Safety Alert

fire

Air Bag Teeter-Totter

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Getting Ready

Does air have weight? How does it move? What happens when air gets warm or cold? All great questions you might find answers to in this activity! Be *CAREFUL* with the flame!!

Stuff to Make it Happen (Materials)

wooden dowel	string	adhesive tape*
2 paper lunch bags	tall candle*	matches*

Making it Happen *(Adult supervision required to use matches!*

1. Balance the wooden dowel or ruler on your finger to find the middle. Tie about a foot of string at this point. Tape the other end of this string to a desk edge or a place where you have some room for the dowel or ruler to swing. Check the diagram for more help.
2. Open the two lunch bags and tape a foot of string to the outside bottom of each bag. Attach the tape in the middle of each bag's bottom. *Look at the picture for help in doing this*.
3. Loosely tie the free end of each bag's string to the outside end of the dowel or ruler.
4. Move the strings back and forth until the bags are balanced! Tape them down.
5. Light the candle and hold the flame underneath but *AWAY* from any bags. Keep in mind at all times your lunch bags could become lessons in "*how to use a fire extinguisher*" faster than you can realize! Let's be careful!!!!
6. Isn't that cool the way the bag rises? Take away the candle and watch it sink back. Try to raise the other bag with the candle's flame, keeping all safety ideas in mind!

Understanding the Science

When the dowel and bags were **Balanced**, both bags had the same amount of air. The candle flame changed that by adding **Heat Energy** to the **Molecules** inside the bag. Heat made the molecules move faster and further apart. The molecules inside the bag started hitting harder with more **Force** against the bag they were in and some even escaped! This caused the bag to rise as the **Density** inside decreased. This made the dowel act like a **Lever**. When the candle was removed, the molecules slowed down and came closer together. This made the **Density** increase so the bag came down!

Let's Check the View!

(Questions and Assessments)

1. What do you think would have happened if you would have held a large piece of ice inside the bag without touching the bag? Why do you think this would have happened?