Glider: A Current Event

(Adapted from: *The Fabric/Flight Connection*. See “More Great Resources for Grab and Go with Science Activities” at the end of this publication for more information, including activities for older youth.)

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**Main idea:** Gliders are not powered. They are launched by a crew, truck, or plane, or from the natural altitude of a cliff. Once airborne, they ride the air currents.

**Objectives:**

- Make a glider
- Test glider in different air currents

**Materials:**

- 1 piece typing paper, 8 1/2 x 11 in. (21.5 cm x 28 cm)
- Stapler and staples
- Stopwatch
- Tape measure or yardstick

**Motivator:** Although most glider flights range from one to five hours, the longest recorded flight was 70 hours! The average cruising rate of a glider is about 50 miles (83 km) per hour.

**Questions:**

Before you start the activity, ask the students:

- Have you seen a large glider that carries people?
- What are gliders made from? (A: Wood, aluminum, fiberglass, fabric.)

**Activity:**
See diagrams that follow, **Glider 1: A Current Event.**

1. Fold and crease paper along centerline from top to a point about 1/3 the length of the paper (do not fold along entire length).

2. Carefully roll (do not crease) top corners back to meet at fold about 1 1/2 in. (4 cm) below top of paper.

3. Staple the two corners to creased fold using one staple placed parallel to fold.

4. Sail glider by holding it at the fold, aiming nose slightly downward and gently pushing it forward. Practice until you attain a long, smooth flight.

5. Time flight and measure distance traveled.

6. Repeat in different locations to experience different air currents.

**Learning checks:**

q What provides the power for this glider? (A: Your arm.)

q Why should the nose of the glider point slightly downward? (A: So that the force of gravity can produce the speed needed to create lift.)

q Will the glider travel farther if you throw it harder? (A: No, a hard throw may provide a burst of initial speed but the glider will float on the air currents and be pulled slowly by gravity to the ground regardless of the force of the throw. More important is a smooth, even release.)

**Background:** Gliders fly because their drag (air resistance) is low due to their streamlined shape and light weight and because gravity pulls them downward at a speed that creates lift by maintaining the air pressure differences below and above the wings.

**Vocabulary:**

**Air Current:** Flow of air, especially in a definite direction.

**Glider:** A heavier-than-air craft that has no engine.

**Hang-glider:** A large kite with a suspended harness for the pilot.

**Extensions:**
Try folding airplanes (gliders!) of your own designs, from patterns in books, or from kits.

Visit a glider show and sketch the different gliders. What did you notice about their shape(s)?