

Quick Check

The Balloon Brothers

Name _____ Date _____

Instructions: Read each question carefully and choose the best answer.

1. An object will experience upward force if _____.
 - Ⓐ its density is more than the density of the fluid in which it rests
 - Ⓑ its density is the same as the density of the fluid in which it rests
 - Ⓒ its density is less than the density of the fluid in which it rests
 - Ⓓ its density changes while it is in the fluid in which it rests
2. When air is heated, _____.
 - Ⓐ it expands and becomes more dense
 - Ⓑ it contracts and becomes less dense
 - Ⓒ it expands and becomes less dense
 - Ⓓ it contracts and becomes more dense
3. What is the main idea of the section "Two Brothers with Big Ideas"?
 - Ⓐ Pierre Montgolfier was a successful paper manufacturer.
 - Ⓑ The Montgolfier brothers began burning different combustible materials to identify ones that produced a lot of smoke.
 - Ⓒ Pierre Montgolfier's factories were the official supplier of stationery to the court of King Louis XVI.
 - Ⓓ Joseph and Étienne Montgolfier were two French brothers who were fascinated with the possibility of flight.

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4. What was the author's purpose for writing this book?
 - Ⓐ to persuade the reader that traveling by hot-air balloon is not as dangerous as it used to be and should be a major mode of transportation
 - Ⓑ to inform and entertain the reader with comical stories about the first hot-air balloon flights
 - Ⓒ to persuade the reader that the work of Jacques Charles was more advanced than the work of the Montgolfier brothers
 - Ⓓ to inform the reader about the work and impact of the Montgolfier brothers on the history of air travel
5. Which event occurred in the 1770s?
 - Ⓐ The Montgolfier brothers took over the family business.
 - Ⓑ The German aircraft *Hindenburg* crashed in New Jersey.
 - Ⓒ The element helium was discovered and used in balloons.
 - Ⓓ The Montgolfier brothers discovered that using "Montgolfier gas" was an effective way to make a balloon float.
6. Why were the first hot-air balloon passengers considered heroes?
 - Ⓐ King Louis requested the passengers personally.
 - Ⓑ They flew around the world on the balloon.
 - Ⓒ The dangers of flight were still unknown.
 - Ⓓ They successfully flew over the English Channel.

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7. A **physicist** named Jacques Charles proposed building a hydrogen balloon. What is a **physicist**?
 - Ⓐ a scientist who studies chemical elements and how chemicals interact
 - Ⓑ a scientist who studies items that are easily able to catch fire and burn
 - Ⓒ a scientist who studies the nature and properties of energy and matter
 - Ⓓ a scientist who studies wingless aircraft capable of powered flight
8. Why is helium a much better gas for balloons than hydrogen?
 - Ⓐ It does not catch fire or explode.
 - Ⓑ It is much less expensive.
 - Ⓒ It allows the balloons to fly higher.
 - Ⓓ It is lighter than hydrogen.
9. Why was Joseph Montgolfier's first attempt to float paper spheres with hydrogen gas unsuccessful?
 - Ⓐ The hydrogen was too flammable and caught the paper on fire.
 - Ⓑ He could not find a reliable source of hydrogen to use for his experiments and did not have enough to make the spheres float.
 - Ⓒ The hydrogen atoms were so small that they passed through the paper.
 - Ⓓ The hydrogen produced too much foul-smelling smoke.

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10. When something is **immersed**, it is _____.

- Ⓐ combined with other substances and burned to make smoke
- Ⓑ placed into a fluid or substance that surrounds it completely
- Ⓒ mixed with helium to help make it float
- Ⓓ covered completely with paper or with cloth to create a seal

11. **Extended Response:** What is the legacy of lighter-than-air flight after the initial hot-air balloon flights?

12. **Extended Response:** In what ways do you think rivalry helped advance the evolution of aircraft? Use specific examples from the text.

Quick Check Answer Sheet

The Balloon Brothers

Main Comprehension Skill: Cause and Effect

1. Ⓒ Cause and Effect
2. Ⓒ Cause and Effect
3. Ⓓ Main Idea and Details
4. Ⓓ Author's Purpose
5. Ⓐ Sequence Events
6. Ⓒ Cause and Effect
7. Ⓒ Vocabulary
8. Ⓐ Main Idea and Details
9. Ⓒ Cause and Effect
10. Ⓑ Vocabulary
11. Answers should include the following: *People continued to experiment with air travel despite the risks. By the 1800s, lighter-than-air vehicles had rudders and motorized propellers, so they were more controllable. By the 1930s, huge airships were flying passengers across the Atlantic Ocean. After the crash of the Hindenburg, however, airships were no longer used for large numbers of passengers. Today, airships are used mostly for advertising, and many people continue to enjoy hot-air balloons.*
12. Answers will vary but should include the idea that with competition and rivalry, inventors are always looking to improve their experiments and always coming up with new ideas. For example, even though the Montgolfier brothers gave up on using hydrogen to float their balloons, Charles continued his experimentation with hydrogen, which ultimately led to the birth of airships.