

ACTIVITY 7-4: WHY THINGS FLY?

OBJECTIVE(s): After completing the activity, students will be able to:

- ▷ demonstrate Bernoulli's Principle.

MATERIALS:

30 Pencils

2 rolls of clear tape

30 strips of white paper (5 cm x 40 cm)

BACKGROUND INFORMATION:

Bernoulli's Principle states that the pressure in a moving stream of fluid is less than the pressure in the surrounding fluid. In other words, when air moves more swiftly across the top surface of a material than across the bottom surface the pressure of the air pushing down on the top surface is lower than the pressure of the air pushing up. This principle helps make flight possible.

PROCEDURE:

1. In this activity, students will be demonstrating Bernoulli's Principle using a pencil and a looped strip of paper.
2. Students will work individually.
3. Instructors will demonstrate how to construct this simple device. Students should follow along.
4. Use tape to connect both ends of the strip of paper (leave a small gap between the two ends of the paper strip). The same piece of tape should also connect the pencil to inside of the loop.
5. Hold the pencil and paper device in front of yourself and blow over the top of the loop (this takes practice). Most students will think that the paper loop will move downward, but due to Bernoulli's Principle, lift is produced causing the paper loop to rise.

ACTIVITY 7-5: **THINGS THAT FLY**

OBJECTIVE(s): After completing the activities, students will be able to:

- ▷ demonstrate Bernoulli's Principle.
- ▷ construct flying devices.

MATERIALS:

30 Boomerangs	30 clear, plastic straws
5 rolls of clear tape	40 sheets of white paper
stapler/staples	white paper strips
	-30 (2" wide x 7" long)
	-30 (2" wide x 9" long)

PROCEDURE:

1. In this activity, students will have the opportunity to build a variety of flying devices.
2. Students will work individually.
3. Instructors should set up 3 stations: Boomerangs, Gliders, and Super Loopers. Two instructors should assist at each station.
4. Students should follow directions on station cards to complete the devices.

ACTIVITY 7-6: **PAPER AIRPLANE CONTEST**

OBJECTIVE(s): After completing the activity, students will be able to:

- ▷ use their creative talents to design paper airplanes that will fly the longest distance.

MATERIALS:

100 sheets of white paper	30 medium paper clips
30 certificates	6 Prizes

PROCEDURE:

1. In this activity, students will design paper airplanes that will travel a long distance.
2. Students will work in teams comprised of 1 girl and 1 boy. The winners will be determined by combining the throws of each partner.
3. Student teams will have 15 minutes to build and test their airplanes before the contest begins.
4. Certificates will be presented to each participant. Prizes will be given to the top three teams.