



Activity 11: Bernoulli Brainteaser

Question

How can we show Bernoulli’s Principle at work?

Resources

- sheets of paper
- hair dryer
- ping-pong ball
- scissors

Hypothesis

Read each of the activities in the "Procedure", and predict what you think might happen.

Activity	Hypothesis
Blowing on Paper Need a Hint? Will the paper move up, down, or stay unchanged?	
Paper Strips Need a Hint? Will the strips of paper move together or apart?	
Ball Balancer Need a Hint? What will happen to the ping-pong ball?	

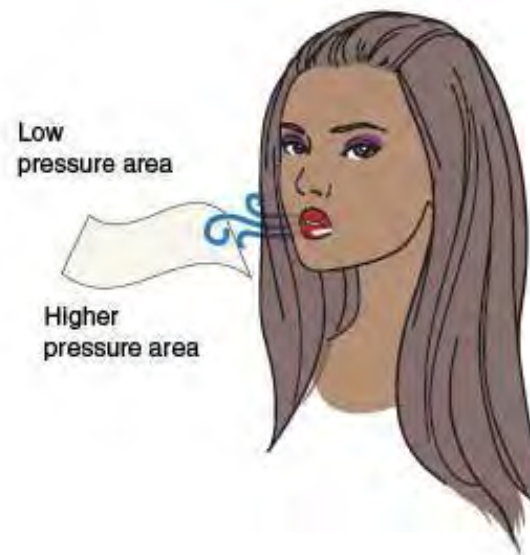
Procedure

1. Perform each activity described.
 2. After each activity, record what happened.
 3. For those activities you are unable to do, click the videos to watch what happens.
-

Activity 1: Blowing on Paper - video

Access the link to the video from the online course, or click [here](#).

1. Take one flat sheet of paper and hold it immediately beneath your bottom lip with your thumb and forefinger.
2. Take a deep breath and blow directly over top of the paper.

**Activity 2: Paper Strips - video**

Access the link to the video from the online course, or click [here](#).

1. Cut a piece of paper in half length-wise.
2. Hold the two pieces of paper side by side in front of your face. (The flat surfaces of the paper are facing each other.)
3. Blow between the two sheets of paper.



Activity 3: Ball Balancer - video

Access the link to the video from the online course, or click [here](#).

Safety Warning: Be careful as you do this activity. Be sure the hair dryer is set on 'cool air'.

- 1 Turn on your hair dryer and point it upwards.
- 2 Place the ping-pong ball in the air stream of the hair dryer.
- 3 Try tilting the hairdryer to see what happens.



Observations Table

Activity	What Happened?
Blowing on Paper	Need a Hint? Did the sheet of paper move up or down?
Paper Strips	Need a Hint? Did the paper strips move together or apart?
Ball Balancer	Need a Hint? What happened to the ping pong ball?

Conclusion

Go back to your hypothesis for each activity and indicate if your hypothesis was correct or incorrect. Then, try to explain what happened using Bernoulli's Principle.

Activity	Hypothesis correct/incorrect?	Can you explain what happened using Bernoulli's Principle?
Blowing on Paper		Need a Hint? The air flowing over the paper was moving faster and with lower pressure.
Paper Strips		Need a Hint? The air flowing between the sheets of paper was moving faster and with lower pressure.
Ball Balancer		Need a Hint? The air flowing past the ping-pong ball was moving faster and with lower pressure.