

HOW DOES IT WORK?

HOT AIR BALLOONS



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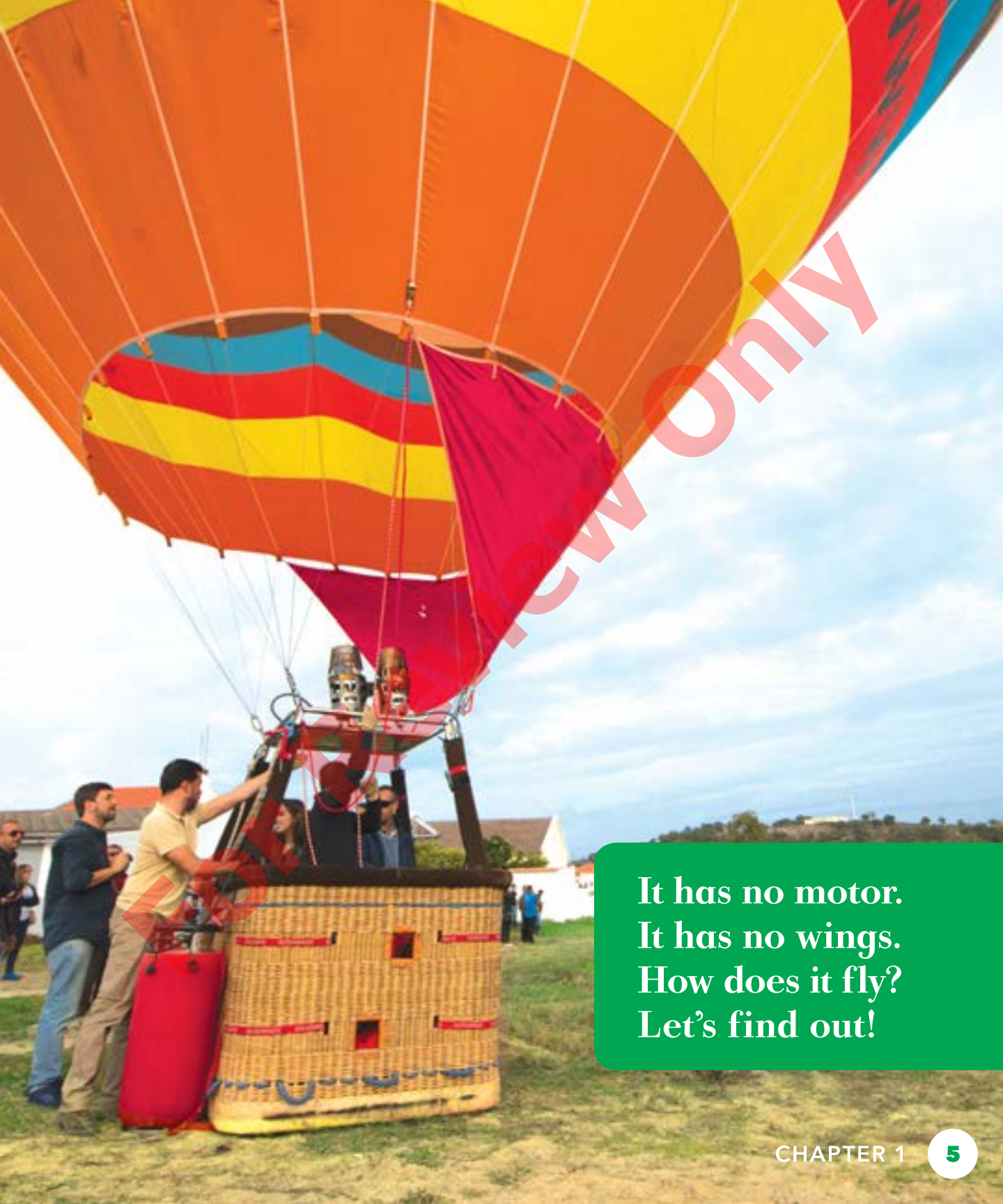


CHAPTER 1

FLOATING

Have you ever seen a hot air balloon? It rises in the sky. It floats among the clouds.



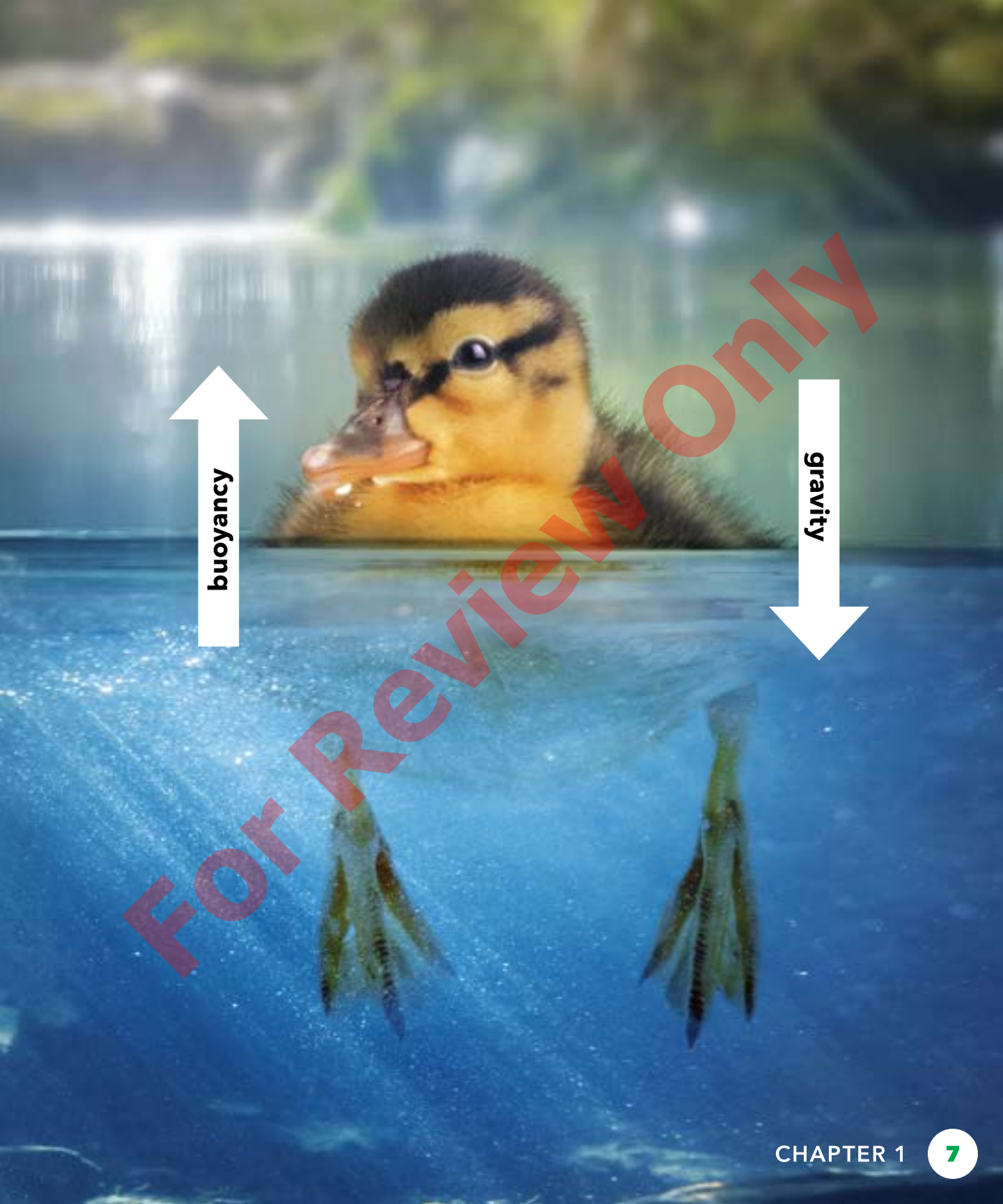


It has no motor.
It has no wings.
How does it fly?
Let's find out!

Think of a duck in water. Does it float or sink? It floats because it is less **dense** than the water. **Buoyancy** keeps it up.

Hot air balloons float because of buoyancy. This is an upward force. **Gravity** pulls things downward. Buoyancy acts against gravity.





buoyancy

gravity



**hot air
molecules**



**cold air
molecules**



What makes a balloon buoyant? Hot air.

Air is made of **molecules**. When air inside a balloon is heated, the air molecules expand. They move apart. There is more space between them. This makes the air less dense. The hot air inside weighs less than cold air outside the balloon. The hot air rises. It fills the fabric of the balloon. It lifts the whole thing up!

THINK ABOUT IT!

Imagine being inside a house on a hot summer day. Is it warmer or cooler in the basement? What does this prove about heat rising?

