Paper Airplanes

Materials: paper (different types you could use: printer, notebook, construction, tissue, etc.), tape (optional), paper clips (optional), markers

Background Information: There are four forces of flight: thrust, drag, weight, and lift.

Thrust is a force that moves an aircraft in the direction of the motion. It is created with a propeller, engine, rocket, or push. Drag is the force that acts opposite to the direction of motion. It tends to slow an object. Drag is caused by friction and differences in air pressure. Weight is the downward force caused by gravity. Lift is the upward force that holds an airplane in the air.

STEM Career Connection: Aerospace engineers design, develop, and test aircraft, spacecraft, and missiles, as well as supervise the manufacture of these products. Those who work with aircraft are called aeronautical engineers.

Literature Connections: Gravity Is a Mystery (Let's-Read-and-Find-Out Science 2) by Franklyn M. Branley, Hands-On Science: Forces and Motion by Jack Challoner and Maggie Hewson, Marvelous Mattie by Emily Arnold McCully

Challenge:
1. Gather materials.
2. Create a paper airplane as you know how or using the instructions provided.
3. Test your paper airplane. Make observations about the flight of your airplane and where, when, and how the four forces of flight are demonstrated.
4. Modify or change your paper airplane in some way by making new/different folds, adding mass (paper clip, etc.), or something else. Retest your airplane and make observations. How did your modification change the flight of your airplane?
5. Extensions: Try flying your airplane inside and outside. Use different types of paper to make airplanes of the same design. Set up a target and try to hit the target with your paper airplane. Measure how far your airplane flies.
Paper Airplane

1. Fold paper in half long-ways
2. Fold corners
3. Fold bent corners into center
4. Fold in half
5. Fold wings down
6. Go fly!!

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