In April 1875, three individuals, including Gaston Tissandier, ascended in a balloon called the *Zenith*, near Paris, France, to an altitude of nearly 28,000 feet and lost consciousness. A newspaper at that time included the wood engraving featured here, illustrating what happened.

At first glance, students may observe the three men in the basket and wonder why one of them is dosing off. Upon closer investigation, students may notice the scientific instrumentation on the ropes above the basket and speculate what these instruments measure. Encourage additional student observations, reflections, and questions.

In the late 19th century, high-altitude ballooning was much like the space race of the 20th century: there was pride in going the highest, but scientific discovery was an important part of the process, too. Tissandier and his doomed fellow aeronauts had set out on an expedition to collect data at the highest altitude a balloon had ever reached. All three men were aware of the risks of hypoxia on the human body due to low atmospheric pressure; they brought a breathing apparatus on board their flight, but none of them predicted that this investigation could be fatal. Tissandier floated in and out of consciousness, relying on the breathing apparatus to increase his oxygen levels. Somewhere around 28,000 feet, Theodore Sivel and Joseph Croce-Spinelli lost consciousness after being restricted to less than 50% oxygen saturation for nearly two hours. They never regained consciousness. As a result of this tragic event, high-altitude ballooning was halted for two decades.

Ask your students if they have ever listened to the safety briefing before an airplane flight. Invite them to consider the relationship between the announcement to use an oxygen mask in the event of cabin depressurization and the discoveries made during the deadly *Zenith* ascent.

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