

CELEBRATING SPACE: A QUICK HISTORY

Background

Putting the Space Age Into Context: The dawn of the space age does not date back that far in human history—only 40 years! It is so recent that you can get eye-witness accounts by asking parents, grandparents, and even teachers where they were during Alan Shepard's launch, John Glenn's orbit, or Neil Armstrong's first step on the Moon.

How It Began: The first astronauts and cosmonauts went alone, stuffed into capsules barely large enough for their bodies. They ate squeeze-tube food and peered out at Earth through tiny portholes. Flights lasted only a matter of minutes or hours.

Where We Are: A lot has happened in 40 years. Today we routinely launch satellites to orbit Earth so we can learn about weather and understand our environment. We build increasingly more advanced technology to explore our Solar System and peer into the far reaches of the universe using both Earth-based and in-orbit telescopes.

Where Are We Going? The final answer to that question is up to today's young people.

Materials

"Celebrating Space" Student Worksheet

Set of decade signs

Set of milestone cards

Set of blank milestone cards

Internet

Science Journals

Books

Magazines

Video

Scissors

Tape

Markers

Colored Pencils

Pencil/Pen

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Procedures

1. Post the years by decades on a wall, a chalkboard or a table, beginning with the 1950s on through the 2050s.
2. Direct students to sequence the milestones on the timeline.
3. We purposely left out some key milestones for students to add. As time allows, students can research and add more milestones using the blank template. Here are some additional milestones to point them in the right direction:
 - a. 1926 – Dr. Robert Goddard's first liquid-fuel rocket
 - b. 1957 – Sputnik (first man-made satellite in space)
 - c. 1958 – Explorer 1 (first American satellite in space)
 - d. 1961 – Yuri Gagarin, Soviet Union (first human in space)
 - e. 1962 – Mariner 2 (first robotic flyby of another planet)
 - f. 1970 – Venera 7 (first robotic landing on another planet)
 - g. 1975 – Apollo-Soyuz (first international mission in space)
 - h. 1978 – Pioneer Venus Orbiter encounter
 - i. 1981 – Voyager 2 Saturn flyby encounter
 - j. 1989 – Voyager 2 Neptune flyby encounter
4. Challenge students to create futuristic milestones for the decades spanning 2010–2050. (Like returning to the Moon, colonizing Mars, etc.)

Extensions

- Have students pick one event and provide a 15 minute presentation, or 2 page written report about the event.
- Have students research the development of technology in the space program and how those advancements are used in everyday life.

Before 1960

1960–1969

1970–1979

1980-1989

1990-1999

2000-2009

2010-2019

2020-2029

2030-2039

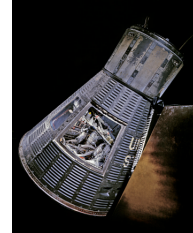
2040-2049

2050-2059

After 2059

CELEBRATING SPACE: A QUICK HISTORY**Kennedy's
Challenge
1961**

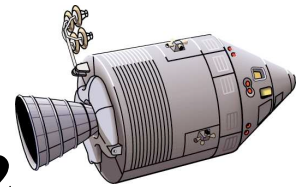
President John f. Kennedy, speaking to Congress, challenged the nation “to land a man on the Moon and return him safely to Earth: before the end of the decade.

**Mercury
Program
1961-1963**

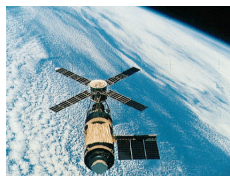
These single-man spacecraft enabled astronauts to orbit Earth for only a few hours at a time and helped prove a human's ability to function in space and to maneuver their spacecraft.

**Gemini
Program
1965-1966**

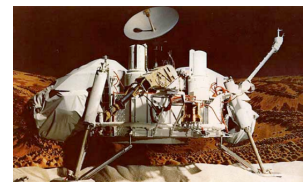
These two-person spacecraft extended missions to last up to two weeks and perfected space docking procedures in orbit.

**Apollo
Program
1967-1972**

The Apollo spacecraft carried crews of three on missions to the Moon and back. By the program's end, 12 Americans had walked on the surface of the Moon.

**Skylab
1973-1979**

America's first space station, Skylab housed three different three-man crews over nine months in 1973-74. Skylab helped show the value of conducting scientific experiments for extended periods of time. Skylab reentered and burned up in the Earth's atmosphere in July 1979.

**Viking 1/2
1975-1976**

These twin probes surveyed Mars, analyzed its soil, and searched for signs of life. Viking 1 provided the first-ever close-up pictures of the surface of Mars. While these dates reflect the launch and landings, the Viking 2 lander was not shut down until 1980, and the Viking 1 lander, in 1982.

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**Space Shuttle Program
1981-Present**



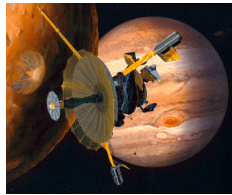
The first reusable spacecraft, shuttle orbiters, lift-off like a rocket, orbit like a spacecraft, and land like a plane. The orbiters serve as science laboratories, and they launch, retrieve, and repair satellites.

**Mir Space Station
1986-2001**



Russian cosmonauts have broken space endurance records aboard this space station with stays of more than one year. Americans trained on Mir preparing for the new ISS.

**Galileo
1989-1997**



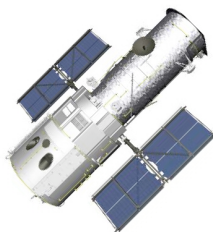
The Galileo spacecraft has sent us flyby images of planets, asteroids, and even the Shoemaker-Levy comet collision with Jupiter in 1994. It is currently in orbit around Jupiter and studying its moons.

**Crew Exploration Vehicle
TBD**



NASA plans to return to the moon and the CEV is the spacecraft to get the astronauts on their way. Once on the Moon, bases will be established to lift-off for Mars.

**Hubble Space Telescope
1990-Present**



Rewriting much of what we know about the universe, Hubble has found planets around other stars and possibly witnessed the birth of new galaxies. Regular servicing missions continually upgraded the telescope's instruments.

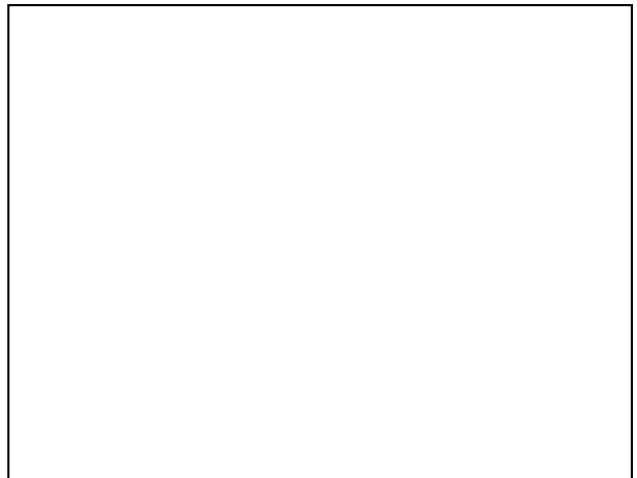
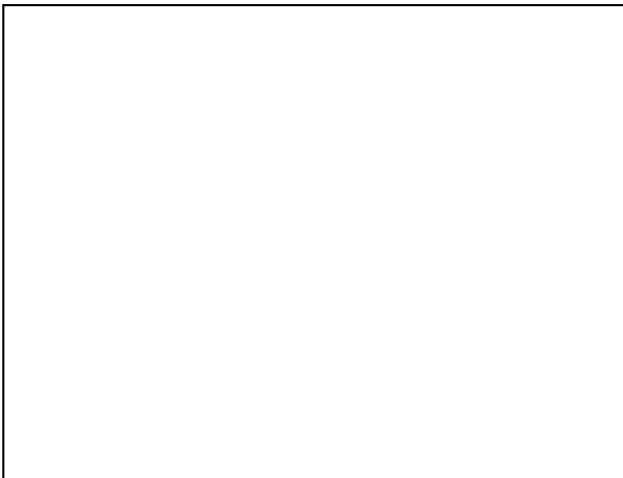
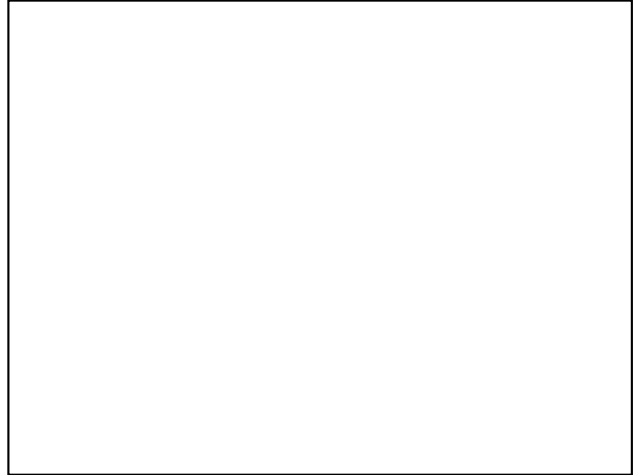
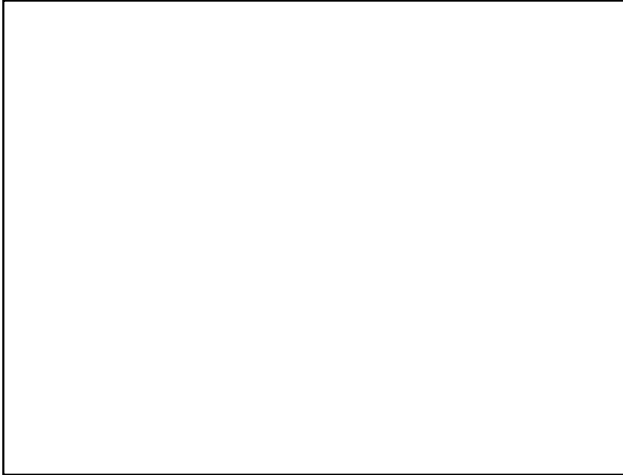
**International Space Station
1997-TBD**



Housing crews of up to eight scientists, this international laboratory should lead to medical breakthroughs, advanced technologies, and further human space exploration.

TEACHER PAGE

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Student Name _____ Date _____

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Where We Are: A lot has happened in 40 years. Today we routinely launch satellites to orbit Earth so we can learn about weather and understand our environment. We build increasingly more advanced technology to explore our Solar System and peer into the far reaches of the universe using both Earth-based and in-orbit telescopes.

Where Are We Going? The final answer to that question is up to you.

DIRECTIONS. Read through the following instructions in order to create a space exploration timeline.

Procedures

1. Look at the decades posted by your teacher. Using the milestones provided by your teacher, place the space event in the correct decade.
2. Some key milestones have been left out. As time allows, research and add more milestones using the blank template. Here are some additional milestones to get you started:
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