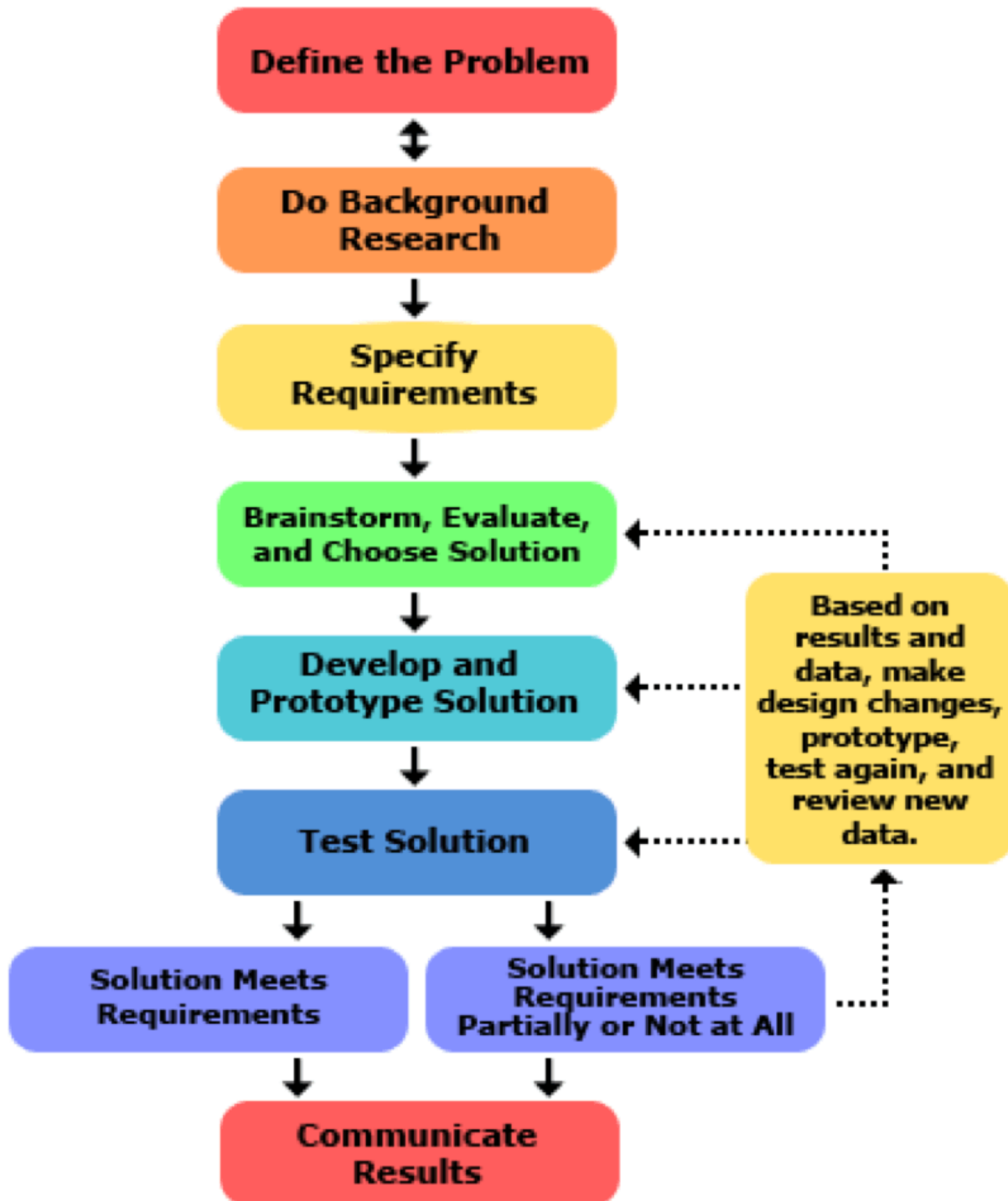


Names: Michael Nathan Jarod Ian Period: 4



Engineering Process Flowchart.

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

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

We wanted to make a plane that went the farthest. We didn't really care if it was fast as long as it got distance. Weight distribution and wing curvature were the main components for our plane.

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 rely on the wings giving updraft for them to stay afloat in the air. If the wind is not pushing the plane forward, then it is very hard for a plane to move forward.

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.

We went with a simple but effective design that was the world record holder. The only thing was that the record flight was indoors rather than outdoors. We curved the back of the wings up so that the plane does not nose dive. The small body but big wings make the plane easier to be carried by the wind.

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.

We realized that the wind is a crucial factor in either getting a good or bad flight and we added the curving the wings up after we found that nose diving was a problem. After curving the plane wings up, it no longer nose dives and we were getting 55 feet average.

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.

If there is no wind acting on the plane, then you can expect a distance of 60 feet and about 2-3 seconds of flight time. The record times however were 70 feet with the final prototype. If there is wind, then the plane is very susceptible to sharp turning and following the wind.