

Science Symposium February 12, 2001



The school gym was the scene of an exciting event for the Grades 4-6 students on February 12. Under the leadership of a group of Grade 6 students, all the participating students worked in small groups to create hot air balloons that would actually fly.

The groups of students needed to follow a problem solving process. They had a shopping bag of materials, some directions and a goal. Could they make a hot air balloon?

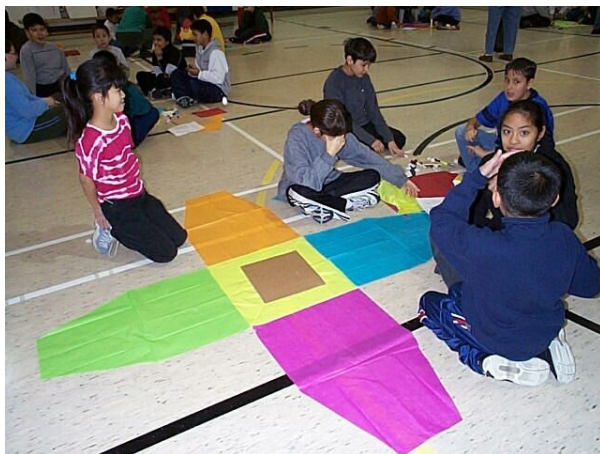


At first, the groups needed some time to read, research and make their plans. Their student leaders and the teachers could talk about the problem, but not solve it for them. The bag held tissue paper, glue, scissors, markers, cardboard, a meter stick, fine wire, and some cotton batting. There was newspaper and fishing line available in the room.



It was not easy to get started. The groups tried a number of methods before finding one that worked. Then, as first one group and then another began to figure it out, the basic structure of the balloons started to appear.

The students started to see how to put the balloons together. Once they had cut the tissue paper and laid it out on the floor, they could start gluing the sides together.



The balloon's basic shape is laid out on the floor.



Gluing was a difficult process. All hands were needed and they had to take great care not to rip the tissue paper in the process. There were some rips, which were repaired, and in the end the students got the basic balloons assembled.

Making the frame for the open end needed careful measuring and planning. The cardboard frame had to be cut to just the right size in order to hold the balloon open. Two wires were attached vertically and horizontally in the frame so that they crossed in the centre. A small piece of cotton batting was placed in the centre of the wires. When the time came for lift off, the cotton batting



would hold the fuel! The edges of the end of the balloon were then wrapped around the frame and it was all glued together.

The frames were all rectangles, but there were many different sizes. Each group had to work out how to get the frame into the balloon.

After the frame had been installed, the groups wanted to test the balloons. They used the heating vents in the gym floor as a source of hot air, and held the balloon in place to see if it would fill up. Some holes in the paper were found in this way, and were patched up with tissue paper and glue.



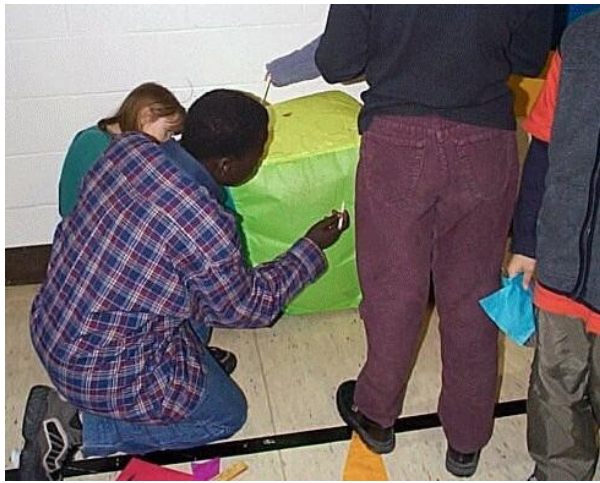
It was exciting to see the balloons fill up with air. It proved that tissue paper balloons actually could hold hot air and made success in flying them seem more possible.

As the different groups saw each other trying out things, ideas spread. Other groups tried out the testing.



Recording

Every group had a recorder. The steps the group took, the things they tried, what worked and what didn't, all was recorded for future discussion, reflection and writing. This was one of the most important aspects of the project, because soon the balloons would be gone, but the record would stay.



Writing a Message

The groups wanted to name their balloons and to write a message on them. Because it was **I Love to Read Month**, many of the messages contained thoughts about reading. Who would read these balloons and be inspired to read? It was an intriguing thought!



Lift Off!

It was time to fly! While the whole school watched from a safe distance, Mr. LeGrand, the Principal, and some intrepid teachers braved the bitter cold to ignite the balloons. It had to be done without gloves, so there were some pretty frozen hands after a while. Methyl

Hydrate was poured on the cotton batting and lit with a long match. The balloon was held as upright as possible while the air inside was heated.

It's Up!

Some balloons flew about 100 meters across the playground. Some flew two blocks away, and some simply caught fire as we tried to light them. As the wind picked up, it became more and more difficult to light the balloons, because the wind just blew the tissue paper into the flame, and the balloon burned up. The remaining balloons were stored away, to be flown on a warmer day with no wind.



Where will it land?

Can you see the small blurry dot above the trees? That is one of our balloons! We watched it sail away and found it later two blocks away. It was ripped, but maybe reparable, and it may fly again one day.





This balloon simply burned as we tried to light it. After all that work and so many hopes!



Talking About It

We all came back in and talked about our experiences. We were freezing, we were tired, and everyone felt that we had had a terrific time! We deserved a medal! And so everybody got a medal!



Medals

This was an incredible day. As a souvenir, Mr. LeGrand gave each person a medal, to serve as a reminder of the day. We will neer forvget it!