**Science Night and Inquiry Learning**

By Becky Colpitts, Volunteer Management Program Assistant

Science Night. Friday night, January 13th, 2012. The conference room at the Grafton County Extension office is filled with families on a mission to construct a car using only a cardboard rectangle, 8 paper plates, 8 rubber bumpers, 2 – 12" dowels, 1 brass fastener, masking tape and scissors. The first challenge – make a car out of the available materials. The question – How far will the car travel down a ramp? 4-H youth facilitator, Griffin Zuk set forth the challenge. Sonia Zuk, 4-H leader, and myself, Becky Colpitts, Volunteer Management Program Assistant, served as additional facilitators. Our job – provide materials for this science experience, create a safe physical, cognitive, and emotional environment, ask open-ended questions instead of giving answers and step back to allow the process of exploration, discovery, and learning to happen.

The method we are using at the Science Nights is called inquiry based learning. Inquiry-based learning is an approach that uses scientific thinking process and discovery to learn and explore skills and knowledge. Learners use their own curiosity as a guide to delve into the learning experience. Inquiry is learner centered. As stated in the article, 4-H Science in Urban Communities (urban4hscience.rutgers.edu/practices/4h-science/inquiry-based.html) "Inquiry requires action on the part of the learner: a search for information, a pursuit of knowledge, the exploration of phenomena in order to better understand the world."

In an article on inquiry-based learning called A Collaboration between School Media Centers and Classroom Teachers (courseweb.lis.illinois.edu/-dafagen2/LIS506LEB/best_practices/benefits.shtml), there are many befits to this type of education some of the which include: highly motivated students, long term retention of information, deeper understanding and development of interpersonal and team skills. Our Science Nights have been happening once a month since October. Knowledge gleaned from previous experiments is used and applied to the new challenges presented. Teams are, most often, family groups. Parents and children work together on the challenge using child-led ideas, adult led ideas, and the merging of all ideas to test and provide solutions to the challenge. The air buzzes with questions within each team. "How?" "What would happen if…?" "What is your idea?" Inquiry learning is messy, loud, lengthy, and oh so much fun judging by the smiles and excitement permeating the room. Father and son launch their car down the ramp for a series of test runs. The sister carefully records the distance by counting the tiles in the floor. After each run, adjustments are made to see if the car will travel even further down the hallway.

The next challenge is to attach a rubber band to the car. Groups are given a rubber band, paper clips and another brass fastener. Discussions arise on how the rubber band could be used to make the car move. How is the rubber band attached? After many attempts, frustrations, then laughter, success is evident - car rolling down the hall using only rubber band power! In all this commotion learning is evident as friction, drag and torque are investigated. These are ideas that learners can build on and use in other areas of life.

4-H is using inquiry-based learning in their Science, Technology, Engineering, and Mathematics curriculum. There are a wide range of topics to spark curiosity from robotics to agricultural science. UNH Cooperative Extension is in the third year of a NPASS (New Practices in Afterschool Science) grant. The grant is with the Educational Development Center, Inc. of Waltham, Massachusetts, and teaches afterschool professionals and 4-H leaders inquiry-based science programs to use with youth. If you would like to join 4-H or would like more information about our next science night on February 10th please contact the Grafton County Extension Office at 787-6944. To find out more about all of the programs we offer find us on the web at **http://extension.unh.edu/Counties/Grafton/Grafton.htm** or like us on Facebook at **UNH Cooperative Extension - Grafton County.**