A Summer of SCIENCE

California camp aims to stimulate students' pursuit of aerospace careers

BY KIMBERLEE BEERS

There's always an element of surprise when you open a bag of M&M's candies. The surprise is not about winning the latest contest, but how many of your favorite color M&M's will be in the bag.

Participants in the 12th annual Summer Science Camp spent time calculating the likelihood of a particular color of M&M's in a package, among other activities. Almost 500 students in grades kindergarten through 11, representing 71 Southern California cities, attended the camp this year at La Mirada High School in La Mirada, Calif.

Volunteer Kim Freeman gets hands-on with some of the younger campers in making space helmets for a workshop.
PAUL PINNER PHOTO

The M&M's exercise wasn't a lesson about color, however. It was a fun and educational way for campers to learn about the scientific method, which is a set of rules and procedures that allow one to test ideas about how the world works, make predictions about events, and create theories.

The camp curriculum, which includes several exercises like the M&M's activity, is intended to stimulate and foster the natural curiosity of young people to get them interested in studying math, science and engineering—and to consider eventually pursuing careers in these fields. Indeed, Boeing and other aerospace companies view the skills and related career topics addressed at the Boeing-run Summer Science Camp as critical to their futures. Underscoring the urgency to get students interested in such careers is a potential future shortage in the number of engineers, scientists and other skilled technicians.

"Sixty percent of future jobs will require training that only 20 percent of the workforce possesses," said Rick Stephens, Boeing IDS vice president and general manager of Homeland Security and Services. "Thus the concern about the future workforce is not about a labor shortage, but rather a skills shortage. This skills gap could profoundly affect our nation's competitiveness in the world economy."

The six-day camp in July offered a wealth of enticing scientific exercises and experiments designed to help increase confidence in the students' abilities to work as "scientists and mathematicians." Eighteen fun-filled science workshops included opportunities to put together dinosaur skeletons, make Mars Lego vehicles, and even develop forensics skills by exploring crime scenes and taking fingerprints.

"A critical way to help children develop their potential in science is to stimulate their own interests in the subject," said Marie Mungaray, Boeing Integrated Defense Systems education relations specialist. "We surveyed more than 100 parents after last year's Summer Science Camp, and 98 percent of them said their children finished camp with an increased interest in science."

Students applied by submitting an essay, a copy of their grades and an interest inventory. A committee then reviewed all applications and selected a diverse group of applicants. Among this year's entries:

- Jose Castillo, a fourth grader, dreamed up the idea of an "apecam"—a camera strapped to an ape's head—to help learn more about primate behavior.

- Jay Hwang, a seventh grader, wants to invent machines to help blind people see and deaf people hear.

- Andre Lee, an eighth grader, notes the supply of helium-3 in the lunar soil could be a vast source of fuel for nuclear fusion.

Previous students have said the camp exposed them to the world of science, engineering and technology, and steered them into their current career path. Many students said the camp increased their confidence and taught them valuable communication, leadership and organization skills.

"Summer Science Camp gave me handson experience that helped me develop a love of science," said Smith Sirisakorn, who attended the camp for six years and served as a camp volunteer this summer.

"The ratio of volunteers to children is about two to one, so there are plenty of opportunities to work closely with scientists, engineers, teachers, college students and community volunteers," said Sirisakorn, now a senior at the Massachusetts Institute of Technology majoring in biology.

Boeing runs the camp with the help of almost 300 volunteers, including employees, teachers, parents and Summer Science Camp alumni. As a result of volunteer support, Boeing is able to provide participants affordable hands-on learning resources with the individual attention that aids in the learning process.

"The excitement, talent and creativity I saw for astronomy that week was beyond my fondest hope," said retired Boeing employee and SSC volunteer Robert Carter. "I want to know that our future in space is being supplied with good young talent."

Good young talent is a concern for the aerospace industry. At the fall 2000 American Institute of Aeronautics and Astronautics Space Conference, attendees learned that a potential shortage of qualified people is endangering the future aerospace industry.

According to science and engineering data from NASA, between 1998 and 2008 there will be 1.9 million new jobs in science and engineering, but only 198,000 college graduates per year to fill them. Nearly two million workers are expected to retire. These developments will create a shortfall of more than two million workers.

"Summer Science Camp is a great example where schools, parents, businesses and the communities have come together to work as part of an integrated system to develop our future employees so that they have the right skills," IDS' Stephens said.

By the way, in case you were wondering: according to Mars Inc., the maker of M&M's candies, the average bag of M&M's contains 30 percent brown, 20 percent each of yellow and red, and 10 percent each of orange, blue and green.

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