

Hands- On Workshop Ideas

Below are a number of workshop ideas for EYH Conferences. We stress the benefit of a hands-on approach. The 1995 AAUW report *Growing Smarter* recognizes three of the key factors in girls' academic success are: a hands-on approach to learning, single sex setting for non-traditional activities, and exposure to women role models.

Veterinarian

“Oh, You’re Such An Animal” or “The Great Animal Detective”

Have a local woman veterinarian bring in several very calm pets on the day of the conference, such as cats, dogs, rabbits, guinea pigs, rats, birds. Also ask that the veterinarian bring with her a female animal technician. The veterinarian and animal technician can discuss the different levels of science training required for their work. After instruction, and with assistance from the professionals, the students work in teams to listen to the animals' heartbeats and lung function and use instruments to check the animal's ears. They can watch the doctor give a shot and perhaps themselves give a shot to an orange. The veterinarian will discuss how to keep an animal calm during the examination, what to look for in healthy vs. sick animals, and why different kinds of animals have different heart rates.

Forensic Scientist

“The Science of Sleuthing” or “The Scene of the Crime”

Invite a woman forensic scientist from a local police department or FBI office to bring various materials to illustrate scientific detective skills. She can bring microscopes and blown-up pictures of hairs to discuss the difference in various types of hairs. The girls attempt to identify the difference between a human hair and animal hair. The young women examine each other's hair strands and see if they can figure out whose it is. They scrape dried material from a fabric and see if they can figure out what it is. They can discuss how forensic scientist matches threads from a crime scene. The young women fingerprint each other to see if they can figure out “who done it” from fingerprints they have lifted from material.

Hazardous Material Specialists

“Don’t Touch That Stuff”

Soil Scientist

“You’re Getting My Dirt Dirty!”

Ask a Hazardous Material Spill Response team to come to the Conference and work with students to clean up a “Mock Spill.” Figure out a nice, safe white powder that is unknown to the students to “spill.” We have used a mixture of baking soda and vinegar because it makes a nice bubbly effect. Other ideas are flour, sugar, salt, or mixtures of these. The team should bring plenty of protective garments to allow the students to fully dress up and work on the testing and clean up, just as if they were on the Hazardous Materials Team. The students should be actively involved in trying to identify the material. They should also understand how the various public agencies get involved in such an activity.

You can team up with two other hands-on workshops. The first is on soil science. In the morning workshop, the students work on the identification and clean-up of the spill. In the afternoon, the students study how different materials leach into the soil and whether they are harmful. The soil scientists talk about the benefits of “clean” dirt and discuss how different soils can reduce the rate at which a material reaches ground water.

Engineers

“Turn up the heat!”

This is very practical workshop where the students see how science, mathematics, and engineering affect their everyday world. Have a woman engineer put together a workshop on energy-efficient buildings. The workshop illustrates temperature and thermal conductivity. Discuss insulation and what makes some materials good insulators and some not. In one workshop, the presenter had a number of hot plates all turned to the same warm, not hot, setting. The students put different materials on top of the hot plates and, after a few seconds, put their hands on the materials to see which were conducting heat. The presenter had sheets of copper, aluminum, and steel (all the same thickness), fiberglass insulation, glass, and sheet rock. The participants discussed home lighting, how to get the same level of lighting in your home with different types of light bulbs, and which used the least energy.

Engineers

“Black out”

This workshop goes hand-in-hand with “Turn up the heat.” Ask another woman from the power company to hold a workshop about electrical generation and distribution. Many power companies have working scale model of power grids that show the route that electricity takes from the power station, through power lines, transformers, stations, relay stations, and into a home. The students learn about how the electricity is produced, the difference between AC and DC electricity, and about transformers. After one such workshop, one young woman said to another, “That was great! You blacked out the whole city.”

You can try a similar workshop with water distribution and water reclamation plants, and with your local phone company.