

Ping-Pong Funnel

Safety Precautions

- Be sure to use your own straw and don't put the ends of the funnels in your mouth.

Vocabulary

- pressure - force per area exerted on or against an object by something in contact with it

Materials and Equipment

- small and large funnels
- ping-pong ball, small box, marble, small wooden cube
- drinking straw

Questions

1. What happens to a ping-pong ball when you blow air into the bottom of a funnel? Can you blow the ping-pong ball out of the funnel?
2. Do the results change when you use different funnel sizes?

Research

The faster air travels, the less *pressure* it exerts. When you blow on the ping-pong ball, you are increasing the speed of the air both above and below the ping-pong ball. The pressure of the air on the other side of the ping-pong ball is greater than the air above it or below it.

Hypothesis

What is your hypothesis? Be sure to include your "best guess" answers to the 2 questions above.

1.

2.

Experiment

1. Push the straw about half an inch into the bottom of the small funnel.
2. Place the ping-pong ball inside the small funnel. Be sure that the straw doesn't touch the ping-pong ball.
3. Hold the ping-pong ball in the funnel.
4. Hold the small funnel horizontally, blow into the straw, and release the ping-pong ball. Record your observations.
5. Stop blowing into the straw. Record your observations. What happens to the ping-pong ball?
6. Repeat the experiment with the large funnel.

Data and Observations

- What did the ping-pong ball do while you were blowing into the funnels?
- What did the ping-pong ball do after you stopped blowing into the funnels?
- Were the results the same for both funnels?



Analysis

1. What happened to the ping-pong ball when you blew air into the bottom of the funnels? Could you blow the ping-pong ball out of the funnel?
2. Did the results change when you used the other funnel?

Conclusions

The ping-pong ball doesn't move and its lack of movement doesn't depend on the size of the funnel.

Additional Questions

1. If you used a small hollow box (hollow cube) instead of a ping-pong ball (hollow sphere) would the results be different? Why or why not?
2. If you used a marble (solid sphere) instead of a ping-pong ball (hollow sphere) would the results be different? Why or why not?
3. If you used a small cube of wood (solid cube) instead of a ping-pong ball (hollow sphere) would the results be different? Why or why not?



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