Tennyson Students “Starry-Eyed” Over Physics Circus

CASPER kicked off its first Physics Circus with a “bang.” Or perhaps a flash and crackle would be a more appropriate description of the science demonstration show filled with laser lights, neon tubes and lightning. Approximately one hundred seventh-graders from Tennyson Middle School showed up on May 12th for the event along with several of their teachers. The event was held on the campus of Texas State Technical College and lasted most of the school day.

The students took part in several activities during the day, including a theatre performance of physics demonstrations, both indoor and outdoor hands-on experiments, and an Egg-Drop design contest. Overwhelmingly the students voted the design contest as the most enjoyable activity of the day. Student groups of four were required to design and build an apparatus that would safely allow an egg to drop from a height of 20 feet without breaking. The groups who performed the feat successfully won not only bragging rights but also a pizza party for their entire class. The Pizza Hut franchise on Baylor Campus generously donated the majority of the cost of the party.

The students were treated to an eerie, sci-fi theatre setting as they watched the performance of many physics demonstrations. The themes of Physics Circus 2000 were waves, sound, light, color and electricity. There were two actors appearing as a science professor and a spy performing the demonstrations. The actors, CASPER graduate students Bernie Smith and Troy Henderson, created artificial lightning using a Tesla coil for one exhibit. The students were also dazzled by a multimedia show, produced by Mr. Willie Hudson of the IDEAS center at TSTC featuring video footage shot at Tennyson of the students answering questions about science. One of the most spectacular demonstrations of the performance was a laser light show designed by Mr. Jerry Reay of CASPER.

Another popular activity enjoyed by the students was the Orbitron Space Simulator. The Orbitron uses the same principle as does a gyroscope for Space Shuttle navigation. The students were able to spin around without experiencing dizziness. Our thanks to Mr. Bill Barge and Mr. John Mackey for their assistance in the transport and operation of the Orbitron.
Egg-Drop Design Experiment a Favorite of the Students

One thing is universal – kids like to create things with their own hands. One hundred seventh-graders from Tennyson Middle School got the opportunity to do just that at the CASPER Physics Circus on May 12. The assignment given to each group of four students was to construct an apparatus that would protect a raw uncovered egg during a two-story fall from the top of the TSTC Student Center. The groups were given only thirty minutes to design their experiment, and they were only to use materials provided.

The twenty-five egg-drop experiments were dropped by Mr. Wayne Blinka and Mrs. Carliss Hyde of TSTC, and the results were judged by Ms. Toni Herbert and Mrs. Beverly Clark of TSTC. If the apparatus landed without the egg breaking, the experiment was ruled a success. Each successful group shared in the overall prize for the contest – a pizza party for their entire class provided by Pizza Hut of Waco.

Seven experiments proved to be successful. Other awards of “egg-cellence” were given, such as the “Scrambled Egg Award” for the biggest mess made at the landing site, the “Egg-Head Award” for the most creative design, and the “Yolk Award” for sportsmanlike conduct. The pizza party was given the following week to the students at Tennyson M.S. during their lunch period.

CASPER Physics Circus Growing by Leaps and Bounds

The first Physics Circus was a great success, according to Dr. Laura Barge, Senior Research Fellow for CASPER and Project Director for the Physics Circus. The event designed to follow a cohort group of Waco ISD students from their seventh-grade year through high school was limited to only 100 participants for the first year, due to a delay in funding. However, starting with the 2000-2001 school year, all Waco ISD students in the cohort group (now eighth-graders) will have the opportunity to come to TSTC for a day filled with science activities and hands-on experiments.

“We are creating a science experience that is truly unique in the field,” says Barge. “Not only do the students get the opportunity to see exciting physics demonstrations performed in a science-fiction theater setting, but also they are able to spend the day doing the same and additional demonstrations as well as building experiments of their own.”

During the summer months, members of CASPER will be creating a multitude of new performance demonstrations and hands-on equipment (to be used at the next Physics Circus, to be held in December and May of the next school year).

Playing With Toys to Teach Science

Whoever thought playing with toys would be educational? It is when you are at the Hands-On Exhibits of the CASPER Physics Circus. After watching the theater show, the students were able to play with many of the demonstrations performed by the actors on stage. They had the opportunity to balance a gyroscope on the end of a pencil, make a speaker out of their cranial cavity and make their hair stand on end using the Van de Graaff machine. They also enjoyed looking at different sources of light through their rainbow glasses which breaks the light into its constituent colors.

Through it all, there were CASPER personnel standing near to engage the students in discussions about how the toys worked. The director of CASPER, Dr. Truell Hyde, spent several minutes with a student playing with the Newtonian Demonstrator, an apparatus with bouncing metal balls suspended by strings. “The students have an intuitive understanding about physics principles such as energy and momentum. It is fun to see them explore science.”