

ACTIVITY

Forces of Flight

Bernoulli's Principle!

The following activity aligns with Utah SEEd Standard 3.3.1

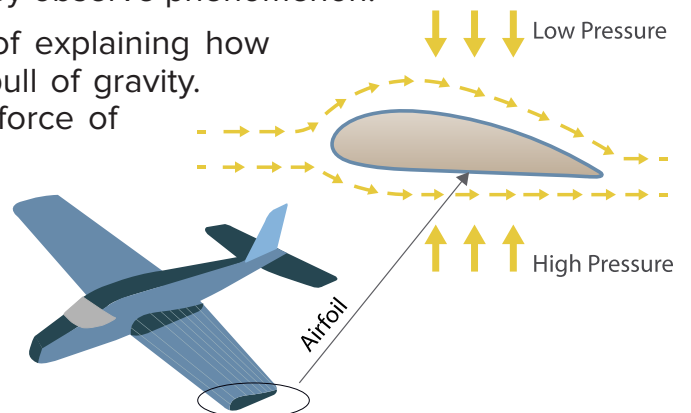
Daniel Bernoulli stated that as a fluid (air) moves faster, it creates areas with less pressure. Air naturally moves from area of high pressure to low pressure, creating a vacuum effect.

Students will observe this phenomenon by using the craft activity on the worksheet below.

- Have students cut along the dotted line to create a free strip of paper.
- Attach a straw on the indicated mark with tape.
 - The length of straw attached to the paper may vary, students may need to experiment with where to put the straw on the paper.
- Once the straw is attached to paper have students blow as hard as they can into the straw and observe how the paper acts.
 - Intuition tells most that the air coming out of the straw will push the paper down. Thanks to Bernoulli's Principle we know that the faster moving air on top of the paper creates less pressure. This area of low pressure creates a vacuum that pulls the air under the paper up and creates a flapping effect.
 - It may be useful to have students create a hypothesis before conducting their experiment, "I think the paper will... because..." After the experiment students can then evaluate their hypothesis and adjust as they observe phenomenon.

Bernoulli's Principle is one of the primary ways of explaining how airplanes generate enough lift to overcome the pull of gravity. Once the force of lift becomes greater than the force of gravity, an aircraft will move upwards.

This activity is a supplement to the Hill Aerospace Museum Education Center's Forces of Flight lesson. To schedule a field trip or outreach with the Hill Aerospace Museum's Education Center please contact education@aerospac Utah.org for availability.





Forces of Flight



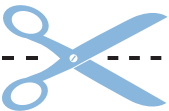
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Bernoulli's Principle!

Daniel Bernoulli was a mathematician who lived in the 1700s. He discovered that fluids that move fast create areas of low pressure. Even though he was experimenting with water, this principle also applies to air too! Air moves from areas of high pressure to low pressure, and will lift things when it moves.

- Cut out the dotted line below and tape a a straw where it says “Tape Straw Here”.
- Blow into the straw:
 - What do you think the paper will do when you blow into the
 - Why did the paper move the way it did?



Tape straw here