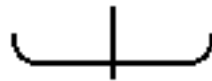




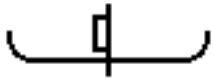
Name _____ Class Period _____

Directions: Answer the questions below. Draw pictures to aid each response. You should draw the plane from a rearview perspective, as though the plane is flying away from you and in to the paper. Remember to launch your plane with the same amount of force and at the same angle for each step in this activity.

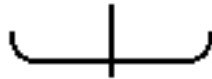
Example: How would you position **both** elevons so the plane will quickly climb in altitude? Draw the elevons on the picture below: (You are looking at the back of the plane.)



1) What happens when the elevons are neutral (they are even with the wing) and the rudder is moved to the left? (You are looking at the back of the plane.)



2) Place the rudder in a neutral position for the following experiment: How would you arrange **both** elevons to get your plane to fly to the left? Draw the position of the plane's elevons.



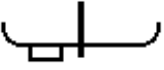
3 – 5) How can you get your plane to fly to the right? There are at least 3 possible answers. Draw a picture of the back of each plane and show the position of its control surfaces. Feel free to use combinations of the rudder and the elevons.

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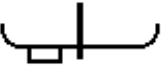


ARCONIC

Directions: Configure your FPG-9 so that its left elevon points down. Keep all other control surfaces in a neutral position. Launch your plane in exactly the same way for each trial. Observe which way your plane flies and record your data in the table below:

Plane configuration:	Direction plane flew after launch										% time that plane flew left:
	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	
	Left	L	L	L	L	L	L	L	L	L	
	straight	S	S	S	S	S	S	S	S	S	
	Right	R	R	R	R	R	R	R	R	R	

6) How many times out of 10 trials did your plane fly to the left? _____

7)  Is this configuration predictable? Yes No

8) Why do you think full-scale planes use more than one control surface when turning?

9) Drag is the force that resists the forward motion of the plane. Drag slows the plane down. Which configuration (A or B) should have more drag? Circle your answer:



10) Refer to the following picture to answer this question: Which wing has higher/greater/stronger pressure under it when the plane is flying? Circle your answer below:

The left wing has greater pressure under it.



The right wing has greater pressure under it.