AAPT High School Physics Photo Contest

The AAPT High School Physics Photo Contest is an international competition for high school students. For many years this contest has provided teachers and students an opportunity to learn about the physics behind natural and contrived situations by creating visual and written illustrations of various physical concepts. Students compete in an international arena with more than 1,000 of their peers for recognition and prizes.

Photo Contest Details

The contest is open to high school students in grades 9-12 (or equivalent international grade level). Entries are welcome every year between March 1 and May 15 for that year's competition.

There is a limit of 15 entries per school each year.

Photos may be entered in one of two categories described below, and will be judged on the quality of the photo and the accuracy of the physics in the explanation that accompanies the photograph.

Category Examples (2008 Winners)

Natural photo

Contrived Photo

Categories

- Natural photos are those that involve everyday situations that may demonstrate a variety of physics concepts.
- Contrived photos are those that are set up to show a particular physics concept or related set of concepts.

For additional information and suggestions for classroom use
contact photocontest@aapt.org

Judging of the photos is done in two stages.

1. A committee of physics teachers will select the top 100 photos from the total entries received. (scoring approximately 40% essay and 60% photograph)
2. The top 100 photos (50 Contrived, 50 Natural) will be displayed and judged at the next AAPT Summer Meeting to determine the final winners.
3. Winning entries receive awards as follows:

- Student 1st place $100 and a certificate
- Student 2nd place $75 and a certificate
- Student 3rd place $50 and a certificate
- Teachers of 1st, 2nd, and 3rd place students receive a $100 gift certificate from Vernier and a certificate.

Questions

For any questions regarding the contest or registration, please contact the AAPT High School Physics Photo Con test at photocontest@aapt.org, or 301-209-3340.

School: Glenbard West

Teacher: Bruce Medic

This photograph shows a non-Newtonian fluid on a vibrating speaker. The fluid is oobleck, a suspension of cornstarch in water. Oobleck is a non-Newtonian fluid because its viscosity is affected by pressure. Specifically, it is a dilatant fluid, meaning that as pressure is increased on the material, its viscosity increases. This happens because the sugars from the corn starch are not able to move freely past each other when pressure is applied, and it behaves with some characteristics of a solid rather than a free flowing aqueous solution. Because of the pressure applied by the speaker to the oobleck, the oobleck moves, but is not thrown off the speaker as would be expected with the same experiment with only water, for example. The speaker applies pressure by striking and retracting extremely quickly, so the pressure applied to the ooblick is constantly changing. If a higher frequency had been used, the oobleck would have behaved more like a solid, and clumped together. However, it was determined that about 30 hertz was the sweet spot for this suspension, and the oobleck started to change back to a liquid before the stereo struck again, as seen by the plateaus and columns in the photograph.