



SOAR for Science: Foam Flyers Activity

This lesson is an excellent post-visit activity for the SOAR for Science program, as it reinforces the concepts of the four forces of flight and the three primary control surfaces of an airplane.

Materials:

- 1 set of Foam Flyer Templates per student
- 1 copy of Foam Flyer handout per student
- 1 foam plate per student
- 1 penny per student
- Scotch Tape and scissors
- Pens and Pencils

Procedure:

- Copy template onto several plates to make additional templates for students to use.
- Pass out a foam plate, pen, penny, a pair of scissors, and a Foam Flyer handout to each student. Using the templates, students should trace the wing and tail onto their plate.
- Students cut out the two pieces and along the slots in order to be able to insert the tail into the back of the wing. The slots produce ailerons/elevators behind the wing and a rudder behind the tail.
- Before taking their first flight, have students write their names on their planes, and then record their thoughts and predictions on their handout.
- Move to an open area to test fly the gliders. Before each test flight, have students write their predictions about their flight on their handout. Only one change should be made for each flight, with students noting what change they made. After each flight, students should note their observations in their notebooks.

Suggested changes:

- Move the tabs behind the wings up and observe what happens to the flight (the tabs in this position are acting as *elevators*, the result being the plane flies higher).
 - Move one tab up and one tab down (the tabs in this position are acting as *aileron*s, the result being the plane turns left or right, depending which way they have set their tabs).
 - Move the tab on the tail (*rudder*) to the left or right (the result should be a turn to the left or right).
- After about 20-30 minutes, bring the class back together to discuss results.
 - What is the role of the *rudder* in controlling the airplane?
 - What is the role of the *elevators* in controlling the airplane?
 - What is the role of the *aileron*s in controlling the airplane?

Foam Flyer Handout

PREDICTION	DESIGN CHANGE	RESULT

What is the role of the *rudder* in controlling the airplane?

What is the role of the *elevators* in controlling the airplane?

What is the role of the *ailerons* in controlling the airplane?

Foam Flyer Template

