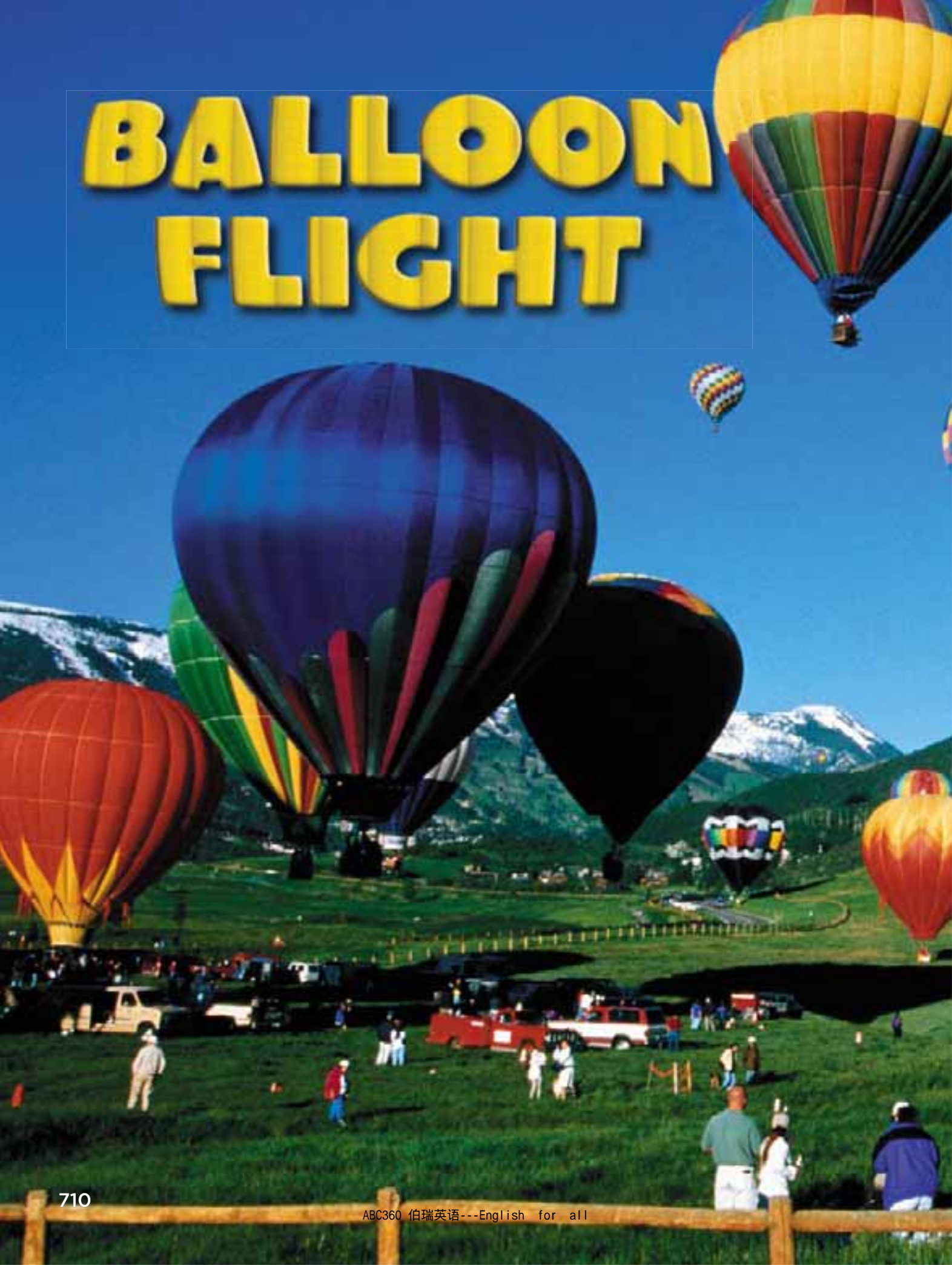
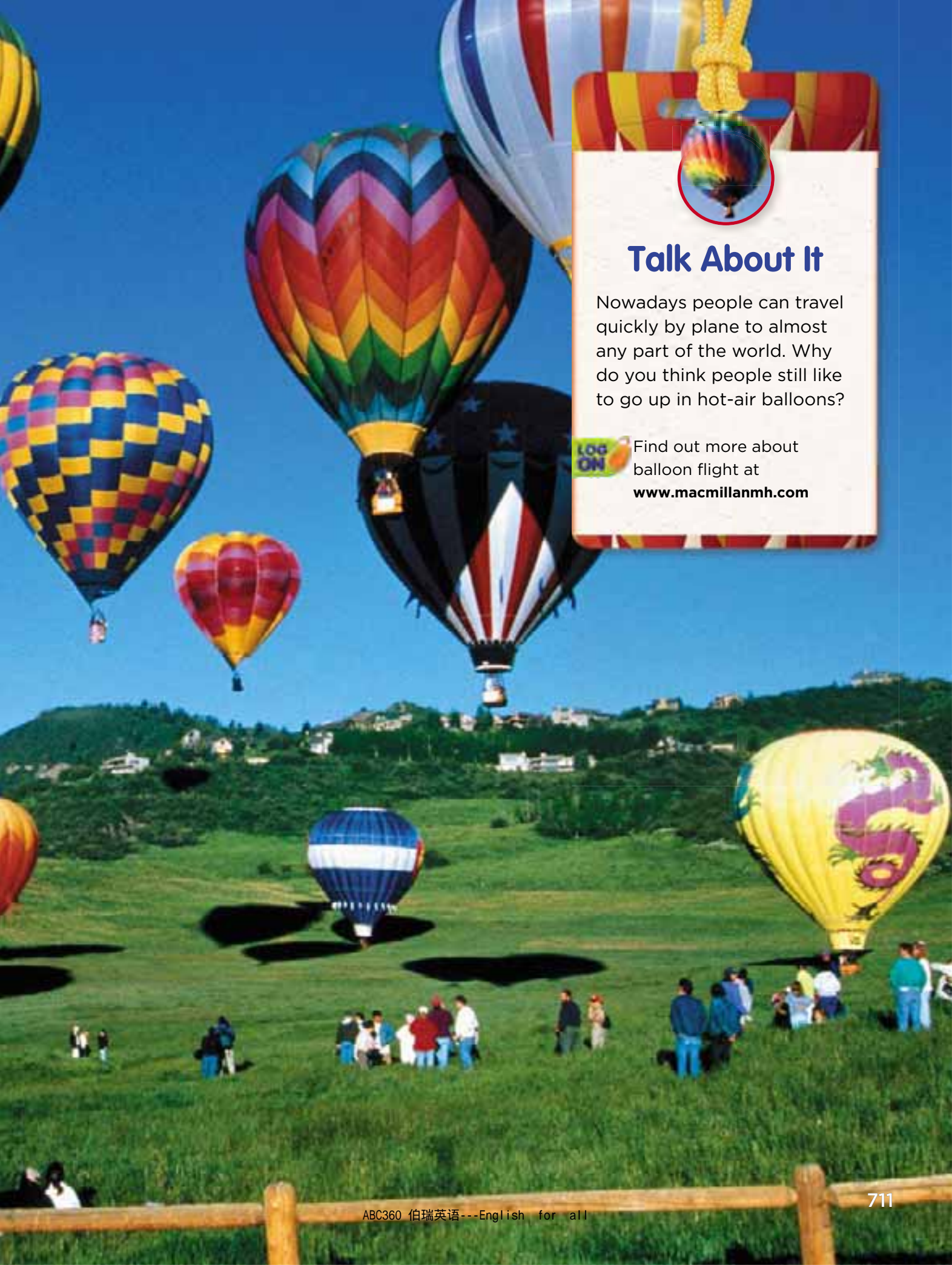


# BALLOON FLIGHT







## Talk About It

Nowadays people can travel quickly by plane to almost any part of the world. Why do you think people still like to go up in hot-air balloons?



Find out more about balloon flight at

[www.macmillanmh.com](http://www.macmillanmh.com)



## Vocabulary

launched	anchored
particles	companion
dense	hydrogen
inflate	scientific

## Word Parts

**Greek Roots** help you understand entire word families. The word *hydrogen* has the Greek root *hydr-*. This root means “water.” Most words beginning with *hydr-* have something to do with water.

# The Science of Hot-Air Balloons

by Enriquez Mera

**S**ince the first hot-air balloon was **launched** in 1783, few things have changed about how they fly. However, some new differences have made ballooning a safer activity enjoyed by many people worldwide.

In the past hot-air balloons were always made out of linen and paper. Today most are made of nylon. Long pieces of nylon, called *gores*, are stitched together to create the balloon. Balloonists use nylon because it is a thin and light material. Also, it cannot be damaged by heat.



Heat is the basic ingredient needed for ballooning. As air becomes hotter, tiny **particles** of matter move faster and faster. As the balloon fills with warmer particles, it begins to rise. This is because the air inside is lighter than the **dense** air surrounding the balloon. It is the warmer air particles that allow the balloon to float above the cooler air.

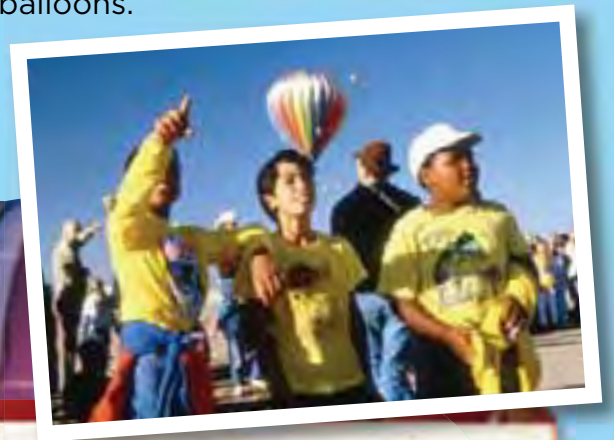
How the air is heated to **inflate** the hot-air balloon has changed a great deal since the early days of ballooning. Back in 1783 fire from damp straw and wool heated the air as the balloon remained **anchored** to the ground. Usually, a brave man or woman and a **companion** would climb into the basket, cut the line, and soar into the air.

Now balloonists use propane—the same gas used in most outdoor grills—instead of straw. For hot-air balloons, it is piped from a tank to metal

tubes. Once there, a small fire heats up the tubes and the propane. When the propane flame is released, it creates hot air that fills the inside of the hot-air balloon.

Besides propane, another gas that could be used is **hydrogen**. Hydrogen is a gas that has no odor, color, or taste and burns very easily. One advantage of hydrogen gas is that it does not need to be heated. However, hydrogen is expensive, so it is mostly used for balloons during **scientific** studies. These are studies designed to gather information that will help scientists.

Whether for science or sport, more people than ever are taking to the air in balloons.



## Reread for Comprehension

### Monitor Comprehension Make Generalizations

A Generalizations Chart helps you make broad statements that describe ideas or events. This will help you monitor your comprehension or understanding of what you read. To make generalizations, combine key facts from the text and your prior knowledge. Use your Generalizations Chart as you reread “The Science of Hot-Air Balloons.”

Fact	Opinion