

Tech Prep Applied Learning Activities

2005-2006

Clinton: Energy in Motion

Students will utilize a systems diagram to apply knowledge obtained about mass, velocity, friction and aero dynamics to transform a piece of pine stock into a competitive compressed air dragster using resources found in the technology lab. Students will research and brainstorm before building the car. Students will then use a computer-simulated program to design and test their car prior to construction.

Holland Patent: Marketing Project

The students will create or invent an actual project and develop a marketing plan for that product. Students will work in groups and use surveys to see if there is a need or demand for the product. Research is done to look at the competition, identify target market and develop communication to that group. Then the product is developed and promoted. Students design a commercial as well as a radio announcement and magazine ad.

Oriskany: Wet T-Shirt Lab

Using a wet t-shirt, student will determine that amount of energy needed to vaporize the water from the t-shirt using a hair dryer.

Remsen: A Physics Black Box

How can the output strap from a commercial weaving loom move at a constant speed, yet the three input component fibers of the strap move at dissimilar speeds?

This activity is designed to introduce students to a number of valuable scientific skills. Students will take measurements, use those measurements to make predictions about the weaving loom component (the Black Box) and then compare their predictions with the actual functioning of the weaving loom component (Black Box).

Sauquoit: Harnessing Sunlight

In this activity, students investigate how it might be possible to recharge batteries by harnessing the power of sunlight. First they will explore what is needed to turn sunlight into electricity and then by examining the types of batteries that can be recharged using this method. Next the students will look at various electrical components needed and the electronic devices used to set up and monitor the rate of the charge. In the end, students will apply this information to design and construct a device that is capable of recharging batteries.

Utica: Public Service Announcement

Students will use equipment involved in the making of television PSAs to develop their own PSAs for use in promoting healthier lifestyles. The students will write, edit, direct, film and act in the PSAs from beginning to end product.

Waterville: Big Creek Stream Profile

The objective of this activity is for students to learn methods to determine a stream cross-sectional profile, stream velocity, and to calculate the stream discharge. Students will gain experience in using Excel, a spreadsheet program, for scientific purposes. The students will also learn why scientist use stream discharge to help control flooding and erosion. By completing the task, students develop and improve their problem solving skills. They gain experience in cooperation and team skills.

Westmoreland: Vertical Jump Work Lab

Students will learn to calculate mean work performed using two methods of vertical jump.

Whitesboro: Purple Loosestrife Project

The study of invasive species, especially purple loosestrife, is well suited to any life science or environmental science classroom. Demonstrating the complex organization and dynamic balance that exists in diverse natural communities is key to helping student understand the value of this diversity. The "hands-on" component of this activity will engage students in studying the effects of the loss of biodiversity; hopefully producing citizens that value and advocate for the protection of our natural communities of living organisms. Students also study the lifecycle of the particular beetle that feeds on loosestrife, as well as learn about the lifecycle of the purple loosestrife. They will manage the growth of the plants, applying what they learn.