FIFTH GRADE SCIENCE AND ENGINEERING KITS

Designing Solar Ovens (engineering kit)
Lerato in Botswana needs a way to cook the evening meal without spending hours gathering wood that pollutes. Test materials for insulating qualities and graph temperature results. Do life cycle assessment for classroom paper develop action plan. Use green engineering principles to choose materials for constructing solar ovens. Test ovens with thermometers and s'mores or nachos.
For use as a stand-alone kit. Kit includes teacher's guide, read-aloud story, and materials to do the testing lab. Order clip lamps kit separately.

Cleaning Up an Oil Spill (engineering kit)
Tehya who loves the out of doors notices an oil spill on her favorite stream and needs a way to clean it OR introduce lesson with current event focus, *Oil Spill! Disaster in the Gulf of Mexico*. Test materials for their efficacy in removing oil floating on water. Includes "booms" (rubberbands and yarn), "tools" (eyedroppers and spoons), and absorbent materials (cottonballs, filterpaper, wool, sponges, felt). Design an oil clean-up system. All processes will be scored on two success criteria (amount of oil removed, amount of oil recovered) and on constraints (cost of materials). Redesign and retest.
For use as a complement to FOSS Environments kit. This is a stand-alone kit and does not need materials from the FOSS kit. Kit includes teacher's guide, read-aloud books, and materials to do the lessons.

Environments (science kit)
Explore the relationship between aquatic organisms and their environment by monitoring water temperature, acidity, and salinity. Use chemical indicator to measure acidity and indirectly monitor the carbon dioxide produced by the goldfish, but not by elodea. Add pond snails, duckweed, and grammarus (small crustaceans) and observe interactions of organisms. Investigate salinity as a factor in hatching brine shrimp eggs with a controlled experiment. Grow seeds with a range of salinity to determine each plant's salt tolerance. Learn about the salt cycle and inputs and outputs in the ocean. Includes FOSS Science Readers to supplement the lessons.

Variables (science kit)
Introduces the controlled experiment with variables. Identify and control variables in experiments involving a swinging pendulum, a floating paper cup boat, a flying windup airplane, and a mini-catapult. Results are graphed and analyzed. Activities show that the relationships between things always involve interactions, dependencies and cause and effect events. Includes FOSS Science Readers to supplement the lessons.

Landforms (science kit)
Use stream tables to observe the processes of erosion and deposition and the landforms created. Study variables that affect erosion and deposition (slope of the land and the rate of flow). Map the results. Includes FOSS Science Readers to supplement the lessons.

Wind (engineering kit)
Use the three wind turbines and multimeters to build and test a variety of wind vanes. Try to maximize electrical output by varying length of blades, angle of blades to wind source (pitch), number of blades, type of materials, smoothness of blade surface, and/or blade shape. Collect materials for blade construction: cardboard, Styrofoam meat trays, paper plates, index cards, aluminum pie plates, and other flat found materials. Designed as a supplement to Variables science kit.