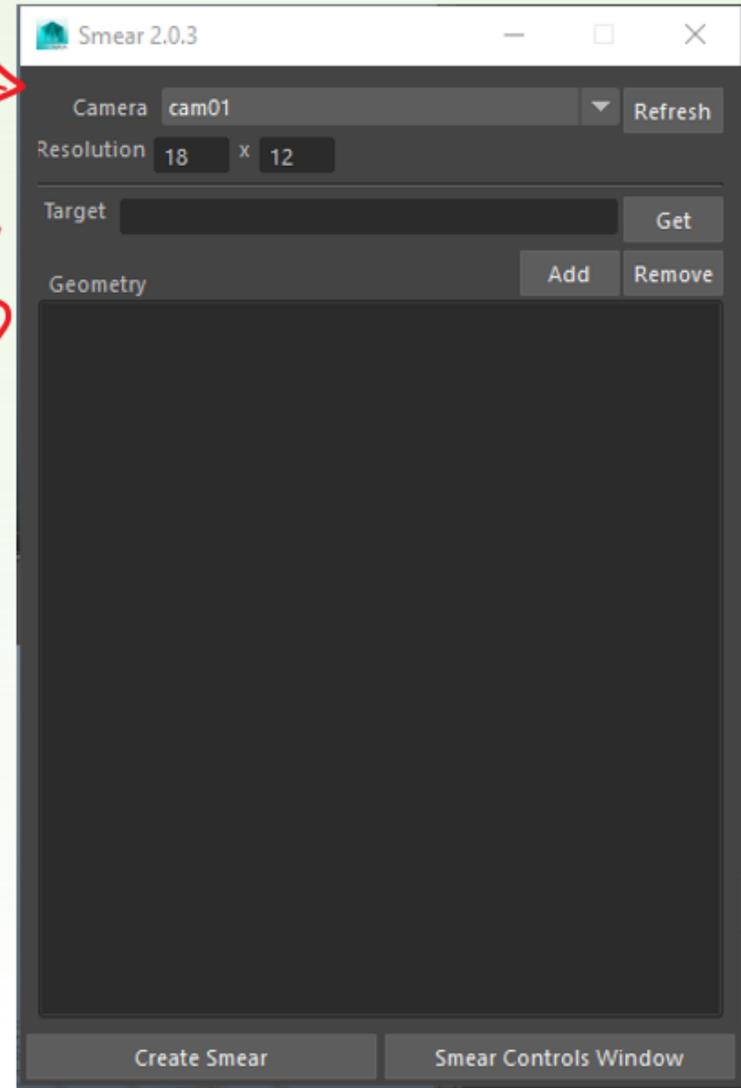
Start up boSmear and you will see this menu. →

Important things to know-

- 1. Camera:** This will give you a list of cameras in your scene. You should be using the one that will be used for the final render in your scene.
- 2. Resolution:** This will be the number of vertices that you will use to manipulate the mesh and create the frames.
- 3. Target:** This is the part of the subject that the smear will be centered around. Select the appropriate controller and hit "Get".
- 4. Geometry:** Select all geometry you want to deform and hit "Add".

Once you have done all this hit "Create Smear" and you're ready to start.

1. →
2. →
3. →
4. →



(Future Page)

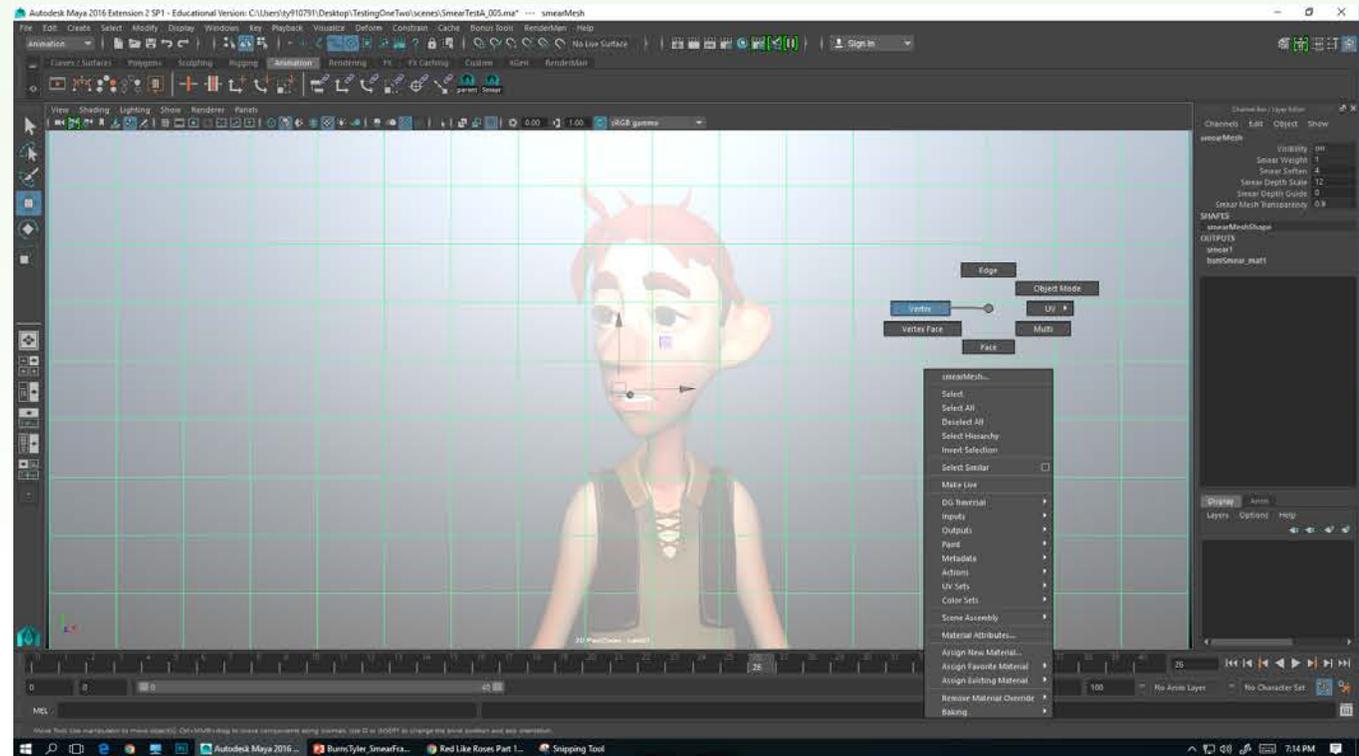
Creating your Smear

When you click Create Smear a light grey plane will appear in front of your subject. This is the mesh you will use to deform the subject. Select it and you will be able to see mesh. Now right click and select vertex (just to the left).

This will allow you to manipulate the image based on the vertices.

And now you can finally start creating your smear frames.

Almost...



Animation Controls

At this point you should probably have seen the small window pop up called Animation Control. If you don't, the "Smear Controls Window" button on the smear menu will turn it on.

More buttons!

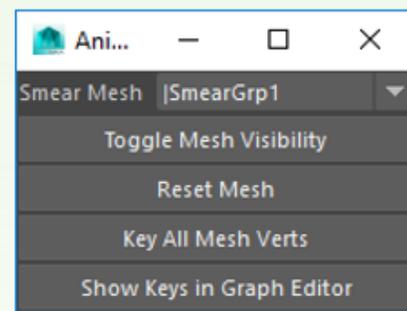
Smear Mesh: Allows you to switch between the different smear meshes you create. (You can have several in a scene!)

Toggle Mesh Visibility: This toggles the mesh's visibility...

Reset Mesh: After you manipulate the mesh and want to add a new key you will probably want to start from scratch. This lets you do that! It also adds a key once you have started keying the mesh and it causes a change.

Key All Mesh Verts: Like any animation in Maya this keys the mesh in that spot. Remember for your first key that means that is the only information on it so plan ahead!

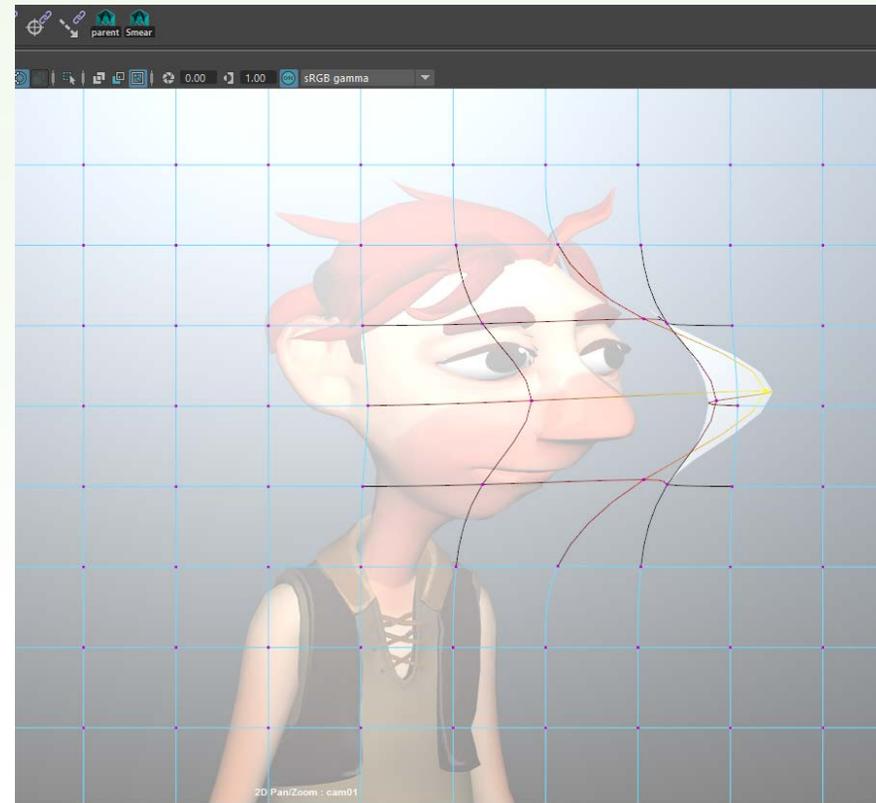
Show Keys in Graph Editor: I never had a problem seeing the keys but it's here if you need it.



Manipulating Mesh

Now we are finally ready to start actually manipulating the character. You have the vertices selected and can move them freely which should then move your subject.

A good way to start is by using soft select which you can do by pressing the B key. To increase or decrease the radius just hold the B key down, click and drag the mouse. This makes it much easier to sculpt your pose instead of going from vertex to vertex. However, I did end up doing this when I was refining the pose.



Keys

In the head turn I showed before there is about 5 frames from beginning to end of the turn. It was intentionally quick to experiment with this tool and those 3 frames were even close enough where a smear wasn't necessary. Although it definitely improved the animation.

So with 3 frames to work with I would start by keying (clicking "Key All Mesh Verts") on the last and first frames you want to have without any deformation to 'frame' your workspace.

You can then go to the frames you want to change and create your pose which will now automatically key your changes. Just be sure to reset the mesh in the keys that follow, if they aren't already, so there isn't any unintentional posing.

Where to use it

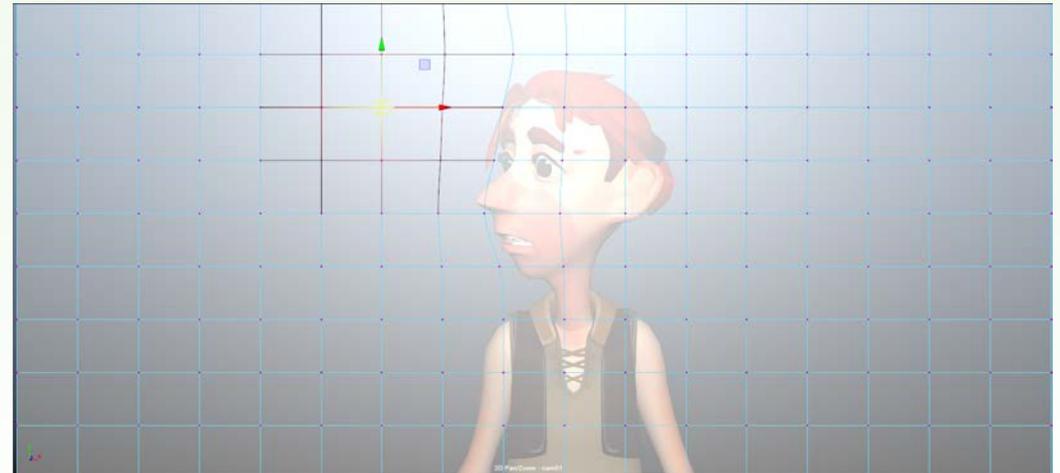
As you probably know smears are used to bridge the gap between two poses to make it less noticeable to the human eye that there is actually nothing in between. So you will often only be using this on one or two frames per action.

So when I want to go from here



to

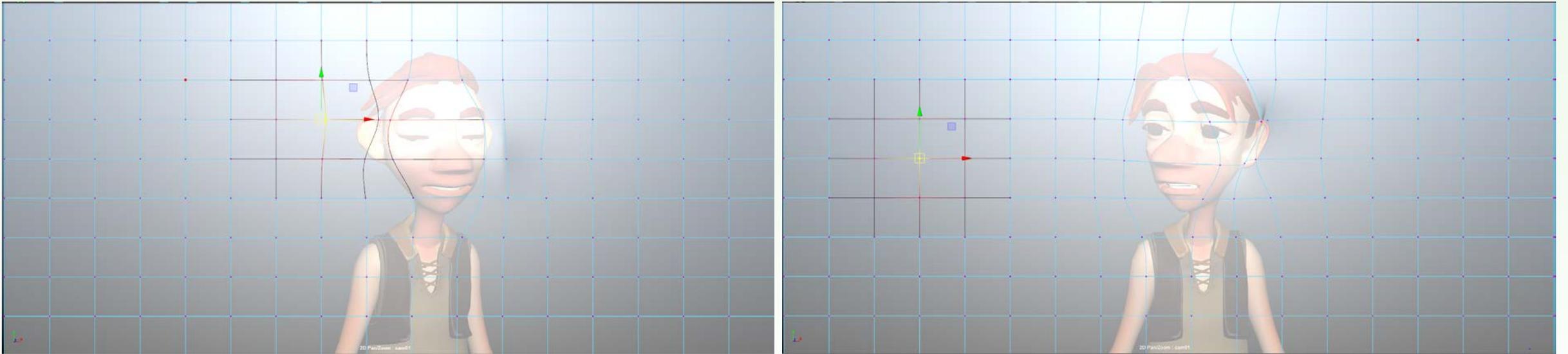
here



You want a pose that shows as much information as possible in the frame or two you have without being obviously wrong.

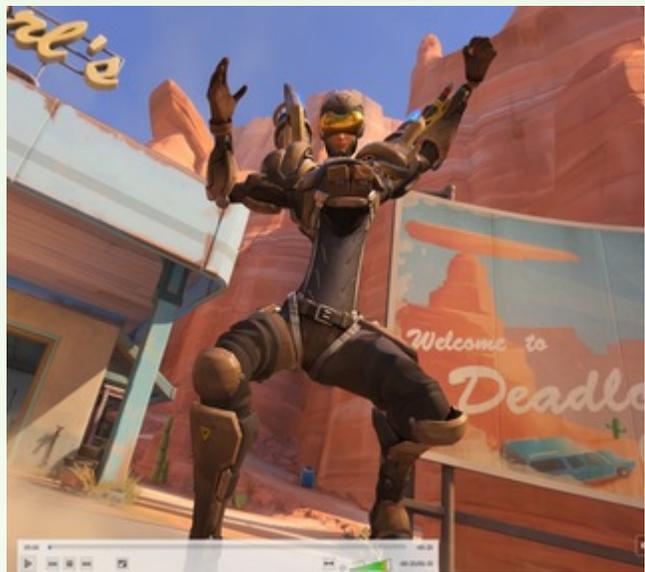
Where to use it

For me trying to continue the action without getting into the territory of the last frame so that the movement flows works best.



I only really had two frames where a stretch was even possible so this is what they end up looking like. No one watching will ever see this and it will create a more fluid motion.

And this is a very subtle way to use it. It can be much more extreme...



(Overwatch had the best examples of 3D smears I could find)

Additional Information

There are settings for the boSmear that you can change. Just select the mesh in object mode and go to the channel box.

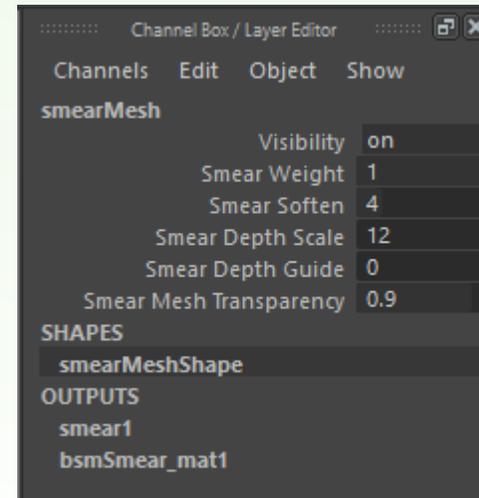
Here's what all these do:

Smear Weight influences the amount of smearing.

Smear Soften will soften the geometry to reduce tearing caused by the smears. The greater the value the more it softens.

Smear Depth Scale is used to change the depth to include further or closer objects if they are not being included in the smear.

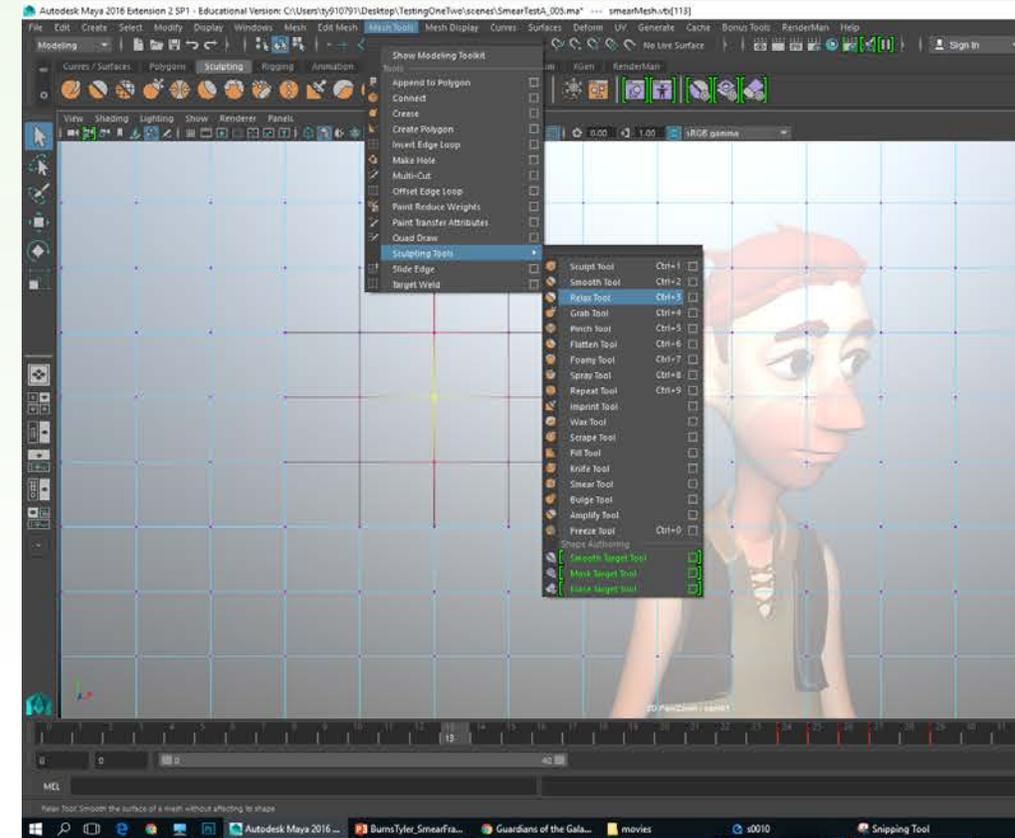
Smear Depth guide toggles the visibility of the depth so you know what area is being effected.



Tools

Selecting and moving vertices is not your only option! The smear mesh is just a polygonal plane so you can use all kinds of tools in your smears.

Such as the sculpting tools. Obviously you will primarily just move things with soft select but many of these could be used to compliment your workflow.





As with anything, you will find what works best for you. If you just use the principles of animation to inform your work, experiment with ideas and techniques, and find a way to enjoy doing it you will get great results. I hope this has helped.