

Taylor Powers
Jean Hertzberg
FlowVis
April 23, 2014

Third Team Image Report

For the last project of the year, I decided to work with eggs because I had wanted to in the beginning of the year and I never did. My group and I also could not arrange a time to get together so I had total freedom in the deciding process. Eggs are a unique substance and viscosity and I thought experimenting with them would be fun and interesting – it was. I decided to add food coloring to the yolk of a raw egg and watch it boil. I was hoping to see the color and yolk erupt in a sense, but they more flowed out not as violently.

I first poured honey, corn syrup and a bit of oil into the pan, because I didn't want the egg to burn, and I wanted the motion to be slowed down. I then cracked the egg into the pan, yolk still together, stabbed the yolk gently with a knife, and squeezed in the food coloring. I did this twice, once with blue and once with red. The blue was first, and we faced an error with the amount of food coloring I put in – not enough, because it did not burst the yolk. With the red, I squeezed in a generous amount of dye into the yolk, which made it break. It flowed out of the egg, yolk and dye while mixing. The yolk spread faster and the dye followed, spreading more and more each second. I think the dye got caught in the middle of the yolk, and when it broke because of pressure, the yolk released quickly, and the dye was still condensed until it touched air.

I had the pan on the stove on temperature low. I had lights from the sides only and the kitchen lights off. I did have natural light in the room from the windows though.

Using a DSLR D5200, on a tripod directly above the experiment, I videotaped the entire 12 minute process. I the field of view was small, for the camera was approximately a foot and a half above the pan. I was zoomed in slightly to only get the view from within the pan – none of the stove was in the image. I had the camera set to automatic with no flash. When downloading the video, I could not compress or export the file to get it into an editing program such as Imovie or Final Cut Pro. I played it in Quicktime player and took screen shots to make a stop motion of the phenomenon I was trying to portray. In Photoshop I only cropped the photos so they were all the same size.

The images reveal the flow that the egg and dye took in the order of egg than dye. I thought it was interesting that the egg moved faster than the dye, but then once the egg spread to capacity, the dye flowed through the yolk quite rapidly. I like that I was able to show this phenomenon, however I would've been happier if I could've gotten the video to work because I wanted to put it in slow motion, fast forward, normal and backwards, however, taking that many pictures of the video for the stop

motion would've taken too long. I think that I could develop this idea further and experiment with eggs and dye incorporating different variables that would affect the flow as well.