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IV1 Report

CINE 4200

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Figure 1: Final edited image

The intent of this image is to capture fluid physics principles in everyday phenomena. Since enrolling in Flow Visualization, I began to notice flow physics in day to day items that I had not before. This teardrop effect created by water rolling off a leaf was one of them. I had originally not been able to capture a satisfactory image during a rainstorm, and recreated the scenario with the help of Bella Drummond, who sprayed water on the leaf as I took images.

The flow apparatus used in this image was a leaf still attached to a bush, alongside a small spray bottle filled with tap water. The image was captured with a Nikon D3300 and a 50mm prime lens.

The phenomenon captured in the above image is a result of surface tension, adhesion and gravity. Surface tension causes the water to hold itself together and tries to minimize surface area by forming a sphere (Jones). However, as you can see here the water forms a “tear” shape, this is due to its adhesion to the leaf and the stretch of gravity. As more water collects, the drop will continue to stretch until gravity breaks its link with the leaf.

I wanted the sole focus of my image to be the leaf and the drop, and didn’t want to capture any extraneous information. In order to accomplish this, I used a fixed 50mm AF Nikkor lens on a Nikon D3300 body and aperture of 2.8 to best achieve a shallow field of view. Originally the image was of size 6000 x 4000 (see figure 2). First, I cropped the photo using Darktable resulting in a final size of 4676 × 3075. Next, I altered the exposure and base curve of the photo in an attempt to make the image more “crisp”.



Figure 2: Original unedited image

This simple image reveals the phenomena behind an occurrence most people have experienced. The simplicity of the image demands the viewers focus on the fluid physics occurring. I would like to improve some distractions in the background, such as the large white sun glares. This was difficult in post processing to obtain a natural mask to cover these areas. I believe that attempting to capture this image on an overcast day would solve this problem.

## References

Jones, Andrew Zimmerman. "What Is Surface Tension? Definition and Experiments." *ThoughtCo*,  
[www.thoughtco.com/surface-tension-definition-and-experiments-2699204](http://www.thoughtco.com/surface-tension-definition-and-experiments-2699204).