

Aileron Roll Activity

Name: _____

First make a paper glider using the link on the website, or make your own

- Cut 0.25 inch (6 mm) slits about 1 inch (2.5 cm) from the end of each wing and then fold these areas down. The tabs you have just made are called: _____
- Looking at your paper airplane from the front, fold the right tab down and the left tab up, so that it resembles the diagram on the Aileron Roll Web page. What motion do you predict will result when you fly your airplane? _____
- Fly your paper airplane. Was the motion the same as your prediction in the question above? If not, describe how it differed. _____
- The paper airplane should have rolled counterclockwise around its center of gravity if viewed from the front. Where is its center of gravity in terms of the length of the airplane? _____
- Now bend the left tab flat and bend the right flap up. Predict the motion you will see when you fly the paper airplane: _____
- Fly the plane again. Was your prediction correct? If not, describe how it differed.

- If the tab is bent down, is more lift or less lift generated by the wing? _____
- Bend the tabs on both wings up and fly your paper airplane. Explain what happened.

- In what situation would a pilot want to use the ailerons to roll the plane? _____
- Where are the ailerons located on a commercial jet? _____
- If the ailerons were used during landing to decrease lift, which way would they be deflected?

- Where is a spoiler located on a wing of an airliner? _____
- If a spoiler is deflected on the left wing of an airplane, which way would the airplane roll as viewed from the front? _____
- If spoilers on both wings were deflected the same amount at the same time, how would the plane's position change? _____
- Cut and attach small strips of paper to your paper airplane's wings with tape. Fly it. How did your spoilers affect the flight?