

Space Shuttle Columbia

By Sharon Fabian

¹ In the 1960s, the Space Shuttle Program was in the planning stages. Scientists envisioned a vehicle for space transportation that could make dreams come true. It would have the capability to orbit the earth and then return just like a jet plane - ready to go again. It would carry satellites into space, and it would even carry astronauts back and forth to a space station.

² By the 1970s, the first shuttles were being built. The first one, *Enterprise*, was an experimental model. After that, five more were built: *Columbia*, *Challenger*, *Discovery*, *Atlantis*, and *Endeavor*.

³ Over the years, the shuttles had many successful flights. Still, NASA engineers were concerned about the safety of each mission. Blasting off into outer space was always dangerous.

⁴ In 1986, the shuttle *Challenger* met with disaster. As it was blasting off from the launch pad, the shuttle exploded, killing all seven astronauts aboard. The disaster was blamed on the failure of a small part called an O-ring. Investigations showed that there had been problems with the O-rings for some time.

⁵ After the *Challenger* disaster, NASA flew many more shuttle flights without incident. Shuttles carried satellites including the Hubble Space Telescope and military satellites into low earth orbit. Later they began to carry supplies and astronauts to the International Space Station.

⁶ By the year 2003, the space shuttle *Columbia*, the oldest operating shuttle, already had a long list of successful flights. On January 16 of that year, it set out on another mission. After twenty-seven flights, this one must have seemed almost routine.

⁷ When the space shuttle was launched, a chunk of foam insulation broke off from its fuel tank. Problems with the insulating foam had happened before. In fact, they had happened often enough that they had started to seem routine, too.

⁸ Still, engineers at NASA looked into the problem. They saw that the chunk of foam had broken a hole in the front edge of one of the shuttle's wings.

⁹ Officials at NASA made the decision to continue with the mission.

¹⁰ *Columbia* stayed in space for sixteen days. The astronauts completed their jobs and prepared for reentry into earth's atmosphere. Dressed in their orange space suits, they passed around a camera taking pictures inside the shuttle and through its windows. When it was time, they strapped into their seats for the final stage of reentry into the earth's atmosphere.

¹¹ Then it happened. The force of reentry caused a tremendous amount of heat to enter through the hole in the shuttle's wing. The heat was too much for the shuttle. *Columbia* disintegrated as it flew over Texas on that day, February 1, 2003.

¹² President Bush came on TV and announced to the nation, "The *Columbia* is lost; there are no survivors."

¹³ This was the second major disaster for the shuttle program, and it brought the program to a halt. Taking a serious look at problem areas like the O-rings and the foam insulation could not wait any longer. No more shuttle missions were launched while the problem was studied.

¹⁴ Stopping the shuttle program delayed work on the International Space Station. It meant that astronauts could only travel to and from the space station by way of Russia's space shuttle.

¹⁵ Engineers and astronauts at NASA made improvements to the shuttles. Space travel was still a dangerous adventure, but eventually they decided that the time was right to fly again. Shuttle flights resumed in 2006. Then, in about 2010, if all goes as planned, the shuttle fleet will retire to make way for a newer model space vehicle.



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<p>1. The space shuttle <i>Columbia</i> met with disaster in ____.</p> <p><input type="radio"/> A 2006</p> <p><input type="radio"/> B 1960</p> <p><input type="radio"/> C 1970</p> <p><input type="radio"/> D 2003</p>	<p>2. <i>Columbia</i> was ____.</p> <p><input type="radio"/> A A Russian space shuttle</p> <p><input type="radio"/> B One of six US shuttles</p> <p><input type="radio"/> C The first shuttle to meet with disaster</p> <p><input type="radio"/> D The first space shuttle</p>
<p>3. Space shuttles ____.</p> <p><input type="radio"/> A Land on the moon</p> <p><input type="radio"/> B Visit other planets</p> <p><input type="radio"/> C Orbit the earth and return</p> <p><input type="radio"/> D Are permanent stations in space</p>	<p>4. Space shuttles are ____.</p> <p><input type="radio"/> A Space vehicles that are no longer used</p> <p><input type="radio"/> B Imaginary space transportation</p> <p><input type="radio"/> C Vehicles of the future</p> <p><input type="radio"/> D Useful vehicles</p>
<p>5. Space shuttle <i>Challenger</i> was destroyed in flight because of problems with ____.</p> <p><input type="radio"/> A Computer systems</p> <p><input type="radio"/> B Foam insulation</p> <p><input type="radio"/> C O-rings</p> <p><input type="radio"/> D Not enough fuel</p>	<p>6. Space shuttle <i>Columbia</i> was destroyed in flight because of problems with ____.</p> <p><input type="radio"/> A Computer systems</p> <p><input type="radio"/> B Foam insulation</p> <p><input type="radio"/> C O-rings</p> <p><input type="radio"/> D Not enough fuel</p>
<p>7. Because of earlier problems, NASA officials knew that there was the possibility of a problem on <i>Columbia's</i> final flight.</p> <p><input type="radio"/> A False</p> <p><input type="radio"/> B True</p>	<p>8. After the <i>Columbia</i> disaster, the space shuttle program was grounded until there was no longer any possibility of in-flight problems.</p> <p><input type="radio"/> A False</p> <p><input type="radio"/> B True</p>

