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CS 148 Final Image Report

Project Requirements

- Main geometry from scratch
 - Caterpillar, leaves, and dew drops are all crafted from scratch.
 - The caterpillar was made using only toruses and spheres to model the image reference shown below. Each torus is rotated and stretched in various ways to match the shape of the caterpillar.
 - The first leaf was made by adding vertices to a plane and shaping the plane to the shape of the image of a leaf. The top of the leaf is a plane with the texture of the top of a leaf, and the bottom is likewise a close-by parallel plane with the texture of the bottom of a leaf. This pair of planes was then molded using Proportional Editing for each of the five leaves in the scene to capture the dynamic and diverse shapes found in nature.
 - The dew drops were made by starting with a sphere and then grabbing vertices and stretching the sphere as needed using Proportional Editing.
 - caterpillar texture mapped from scratch
 - Each torus from the geometry is mapped to a different section of the reference image to match the caterpillar's texture using the UV editing page. In certain areas, the faces of the torus were manually adjusted to match the texture mapping from other toruses. Using the 'project from view' feature was very helpful in mapping the texture from the camera view so that the texture lines up when rendering.
 - the leaf and the dew drops make use material nodes
 - The leaves all use the same top and bottom leaf texture, which as explained earlier, are UV-mapped to opposing outward-facing sides of parallel surfaces. Once the texture was mapped, we used material nodes to adjust the texture of the leaf, including using the color to determine displacement. See Figure 1 for the nodes used to texture both surfaces of each leaf.
 - The dew drops were made using a custom material with the nodes shown in Figure 2 based on the Glass BSDF provided by Blender.

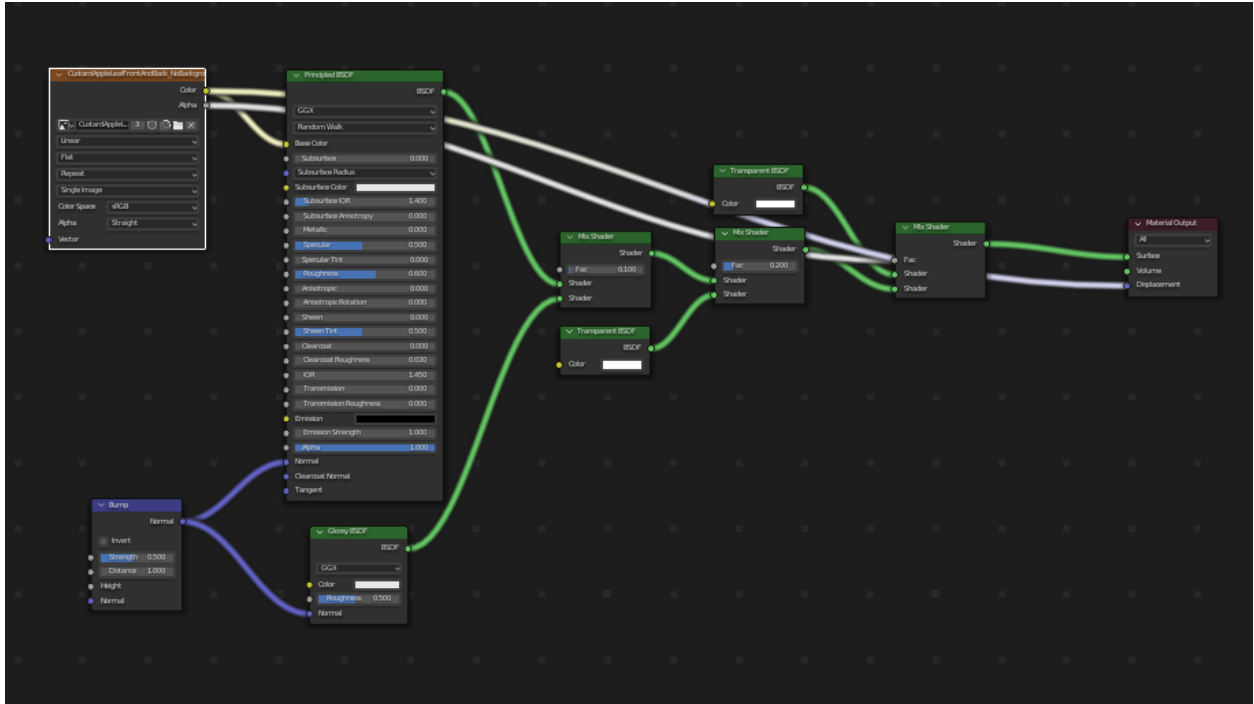


Figure 1. Material Nodes used to create custom texture for the top and bottom of each leaf.

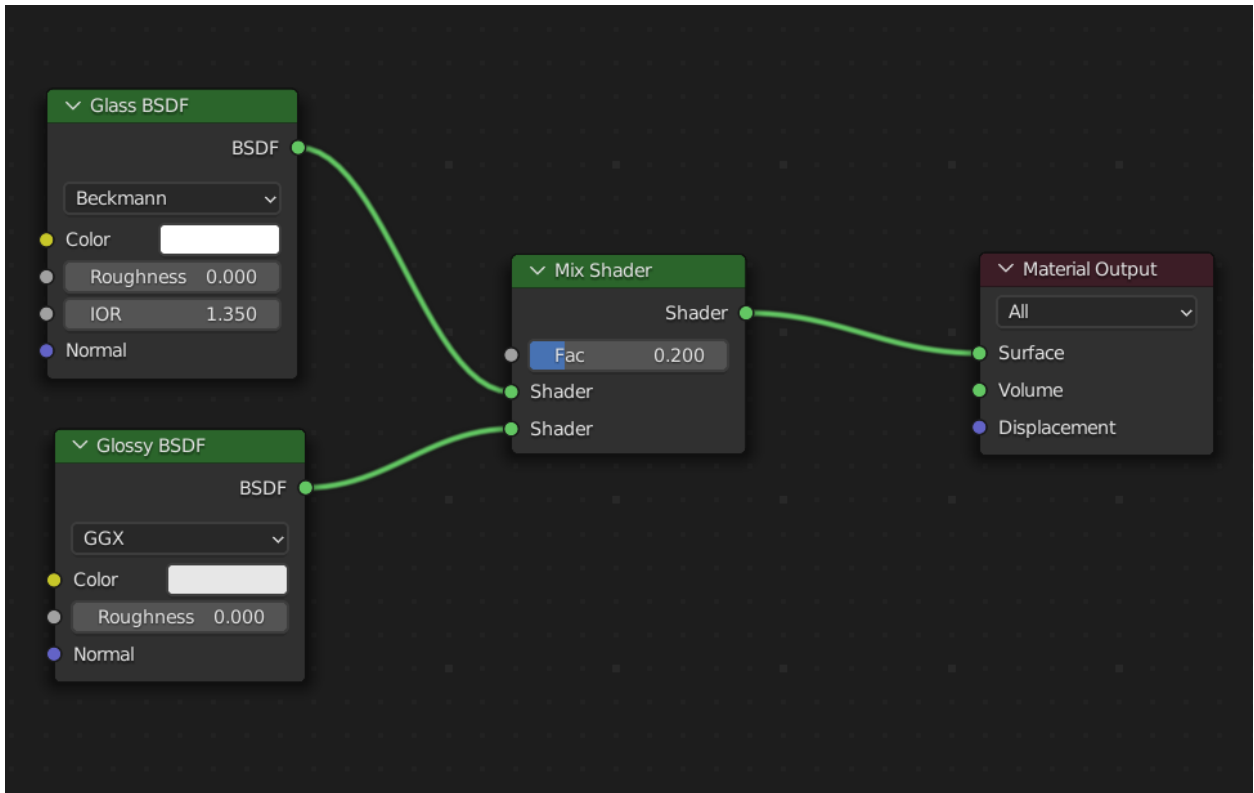


Figure 2. Material nodes used to create custom water material used in dew drops.

- Blender/Cycles feature
 - One advanced feature that we used is depth of field. Our focal point was the falling dew drop, which is close to the head of the caterpillar. The effects of depth of field are most notably seen in the blurriness of the HDRI background as well as in the slight blurriness of the backside of the caterpillar. We used this feature to highlight the dewdrop and head of caterpillar, allowing the surroundings to fade away, as though a photographer had encountered this scene and snapped a photo through the brush.
- Cite your Sources

What each member of the group did

- Kate Eselius - keselius
 - Caterpillar geometry and texturing
- Jamie Ullman - jamieu
 - Leaf geometry and texture
 - Dew Drop geometry and texture
- Both collaborated on each others parts and worked together and in person to decide on composition, additional modeling changes, and HDRI background

What assets you downloaded from online vs. what assets you made yourself

- All geometry was made from scratch (using some references as listed below)
- Downloaded Assets:
 - Leaf texture image source: ([link](#)). This image was obtained on a **free trial**.
 - Caterpillar texture image source: ([link](#)).
 - This image was edited to be more easily UV-unwrapped onto. See Figure 3.
 - HDRI Background: source: ([link](#))



Figure 3. Caterpillar base image

What tutorials (documents/videos) you referenced if any

- Caterpillar
 - By hand, using only the reference image shown above.
- Leaf and Dew Drop
 - From Demo ([link](#))
 - Note: Leaf shape and styling as well as aspects of the dew drop's material properties we changed beyond what is described in the demo.