

SODA BOTTLE ROCKETS

PRE-VISIT PAGE (GRADES 2-8) 90 minutes

The Arizona Science Center will be visiting your location with all the materials and equipment needed for your group to participate in a program introducing aerodynamics and rocket flight.

CONCEPTS

- Thrust is created when fuel is forced out of the bottle at high speeds
- Newton's 3rd Law of Motion will be used to explain the motion of the rocket
- Drag can be reduced by making the rocket more aerodynamic
- There is an optimum weight for rockets; light enough to be propelled by thrust but heavy enough to overcome drag

EXTENSION ACTIVITIES

- Compare distances between a baseball and whiffle ball when thrown
- Create and test various flying objects using paper
- Design a balloon rocket that can transport increasing amounts of weight

PROGRAM NEEDS

- **One instructor table at front of room**
- **Water source readily available with the capacity to fill up 2 liter bottles (i.e. hose and faucet preferred over bathroom sinks)**
- **Limited to 30 participants who will work in groups of 3 or 4**
- **Outdoor location for launch must be unoccupied by other groups, free from overhanging trees, power lines, etc. and a minimum of 50 ft. x 100 ft.**
- **If multiple programs are scheduled at your location, it is ideal that the instructor be set up in one room and participants be brought in, otherwise allow 15 minutes between programs**
- **Class teacher/instructor must remain in room for duration of program**

