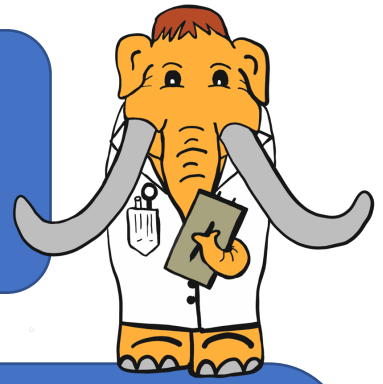


Science Saturday @ Home

Bernoulli's Principle at Work



Gathering Supplies:

Short Cardboard Tube
Tissue paper or other
light weight paper
Colored Markers

How To Steps:

To see the Bernoulli's principle at work we are going to build a fire breathing Dragon, but what is Bernoulli's principle? It is when fast moving air creates an area of lower pressure than the surrounding slower moving air. This should cause the paper strips to be pushed up into the area of lower pressure, moving the dragon's breath up and down. Let's try it out!

1. Cut three thin strips of tissue paper, about a $\frac{1}{4}$ of an inch by 2 inches. For the dragon's breath, red, yellow, and orange work well.
2. Use pieces of tape to attach one end of each strip to the tube, just on the bottom half of one side. The pieces should be sagging down. This will be the dragon's breath.
3. Now blow into the tube, pretty hard and a bit towards the bottom of the tube. Can you get the dragon's breath to lift up and move? Keep trying! You need to get the fast moving air going right across the top part of the tissue paper.
4. Decorate the outside of the tube to look like a dragon!

Max and His Dragon



Did You Know?

Way back in 1738 a scientist name Daniel Bernoulli was watching water flow in a stream. He noticed that in some places the water flowed quickly and others slowly. He became known for his work looking at fluid flow and how that related to pressure, density and velocity of the fluid. His research became known as Bernoulli's principle and can be applied to air as well as other fluids.

If you look in a dictionary Bernoulli's principle is "the principle in hydrodynamics that an increase in the velocity of a stream of fluid results in a decrease in pressure. Also called Bernoulli effect or Bernoulli theorem."

How does watching water in a stream connect to making paper fly up into the air? The faster moving air has a lower pressure than the surrounding air. So if an airplane wing or a piece of paper has air moving faster across the top, the air pressure is less on the top than the bottom. The higher air pressure on the bottom now push the airplane wing, or strip of paper, up into the