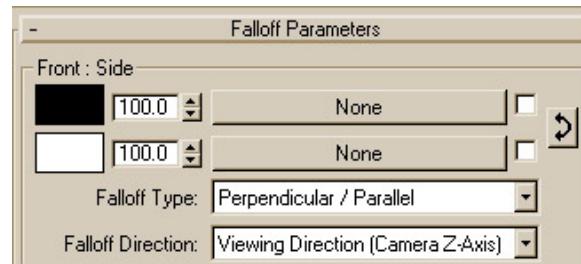


3D Studio Max: Materials Leslie's Toon Shader



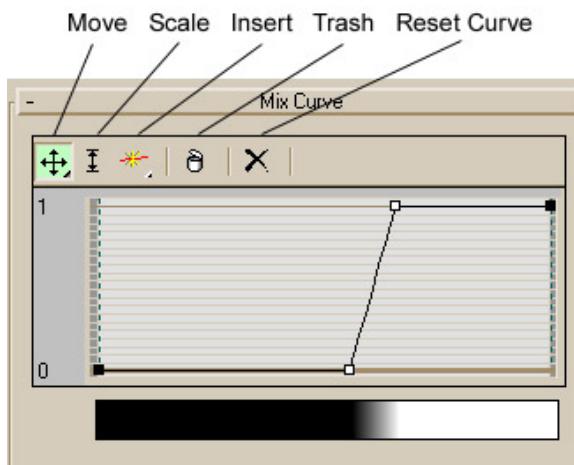
Here's a way you can simulate those expensive toon shader plugins to get that flat-rendered, black outline look for your 3D objects.

1. Start with a new material in the Material Editor.
2. Uncheck Color for Self Illumination and set the amount to 100.
3. Click on the box next to the Diffuse color swatch to apply a map.
4. Choose the Falloff map type.
5. Accept the following default settings:
 - Falloff Type: Perpendicular / Parallel
 - Falloff Direction: Viewing Direction (Camera Z Axis)
6. Use the double arrows on the right of the panel to swap the two color swatches.
7. Select the white color swatch and set it to the color of your choice.
8. You can leave the other swatch black or choose an alternative dark color. This will be your outline color.



Next, you adjust the gradation between the light and dark colors to achieve the outline affect. The goal is to create high contrast with a slight gradation to "anti-alias" the outline color.

9. Scroll down in the Falloff Parameters window until you see the Mix Curve at the bottom.
10. Insert two vertices anywhere on the curve.
11. Move the vertices so that they resemble the image on the right. Observe how the color bar at the bottom reflects your curve changes.



Now you are ready to apply the material to your objects. Test render and observe your results! You will probably wish to make modifications to the Mix Curve to control the quality of the black outline.

12. To soften and blend the edges of your outline with the fill color, widen the gap between the two middle verticies you inserted on the curve. This will graduate the change from dark to light.
13. To control the thickness of the outline, select both verticies and slide them horizontally. Positioning them towards the right will create thinner lines. Positioning them towards the left will create thicker lines.

Caveats

A true "toon shader" would give you more control over the outline and how it defines the surface. However, this method produces lines that vary in thickness, which has an interesting quality.

Because this method uses self-illuminated materials, it's not possible for your objects to receive shadows. However, they can cast shadows.



Stay tooned for part 2 of this handout which shows you how to simulate a shadow effect!