Age: 8+

I is for... Investigative Science

What is investigative science? A science experiment where you start with a problem and conduct research (or an "investigation") to decide what you think the outcome will be

Investigative science experiment:

Materials:

- Go back to the directions for letter A "Aerodynamics" and make a paper airplane.
- A ruler
- Pen/paper to write results

Instructions:

1. **Test your airplane:** After you have created your paper airplane test the airplane [You will do this 10 times]
2. Record your results in the table below and be sure to start at the same starting point each trial. You can measure your data by using a ruler or if able use sidewalk blocks.

2. Change one thing about your plane
    - Examples:
        - Size/length of wings
        - Type of paper
        - Weather: Windy vs. Sunny day, temperature

3. After you have changed something about your place, trial the plane by flying it 10 times from the same starting location as before

4. Record your results in the table below from your 2nd trials

- What worked well? What didn't?
- DId you notice any differences in how the plane flies when you changed one thing?
- Make observations about how your modification affected the performance compared to your original design

Students Name:		**Original Design**	**Updated design**
	Modification	None	What did you change?
	Unit of Measure		
Distance Trial 1	Sidewalk squares		
Distance Trial 2	Sidewalk squares		
Distance Trial 3	Sidewalk squares		
Distance Trial 4	Sidewalk squares		
Distance Trial 5	Sidewalk squares		
Distance Trial 6	Sidewalk squares		
Distance Trial 7	Sidewalk squares		
Distance Trial 8	Sidewalk squares		
Distance Trial 9	Sidewalk squares		
Distance Trial 10	Sidewalk squares		
Average: =(Total/10)			

Job Exploration:

Design Engineer: Is a type of engineer that is focused on the design process of an engineering product and/or discipline. Design engineers usually work on products and systems that involve adapting and using complex scientific and mathematical techniques.

Mechanical Engineer: An engineer designs and builds complex products, machines, and system. A mechanical engineer works with how things are made and how machines operate. They also

design and builds complex products, machines, and systems. Mechanical engineers also help with the invention of many machines, including the early inventions of simple machines like the wheel and axle.

Aerospace Engineer: Aerospace engineers design aircraft, spacecraft, satellites, and missiles. In addition, they create and test prototypes to make sure that they function according to design.

Chemical Engineer: Chemical engineers apply the principles of chemistry, biology, physics, and math to solve problems that involve the production or use of chemicals, fuel, drugs, food, and many other products.

Civil Engineer: Civil engineers conceive, design, build, supervise, operate, construct and maintain infrastructure projects and systems in the public and private sector, including roads, buildings, airports, tunnels, dams, bridges, and systems for water supply and sewage treatment