MIND TREKKERS

Straw Fountain Lesson Plan

Amount of time Demo takes: 1 - 3 minutes

Materials (be as thorough as possible):
1. Straws
2. Cups
3. Water
4. Paper towels
5. Long bin
6. ½ table of space
7. Trash bag

Set up instructions: (if any)
1. Fill a cup ⅔ full with water.
2. Set up a trash bag for used straws.
3. Put one straw in the cup of water at an angle, such that the top is resting on the rim of the cup.

SAFETY!
1. Safe demo

Lesson’s big idea
● When air isn’t moving, the air pressure pushing on the water is the same everywhere.
● When air is moving, the air pressure in that area drops, so the pressure on the water in the cup is greater than the air pressure on the water in the straw. When the air moves fast enough, we can make water spray!

Background information
1. Air pressure: air is always exerting pressure on us (we don’t notice because it is pushing on us equally from all sides). You may have seen some air pressure examples in our ping-pong cannon demonstration, or in the trash bag and vacuum. It is pushing down on the water inside the straw and on the water in the surrounding cup.
2. Bernoulli Principle: the faster air is flowing, the lower the pressure. So, when you blow air very fast at the place where the straws meet, the air pressure drops. The air pressure on the rest of the water in the cup, however, is unchanged. The pressure difference pushes water up the straw.
3. Applications of this principle are found in spray guns for painting, in spray bottles, spray pressure cans, etc.

Instructional Procedure
1. Have students take another straw and blow across the top of the straw in the cup.
   a. If students are not able to get water to spray from the top of the straw, they may not be able to blow air hard enough.
b. If they get frustrated and want to see it work, feel free to show them how it works!

Assessment, Sample questions you can ask:
1. What makes the water move up the straw?
2. Where else does the difference in pressure matter?

Clean Up
- Pour out the water, throw away any used straws, and dry the glass before putting it away.

References

National K-12 Science Standards
- List by K-4, 5-8, 9-12 for each standard covered