



Amazing World Records of Science and Technology

World's First Space Station: *Salyut 1*

Science and Technology
Worksheets and Activities

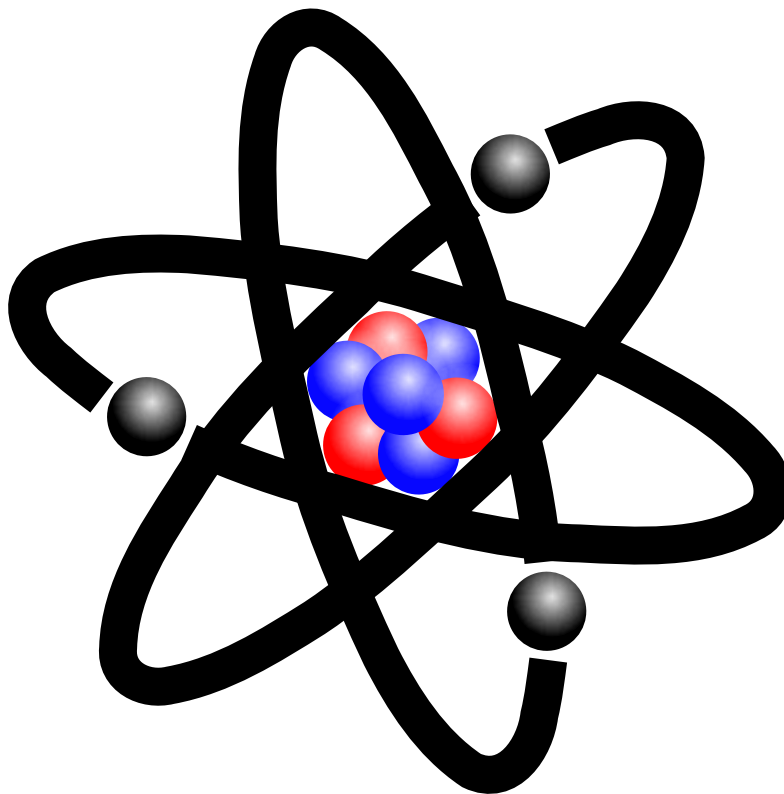
To the Teacher

Welcome to a superlative of science and technology!

This teaching packet is excerpted from the book, *Amazing World Records of Science and Technology*; the activity sheet numbers are for reference only.

Sharing World Records

However you integrate this packet into your teaching, always keep in mind that the student activity sheets provide countless opportunities to foster broader and deeper awareness of scientific and technological forces. Keep in mind, too, that children learn best when they're having fun. Foster surprise, delight, and awe about these superlatives of the human experience. Emphasize the drama that underlies every world record. Do your best to evoke wonderment of the grand human story. Good luck in this important work.





15. The World's First Space Station

Salyut 1

The World Record

The world's first space Station was *Salyut 1*, launched by the Soviet Union in 1971.

Thoughts on Teaching

Explain the role of the Cold War in the space race.

Major Objectives

By answering the questions and completing the projects on this activity sheet, students will accomplish the following objectives:

- identify, investigate, and discuss the world's first space station.
- explore the relationship of this record-setting object to broader topics and to their own experiences.

Time Required

The activity sheet can be completed in about one class period. Allow additional time for extension and enrichment activities.

The Activity Sheet

Level

basic/intermediate

Answers

Show What You Know

1. A space station is a manned satellite; the Soviet Union; *Salyut 1*.
2. They died during reentry; *Salyut 1* burned up when its orbit decayed.

Think About It

3. Answers will vary but should at least indicate student appreciation of how valuable a space station is for learning about living in space. Reward thoughtful responses.

Challenge Yourself

Consider guiding a class discussion about the value of space exploration.

Hands-on Enrichment Activity

Most students have a misconception about the height of orbiting spacecraft above the earth. From looking at not-to-scale diagrams, they picture orbits as being much higher than they are. Explain that manned spacecraft typically orbit at an altitude of less than 200 miles. Emphasize how long this is in relation to the size of the earth by having students use a globe and a piece of paper cut to scale to represent 200 miles. Have them hold the paper vertically against the surface of the globe to indicate the true scale height of the orbits of space stations such as *Salyut 1*.

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The World's First Space Station

Activity Sheet 15A

Name _____ Class _____ Date _____

A satellite is an object that is launched into space by rockets and then orbits the earth. There are many kinds of satellites. Communication satellites relay television and telephone signals. Weather satellites measure and analyze the earth's atmosphere. Spy satellites take pictures of other countries. But perhaps the most fascinating satellites of all are called space stations. They are satellites in which astronauts live, sometimes for months at a time.

Space stations are important for a variety of reasons. They provide a place for astronauts to work on long-term projects. Crews can come and go, traveling in spaceships that dock at the station. People can live in space stations for long periods of time, and their experiences teach us about the effects of living in space. In the future, space stations may serve as stopping-off points for flights deep into space. One scientist said, "Space stations are incredibly important. They are the first stepping-stones on mankind's journey to the stars."

The first "stepping-stone" was a worldwide sensation when it was launched. Its launch remains one of the most momentous events in history. To find out about this space station and others, read the following information and study the illustrations. Think about how space stations will advance during your lifetime. Then answer the questions and complete the activities.

The World Record

**The world's first space Station was *Salyut 1*,
launched by the Soviet Union in 1971.**



Salyut 1 with docked Soyuz 10 spacecraft



The World's First Space Station

Activity Sheet 15B

Name _____ Class _____ Date _____

Vital Statistics

- ◆ *Salyut 1* was launched into earth orbit on April 19, 1971. Cosmonauts (the Russian term for astronauts) first entered the space station from another spacecraft, *Soyuz 11*, in June.
- ◆ Three cosmonauts orbited in *Salyut 1* for 23 days, a duration record at the time.
- ◆ Tragically, the three cosmonauts, Georgiy Dobrovolskiy, Vladislav Volkov, and Viktor Patsyev, lost their lives when their spacecraft lost pressure as it was reentering earth's atmosphere.

Salyut 1: Fascinating Facts

- ◆ A crew from *Soyuz 10* docked with *Salyut 1* prior to the *Soyuz 11* docking, but they failed to enter the space station.
- ◆ *Salyut 1* was the first of seven Salyut space stations. The Soviet *Salyut* program was replaced by the Russian Mir station in 1987.
- ◆ *Salyut 1* was launched on the 10th anniversary of the first manned space flight, which was made by Yuri Gagarin.
- ◆ The *Salyut* stations were huge: Each was about 45 feet long, from 7 to 13 feet in diameter, and weighed about 20 tons.
- ◆ *Salyut 1*, unlike some other space stations which are assembled in orbit, was launched in one piece.
- ◆ The *Salyut* stations were launched unmanned; crews ferried to them later aboard Soyuz spacecraft. The space stations were crewed by three cosmonauts.
- ◆ Power was supplied by solar panels that extended from the main body of the spacecraft.
- ◆ *Salyut 1*'s orbit decayed and it burned up in earth's atmosphere, without anyone on board, on October 11, 1971.



The World's First Space Station

Activity Sheet 15C

Name _____ Class _____ Date _____

SHOW WHAT YOU KNOW

1. What is a space station? Which country launched the first space station? What was it called?

2. What became of the crew of the first space station? What became of the space station itself?

THINK ABOUT IT

3. Explain this statement: "space stations are incredibly important. They are the first stepping-stones on mankind's journey to the stars."

CHALLENGE YOURSELF

- ◆ Space stations orbit the earth today. Conduct research about life on a space station. What space stations are currently in use? What do crew members eat? How do they sleep? What kind of work do they do? Report your findings to the class.
- ◆ Many people argue that the money spent on space stations could be better spent on things here on earth. Do you agree? Explain your position.