We will be doing the following experiments:

* ***Tornadoes***

1:00 pick up curb

* PROCESS:

Fill one of the bottles two-thirds full of water.

Take the Tornado Tube and twist it on the first bottle. Then, grab the second bottle and attach it to the Tornado Tube.

Or use duct tape to fasten the two containers. Make sure to tape tightly to make sure that no water will leak out when you turn the bottle over.

Turn the tornado maker, so that the bottle with the water is on top. Swirl the bottle in a circular motion. Most tornadoes form counter-clockwise in the Northern Hemisphere. A tornado will form in the top bottle as the water rushes into the bottom bottle.

\*If you want to get creative, you can also use food coloring to make the tornado have a color and glitter to represent debris.

EXPLANATION:

The swirling motion you give the bottle forms a vortex and is a easy way to create your own tornado.

http://www.weatherwizkids.com/experiments-tornado-bottle.htm

* ***Diet Coke/Mentos Blast***

9:00 am back of ball field

This activity is probably best done outside in the middle of an abandoned field, or better yet, on a huge lawn.

Carefully open the bottle of soda. Position the bottle on the ground so that it will not tip over.

Unwrap the whole roll of Mentos. The goal is to drop all of the Mentos into the bottle of soda at the same time (which is trickier than it looks). One method for doing this is to roll a piece of paper into a tube just big enough to hold the loose Mentos. You'll want to be able to position the tube directly over the mouth of the bottle so that all of the candies drop into the bottle at the same time.

Don't drop them into the bottle just yet! Warn the spectators to stand back. Okay, you're going to drop all of the Mentos into the bottle at the same time and then get truckin' (move out of the way... so long... bye- bye... hasta la vista!)

It's just like fireworks on the 4th of July. The spectators erupt, of course, in a chorus of ooohs and ahhhs. Someone yells out, "Do it again" and you do.

http://www.stevespanglerscience.com/experiment/original-mentos-diet-coke-geyser

* ***Balloon Blast***

9:30 am bleachers

**Experimental Procedure**

1. Using the funnel, add the baking soda to each balloon (two people may be needed for this; one person to hold the balloon open and the other person to put the baking soda inside of the balloon).
2. Pour the vinegar into the bottle.
3. Carefully fit the balloon over the bottle opening (be careful not to drop the baking soda into the vinegar yet).
4. Once the balloon is fitted snugly on the nozzle, hold up the balloon and allow the baking soda to fall into the vinegar.
5. Observe the chemical reaction and effect on the balloon.
6. Record observations.

Why?

The gas project is designed to teach students about gas through the chemical reaction of baking soda and vinegar.

http://www.education.com/science-fair/article/balloon-gas-chemical-reaction/

* ***Fingerprints***

10:30 am Classrooms

## Get Those Prints

This project is more fun with a group because kids can compare fingerprints and learn from the variety.

You will only need a few household items for this experiment:

* Ink pad
* Magnifying glass
* Paper
* Ink pen

Label paper with the child's name. If you don't mind a mess, let the kids take each other's prints. But if you have nice fabric close by, let a parent help. Starting with the pinky finger of the left hand, press fingers into ink then touch to the paper. (Experts roll each finger from left to right to get a more thorough print.) Let the prints dry, then observe with the magnifying glass.

There are many different patterns of fingerprints. It's interesting to note that not all fingers on a given hand will bear the same pattern.

sciencespot.net for My Prints worksheet, Finger print challenge, and finger print basics

* ***Lava Lamps***

1:30 Curb

* First, fill the jar about a third full of oil.
* Next, sprinkle on glitter, sequins, small beads, or any tiny sparkles that catch your eye.
* Add water to nearly fill the jar.
* Add a drop or so of food coloring.
* Finish filling the jar with water, then screw the lid on tightly.

Flip the jar over. Flip it back. Shake it up. Have fun!
Why?

1. Let the liquids settle, then open the jar and sprinkle a tiny bit of salt on top. What happens? Why?
2. Water is a polar molecule, while oil is nonpolar. Polar molecules stick to each other, but not to nonpolar molecules. Oil and water don't mix!
3. The oil is less dense than water, so it floats on top. Is the food coloring in the oil or the water? How can you tell? Is food coloring polar or nonpolar?

http://chemistry.about.com/cs/howtos/ht/lavalampreal.htm

* ***Soap Puff***

10:00am Teacher’s Lounge Thorpe

10:15am teacher’s Lounge Dembowiak

This experiment requires adult supervision and permission to use the microwave oven.

**Adult Warning!** You will not be able to sneak co-workers into the cafeteria to see the incredible expanding soap trick without filling the office with the lovely smell of Ivory soap. Besides, the chorus of ooohs & ahhhs erupting from the cafeteria is a dead giveaway.

1. Fill the bowl with water.
2. Drop the bars of soap in the bowl of water. Notice how all of the bars of soap sink except for the Ivory brand soap. Why?
3. Remove the Ivory soap from the water and break it in half to see if there are any pockets of air hiding in the middle of the bar. If there are, that would make the soap float, right? But there are no pockets of air. Hmm...
4. Place the bar of Ivory soaps in the middle of a piece of paper towel and place the whole thing in the center of the microwave oven.
5. Cook the bar of soap on HIGH for 2 minutes. Don't take your eyes off the bar of soap as it begins to expand and erupt into beautiful puffy clouds. Be careful not to overcook your soap soufflé.
6. Allow the soap to cool for a minute or so before touching it. Amazing... it's puffy but rigid. Don't waste the soap. Take it into the shower or bath. It's still great soap with a slightly different shape and size.

How does it work?

Ivory soap is one of the few brands of bar soap that floats in water. But when you break the bar of soap into several pieces, there are no large pockets of air inside. If it floats in water and has no pockets of air, it must mean that the soap itself is less dense than water.  Ivory soap floats because it has air pumped into it during the manufacturing process.

The air-filled soap was actually discovered by accident in 1890 by an employee at Procter and Gamble. While mixing up a batch of soap, the employee forgot to turn off his mixing machine before taking his lunch break. This caused so much air to be whipped into the soap that the bars floated in water. The response by the public was so favorable that Procter and Gamble continued to whip air into the soap and capitalized on the mistake by marketing their new creation as "The Soap that Floats!"

http://www.stevespanglerscience.com/experiment/soap-souffle

* ***Balloon Powered Cars***

2:00 In Classrooms/race in hallway

1. Explain the activity to the students. Provide them with the [How to Build a Rocket Racer Sheet](http://teachers.egfi-k12.org/wp-content/uploads/2010/04/How-to-Build-a-Rocket-Racer.pdf). Go over the construction steps and demonstrate how to snap or cut out parts, mount the wheels, and attach the straw to the balloon.

2. Review the [Rocket Racer Data Sheet](http://teachers.egfi-k12.org/wp-content/uploads/2010/04/RR-Data-Sheet.pdf) and make sure students know how to fill out the graphs and what data they should collect.

3. Students should plan the arrangement of parts on the tray before cutting them. If you wish to avoid using scissors with younger students, they can trace the pattern pieces with the sharp point of a pencil or a pen. The pieces will snap out of the Styrofoam if the lines are pressed deeply.

4. Lay out a track on the floor approximately 10 meters long. Several metric tape measures joined together can be placed on the floor for determining how far the cars travel. The students should measure in 10-centimeter intervals.

5. When student racers are ready, have one or two students at a time inflate their balloons and pinch off the end of the straw to keep the air inside. Have them place their racers just behind the starting line and release the straws. Regardless of how much curving a racer does, the measured distance is how far along the straight line of the racecourse the car reached.

6. Post distance records to motivate students to modify their racers to set new records. Provide guidance as students work on their improvements.

7. After each racer runs three times, have students complete their data sheets and sketch their final design on the design sheets.

http://teachers.egfi-k12.org/activity-ballon-powered-car/

We will be doing the following experiments tomorrow. We may have to “tweak” our schedule if it rains. If you would like to join us for **one** of the activities, we would love to have you, but you will be put to work. ☺

Schedule

9:00: Diet Coke/Mentos Blast/Back of ball field

9:30: Balloon Blast/Bleachers
10:00: Soap Puff/Teacher’s Lounge - Thorpe

10:15: Teacher’s Lounge – Dembowiak

10:30: Fingerprints/Classrooms

1:00: Tornadoes/Pick up curb

1:30: Lava Lamps Curb

2:00: Balloon Powered Cars

In Classrooms/race in hallway