

# *TECH TRUNKS*

## *AEROSPACE/GPS*

### **Activity 1: Rockets Away! - Grades 3-5**

Students investigate Newton's third law of motion by designing and constructing rocket-powered racing cars from Styrofoam food trays powered with the thrust of an inflated balloon. Data is collected and a report submitted showing their race car design and performance graphs. Problem solving, reasoning and proof, and communication are some of the math standards that are covered as well as comparing a straw rocket to a model rocket.

### **Activity 2: Powerful Payload/Pop Can "Hero Engine" - Grades 6-8**

Put on your rocket engineer hat and prepare to make a rocket balloon shuttle and measure thrust. Discover what determines the size payload a shuttle can carry.

Construct water-propelled engines out of soft drink cans to investigate Newton's third law of motion. Discover ways to increase the action-reaction thrust produced by water shooting out of holes punched in the can sides.

### **Activity 3: Fly Me To The Moon - Grades 3-5**

Design and create a paper rocket propelled by Alka Seltzer and water that demonstrates Newton's Third Law of Motion – "For every action there is an opposite and equal reaction." Students will make an observation, write a hypothesis and make predictions to determine the action and reaction.

### **Activity 4: Pop! Rockets - Grades K-6**

Construct a simple air pressure launcher from PVC pipe and a 2-liter pop bottle for paper rockets that are also designed and constructed by students. Geometry, measurement, data analysis and probability are covered as math content standards.

### **Activity 5: GPS Unit 101 - Grades 3-8**

Learn the basics of exploring navigation with a GPS (Global Positioning System) – "a network of satellites that continuously transmit coded information, which makes it possible to precisely identify locations on earth by measuring distance from the satellites".

### **Activity 6: GPS Treasure Hunt - Grades 3-8**

Utilize GPS skills by conducting a Treasure Hunt and Geocache Hunt. Apply technology to achieve desired results.

Descriptions provided by Kaitlin Peine, Douglas Co. Extension and Patsy Maddy, Twin Creeks Extension District. 2013