

Teacher Resource

Current Events from Carolina™ Curriculum

Carolina™ Curriculum helps you bring current events into your classroom and connect real world events to topics you're already teaching.

Topic: The NASA Space Shuttle Program

The following articles are meant to be used with your Grades 6-8 students (Student Version B)

Selections include key vocabulary, discussion questions that require students to summarize what they've read, and questions that prompt students to make inferences based on what they have read.

For more information about the curriculum featured in this Teacher Resource visit Carolina™ Curriculum on the web at www.carolinacurriculum.com.

NASA Space Shuttle Program

On May 16, 2011, Space Shuttle *Endeavour* took its final launch into orbit. For over 30 years, the space shuttles have been **NASA's** (National Aeronautics and Space Administration's) vehicles for sending people into space.

What is a space shuttle?

A space shuttle is a reusable spacecraft. It is launched into space by rockets, but lands like an airplane when it returns. Because it is reusable, the parts can be collected to be part of future missions. Only six orbital vehicles (the white, plane-shaped part) have been built.



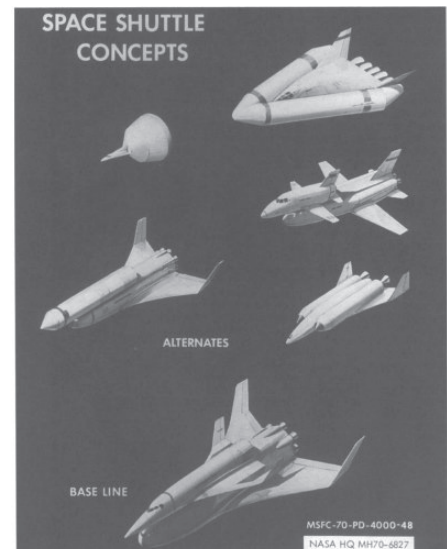
Space Shuttle *Discovery*

How long has the space shuttle program been active?

The first manned space shuttle was launched on April 12, 1981. Its two-day mission was to show that the space shuttle was a safe way to enter space. But the engineers and scientists who designed and built the space shuttle started much earlier. In 1972, NASA announced the design for the space shuttle, and in 1977 the first **prototype**, or shuttle built for testing, flew.

What was before the space shuttle program?

A series of vehicles were used before the space shuttle program. Project Mercury sent the first American man to space on a Titan rocket. In 1969, Project Apollo put the first man on the moon using a rocket. These were not reusable, which meant that a new spacecraft had to be built for every mission. A space shuttle is also has a larger payload than other spacecraft. The shuttle can hold up to 11 people and carry a payload equal to the weight of 10 cars.



Early Space Shuttle Ideas

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NASA Space Shuttle Program

How many space shuttles are there?

NASA has built 6 shuttles: *Atlantis*, *Challenger*, *Columbia*, *Discover*, *Endeavour*, and *Enterprise*. Five of the shuttles were used for space missions while the other (*Enterprise*) was used as a prototype. Two of the shuttles were in accidents (*Challenger* and *Columbia*). The four remaining shuttles went to museums in Florida, California, Virginia, and New York.

What is important about the space shuttle program?

In the thirty years the space shuttles have flown, there have been over 133 missions. Early space shuttle flights brought a program called Spacelab, in which scientists could conduct experiments in microgravity. A space shuttle brought the first American woman, African American, Canadian, and teacher into space. The space shuttle launched probes like *Magellan* to Venus and *Galileo* to Jupiter. It also launched and repaired the Hubble Space Telescope and brought most of the pieces of the **International Space Station** into space.

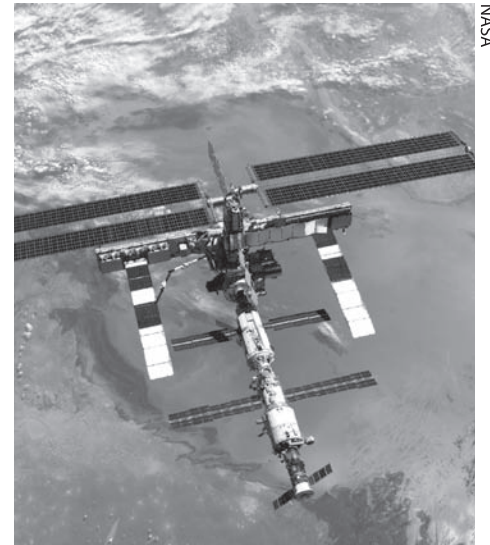
Has anything bad happened to a space shuttle?

Unfortunately, two space shuttles were lost on their flight missions. In 1986, Space Shuttle *Challenger* disintegrated after launch due to a faulty part. In 2003, Space Shuttle *Columbia* disintegrated during re-entry because of a damaged heat shield.

NASA Space Shuttle Program

What comes after the space shuttle program?

Currently NASA is looking at designing a replacement for the space shuttle called the Space Launch System, which is planned to begin operations in 2016. Until the Space Launch System becomes active, other countries continue support NASA with the international space station until then. The Russian *Soyuz* spacecraft provides manned missions to the space station while the European and Japanese spacecraft supply restocking missions sending materials and food to the space station. A private company called SpaceX will also take part in supplying the space station.



NASA

International Space Station

U.S. Manned Space Programs

Program	Years	Highlight
Mercury	1958–1963	First American in space
Gemini	1964–1966	Prepared NASA for Moon landing
Apollo	1967–1972	First man on the Moon
Skylab	1973–1974	First American space station
Space Shuttle	1981–2011	First reusable space vehicle

Discussion Questions

1. What have you learned about the space shuttle program?
2. What scientists might work on or with a space shuttle?
3. Research to find out what the most recent news on human space flight is.

Key Vocabulary

- International Space Station
- NASA
- Prototype

Connections to Carolina™ Curriculum

This document can be used to extend the following lessons from the programs of Carolina™ Curriculum:

The STC Program™

- ***Earth In Space, Lesson 10:*** Students explore space exploration in the Anchor Activity. This article can help extend the lesson and included reading selections by giving students an additional jumping off point for their projects.
- ***Experimenting with Forces and Motion, Lesson 8:*** In the Exploration Activity for this unit, students explore modes of transportation. This article can extend the discussion of transportation devices that students might select for their projects.
- ***Exploring the Properties of Matter, Lesson 9:*** The Exploration Activity for this unit explores the connection between manufactured objects and the materials they are made from. This article presents students with an option for research that they may not have thought of exploring.

GEMS®

- ***Space Sequences Grades 6–8, Session 1.8:*** Students learn how space shuttle astronauts protect themselves from exposure to dangerous energies from the sun.