Lesson 0.4 - Paper Airplane Design Process Worksheet

Graded classwork | Individual worksheet | Small-team build/test activity | Engineering notebook document #1

Name: _____ **Period:** _____ **Date:** _____

Challenge Summary

Your team will use the engineering design process to design a paper airplane for distance. Each team gets one sheet of paper for Version 1 and one new sheet of paper for Version 2. Nothing else may be used. Official distance is measured from the launch line to where the airplane first touches the ground, using feet and inches.

1. Define Problem What are you trying to improve? What counts as success?	**2. Generate Concepts** Sketch one possible paper airplane design. Your team will compare ideas and choose one to build.
3. Develop Solution Record the team design choice and why it was selected.	**4. Construct & Test** Build Version 1, complete one official flight, revise, then build and test Version 2.
5. Evaluate Solution Use the distance data to decide whether Version 2 improved, got worse, or stayed the same.	**6. Present Solution** Summarize what your team changed and which design process step mattered most.

Define Problem

Write the design problem in your own words and list what will make the airplane successful.

_____
_____
_____

Generate Concepts - Individual Sketch

Sketch one paper airplane concept. Label at least two important design features, such as wing shape, nose shape, folds, or stabilizers.

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Page 2 | Record evidence, evaluate the redesign, and prepare the worksheet for the engineering notebook.

Name: _____ **Period:** _____ **Date:** _____

Develop Solution

Which design did your team choose to build for Version 1? Why did your team choose it?

_____
_____
_____

Version	Design Change	Distance	Notes
Version 1			
Version 2			

Evaluate Solution

Did Version 2 improve, get worse, or stay about the same compared with Version 1? Use distance data as evidence.

_____
_____
_____
_____

Present Solution / Reflection

What did your team change from Version 1 to Version 2, and why? Which design process step was most important during this challenge? Explain your answer.

_____
_____
_____
_____
_____

Before adding to your notebook: Make sure this worksheet is complete, thoughtful, numbered as document #1, listed in the Table of Contents, and placed in the engineering notebook.