

Name:

Date:



Math Lab - Paper Airplane Flight Distance

#0 - Teacher hands out the following material to each student.

1 copy of this page, 1 copy of the paper airplane template printed double-sided, 1 pencil, 1 internet connected device (optional - teacher may choose to demo the simulations at the end)

#1 - Students watch the “Paper Airplane Intro Video”.

#2 - Teacher assigns each student in the class one of the 6 angle measurements from the table below. Students watch the “Making a Paper Airplane” video. Teacher facilitates, pausing when prompted and making sure all students have completed each step before moving on to the next.

#3 - Students watch the “How to Prepare, Fly, and Collect Data” video and complete the described activity.

1. Fill in the table below with the data from your paper airplane flights.
2. Calculate the mean distance for each angle and write it in the bottom row of the table.

Flight Distance vs. Wing Fold Angle

	0°	9°	18°	27°	36°	45°
Trial 1						
Trial 2						
Trial 3						
Trial 4						
Trial 5						
Mean						

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#4 - Teacher facilitates student completion of the work below.

3. If x = the wing fold angle in degrees, and $f(x)$ = the mean of the five measured flight distances, fill in the table below using the data from above.

x	$f(x)$
0	
9	
18	
27	
36	
45	

4. Let $g(x)$ = the linear function of best fit for the above data. Find $g(x)$.

Linear Function of Best Fit

$g(x) =$ _____

#4 - Students watch the Flight Distance vs. Fold Angle Simulation Intro Video.

#5 - Students simulate the linear function of best fit using the Length vs. Rotation Simulation and answer the questions below.

5. What does your simulation predict for a fold angle of 30 degrees? Is this a reasonable prediction?
6. What does your fold angle predict for a fold angle of 100 degrees? Is this a reasonable prediction?
7. Does a linear function seem to be a good fit for this data? Explain.



