Teaching Bernoulli's Principle

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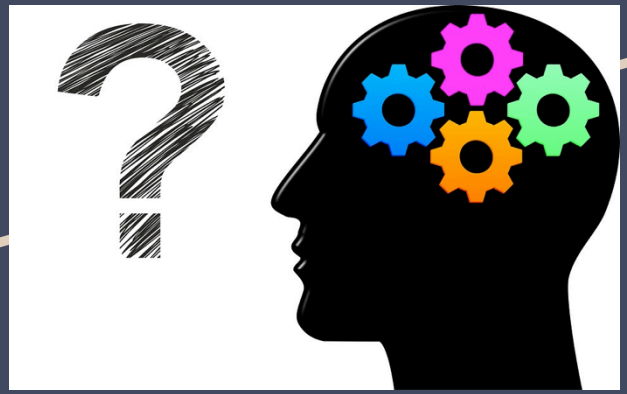
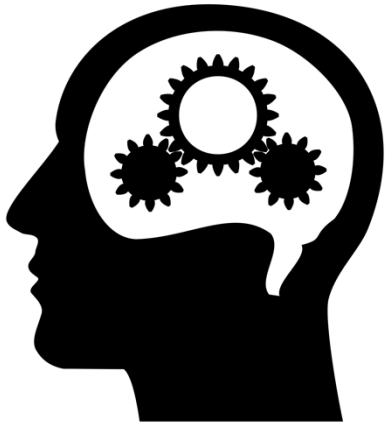
“Magic” Ping Pong Ball

Why did the ball move?

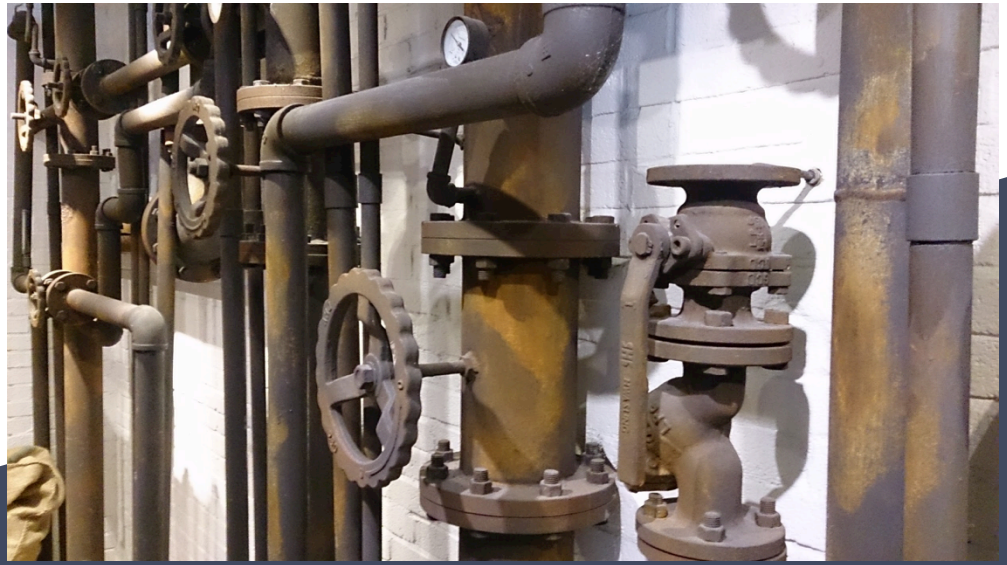
- Did any of these have something to do with it?

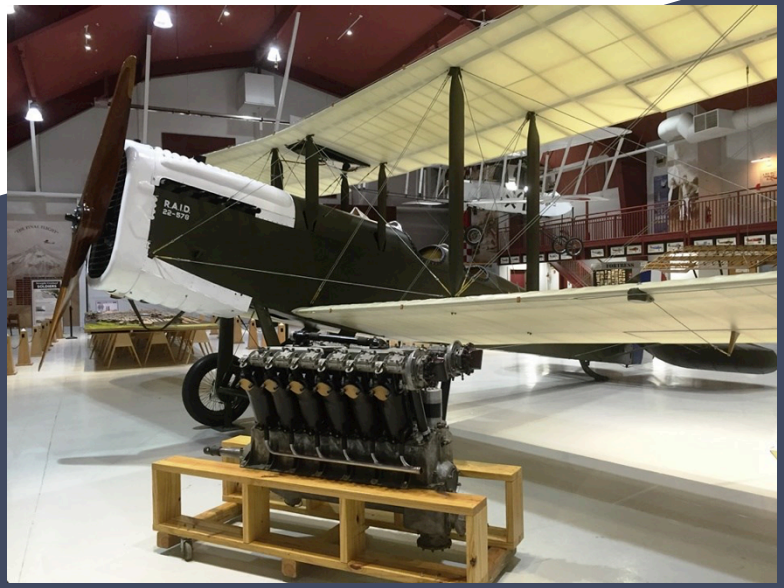


- Pressure outside the cup
- Pressure inside the cup
- Speed of the air being blown over the cup
- weight of the ping pong ball
- The color of the ping pong ball



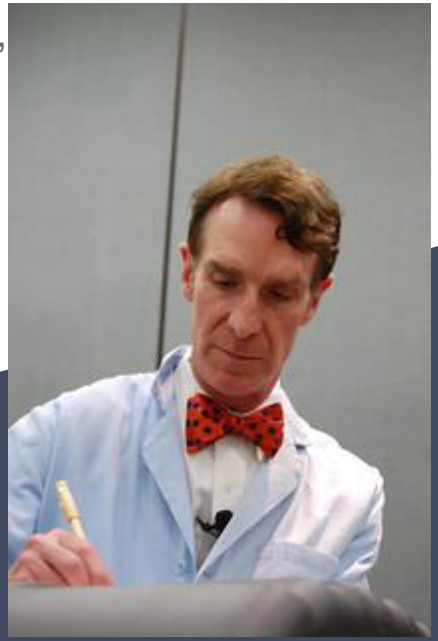
What is an Engineer and what do they do?



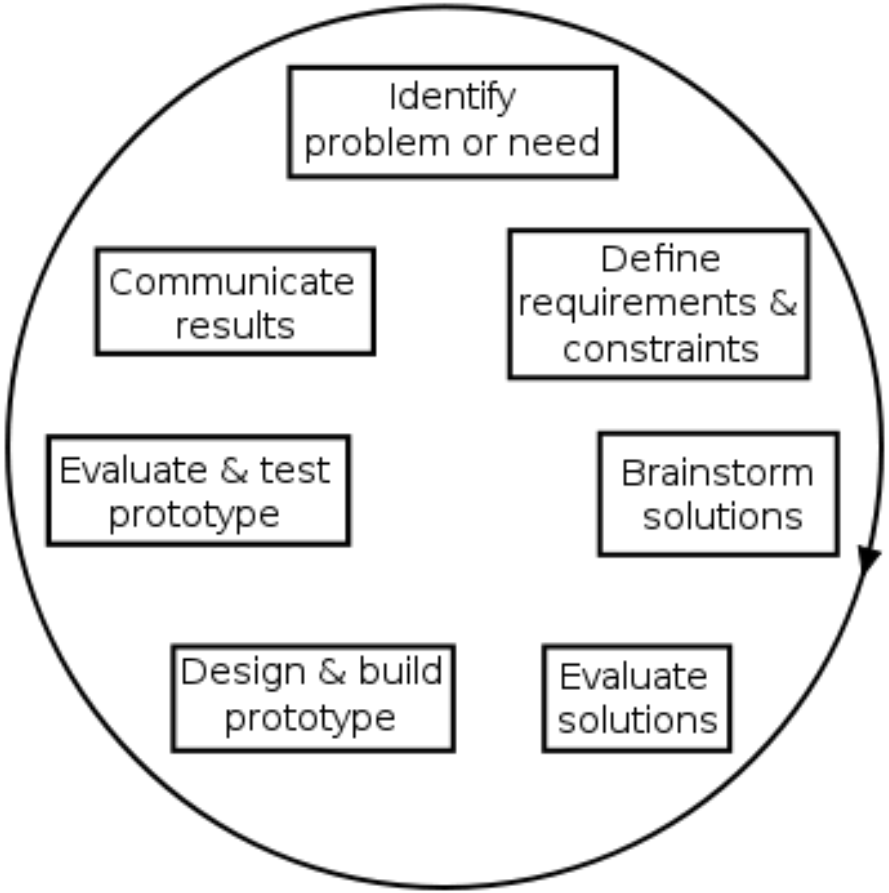


Famous Engineers

Bill Nye “The Science Guy”
(Mechanical Engineer)
& Neil Armstrong
(Aeronautical Engineer)



Engineering Design Process



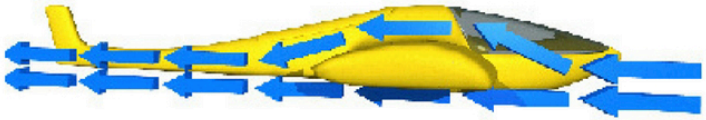
Bernoulli's Principle

- This is why planes fly
- This is how water flows through pipes

When the speed of the air/ water goes up, at the same time, pressure of the air/ water goes down.

Daniel Bernoulli

Why it works...



The Bernoulli's Principle states that increased airspeed produces decreased air pressure.

This helps to explain the lift produced by the wings of an airplane.

The wing is designed so that the air above the wing moves faster than the air below the wing, decreasing pressure above the wing.

The plane is heavy so it is trying to fall, pushing on the air below the wing.

This difference between the decreased pressure above and the increased pressure below produces lift.

Jetfire Plane

Quiz Time!