Who is this guide for?

Novices who are not fully familiar with the program, its tools, environments and editing workflow. More specifically, the user who has just installed SFM from the Steam Store page, and may be overwhelmed with all the options available. Some tips and tricks are available for experienced users, as well.

Think of this as a sort of crash course: what this button or mode does, how to do a specific thing, and so on. Please note that, due to size and research limits, this guide doesn't account for absolutely everything the program has to offer. While designed to get a beginner started and on their way, it does not exhaustively tackle either animation or poster making - but does contain some general advice on performing functions related to them.

Below is a reference of the default SFM layout, in the event that, throughout the guide, you get lost or confused. Click the image to expand to full size.

The Viewport lets you see how your project will look like from various camera angles.

The Animation Set Editor is from where you create, manage or delete entities like characters, objects, cameras, lights and particle systems.

The Property Sliders allow you to modify an entity's settings by dragging the respective sliders to the left or right.

The Timeline allows you to work on your project in several editing modes (namely Clip Editor, Motion Editor, and Graph Editor) - generally for animation, though still remains useful in poster making.

The Camera mode buttons allow you to create, manage and switch between the main project camera(s) and a temporary "work camera", used purely for editing.

Onwards!

1. Creating Session & Loading a Map

First thing's first, we need a project to work on. Let's begin by starting SFM up.

Load/create Session File window

This is the window you'll be greeted with once SFM is loaded. By default, projects (or Sessions as they are properly known by in this program) will save in SFM's file directory, but I recommend choosing a custom destination for backup purposes. Make sure to avoid using special characters like

? , " : .

and so on. This is because SFM cannot save projects with special characters in them - accessing them next time will give an error. Stick to just letters, numbers and underscores, and you'll be fine.

Framerate shouldn't be worried about unless you plan to animate your scene. This setting can be modified later on, should the need arise.

Select create to get started!

Map Loading...

Next up, you'll want to load a map. You can either use one from the Steam Workshop, or choose from the many already installed and available in SFM.

To load a map, right click the Viewport (the big black window with nothing on it) and at the bottom of the drop-down menu, click Load Map... From there, another window will pop up.

For now, we want the stage map. Type "stage" in the Filter Box at the bottom of the window and select the first thing that is already highlighted. Click Open. For reference, consult the image to the side.

2. Loading your first Model

Once your map has loaded, you’ll be greeted with an empty room. Let’s make things look a bit more interesting and learn how to load your first model into the scene!

Inside the Animation Set Editor window, right click to bring up a drop-down menu. This menu is used for selecting what it is you want spawned in your scene: cameras, lights, models and even particles! For now, we want to select Create Animation Set for New Model.

An alternate method is to select the Cross up the top of the Animation Set Editor window and choose the option to create a model from there:

A new Window will appear. Here is where all your models are stored and ready for you to load into your scene at any time. This list will grow as you subscribe to more submissions on the workshop. We'll start out by loading TF2's Heavy into the scene, but the remaining process will be identical regardless of character. Type in Heavy and scroll down the list until you find player/heavy.mdl and then click Open at the bottom right hand corner of the window to load him into the scene.

I'm starting off the example with the regular playermodel of the Heavy; over time, you'll want to gravitate towards hwm/heavy.mdl or similar, because they are higher quality and more expressive.

If you have done everything correctly, you should be seeing your model successfully loaded right now.

Suggestions:

At the top where it says Mod Filter, if it's not set for All Mods already, change it to that via the drop down box because this will come in handy in the future.

3. Using the Viewport & Timeline

The Viewport is your primary display. Everything you do and whatever settings you make will be shown on this screen.

Camera Modes

Located in the bottom right hand corner, you can toggle camera modes by left clicking the box labelled Camera1 or WorkCamera. What do these mean though?

WorkCamera

The work camera is a "temporary" camera. In this mode, you are free to move the camera however you wish, as it will not affect the settings of your main camera. As the name implies, it's used to actually work on your scene: you can fly around the map and adjust your scene elements freely. Creating a new scene camera (ie. camera1 if it hasn't been made yet) will spawn it either from the work camera's position, or near a spawned object.

Camera1

This is the camera you'll be using to export your image or animation with. Wherever this camera is facing will be what you'll be looking at when the final render is complete. This is why you should use the Work Camera to navigate your scene. You can have as many scene cameras in the project as you would like, but only one scene camera can be active at a time. You can not edit its settings or move it while in Clip Editor mode - you'll be notified with a dialog box stating that.

Navigation Controls

To move, left click and hold the viewport. You can now drag the mouse to look around your surroundings, and hold down keys on your keyboard to move the camera itself. Keep in mind, you must have the left mouse button held down to move the viewport at any time. Here's a list of all the movement commands:

W, S, A, D = Allows you to move forward, back, left or right.

Z, X = Pans you up/down.

R = Modifier key that allows rolling the camera side to side, as you move the mouse left or right.

Mouse Wheel = Zoom in/out.

Ctrl, Shift = Slows down or speeds up the camera movement.

Alt + Left Mouse = Orbits around wherever the viewport is facing.

Alt + Middle Mouse = Pans the viewport.

Alt + Right Mouse = Dolly in/out.

To move the scene camera (ie. camera1) after creating it, make sure the Viewport's camera mode is set to camera1. If camera1 has an animation set created, it must also be selected from the Animation Set Editor.

Click the video below (go to 2:08) for a visual demonstration of the viewport navigation!

The Timeline

The Timeline is almost the same as how you would use it from any video editing program. It has multiple modes for editing your basic scene elements, clips, etc. The Graph Editor is heavily used for animation and unlocks most of the tools you'll need for such a task. For single frame sequence artworks, you'll mostly be utilising Clip and Motion editor modes.

Located to the left side of the Timeline are these 3 buttons. They are used for entering the different Timeline modes and allow control for different editing purposes. By default, you are in Clip Editor mode when starting a new project or loading into an existing one.

Clip Editor

Previews your render by applying depth of field and motion blur samples, and for animation it allows you to insert sounds, splice clips depending on your additional cameras, and more.

Hotkey = F2

Motion Editor

Allows you to change the actual scene elements. You can move bones, spawn models, lights, particles and move and manipulate them however you wish. For animation, it is used to apply additional effects to a given range of animation, such as smoothing or jitter. One of the two modes where you can move a scene camera.

Hotkey = F3

Graph Editor

Advanced keyframe-based editor mode, specifically for animation. Allows intricate adjustment of an entity's base properties via a coordinate/value system, and applies basic movement between two separate keyframes. The second mode that allows moving a scene camera

Hotkey = F4

Pro tip: Tab also quickly switches between the Clip Editor and the Motion/Graph Editor, whichever you were using at the time.

A Secondary Viewport

The following is completely optional. If your computer is low-spec, forcing SFM to render two viewports at the same time could negatively impact performance.

Did you know that you can have both Camera1 and WorkCamera turned on at the same time so you can see how your render will appear as you're editing it?

Go to: Windows on the ribbon bar > Layouts > Motion Editing. You can also enter this layout by simply pressing Ctrl+F3.

Now you should have 2 Viewports, allowing you to see your changes in real time, without fiddling back and forth between cameras. How you set up these two viewports is up to personal preference.

For more info on the subject, visit the Customising UI Layout section of this guide.

4. An Introduction to Camera Settings

There are a few ways of creating a camera:

Method 1

Right beside the button labelled Work Camera (or Camera1) in the bottom right corner of the Viewport is a small arrow; click it to open a drop down menu. Select Change Scene Camera and then select New Camera. If there is already one, select that one instead.

Any cameras already created here can be selected to be chosen as the Active Camera. Only 1 camera can be active at a time.

Return to the drop down menu once your viewport is in camera1 mode and Select Animation Set to have it show up in the Animation Set Editor.

Method 2

In the Animation Set Editor, click on the cross button and select Create Animation Set for New Camera. Keep in mind, spawning a camera this way does not give it an animation set, which you need to do so as mentioned in Method 1.

You’ll notice a blue camera has spawned in the Animation Set Editor. This is where all the magic happens. Having a camera is a must-have for any artwork being created.

Camera Settings

Left Click camera1 and you’ll see some parameters appear next to the Animation Set Editor. These are the camera settings, and they're sliders, meaning you click and drag the setting you wish to be changed. For beginners, I'll only be focusing on the first five, starting with fieldOfView (FoV).

Field of View

Otherwise known as zoom level. Drag the slider to the right and you get a wider Field of view, drag it to the left and the view gets narrower. FoV is important to set up correctly: generally speaking, scenes showing a landscape use a wider FoV, while those where the focus is on either a small number of characters, expressions or actions do best with a narrower FoV.

This example has a wide FoV, and it reveals too much empty space. The camera is also rather close to Scout, which can lead to distortion around the view's edges. This is a common beginner's mistake.

Here, I bring the camera farther from the Scout, and drag the FoV slider to the left to reduce how much empty space there will be. The scene now looks much nicer, with the character in focus having good proportions, and there's less empty, useless space.

Practice using a lower FoV than you'd think at first. Don't be afraid to experiment with not just the slider itself, but with the position of the camera: closer, farther, higher, lower, and so on. You can also try to recall scenes from other movies, shows, games and so on, and apply ideas for camera angles here without much risk. Extremely wide FoV is generally reserved for things that intentionally look alien or weird.

Focal Distance

This is the first part of creating a depth of field effect, followed by the Aperture slider discussed below. SFM simulates the mechanism of a real life camera rather well, and focalDistance represents, well, the distance at which an object is in focus - meaning it looks clear while the rest of the scene blurs out the farther one goes from the focalDistance plane.

When you adjust it, a pink plane shows up on Camera1. This shows where the focal point is, thus what will be in focus when you decide to render the piece. It's usually easier to hop into Workcamera mode to get a better idea on its location - it is represented by a pink rectangle. To get an object in focus, drag the slider until the purple plane clips into it.

Camera 1 Work Camera

But what if the slider can't reach the object you want in focus?

You can, via remapping the slider range. Most sliders have a minimum value (represented by the leftmost part of the slider), a maximum value (same as minimum, but for the rightmost part), and a default (where the slider starts and where the lighter grey tends to when you adjust it). First, right click on the slider itself and from a drop down menu, click on Remap Slider Range where a new window will pop up.

The only box you may need to change here is Max: as this controls how far the slider is allowed to go. Setting this to a higher value will change the slider's parameters such that the focal plane can reach out farther.

You can do this with almost any setting. Go and experiment with a variety of sliders!

Aperture

The second part of the depth of field simulation. This controls how much the camera blurs things that are not clipping into the focal plane.

You need to use the focalDistance slider to have any effect here. If you have nothing in focus, adjusting this setting won't be useful.

Example:

Serenade of Water

Иллюстрация от сообщества к Source Filmmaker

Автор: Prof. Purble

Time passes, people move... Like a river's flow, it never ends... A childish mind will turn to noble ambition... Young love will become deep affection... The clear water's surface reflects growth...

The main focal point here is the background. When Aperture is applied, Link (In the foreground) is blurred to give a sense of depth, helping give the illusion that there is some distance apart from one another.

Some neat trivia:

Real world cameras use a combination of aperture (the opening of the lens), ISO (sensor light sensitivity) and shutter speed (lens and sensor movement sensitivity) to influence the exposure (brightness) of the scene. In SFM, aperture only affects depth of field, as other settings and tools can tackle exposure.

Also, SFM's slider is backwards compared to a real world camera. A "lower" aperture fraction like f/1.4 should correspond to a larger ratio between the camera sensor and the opening of the lens, thus increasing blur... SFM instead applies a stronger depth blur effect the higher aperture is.

ToneMapScale

Basically a general exposure slider: dragging this to the left will make the scene look darker, while dragging it to the right makes it brighter.

Sounds useful, right?

The truth is, it both is and isn't. This darkens and brightens everything the camera sees, including stuff that's harder to adjust the light levels for, like the sky or particles. Be mindful of changing this setting, as it can denature your scene if mishandled; however, once you gather experience, you're free to use it in conjunction with different scene elements to adjust the brightness and mood of your project.

Bloom Scale

Bloom is a post processing effect that adds a soft haze around bright objects, similar to many games since 2005. SFM's bloom is... not very good. It looks blocky and barely soft at all. My recommendation to beginners is to either slide it all the way to the left, or leave it veeeery slightly above the minimum - to do this easier, remember you can remap the slider's range and reduce the maximum value to something closer to the default.

Note that remapping slider ranges has one limitation: you can't set the maximum below the default or minimum, and the other way around.

5. How to Move Objects & Characters

I'm not the kind of person to question the genius of aspiring artists who express themselves via overlapping, t-posing models... but I also assume the readers of this guide want to know how to move things around in the scene, so let's talk about that.

While In Motion Editor mode, and with the Transform tool selected (hotkey W), move your cursor over the viewport and then hold down CTRL.

You'll see your model's bone structure. Down the bottom should be a bone labeled rootTransform. Click it!

To speed up this process, in case you want to move the entire model at once, clicking its name in the Animation Set Editor does the same job.

The pelvis bone at first seems to do the same as moving the rootTransform, however it may cause problems if moved independently as it's used for different kinds of posing.

Your XYZ axis icon should now appear, and you can freely move your character by left click holding one of the coloured arrows. Combined axis are represented by the coloured circles, so moving horizontally without changing the model's height is done through dragging by the red-green circle. Dragging by the cyan square will move the model relative to your active camera's perspective, and holding shift while dragging the cyan square will snap the bone to the surface of the surface you dragged your mouse in front of - handy for bringing a character in contact with the ground.

But why stop there? Lookie here, there are more buttons to mess around with in the bottom left corner of your viewport!

The select tool is for selecting things. It's a thing.

Hotkey = Q

The move tool is for moving the selected entity or bone along the XYZ axis.

Hotkey = W

The rotate tool brings up a different control interface, allowing you to rotate your selection on specific axis. The cyan axis is a view-dependent combination of the three axis. Dragging imbetween the axis will allow combined axis rotation up to the edges of the circle.

Hotkey = E

The screen tool's function is the same as the rotate button, but you're no longer bound by the edges of the circle, and you can drag it by the knob to the side to change the orbit point of the model, if you need to.

Hotkey = R

Just as a reminder, you can not do any of this in Clip Editor mode. You must be in either the Motion Editor or Graph Editor mode to make any changes to the scene. Refer to Using the Viewport & Timeline if you forgot how to change between the different modes.

6. Posing your Character

There are two ways to pose your character. Let's look at both and see which you might prefer.

Once more for clarity:

Both methods assume you hold down CTRL while the cursor is over the Viewport. Alternatively, you can select your character's bones via the Animation Set Editor.

Method 1 - Manual posing (forward kinematics)

This route can take longer, but is potentially more rewarding in the end.

While having a bone selected, click the rotate button on the bottom left corner of the viewport or Press E. You can individually rotate a bone on each axis by clicking and dragging on the lines, or rotate in a combination of all axis by clicking and dragging within the circle as it glows yellow. It's advisable to rotate, instead of move (translate) bones, lest it results in distortion - if you made a mistake, you can always undo with CTRL + Z.

This method takes longer to pose, especially for users unfamiliar with the workflow; however, it can potentially reap great benefits as it allows complete control over your character's posing, regardless of physical limitations like joints.

Method 2 - Rigs (inverse kinematics)

A potentially much faster way to pose. Before you can use rigs, you need to right click your character in the Animation Set Editor and then navigate down to Rig.

In this sub-menu, you'll find the options to either apply or disable a Rig-Biped to your model. As you use SFM, you're likely to increase your library of available rigs to use, and some of them won't even necessarily be for posing humans, but for now, use rig\_biped\_simple.

After applying this, you'll see in the Animation Set Editor that the bone structure has changed. Now when you move the feet and hands, the joints connected will now follow along and update as you move them. As a demonstration, when I move the hand, the elbow moves as well.

Great, now you know how to move your character's bones... Now start posing!

Posing is mostly a visual process

While the workflow for posing might not be elaborated further upon in this guide, it is largely a visual process. Generally, you want to convey the motion, weight, attitude, emotions, etc. that you desire, while conforming to anatomical boundaries where it's both possible and expected. A myriad of resources are at your disposal when it comes to creating a convincing pose or animation - chief among which are references.

Don't be afraid to use references

A reference - be it a sketch, photo, stock image or video - provides a baseline visual anchor for a desired expression. Even professional artists and animators use these, so don't worry if you believe it's not original. Well crafted poses add a lot of depth to a scene; while posing is likely to be a trial-and-error affair especially at first, the results will speak for themselves.

What about Sequence Posing?

These are pre-made sequence shot animations Valve created themselves. Usually it's advisable to not resort to sequences for posing primary characters in a scene, but like with all options in SFM it's merely another tool. Sequences are good for large numbers of background characters (as long as you either have a variety of sequences to pose with, or alter them somewhat so they're not all similar), or for posing smaller parts like the face or especially hands and fingers.

That being said, sequence posing will not be elaborated on in this guide.

7. Baking Jiggle Bones

Jigglebones are physics-active bones which wiggle, twist and bounce around freely, depending on how your character (or object) moves during animation. These give a more lifelike appearance to the entity in question, and are usually found in clothes or hair.

A jigglebone will not make itself known straight away as these can be hidden by default, even when you go to hold down Control with the mouse over the viewport. To gain access to these, right click the character/object from the Animation Set Editor and navigate to Utilities -> Bake Procedural Bones. Now when you hold down Control there should be a lot more bones to pick from!

Be mindful that, in doing so, you remove the jigglebone's... jiggle properties, meaning it won't move on its own. Among other things, this puts extra work load for manual animation, and should preferably be used for extra control when making an artwork.

8. Eyes & Facial Expression

You might have a cool looking pose that already tells a story, but a matching facial expression really seals the deal and fleshes out the character. So how do you go about doing this?

Well, if you go over to your Animation Set Editor window, you'll want to click on the little plus icon next to Heavy1 or whatever character you have loaded. This expands the hierarchy of bones and controls within the model. We want to open the option labelled Face, as it contains the controls we need.

Eye Posing

Eyes are pretty useful for looking at things. Most models don't spawn with eyes looking right: either they're closed, cross-eyed, or otherwise all over the place.

It's common to start out using the sliders for this, but using the ViewTarget is even better. This is a separate bone you can find and select by holding down CTRL, and you can move it to have your character's eyes look into its direction, even taking into account distance (so you can make them derpy and cross-eyed if you so wish). The actual eye sliders are still useful for fine tuning the eyes, if deemed necessary.

Note:

This will play a bigger role on characters that have much larger eyes. Fortunately, Heavy has rather small eyes, but it's still something to consider.

Face Posing

Now we can look at what kind of Facial Expressions he will have. Heavy has pre-made flexes ready for us to use, so all it takes is to move the slider of that preset and see how much impact that has on his face. It should be noted, it's easier to see changes while you are close to the face with the Work Camera to get a proper view of whats going on. You can change his facial flex expressions via Full Face, Upper Face and Lower Face.

Here are my settings.

Can't find the settings?

The facial expression settings are not always located in the same spot for every character. This method applies to Heavy and the rest of the stock TF2 models. Other places you may find the controls, in the case of custom models, are under the Unknown heading, so make sure to look around for them.

There we go! Having an actual facial expression makes a huge difference. With Heavy, the look on his face matches the rest of his body - he looks like he is ready and eager to administer a can of whoop-butt to a hapless victim.

9. Changing Bodygroups and Skins

Hold up, how did that guy get a blue soldier in his SFM? Why does that character have a different kind of clothing item and how did he get it? If the creator had uploaded the character with multiple visual options, SFM allows you to change to different skins and turn certain bodygroups on or off, usually for characters who have multiple cosmetic elements.

Changing Skins

This is used for when you want your character to have a different colour scheme.

To access this option, right click the character you would like to change in the Animation Set Editor, navigate down to Set Skins and you should see multiple options. These are the different colour options, with 0 being the default look. Some characters have a lot of options, others do not. Skydomes (large dome props with a sky texture painted on them) particularly take advantage of this to show many different sky textures packed into a single loaded model.

Note that changing the skin of a character does not change the skin of any item you had loaded separately into the scene: here, Link's Sword and Shield look like they don't belong. You can right click those items (again, via the Animation Set Editor) and change their skins individually through the same method.

Changing Bodygroups

This is used for turning various components of the model on/off.

If you were observant before, you may have noticed that, under Set Skins, there is the option: Set Body Groups. Not every model has this option so it's not always guaranteed that this will be present. Here, the Hyrule Warriors Link model is being used as an example. You can tell by looking at him, compared to the left, that his clothing items have been disabled via the Body Group Menu. If you want the items back then go back into the menu and choose the appropriately named options to have them appear again.

Not every character has the ability to change skins or bodygroups, but for those that do allow for that little bit of extra customisation, this gives you the option to have some visual variance here and there. Go and experiment with the TF2 characters!

10. Scaling Objects and Bones

Changing the scale of an object is handy for altering their perspective, or simply to make items that appear too large or too small when first spawned in, more usable. This is moderately more tricky for animations: different scales and positions may only look good from one camera angle, but not from others.

Scaling also, more importantly, allows you to change the size of a model's bones. This might include resizing the hands of a character, or subtly adjusting the size of the head. You shouldn't feel restricted just because a character's body part is getting in the way, though excess can also detract from the final product.

To access Scaling for an object, right click the model or bone in the Animation Set Editor, and select Utilities -> Add Scale Control for Models. Once you have done so, a new controller will appear for that object within its slider controls: rootTransfrom\_Scale. Sliding left will make the object smaller, right is larger. You can even right click the slider and edit the Max value, allowing you to make really disproportionate eldrich creations.

But I wanted to resize a part of the character, not the whole thing!

The process is largely the same as scaling the whole model. Either click on the bone in the Viewport or locate it manually within Animation Set Editor. After you have found the exact bone, right click it in Animation Set Editor and look for Add Scale Control To Transforms, which will generate a new controller specific to that bone. Click it once and the Scaling slider should appear:

Note that scaling controls are on all three axis simultaneously: width, height and length. There is no way to directly change one axis' scale without changing the others. This is a big disadvantage over something like Garry's Mod, which instead uses deeper scripting for this purpose.

11. Object & Zero Locking

In animation, characters hold objects in their hands or equivalent appendages without dropping them mid-motion, unless they desire or are forced by circumstances. This is achieved via Object locking: a model can be locked to a different bone, and the movement of the parent bone will allow the locked object to move simultaneously with it.

First, have your character set up within your scene. Spawn the object you want them to hold onto. The tedious part is manually dragging the object to wherever you want it locked; let's say, they're holding it in their hand. Once you're happy with the object's placement, we can move on.

Next, look towards the Animation Set Editor. Locate your character's hand bone. Next, open your objects bone tree. Every object has bones, even if it's just a single rootTransform.

Drag the hand bone over to the root bone of that object. If you were successful, a lock icon will appear next to the locked object. Wherever you move the hand, it should now follow along with it.

The order in which you do this does matter! If you drag the object onto the hand, for instance, moving the hand won't affect the object, but moving the object will drag the hand with it.

Zero Locking (Or Zero'ing)

This is a unique feature that allows you to quickly bind any weapon or cosmetic object to a model's bone position. This is useful when applying custom outfits to your TF2 characters, eliminating the tedium of manually positioning the items yourself.

Tip...

When Zero locking, load the object in question, but try not to move it! This will mess with its position coordinates, and it may not give desirable results!

To do this, you'll need to have the weapon/cosmetic in question already locked to the character model. See above for how to do just that! Next, divert your attention to the Procedural tab within the same window as the Animation Set Editor. You'll see a setting that says "Zero." Everything else around it is irrelevant for now. Refer to the picture below if you get lost:

Despite the lack of no indicated slider, you can still left click hold and drag this like any other slider setting. Once your object has been locked, you need to highlight it within the Animation Set and then drag the Zero slider as far to the right as possible. If done correctly, your cosmetic or weapon should have homed in on the character's position and will stay in place as you animate/pose them.

Note: Zero Locking can not be undone except with Ctrl+Z

12. An Introduction to Lights

To use lights effectively, it's best to load a map that is marked as a dark map. The stage map is not one of these, because we can actually see things in it. Right click the viewport and select Unload Map. Don't panic, your stuff is still there, it just needs a new map to become visible again. Right click again and select Load Map... It's the same process outlined in Creating Session & Loading a Map, only this time you are searching for black\_void, and not stage.

Once it loads, you'll see that it's quite dark. If a map called black\_void weren't a black void, I'd ask for my money back as well. This is a map that is nearly\* entirely black, allowing you to apply lights as you desire.

It's only nearly entirely black, because Source's map editor, Hammer, makes a map fullbright if it has absolutely no lights placed in it. Most map makers instead put a lone light in a far away corner, where it hopefully doesn't intrude.

Why do such a thing in the first place?

Maps with pre-baked lighting have entirely static lighting. This means spawned objects do not cast dynamic shadows, and trying to make them cast shadows just leads to overbrightness. The ideal solution is getting familiar with dark map workflow, and eventually scenebuilding.

Can't see what's happening?

It's common knowledge that, in the total absence of light, navigation is difficult. Fortunately, you can right click the Viewport and click on Disable Lights to toggle the existing lighting off and render the scene in fullbright. Make sure to enable it once you're ready to start using lights.

We can't really see much at the moment, so let's spawn a light here by right clicking the Animation Set Editor and selecting Create Animation Set for New Light, or clicking the cross and spawning one - it's the same process as to how we spawned a Model and a Camera into our scene. Only difference here is we don't get a pop-up window for a Light.

Psst, extra spicy hot tip for you: drag the newly created light from your Animation Set Editor straight onto the viewport. Now you can control the light with the W, A, S, D keys, just like it were a camera! Use this to easily position lights, instead of having to rely on the Move and Rotate tools.

Light Controls

Each light has a ton of sliders, and most of them do something neat. Let's look at the settings marked in red and see what they do. The rest you can ignore for now.

Intensity

This slider controls the brightness of your light. If your character looks too bright, slide this to the left. Too dark? Go right. Also, try bringing your light further back if the slider isn't doing much. It does matter how close a light source is to an object, funny enough! The closer it is, the brighter things become.

HorizontalFOV/VerticalFOV

You may think that adjusting these sliders will make the light more oval, but you'd be wrong. In practice, the light takes the FOV value of the highest of these sliders; if verticalFOV is higher than horizontalFOV, horizontalFOV is largely ignored. The only time they're not is when controlling the light through the viewport, so my advice is to set them to roughly the same value.

Same deal as for cameras, otherwise: drag to the right to widen the light's FOV. You can also hold left click on the viewport and scroll up or down to change both FOV sliders at the same time. Experiment with wider light FOV than you may think is needed.

Radius

Default light properties in SFM lead to sharp shadows, regardless of distance, which is not believable. In real life, on a sunny day for example, shadows from low hanging objects are sharp, while shadows from tall tree leaves are softer and fuzzier. Radius applies a more realistic softening of the light, to simulate a higher surface area of the light casting object; in other words, it means that shadows farther from where they get cast are softer.

Radius only appears when in the Clip Editor, and only when viewing through the Scene camera as well.

Additional note on ShadowFilterSize: one might be tempted to consider this synonymous with Radius after a bit of experimentation, since it softens shadows without needing a render pass in the Clip Editor. This is incorrect: FilterSize effectively reduces the resolution and clarity of the shadow in all conditions, which is... bad. Radius selectively softens a light based on its interactions with the environment. Good practice in most situations is to keep ShadowFilterSize low, and raise Radius as needed.

Colours

Ah, the RGB sliders. These are the most fun, but also a little confusing if you're not familiar with mixing them to get a desired colour. How can you go from a pure white light to a red light?

You don't touch the red slider; you instead reduce the green and blue sliders. To make orange, you bring red and green close to each other, and reduce blue. So on and so forth.

My advice is to keep at least one colour slider maxed out, and work with the remainder. If the light is too bright or too dim, refer to Intensity. Don't make the RGB sliders do the work of Intensity, this will complicate your workflow.

In real life, the only things that could ever be a single colour (pure red, pure white...) are high intensity lasers. In almost every case, you're served better by not setting any single colour slider all the way to the left.

Recap

Having dynamic lighting can significantly improve your work, and you should definitely practice! Dark maps help quite a bit with the learning process, and can make a huge impact on the quality of your work by using your own lights, applying different techniques and remembering that all spawned lights have their own slider settings - which should be used no matter how insignificant that light may be to you, because it could very well change the outcome of your final render to be ten times better.

Experiment and Practice!

There are tonnes of different lighting styles out there! You can't really give a tutorial for a single light setup to be the basis for every piece of artwork you make. Every scene will be different, every creator will have their own style, and even then will require a different approach across multiple projects. It's usually better to just experiment and see what works for you, as you study and apply the ways of using lights and develop your own styles.

13. Adding Sound to your Session

Видео с YouTube™: 03 sound

Просмотров: 471,936

14. Export Settings

Phew, almost there. Here we'll find out how to export at various quality settings, resolutions, sample rates, and how to get rid of this stupid ugly grain on everything.

To access the Export menus, go to the Ribbon Bar at the top: File > Export.

Clipboard Export

This is not a normal exporting function. This just takes a snapshot of your Primary Viewport's contents at this moment in time. Would be useful for sharing work in progress pictures...

if not for the Windows Snipping tool. (it's on mostly every Windows device by default: Win + Shift + S)

Image Export

You may think this is what you should select to export still pictures. As a matter of fact, the image quality will be overall very poor with this option. Avoid.

Poster Export

This seems like a better alternative than Image Export, and it is - better quality exports, and you can set your custom resolution. However, exporting takes absolute ages (regardless of system performance... believe me, I've tried), the resulting file will be massive for no good reason, some visual effects can bug out, and there's a chance of the end result being corrupted anyway. Exercise caution.

Movie Export

Wait, I wanna export a still image, why-

Because from the Movie Export window, you can change the dropdown from Movie to Image Sequence, and then export the desired single frame.

Ah yes, this is the stuff. It's the most advanced way to export, but it's the most rewarding. It doesn't take long, it has the maximum image quality, it allows you to export in more file types, and can go up to 4K UHD resolution (3840 x 2160) with launch commands.

Recommended settings for single frame exports, except for resolution:

Notice how options past 720p are not available for you, yet. That is because, by default, SFM's maximum export resolution is 720p, which is coincidentally the viewport's resolution. To enable higher resolutions, you need to use Launch Commands.

Keep in mind, resolutions past 4K do not work for Movie Exports and must be rendered as a Poster, buuuut I really don't recommend doing so. Even without the rather small 4MB file size limit for the Steam Community, 16K posters don't come out great. On top of that, the file size of the final output will be ridiculously massive, so good luck posting it on Steam...

Setting Launch Commands

To use these, you will first need to exit SFM (so make sure to Save), navigate to the program in your Steam Library, right click and select Properties. A new window should pop up with a box at the bottom labelled, 'Launch Options'. Copy and paste only one of these commands into the box and exit the window. They will automatically be saved and applied on the next launch of the program.

-sfm\_resolution 1080

-sfm\_resolution 2160

You can now re-launch SFM, navigate back to Export > Movie and the option to render up to that resolution should now be available! However, you generally only want these on when you are ready to render the finished project. You do not want them on, especially the 4K resolution option, when still editing your project, as this will have a significant impact on performance and will cause SFM to run at low framerates.

To disable them, go back to Properties and delete the commands. Restart SFM.

Removing that Grain!

One of the first things your artwork will come under fire for is whether you have removed the ugly black grain in your render. Here's an example of what I mean.

To the Left, Link has a severe case of it, but on the right, he's perfectly clean. This grain is Ambient Occlusion on low sample rates, and the culprit is the Depth of Field Sampling.

To get rid of this, there is this nifty menu called Progressive Refinement, which can be accessed by right clicking the Viewport. It should be the top option from the drop down menu.

You want to click on Render Settings to access this menu. Don't click on the second option, as this toggles the use of your settings on/off.

Here, you can change your sampling rate to override the default. Depth of Field is the main one you want to adjust, but if you have a moving object moving within your scene, you may want to also adjust Motion Blur sampling to be increased as well. All of these changes can only be seen while in the Clip Editor, and only while your Viewport is set to a scene camera.

8 - 16 Samples

Unless your computer is really struggling at running SFM, you don't need to use these at all. 8 samples are the default from the Use Camera Settings option, and 16 is barely an improvement.

32 - 128 Samples

Good for previewing your scene while in the Clip Editor mode, but still has a lot of grain.

256 Samples

A fair compromise for exporting an animation without waiting too much. Grain is low enough that animation isn't too negatively affected - picture exports still deserve better.

512 Samples

Decent for single frame exports that are not animations. Grain is much less visible in most conditions.

1024 Samples

Takes the longest rendering time but grants the best yields: almost zero grain.

psst..

Increasing Depth of Field samples will greatly improve the visual quality of your finished product. Think of it as the general quality option of your export. The benefits are especially high if you use Depth of Field and lights with Radius applied.

But what about Use Camera Settings?

'nuff said.

I recommend leaving Ambient Occlusion enabled, so don't untick the option for now.

Make sure to fully preview your scene before exporting: check the counter at the bottom right corner. While SFM is constructing the preview, the counter increases, and the image itself may shift and shimmer. It is complete when it shows as "1 of 64" (or 8, 16, 32, 128, etc...) and both it and the image remain static.

If you did as follows, you hopefully now should be rid of the pesky grain curse! Remember to do this for every time you want to render because whether you like it or not, you will be critiqued for it! So try to get used to it... If there is still some grain, either you didn't quite follow the instructions correctly or you need to make adjustments to your Camera's SSAO Settings, which are not covered in this guide...

15. How to Install Non-Workshop Assets

Note, I'm aware the images in this section are broken. They will be replaced in a future update. My apologies for any inconvenience.

You might have noticed that, occasionally, some models in artworks/videos are not readily available on the Workshop. This is because of any of these reasons:

The uploader decided to keep his/her workshop upload set to private, so only they can use it.

The model is not available on the SFM Workshop.

In the case of the 2nd option, this means that you can visit other websites to download models for SFM without the Workshop being your only option. As long as the model has been converted to work with Source, it'll work. This is super handy for those who wish to share and contribute their work, but uploading to the Workshop might prove to be a bit difficult, either due to size restrictions, or because certain... features of the model are not appropriate for Steam.

Stop talking and tell me how to do this!

This process is a little more involved than clicking "Subscribe" and letting Steam download it for you. Instead, you download the files and install them manually. Before you go, "But I'm no good with computers," it's actually really easy!

First, download your model from wherever. It'll probably come in a Zipped folder. Inside, you'll see two folders labelled "Models" and "Materials" that you need to extract. Our preference is for 7-Zip[www.7-zip.org] but anything that opens .rar and .zip files and extracts them will work.

Access your game folder here:

While inside the game folder, create a new folder and name it something (that isn't already there) and give it the following sub-folders inside so that it looks like the image on the right:

maps

materials

models

particles

sound

Next, open the SDK and check off your new folder:

Get your "model" and "materials" folders of the model you wish to add and place them inside that new folder! Do not place them in any of the created sub-folders as your model will sort itself out.

Congrats, you can now use the model(s) inside SFM! You might need to restart if the program is already running, and make sure you save a backup because if you reinstall SFM, they will be deleted as well.

Wait, why didn't we use the Usermod folder??

Putting stuff in Usermod may corrupt your SFM install due to crucial files of the program being located here, so it's better to just create new directories to store custom assets. Also, multiple folder directories with custom assets can prevent Source from loading everything at once and eating all its available memory. This way, you need only enable the ones you'll need via the SDK.

Searching for your custom assets in SFM

Remember how, back in Loading your first Model, we mentioned that having "All Mods" set as the filter is important? That's because this shows ALL your models, not just the ones you subscribed to from the Workshop! This lets you type the name of any model you have downloaded or installed, and it will show up. Alternatively, you can change the filter to whatever name you called your custom asset folders to, if you know the model you're looking for.

16. Game Mode

Source Filmmaker is not just a film making program, it is also partly a game. The program is a unique hybrid of 3D animation and a barebones TF2 version, unlike everything else available at the time of writing. The Game Mode takes you into the Game world portion of the software, having controls and movement like in TF2.

Keep in mind, this version of TF2 found is actually one from 2008, thus it is missing a lot of features and important bug fixes introduced in later updates. It's so old, Engineers can't haul buildings.

To enter the game world (or exit it), simply press F11.

Congratulations, you're in! You can shoot, run, bonk or do anything that you can otherwise do in early TF2. If you want a different map to run around in, you have to exit the game world and load a new .BSP file from the viewport. But what do you do from here?

Game Mode is intended to record actions and movement of one or multiple characters at once, in order to create believable TF2 "gameplay" with advanced camera, light, particle etc. systems from within SFM.

Keep note:

Switching views with Alt + Tab does not give you mouse control in Movie Mode, you're still technically in Game Mode and thus need to exit via F11 to properly regain control of Movie Mode.

Recording Time

Finally, let's get down to how you can actually record Gameplay!

To get properly set up, position your character in Game mode, then exit back to movie mode. With your camera set up, hit the record button.

In the filter settings, select the things you don't want to capture because once you make a recording. This captures EVERYTHING happening on screen and can be an issue when SFM's memory usage starts getting full.

Four beeps will start after confirming and you'll be in Game Mode. On the final beep, you are free to move about however you wish within the shot. Once done, press Esc to finish the recording and you'll automatically return back to Movie mode.

You can now edit the recording however you wish, though do note that once you are done recording, any characters or entities that were used in Game mode can not be adjusted in Movie mode.

If you had already set up a camera in Movie mode, you can go back to it through the camera options menu, here:

You're done! To preview the animation, simply hit the play button!

For further reading:

<https://developer.valvesoftware.com/wiki/SFM/Movie_mode_and_game_mode>

<https://developer.valvesoftware.com/wiki/SFM/Recording_gameplay>

17. Customising UI Layout

The Default UI layout is what appears upon starting up Source Filmmaker either for the first time, or is how it was left from the last time you used the program. There are multiple layout styles to choose from, and you can customize them to your liking.

Up in the ribbon bar, select Windows -> Layouts and you'll see some options to pick from.

Return to Default Layout resets you to the Default Layout.

Save Layout enables you to save the current layout.

Next section is a list of pre-made layouts and slots for custom layouts that all serve their own purpose.

Rename Layout allows you to rename the current layout you are currently using.

Reset Layouts deletes all the current custom layouts and resets them back to how they were from the beginning.

Import Layout lets you load .INI files and sets SFM to use the Custom Layout from that file.

Export Layout saves your current layout as a .INI file you can store for backup.

Creating your own Layout

Once you start getting comfortable with SFM, you'll want to use a workspace where you can reach everything you use. This will depend on what you use SFM for, whether it be purely animation, still images, or a mixture.

Here is my custom layout:

My preference revolves around suiting my needs as an artist. I use the Element Viewer almost as often as the Animation Set and wanted both windows open simultaneously. There is a second Viewport window in the top right hand corner, although it's set up in a way that still keeps the main viewport a priority. I have also moved the Console tab down to sit next door to the Timeline Tab for easier access.

What do tabs look like and where are they?

To move a tab, left click and hold onto that tab. When you drag it away, you'll be given squares that look like this around every section of SFM. Drag and drop the tab on one of these squares to snap the tab to that location. Let's say we want to move the Animation Set Editor to the right side of the Viewport window: drag over to that window and simply plop it over the right square.

Also, if you release the left mouse button without dropping over any squares, that tab will become its own window. If this wasn't desired, don't worry - you can easily snap it back to where it was. Simply drag and drop it onto one of the available squares on the main window.

But wait, I lost a tab. How do I get it back?

From the ribbon bar, select Windows and click on any of the options that are missing currently from your layout. This will open it as a separate window which you can then clip into the main window through the same process as before: drag and drop into the white squares.

If you somehow messed things up so much that you can't figure out where anything is, go to the ribbon bar and click Windows -> Layouts -> Return to Default Layout.

Feel free to experiment and make an SFM layout you're comfortable with. Once you're satisfied, try and save an .INI file of it, then load it up. If it showed up exactly as how you saved it, then it was successful!

18. How to Export a Movie

Note, I'm aware some images in this section are broken. They will be replaced in a future update. My apologies for any inconvenience.

So you're finally done crafting your masterpiece, you are ready to hit export and show it off to the world to see! But wait, before you do so, make sure you give your work the best treatment it deserves while exporting.

In the Export window, you're going to select Image Sequence. The other options take way too much time to render, look like a washed out soap opera when finished, and have absurd file sizes. Furthermore, one option requires you to install QuickTime, which is deprecated and poses a security hazard.

Image Sequence allows you to render the film frame by frame at high quality with your preferred image format. This method renders a lot faster and there is a much lower chance of corruption, as you're rendering multiple images instead of a single larger file. Make sure you set a folder destination for all the exported images and not your desktop, unless you're fine with clogging it up... (we've all been there).

Note: to access higher resolutions requires the use of Launch Commands. Refer to "Export Settings" for a refresher.

When you're done, hit Export Movie. This will take a while, but take my word for it, it's a lot faster than the other options. Make sure the option for Separate WAV file is enabled if you want audio to also be exported. Once done, we shall move on to the next exciting step!

Import Image Sequence using Blender

That's right, Blender supports Image Sequences! It's usually the free option if you have no other video editing software available that supports it.

Now I know some of you might feel like you probably won't be able to progress beyond this point because "Blender, aaaaaaaaaa!! Nothing makes sense in this program!" which is why I have taken the liberty of taking as many screen shots as possible to help guide you through the process. Shall we begin?

If you haven't already, go and download Blender. It's free! Start the program and you'll be greeted with this splash screen. Click on the Video Editing option.

Alternatively, you can access Video Editing via the top ribbon bar.

Once you're in Video Editing mode, go down to the Timeline options and click Add -> Image Sequence. Navigate to your image sequence export location, Ctrl + A to select all the images and then Import. You may want to also add the Sound file as well from the same drop down menu if your export came with a .WAV file.

Make sure your render settings are set to the correct frame rate and resolution, as well as the total amount of Frames. If you forgot how many frames there was in your render, the image sequence in your timeline will have a number at the very end of its name showing the amount of frames loaded.

If unsure, every SFM export comes with a .txt telling how many images were exported.

Over to the far right, change the Output File Format to FFmpeg Video. You may also want to set a destination folder where you want the final MP4 export to go.

Change the Encoding "Container" to MPEG-4.

Adjust your Video codec settings. This usually falls down to personal preference, but here is what I like to set it as. You can change it up however you wish.

If you have Audio loaded, go down to the Audio tab and pick out the audio codec.

With that out of the way, go to the top ribbon bar and select Render -> Render Animation.

The results

And there you have it! You'll find the MP4 file Blender exported has a more reasonable file size. If we chose to export this with SFM's AVI option, this would be way inflated and wouldn't look half as good.

Now you can do this with all your future animations and not have to worry about absurd file sizes. And the best part about it is that you don't need a $300 video editing program to do this. (But it's still nice to have, let's be honest.)

19. Bonus Tips and Tricks

Dear reader, as you have come this far into the guide, I'd like to thank you by offering some final tips and tricks to help improve your SFM experience. As I couldn't find a spot in the guide for these miscellaneous, yet noteworthy mentions, I figured it best to create a whole section dedicated to compiling them, rather than scrapping the contents.

A List of all Hotkeys!

Turns out, Source Filmmaker has a built in list of all the available Hotkey shortcuts you can use. Help on ribbon bar > Keyboard Shortcuts, or you can try to remember the four hotkey combination to open it:

Ctrl + Alt + Shift + E

Enabling Hierarchy

This allows you to sort your stuff into groups. Comes in handy, especially when you are working with a lot of props, lights, cameras and particles. The cog icon will have this option.

Grouping and Renaming Dags

Only applies if you enabled Hierarchy!

Renaming Dags allows you to sort and categorize the many different things you have loaded into your scene. Highlight a set of props you want grouped into a sub-folder, right click and then Group Selected Dags. After that, right click the created Group1 folder and then Rename Dag.

Going over 8 Lights

SFM by default only allows up to eight lights with dynamic shadows to exist in the scene. You can right click and select Disable shadows for a selected light, and you can then continue placing lights at the expense of losing out on shadows.

Great news, there is now a way to bypass the hard limit on 8 Shadowed lights! Refer to the guide below for a detailed explanation.

How to increase the shadowed light limit

Руководство по Source Filmmaker

Автор: KiwifruitDev

Hex editing, ahoy! Change your shadowed light limit from 8 to 64!

Precise Slider Values

Different from the slider range remapping, when you double click a slider, you can type in a number between 0 and 1 to take it to a precise percentage of the slider. For instance, 0.1 corresponds to 10% on the slider; 0.65 corresponds to 65% on the slider, and so on. Useful for quickly setting up a desired value on multiple elements, such as lights.

Improving performance

This little window right here may save you a lot of headaches if you have a slow computer.

If you've previously set your Depth of Field sample rate to a high amount, changing it down to 64 or less will allow you to render previews faster. Remember to set this back to a much higher, or even maximum amount, before rendering.

I recommend to set Motion Blur to the same samples as Depth of Field, or to the maximum if DoF is higher. Rendering times and quality are dependent on the highest of the two numbers, and DoF has a much higher impact on visual quality than MB.

If you're using a fairly large amount of lights with shadows enabled, disabling shadows on the lights that don't see a significant benefit can bring you back some frames per second as well.

Ambient Occlusion can also be disabled if your PC is having significant difficulties running the program.