Hot-Air Balloons

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Introduction

Hot-air balloons, where to start. There are so many things to say, like the history, the inventors and how a hot-air balloon works. I guess the best place to start would be at the beginning, it's always a good place to start. When I say at the beginning, I mean the beginning of the history of all hot air balloons and their inventors. One thing I know for sure is that this report will be long and I don't want to make it longer by holding you up here, so go ahead to the next page and start reading. The history of hot-air balloons is waiting for you. What are you waiting for, go ahead, don't be afraid. History doesn't bite, it only informs.

Chapter 1
The Idea

The inventors of the first hot-air balloon were Joseph and Etienne Montgolfier. They lived in Annonay, France and worked at the family paper mill. On their first trip to Paris they got their idea. The brothers were there to see a special event from Japan on paper lanterns that floated on air, how could that be? Men went around to all of the paper lanterns and lit tiny candles inside of them as the event started. Suddenly, some of the

lanterns started rising, slowly but surely, and the crowd gasped with amazement. Back at home Joseph conducted experiments, and after reading on the subject of air, he put the event and reading together to get an idea.

Chapter 2
An Invention in the Making

Back at home, Joseph didn't hesitate to start experimenting. He tried paper and silk, but he wanted something that would work better. By this time Etienne was interested and decided to help his brother. Maybe Joseph would make better progress if Etienne helped. The brothers thought that smoke was the key to floating, so their tried burning many different things. Soon they discovered it was the hot air and made bigger balloons. After more experiment, one balloon flew 1,000 feet. They also discovered that the best materials were cloth on the outside and paper on the inside. On June 5, 1783, the brothers presented a balloon that flew higher, farther, and longer. After, a man named Jacques Charles made a balloon and filled it with hydrogen gas and it flew higher, farther, and longer than the Montgolfier brothers'. This all led up to the big experiment.

Chapter 3
The New Balloon, With Passengers

After Professor Charles's balloon had been such a success, the Montgolfier brothers knew they could do better. They soon announced that their balloon would be better, and it would carry passengers. When the king of France heard about this, he invited the brothers to France without a moment's hesitation. The King wanted the balloon to be made in France and launched at Versailles Palace. Etienne and Joseph agreed and move to Paris. For about a month Etienne, Joseph, and another man named

M. Reveillon (her worked at a paper mill too) worked on a balloon especially made for the king. The balloon was the largest yet being 57 feet tall and 41 feet around. The big day was on September 19, 1783 and the anxious crowd gathered around. Nobody could see the passengers anywhere until finally Joseph pulled a basket with only a lamb, a rooster, and a duck. Everyone was shocked until laughter arose in the crowd. Suddenly there was silence, it was time.

Chapter 4
The Big Moment

The men holding the ropes let go after a dramatic countdown. The balloon went up and up and up. The balloon went up 1,700 feet before descending and traveled 2 miles. The balloon traveled for eight minutes which isn't a lot compared to how high and far it went. When the balloon landed, the lamb had fallen on top of the rooster and its wing was barely hurt. In amazement the people walked and followed the balloon to where it landed, they sure got a work-out that day. September 19, 1783 was a very important day in ballooning history.

Chapter 5
How It Works

After all that I bet you're wondering how a hot air balloon works. Well that's why I'm here. A lot of it has to do with molecules in gases also heat and hot air. One thing you need to know is that in a gas, the molecules are spread out and can move freely. When the heated molecules ‘’move faster and farther apart" causing them to float. You're probably wondering what gases have to do with air, well, that's the thing, air is a form of gas. And when the molecules in the air are heated they move faster and farther

apart until the air in the balloon causes the balloon to float. That is why hot air is used in a balloon instead of cold.

Chapter 6
How to Fly a Hot-Air Balloon

It's may seem hard to control and fly a hot air balloon, but the truth is it's fairly easy. To ascend you have to pull the lever that opens the propane valve and turn knobs to control how much heat and gas go into the balloon. The hotter the flame is, the faster you go up. To slow your ascent or start to sink (depending on how long you do this for) when you pull the cord connected to the parachute valve. Doing this will let in air from outside the balloon making the air's temperature drop and cold air doesn't float. To descend you would have to hold the parachute valve long enough for the balloon to sink to the ground. These are the only controls needed to fly a hot-air balloon; it's as simple as that.

Conclusion

I have learned so many things from this project. I learned how hot-air balloons work and the history of them and their inventors. I also learned a thing or two about molecules. I hope you learned a lot too. My research aligns with my standard because my standard is *Science, Technology and Engineering- Strand: Earth and Space* Science-*6. Air temperature, moisture, wind speed and direction, and precipitation make up the weather in a particular place and time.* I explained how the air temperature affects the way hot-air balloons move and work. I think the most important thing to take away from this is that you should share your ideas not matter what they are; you never know, they could give someone a brilliant idea.

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