

# PARTICLES TUTORIAL

## How to Create a Flamesword

By Maestro

### Purpose

In this tutorial you will learn how to add particles, glows or sounds to any model (weapon, armor, monster, prop, or town) in the game using point helpers in 3ds max 7 for use in Fate. For this tutorial we will be making a sword that flames (much more intensely than the flame damage applied in the game), smokes and glows.

### Requirements

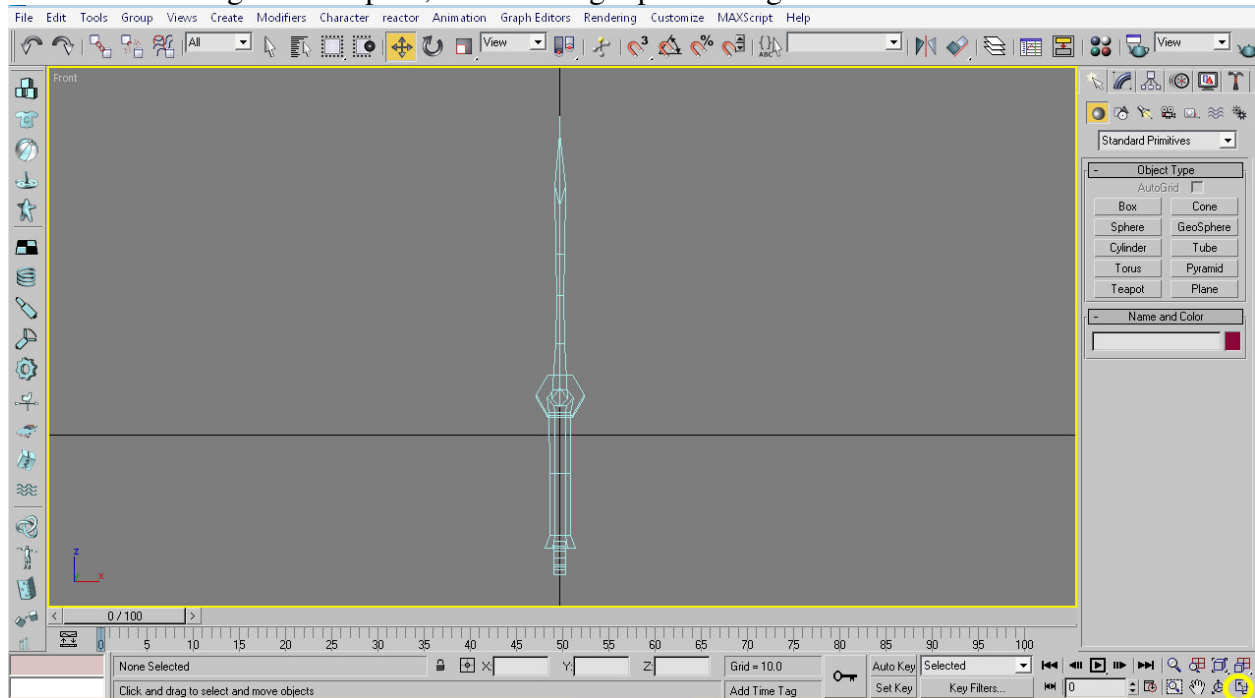
You must have 3ds max 7 in order to import your finished models into fate. **IF YOU ARE USING MAX8 OR 9 STOP NOW! MAX 9 FILES ARE NOT BACKWARDS COMPATIBLE AND YOU WILL LOSE YOUR WORK.** (I found out the hard way)

Also you will need the mod kit which can be found in the mod archive. In it are the exporters for putting files in screwdriver format which the game recognizes. Simple copy all the files in max7 exporters to the plugins folder of 3ds max. When you start the game under file – export the formats .ams, .mdl .sma .sms .scn will now appear. We also will be using the sword model from the samples in the mod kit (though any model will do).

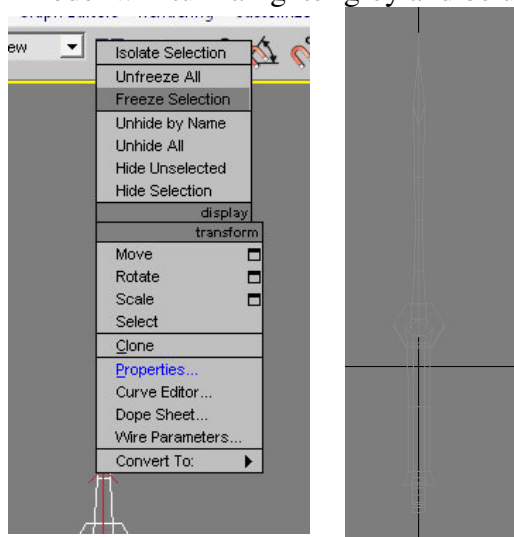


## 1. Preparing the Blade

Navigate to “\fate\_modkit\MOD KIT\SAMPLES\SWORD\sword3.max” which we will use for this tutorial. Maximize the front view so that the point helpers we add will be exactly on the sword not floating in dead space, necessitating repositioning.



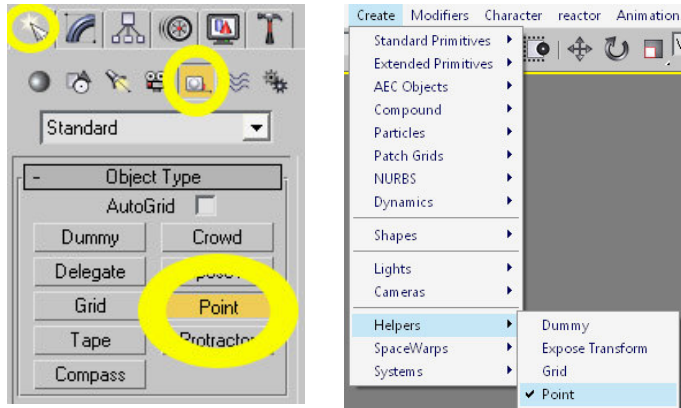
a. freezing the model. You’ll want to freeze the model so that it does not get in the way. Left click on the model to select it. Then Right click on the model. Select “Freeze Selection”. The model will turn a lighter grey and be uneditable until you right click and select “Unfreeze All.”



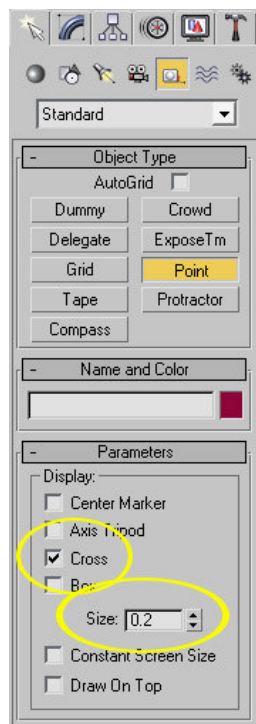
Now you can add and select point helpers on top of this while using the blade as a guide. Later we will remove the blade but for now we need it as a reference.

## 2. Point Helpers

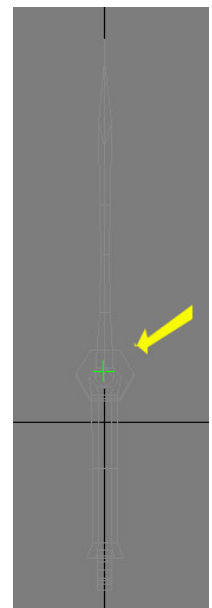
a. Go to the create panel on the right click on the helpers tab and select point. Or go to create – helpers – point.



b. Parameters. In the helpers panel once you've selected pointers there are parameters you can change. First select "cross" and uncheck any others. The size of the point helper has no effect on the particle emission in the game that is completely controlled by the particles.dat. Therefore, select a size that doesn't overlap your other pointers and make them difficult to distinguish. Pretty much for most things you will be selecting a number from 0.1-1.0 unless you're modding the town. For this I selected 0.2 as my size.

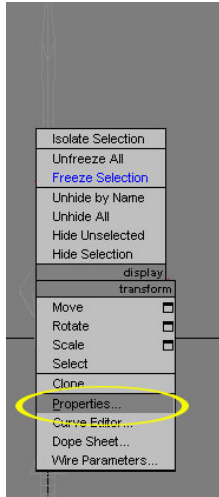


c. Adding the points. Position your mouse on the lowest point of the blade and left click to add a point helper. (Now at this point you can continue to add points but you have to name them and so if you add them all first you might miss one. If they are not named they will do nothing in the game)

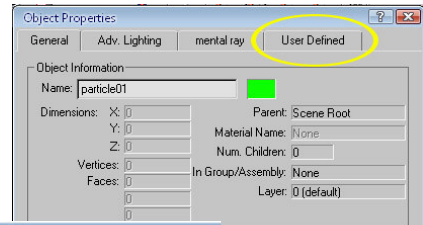


### 3. Modifying the Point Helper – Fire particle

a. Name the point. The name of the point tells the game whether the point is a particle or glow. (in the case of the town it can be a sound, merchant, questgiver etc.) As we will be adding many particles name it “particle01”. Select your particle if it isn’t already, under Name and Color in the helpers panel type particle01 in place of point01.

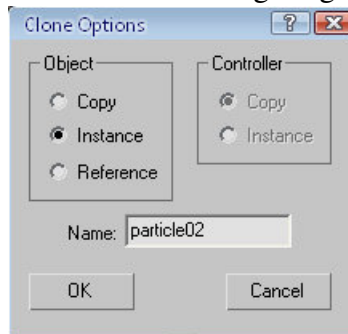
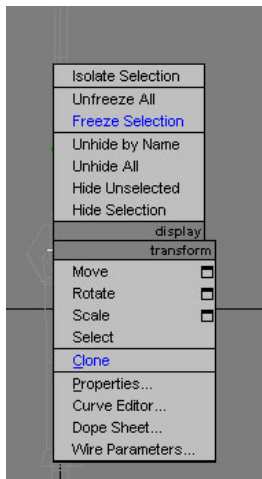
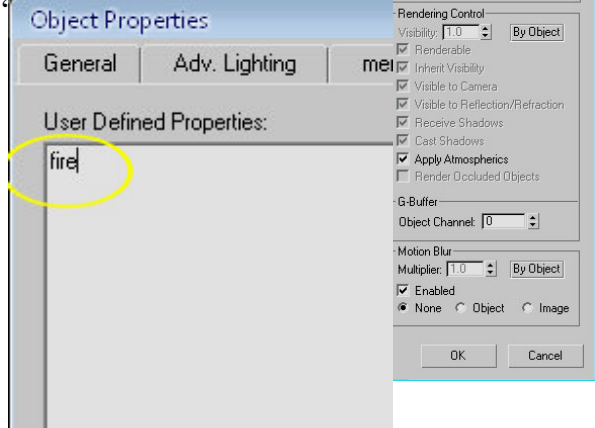


b. Change User Properties. Now select your particle if it isn’t selected. Right click on it and go to properties.

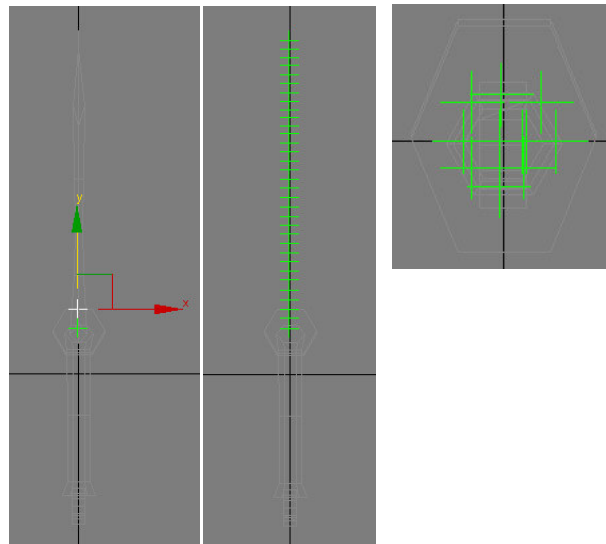


c. In the Object Properties dialogue click on the rightmost tab called User Defined. In the User Defined Properties area type in the word “fire” and nothing else (don’t hit enter or put extra spaces). Then click

d. Now to get a really good effect we will add a good number of particles up the blade. So select the particle, right click and select clone or use ctrl+v. In the Clone Options dialogue select object and the name should already be changed to particle02 for you(cool).



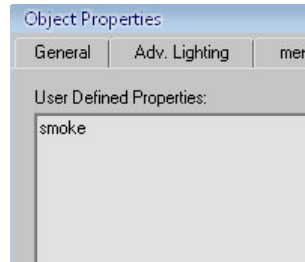
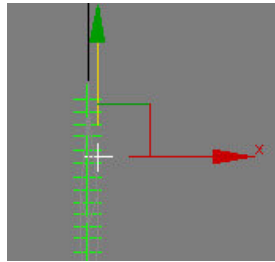
Now use the Select and move tool to drag the particle up a little. Repeat until you cover the entire blade with evenly spaced particles (the number will depend on personal preference, I used 41). Then switch to top view and put some off center at the base to give it the look that it's lighting out of the hilt.



\*Now you’re thinking “I have 41 particles! If I want to change this it will be a major pain in the gluteus maximus!” Au Contrare! You can select all the particles, right click, go to properties, and change the type of particle for all of them, so trying out different looks is a cinch.

### 3a. Modifying the Point Helper – Smoke

a-b. Repeat steps a & b of section 3 (create point, name it particle34, right click, go to properties) You should put this particle at the top of the sword if you want to see the effect or it will get swallowed up by the other particles essentially. I would also offset it slightly to the right or left of the other particles so you can distinguish it.

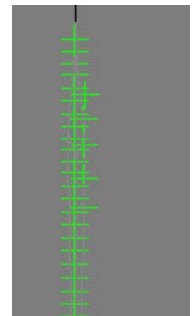


c. Go to the rightmost tab User Defined. In the User Defined Properties space type “smoke” or any of the smoke particles from the particles.dat (smoke is a little darker, steam is very light [looks good for pipe smoke] chimney smoke is large and dark and more intermittent, purple smoke is well purple).

### 3b. Modifying the Point Helper – Sparks

a-b. Repeat steps a-b. from 3&3a. create about 4 points concentrated at the top of the blade to get rising sparks from the flame to make more real.

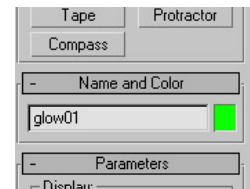
c. Go to the rightmost tab User Defined. In the User Defined Properties space type “firespark”



### 3c. Modifying the Point Helper – Glow

a. Create another point about halfway up the sword and slightly offset to the right or left. Name this “glow01” naming it glow now makes the game look in the glows.dat for the type of glow to use.

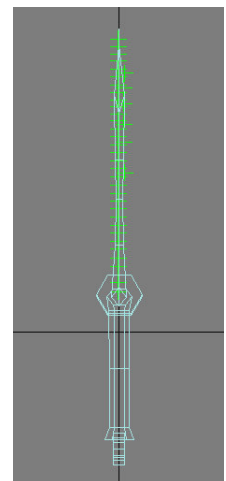
b. Right click on the glow, go to properties.



c. Go to the rightmost tab User Defined and in the User Defined Properties space type “fireglow”

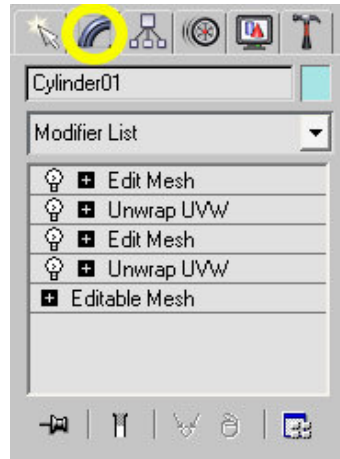
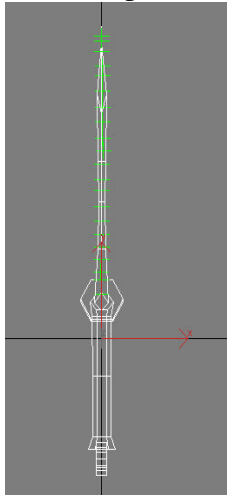
Finally, right click anywhere and select unfreeze all, to show your model again.

\*Now, you could stop here and have a lovely flaming sword. The next section will show you how to remove the blade and have a true flamesword. The final section will show you how to create a custom particle to get just the type of fire you want.

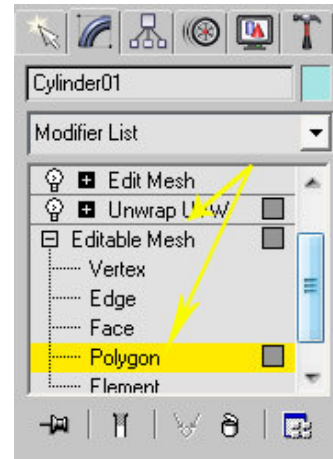


#### 4. Removing the blade.

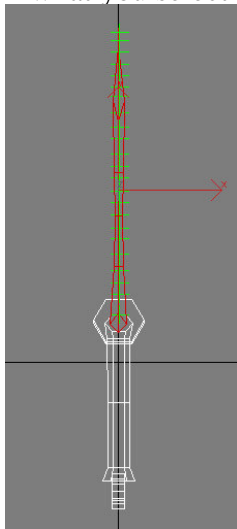
- a. First select your model.  
Click on the sword hilt not the point helpers.
- b. Next go to the modifiers tab



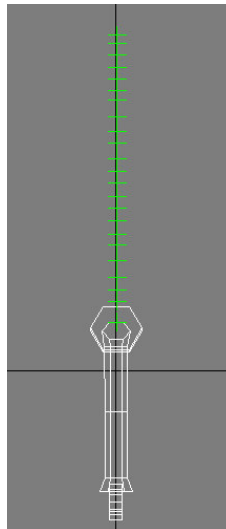
- c. Expand Editable Mesh and click polygon.



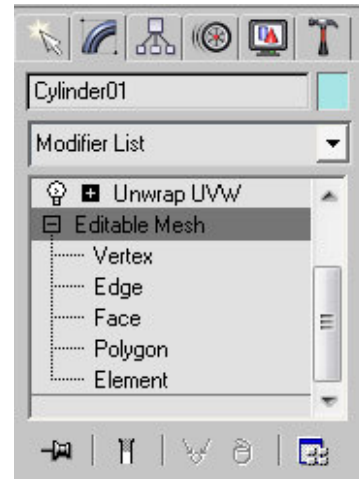
- d. Select the blade in the view window by dragging a box around just the blade, what you select will be red



- e. Press delete.



- f. Click on Editable Mesh to unselect poly.



## You're Done! Well not quite...

### 5. Creating a Custom Fire Particle

Here is the finished sword in game:

Now it looks ok but it doesn't look convincingly like a blade of fire and when you start swinging it around it becomes even more obvious as the flame trails behind and you're just waving a hilt around. Now we could change the kind of particle we're using. To do this we could carefully select all the fire particles—not the smoke, sparks, and glow—and change it to bigfire, candlefire, spellfire, dragonfire, or greaterdragonfire. But candlefire is way too small, bigfire is a little big but I'll probably use it for another model; however, spellfire and the dragonfires present a problem because they flash on and off. There is also small fire but that is the default in the game and what fun is that? The spell fire is the most solid of the fires and therefore most useful for making a solid looking blade but the flashing is no good—your blade keeps disappearing and reappearing, very annoying.

This leaves us with one choice: to create a new particle.

a. Go into your mod folder create a folder called flamesword (or whatever you like) then create a folder in it called particles, then within that create a particles.dat file (make a notepad file then change it to particles.dat, when it asks if you want to change the type of file click yes—if you don't see the .txt or .dat extensions on your file you need to go to folder options – view – unclick hide extensions for known file types).

b. Then go into your game root directory, go into the particles folder and open particles.dat. In there copy the particle fire. You have to be sure to copy EVERYTHING from [PARTICLE] to [/PARTICLE]. It should look like this. Paste this into the particles.dat you created in MODS/flamesword/PARTICLES/ Now we can begin to edit the particle.



```
[PARTICLE]
<NAME>:FIRE
# does motion blur?
<BLUR>:1
# <FREQUENCY> between 0(never) and 1(every frame)
<FREQUENCY>:.1
# <TEXTURE>:base:alpha:additive
<TEXTURE>:NONE:NONE:PARTICLES/Fire.png
# <SIZE>:worldspace unit width
<SIZE>:1.5
# <MAXIMUM_PARTICLES>:maximum number in scene at once
<MAXIMUM_PARTICLES>:200
# <FADE_SPEED>:in rgb/second
<FADE_SPEED>:0
# <FRAMES>:for flipbooks - 0 for none - wide AND high
<FRAMES>:4
# <FRAME_SPEED>:seconds per frame
<FRAME_SPEED>:.1
# <GRAVITY>:acceleration vector
<GRAVITY>:0:4:0
# <SCALE_SPEED>:units/second
<SCALE_SPEED>:-.01
# <MIN_ROTATION_SPEED>:in degrees/second
<MIN_ROTATION_SPEED>:-50
# <MAX_ROTATION_SPEED>:in degrees/second
<MAX_ROTATION_SPEED>:50
<MIN_STARTING_OFFSET>:-.18:-.18:-.18
<MAX_STARTING_OFFSET>:.18:.18:.18
<MIN_STARTING_VELOCITY>:0:0:0
<MAX_STARTING_VELOCITY>:0:15:0
<MIN_STARTING_SCALE>:.5
<MAX_STARTING_SCALE>:1
<MIN_STARTING_ZORIENTATION>:0
<MAX_STARTING_ZORIENTATION>:360
<MIN_STARTING_OPACITY>:255
<MAX_STARTING_OPACITY>:255
<MIN_LIFETIME>:1.5
<MAX_LIFETIME>:2
# the following are for flipbooks only
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<MIN_STARTING_FRAME>:0
<MAX_STARTING_FRAME>:0
[/PARTICLE]
```

## 5a. Explanation of the Particle Tags

Now I want to be clear, I don't profess to know exactly what each tag does but I went ahead and changed the values and empirically recorded this data which I will share with you, to hopefully take some of the mystery/busywork out of making your particle.

<NAME>: Change this to SWORDFIRE or whatever you like but DON'T leave it as FIRE or you will replace every fire in the game with your new animation and it will look strange.

<BLUR>: 1or0. This decides whether the sword leaves a blurred trail behind it when you swing it. For giving your sword more of an illusion of having a blade this is a must, so put 1.

<FREQUENCY>: 0-1 Changing this to 1 will make your sword only appear once a frame so your sword will blink on and off. Leaving it at .1 will make it stay consistently visible. I recommend leaving this one at .1.

<TEXTURE>: This decides which picture to use for the particle's face. This is important if you want to create a different color blade. The particles green, blue, purple and redspellfire exist, but as I said earlier the spellfires blink on and off. So to create a colored fire particle select one of the other png's or create your own custom one.

<SIZE>: This will decide the overall size that your particles will take up not the size of the particles themselves. Increasing this will make your blade very fat. The 1.5 that is there is a good size but you can play with it. Past 2 looks a little overdone and envelopes your character while he walks and fights.

<MAXIMUM\_PARTICLES>: This decides how many fire particles will be packed into the space you specified. 200 is the default which gives a more transparent flame but the spellfires use 500 which I prefer because it gives you a very intense solid flame that really looks like it would hurt. Beyond 500 there's not much difference if any.

<FADE\_SPEED>: This is 0 or a negative number—positive numbers have no effect and mess up some lamps (huh?). This decides how fast the particles will fade away. The default for all fire is 0. Now this is useful because when you swing your sword it leaves behind about 5 after images as it were in the air that give the illusion of a flaming trail, which is cool, though the blade kind of disappears from the hilt as you swing then catches up to the hilt. But interestingly if you put in -1000 or higher (lower?) the sword doesn't leave behind many trails in the air and the flame blade stays on the sword the whole time, while you fight and while you run. The downside? It doesn't look as good in the splash screen but if you go with -1000 it's not too big a deal. At -2000 the blade leaves no trail and stays exactly on the hilt. Somewhere between -2000 and -3000 the blade disappears. I really like the look of -1000 but you might like the big trails.



<FRAMES>: This one needs to be 4 for all fire. If you change it to 0 your flame turns into little beads of fire goes straight up into the sky and never comes back (rofl, its really funny you should do just to watch once, "hey dude! My swords' outa gas, when are they gonna invent gas station in this town?). Ahem, and changing it to 10 makes your flame turn into jagged boxes go up into the sky and come back in a few seconds. So I say leave it at 4, but that's just me.

<FRAME\_SPEED>: This one is important. This decides how many frames the fire animation takes. A number closer to 1 will make the animation linger then disappear. The dragonfire uses .8 so that it can create a big puff of flame and then vanish as it should. But for the sword you want a consistent animation. Therefore I recommend. .1 and lower. To low (.03 and lower) and the animation of the particles blossoming into balls of fire doesn't have enough time and your flame becomes sporadic and incomplete. I settled on .08. It gives a nice solid robust flame that doesn't flicker.

<GRAVITY>: This is also important. The higher the middle number the less your particles will rise, as they are held down by gravity. This will give your blade a much more compact feel but takes away the licking flame feel at the top. A low number will let your flames soar up into the sky. I prefer to leave it at 4 but changing it would give you a longer blade in a way if you didn't want to actually make more particles or want to change someone's mod.

<SCALE\_SPEED>: This one is linked to scale min and max. This decides how fast your blade grows to the scale specified in scale min and max. The scale effects the particle size, unlike size that effects the space the particles can take up. The default -.01 is so slow that each flame particle grows a little but never reaches the full size in the scale before it fades. This is what gives the blossoming fire effect to the flame. But if you raise the scale speed to a positive number it actually reaches the scale size very quick or instantly if you keep going high enough. So the blade becomes like a big poofy candle flame. Which you might like, I think it's over the top. I say leave this one at -.01.

<MIN\_ROTATION\_SPEED>, <MAX\_ROTATION\_SPEED>: This controls how fast the particles spin around. It creates an interesting affect in the splash screen, in game play it's unnoticeable. I wouldn't bother with this one.

<MIN\_STARTING\_OFFSET>,<MAX\_STARTING\_OFFSET>: This will actually offset your flame from your hilt. I'm thinking there's a way this would be useful if you had some sort of gas powered something where at the point the gas is, the flame appears above it? Anyway all the flames have .18 except for the candle .1, so I would just leave it.

<MIN\_STARTING\_VELOCITY>, <MAX\_STARTING\_VELOCITY>: This will give velocity to your flame while your standing still. In otherwords it makes it look like it does when you're running even though you are standing still. Like as if a strong wind were blowing it. So if you want the illusion of wind, then I say go for it!

<MIN\_STARTING\_SCALE>, <MAX\_STARTING\_SCALE>: This is the size of the individual particles. Decreasing this too much has no effect and makes, the lamps have errors and or makes your blade disappear (probably because you go smaller than the png for the particle can display?). Increasing this on the other hand will make your sword envelope your entire character in a ball of flame at about 5min 10max. This would be a really cool idea for an armor mod or helm mod. You could assign little flame particles to the surface, then have one particle in the center that envelopes you and you'd be this total fire ball. Or it would make a really cool monster: Fireball or Meteor. Or at a smaller scale you could have these blazing gloves. Anyway.

<MIN\_STARTING\_ZORIENTATION>, <MAX\_STARTING\_ZORIENTATION>: This has to do with the rotation of the particles I'm assuming. All the particles have this identical so I would leave it.

<MIN\_STARTING\_OPACITY>, <MAX\_STARTING\_OPACITY>: This changes the opacity (amount that light cannot go through) the particles. Essentially, it is how much your overall flame is transparent (see-through). 255 is the max and looks the best. The smokes smaller numbers, so if you want your blade to be lighter and more translucent, you can turn this down but all the flames use 255 in the particles.dat.

<MIN\_LIFETIME>, <MAX\_LIFETIME>: This makes the particles linger but it's very subtle. Perhaps if you change the frame speed it would have more effect. In greaterdragonfire this is higher but so is the frame speed in that one. I would leave it at the default 1.5 and 2.

# the following are for flipbooks only

<MIN\_ANIMATION\_LIFETIME>:1

<MAX\_ANIMATION\_LIFETIME>:1

<MIN\_STARTING\_FRAME>:0

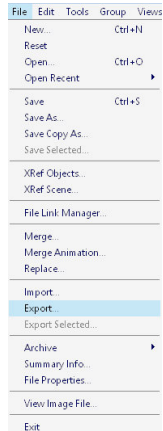
<MAX\_STARTING\_FRAME>:0

If you change anything in this last section the animation gets off like with the <frame>: tag. So I would leave this alone and then you are done, my friend!!!!

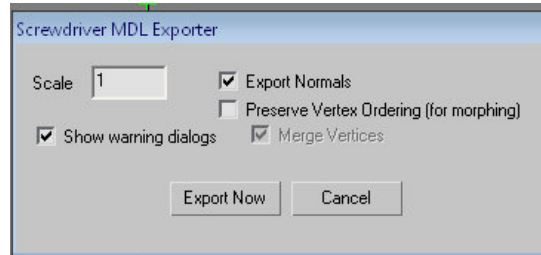
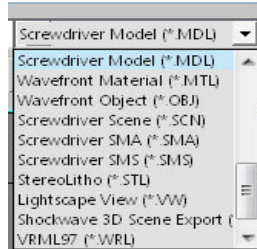
## **5b. Assigning your particle**

Now that you have created your particle, go back into the max file select all the fire particles not the smoke, sparks or glow (if you offset them a little like I said, this should be easy). Right click go to properties - User Defined, and change it to swordfire or whatever you called your particle.

## 6. Exporting your Sword



Go to File – Export. Now if you copied the exporters into the plugins folder and restarted max then in the dropdown for filetype should be screwdriver model .MDL. Navigate to the root directory for Fate, go to the MODS folder, open the flamesword folder or whatever you called it. Create a folder called “ITEMS”, name your sword model with no spaces, click Save. The export dialogue will come up and it should look like the picture below. Hit export and you are ready to try your sword.



## 7. Making the Flame Sword Item

Go to your game root directory/MODS/flamesword/ITEMS/ and create an items.dat. Go to the Items folder for you game and open items.dat. Copy the information for one of the swords from [ITEM] to [/ITEM]. Paste into your items.dat. After model change it to MODS/flamesword/ITEMS/flamesword.mdl . Now go back to the flamesword folder create Icons folder and create an icon and an alpha. In your items.dat after <icon>: type MODS/flamesword/ICONS and the name of your icon. Rename the Sword. I personally added extra firedamage as well.

Create a mod.dat in the flamesword folder and load it up with Modman to try it out. Have fun!!

**For more information on how to get this model into your game and/or make it modman compatible visit the tutorial archive: <https://forum.wildgames.com/showthread.php?t=4582>**

## My Final Particle (I'm sure I'll change it 100times)

[PARTICLE]

<NAME>:SWORDFIRE

# does motion blur?

<BLUR>:1

# <FREQUENCY> between 0(never) and 1(every frame)

<FREQUENCY>:.1

# <TEXTURE>:base:alpha:additive

<TEXTURE>:NONE:NONE:PARTICLES/fire.png:

# <SIZE>:worldspace unit width

<SIZE>:1.5

# <MAXIMUM\_PARTICLES>:maximum number in scene at once

<MAXIMUM\_PARTICLES>:500

# <FADE\_SPEED>:in rgb/second

<FADE\_SPEED>:-800

# <FRAMES>:for flipbooks - 0 for none - wide AND high

<FRAMES>:4

# <FRAME\_SPEED>:seconds per frame

<FRAME\_SPEED>:.08

# <GRAVITY>:acceleration vector

<GRAVITY>:0:4:0

# <SCALE\_SPEED>:units/second

<SCALE\_SPEED>:-.1

# <MAX\_ROTATION\_SPEED>:in degrees/second

<MIN\_ROTATION\_SPEED>:-50

# <MAX\_ROTATION\_SPEED>:in degrees/second

<MAX\_ROTATION\_SPEED>:50

<MIN\_STARTING\_OFFSET>:-.18:-.18:-.18

<MAX\_STARTING\_OFFSET>:.18:.18:.18

<MIN\_STARTING\_VELOCITY>:0:0:0

<MAX\_STARTING\_VELOCITY>:0:15:0

<MIN\_STARTING\_SCALE>:.5

<MAX\_STARTING\_SCALE>:1

<MIN\_STARTING\_ZORIENTATION>:0

<MAX\_STARTING\_ZORIENTATION>:360

<MIN\_STARTING\_OPACITY>:255

<MAX\_STARTING\_OPACITY>:255

<MIN\_LIFETIME>:1.5

<MAX\_LIFETIME>:2

# the following are for flipbooks only

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<MAX\_ANIMATION\_LIFETIME>:1

<MIN\_STARTING\_FRAME>:0

<MAX\_STARTING\_FRAME>:0

[/PARTICLE]