By Lawrence F. Lowery
UP UP IN A Balloon

By Lawrence F. Lowery
Illustrated by Gordon Laite

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I Wonder Why books are science books created specifically for young learners who are in their first years of school. The content for each book was chosen to be appropriate for young learners who are beginning to construct knowledge of the world around them. These young learners ask questions. They want to know about things. They are more curious than they will be when they are a decade older. Research shows that science is students’ favorite subject when they enter school for the first time.

Science is both what we know and how we come to know it. What we know is the content knowledge that accumulates over time as scientists continue to explore the universe in which we live. How we come to know science is the set of thinking and reasoning processes we use to answer the queries and questions in which we are engaged.

Scientists learn by observing, comparing, and organizing the objects and ideas they are investigating. Children learn the same way. These thinking processes are among the questions and inquiries in which we are engaged.

Thinking and reasoning processes we use to get answers to the questions and inquiries in which we are engaged.

Perspectives on Learning

Research shows that science is students’ favorite subject when they enter school for the first time.

Each book uses a different approach to take the reader through simple scientific information. One book is expositional that tells how we gradually learn science through experiences over time. The combination of different artwork, literary perspectives, and scientific knowledge brings the content to the reader through several instructional avenues.

In addition, the content in these books correlates to criteria set forth by national standards. Often the content is woven into each book so that its presence is subtle but powerful. The science activities in the Parent/Teacher Handbook section in each book enable learners to carry out their own investigations that relate to the content of the book. The materials needed for these activities are easily obtained, and the activities have been tested with young learners to be sure they are age appropriate.

After students have completed a science activity, re-reading or referring back to the book and talking about connections with the activity can be a deepening experience that stabilizes the learning as a long-term memory.

The information in these books leads the characters and the reader to discovers how water can be measured and powerful, how the water cycle works, that living things need water to survive, and that plants and animals have adapted to different climate-related environments. They also learn how people have learned to fly in the ocean of air that surrounds Earth.

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Some people felt it would be safer if the balloons were made of cloth. Cloth, after all, was stronger than paper.

Other people thought it would be safer if the air did not need to be heated. No one would have to worry about the air cooling off and the balloon falling.

Around this time, a gas lighter than air was discovered. The name of the gas was hydrogen. Hydrogen was just the right thing for a balloon. It did not have to be heated. It rose above air naturally.

Back in their town, Joseph and Jacques may or may not have heard of the gas. If they did, Joseph probably said, “Great!” and Jacques, “Terrific!”—unless Jacques said, “Great!” and Joseph, “Terrific!”
Someone made a balloon out of cloth and filled it with hydrogen gas. Up it went—but not for long. The cloth leaked! Gas came out through tiny holes in the cloth. Perhaps no one would ever get to ride in a lighter-than-air balloon!

Then someone thought of rubber. If they put a thin coat of rubber on a cloth balloon, the holes in the cloth would be plugged. This would stop the gas from leaking out of the balloon. Perhaps someone would get to ride in a lighter-than-air balloon after all!

A large, rubber-coated balloon was made and filled with hydrogen gas. Another demonstration was held. Hundreds of people waited to see what would happen. Joseph and Jacques were there too.
Young scientists will get both inspiration and giggles from this humorous but true tale of early experiments with flying. The book tells how the first successful venture into human flight came about because of two French brothers, several paper bags, heated air, leaky cloth, hydrogen gas, frightened farmers, a duck, a rooster, a sheep, and a brave friend of the French king. In addition to introducing scientific processes and principles of flight, *Up, Up in a Balloon* may prompt budding inventors to try, try again—just as the Montgolfier brothers did when they launched the first hot air balloons more than 200 years ago.

*Up, Up in a Balloon* is part of the *I Wonder Why* book series, written to ignite the curiosity of children in grades K–6 while encouraging them to become avid readers. These books explore the marvels of geology, land forms, weather, environments, and other phenomena related to science and nature. Included in each volume is a Parent/Teacher Handbook with coordinating activities. The *I Wonder Why* series is written by an award-winning science educator and published by NSTA Kids, a division of NSTA Press.

**Grades K–6**

**NSTAKids**

National Science Teachers Association

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