

FET 2.1**Airplanes**

You're going to learn a little about the Wright Brother's early work with airplanes to learn about the process engineers go through. Then you'll build your own and see if yours has the right stuff.

Part 1 – Wright Brothers Airplanes

The Wright Brothers were pioneers in the field of aviation and aerospace engineering. Go to Smithsonian National Air and Space Museum's website (link below) and complete the following.

- Choose TWO of the Wright Brothers airplanes. They are listed on the website by year: 1900 - 1905 (Don't use 1899 – there's not much for it).
- Read about both planes. When you select the year, there are links down the left side and at the bottom to take you to various sections describing different topics about it.
- Open a blank document in Word. In any format of your choosing, type the following for each airplane (minimum number of sentence is in parentheses):
 - A brief description of the airplane, including its general shape, number of wings, material it was made out of, etc. (5+)
 - At least two challenges they had to consider, changes they had to make, or problems they had to overcome when they were designing it.
 - How they tested it (3+)
 - What were the results of the test (3+)
- Next in your Word document, tell me which airplane you think was better and explain why (3+).
- Finally in your Word document, describe how you think the Wright Brothers' testing might be similar to aircraft testing today (3+).

Part 2 – Build Your Own

- In teams of 1 to 3 (your choice), choose and build two different paper airplanes (I'll provide the paper). They must be two distinctly different designs. Use your own patterns or go to the Internet to find some.
- After you build them, test them in the "Flight Zone" (the back of the room) – perform 3 tests per plane.
- EACH team member should then add this to his/her INDIVIDUAL Word document:
 - Describe the process you went through to choose your airplane designs (3+).
 - Describe your construction process, including steps you followed, folding techniques you used, adjustments and cuts you made, tools you used, etc. (3+)
 - Describe your testing process, including adjustments you made during testing and your results (3+)
 - Describe what you might do differently next time (3+).

Rules, Guidelines, Hints

- All writing must be in YOUR WORDS – NO COPY/PASTE (and yes, I can tell).
- Use only the paper I give you for your planes – no other materials (paper clips, glue, tape, etc.)
- Only 1 team at a time may throw a test flight.
- No test flights anywhere other than in the Flight Zone – unauthorized test flights will result in severe penalties.
- Throw each plane ONLY 3 times – other people need to test, too.

Resources

- Smithsonian Air and Space Museum – Wright Brothers Online Exhibit
<https://airandspace.si.edu/exhibitions/wright-brothers/online/fly/>

Grading Rubric

Part 1	50
Part 2	50
Total	100