Curiosity Guide #205
Flowing Air

Accompanies Curious Crew, Season 2, Episode 5 (#205)

Crashing Cans

Investigation #5

Description

Can you harness air power to make the cans crash?

Materials

- 2 empty pop cans
- Ruler
- Package of drinking straws or wooden dowels, about 24

Procedure

1) Lay out 24 straws parallel to one another and separated by about .5 to 1 centimeter.
2) Stand the two cans up in the center of the bed of straws. The cans should be separated by about 2 centimeters. Use the ruler to check.
3) Consider what will happen when you blow between the cans. What do you predict?
4) Try blowing between the cans. Did the cans move?
5) Repeat the process, but place the cans 5 centimeters apart. Test the cans at various distances apart, up to 20 centimeters.
6) Can you get them to crash into each other?

My Results

Explanation

When a fluid is still, it pushes equally in all directions. However, when fluids such as air move more quickly, the pressure decreases where that moving air is. The still air has higher pressure and pushes toward the lower-pressure area. The idea that faster-moving fluids create lower pressure is called Bernoulli's Principle.

In this example, when you blew between the cans, the cans were able to roll along the straws and come together. Were you able to make the cans crash together when they were farther apart? Here's how to do it: Blow just to the inside of the left can. Continue blowing while moving to the right. The constant flow of that moving air will create the path for the cans to move and eventually come together. The curved side of the can speeds up the flow of air even more, just like the top edge of a wing.

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