

Working with the high speed camera, viscosity effects can be observed by popping a water balloon with a knife. Water balloons were the subject of MCEN 4228 Flow Visualization, Group Assignment #1. By filling and breaking water balloons, viscosity of water could be studied. A high speed camera was used to capture a knife piecing a water balloon.

Viscosity can be captured with a high speed camera by using a tripod to shoot a water balloon on the ground in front of the camera. Viscosity describes a fluid's internal resistance to flow and may be thought of as a measure of fluid friction (Wikipedia). By popping a water balloon with a knife, viscosity can be observed. When the latex on the balloon is popped it retreats quickly and leaves a ball of water. Gravity can be observed crumpling the ball of water and forcing the water to the concrete. Viscosity can be observed by how long the water stays in a ball before gravity can overcome the friction forces of viscosity.

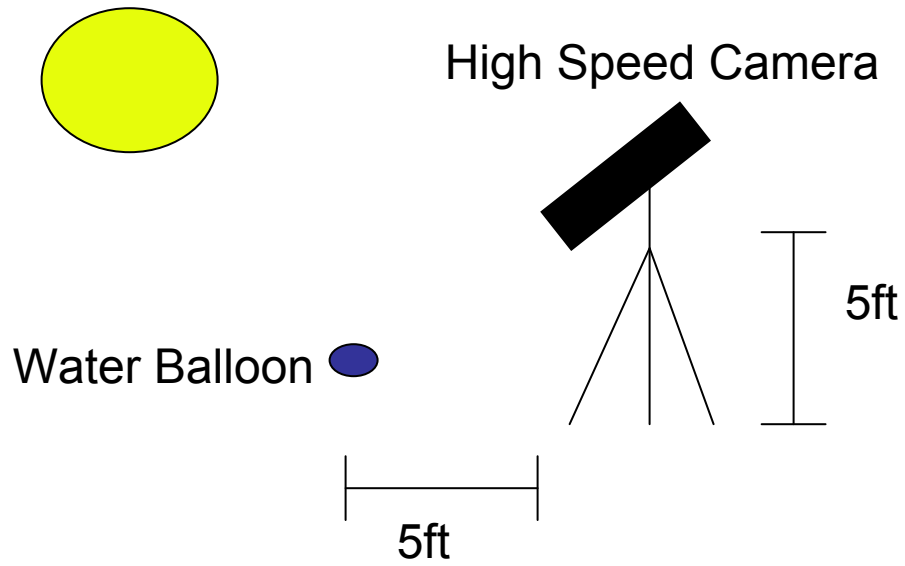
Since the ball of water crashed to the ground so quickly a high speed camera was needed. The high speed camera was placed on a tripod about 5 ft from the ground. The camera was pointed down at a 45 degree angle to a water balloon resting 5 ft away. The water balloon was about 6 in diameter (Appendix A). The balloon was then popped with a knife. The time it took for the balloon to crash to the ground was 1/30 sec.

To see the water on the camera natural lighting was used. The latex water balloon filled up with tap water and was rested on the concrete. On the day the picture was taken the sun was very bright with little clouds. The sun allowed the water to be noticeable on the camera.

The photographic technique used was the high speed camera. Using the high speed camera, 300 frames per second was capture. This was then turned into a video that shows a slow motion view of the water balloon popping. The 10 sec AVI file was edited in Adobe Premiere CS4. The color level was adjusted, the imaged was cropped. The time scale was cropped, and a title was added. The outcome was a slow motion video of a balloon popping.

During this assignment I learned a lot about video editing software and techniques. To edit the video I tried software such as imovie, and adobe premiere CS4. It was cool to see the difference between basic video editing software and professional video editing software. Using the high speed camera was also really interesting. How the speed of the camera effects the lighting was also interesting. On this assignment I tried something new and learned a lot.

Appendix A



References:

Wikipedia. "Viscosity"  
<http://en.wikipedia.org/wiki/Viscosity>