Names: Alvin Kang, Erin Russel, Raffe_____ Period: 2_____

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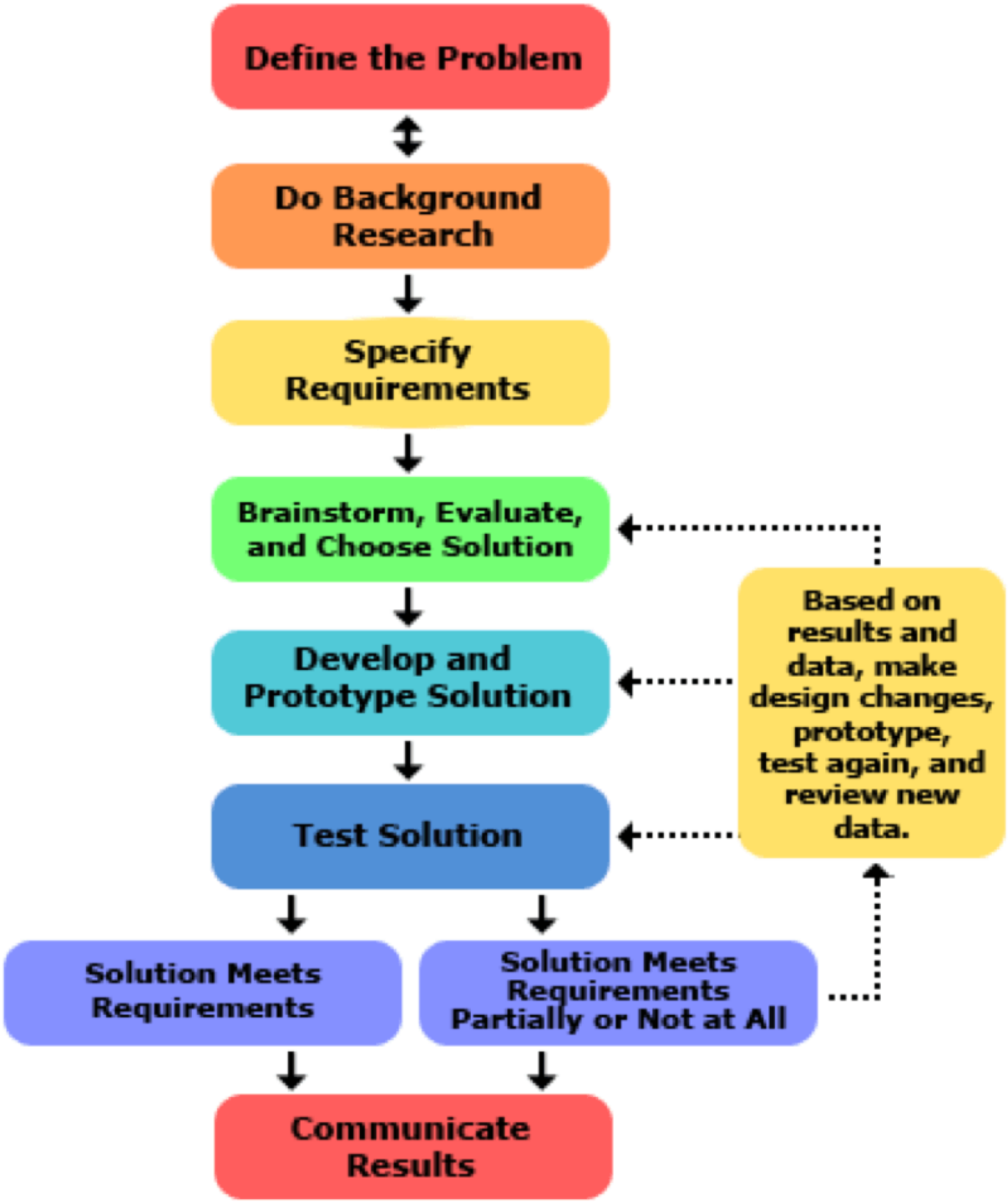

Engineering Process Flowchart.
Source: Science Buddies https://www.sciencebuddies.org/science-fair-projects/engineering-design-process/engineering-design-compare-scientific-method

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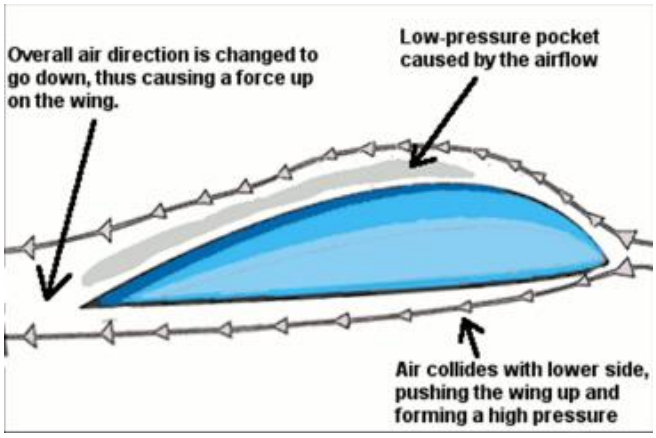
Goal: **(Define the Problem and Specify Requirements)**

Here you can write your intent behind building a paper airplane. Did you want it to be fast so it could fly the furthest distance? Did you want it to be able to fly slowly but for a long time? What were the aspects of the paper airplane flight that you wanted to control the most

Create a paper plane that will travel the furthest distance.

Background: **(Do background research)**

Here you can write what you know about paper airplanes and what you have researched about aerodynamics. Feel free to add in anything that you have learned in the process of this project.

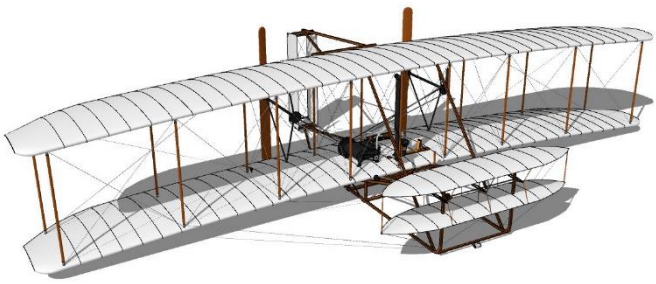


Paper airplanes are more like gliders than airplanes because they don't have any extra thrust

Design: **(Brainstorm, Evaluate, and Choose Solution)**

What are some unique components of your airplane? How does each part of the paper airplane contribute to your goal? Show pictures of your design process.

Design 1: Wright Flier-styled plane



Actual airfoil generates lift, and the small surface area reduces drag

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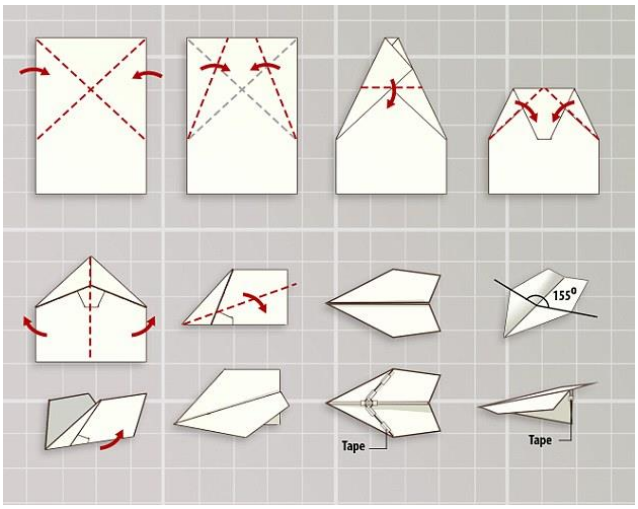
Testing and Redesign: **(Test Solutions and determine what steps you need to return to)**

After testing your initial design, what were some problems you realized? What did you change and how did your paper airplane behave after these changes were made? You will likely redesign several times before achieving your goal. Make sure to document all these redesigns. Show pictures of "prototypes" or "Marks" of your final product.

Test Results: The plane didn't maintain the speed to make the airfoils on the plane outweigh its extra mass, so we moved to a design that was more of a glider



Results: **(Communicate Results)**

What performance can we expect from your paper airplane? What are its recorded distances and flight times? Here you can show diagrams and pictures of your design and its testing. Write about what could be improved and what are the limitations.

We initially expected our improved plane design to reach at least 80 or 90 feet, as even a nerf dart can get that far with far less mass and density, and a complete lack of a wing whatsoever.

The plane was doing fine during our tuning, but during the actual test, it didn't get even close to the ranges that we were initially achieving, only going as far as 55 feet maximum.

Our best run was a distance of 55 feet, and a 2.41 second flight time.