




People have always wanted to explore space. At first they just used their eyes, then telescopes, and then spacecraft and other tools. **Spacecraft** include rockets, satellites, probes, space capsules, space stations, and space shuttles. Some spacecraft have people aboard, but most do not. The first spacecraft, a satellite called Sputnik, was built and launched into orbit in 1957 by the Soviet Union. Since then, several nations and private businesses have put thousands of spacecraft of all kinds into orbit. The launches have cost billions of dollars, and while many have been successful, some have not. Some missions have even ended in disaster.

CHALLENGE  When did some of the great advances in space exploration occur?



Soviet Union leaders stand in front of a model of Sputnik III.



An astronaut climbs down a lunar module.



Space Shuttle Atlantis takes flight.



Two modules of the International Space Station are put together during an astronaut's space walk.



A supply vehicle leaves the International Space Station.

MATERIALS



For each group of four students

- 1 set of 15 Space Exploration Date Cards
- 1 set of 15 Space Exploration Event Cards



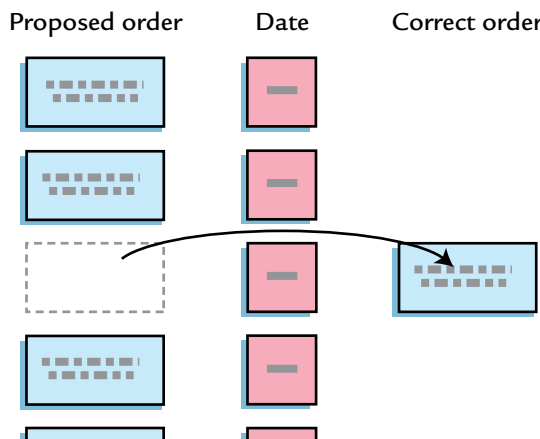
For each student

- 1 Student Sheet 85.1, “Anticipation Guide: History of Space Exploration”
- 1 Student Sheet 85.2, “Space Exploration Timeline”

PROCEDURE

Use Student Sheet 85.1, “Anticipation Guide: History of Space Exploration” to prepare for the following activity.

1. Place the Space Exploration Date Cards in order in a column, with the earliest year at the top and the most recent at the bottom.
2. Carefully read all 15 Space Exploration Event Cards.
3. Work with your group to put the Space Exploration Event Cards in the order in which the events occurred. Place each Event Card to the **left** of the Date Card showing the year in which you think the event occurred.
4. Using the letters and dates on the cards, write this order of events in your science notebook putting the most recent event at the top.
5. Your teacher will provide a clue to help you place one of the cards. Use this clue to move one of the Space Exploration Event Cards to the **right** of the Date Card, as shown in the diagram at left. Moving an Event Card to the right means it is next to the correct Date Card.



6. Re-order your Event Cards on the left of the Date Cards as necessary, based on the new information.
7. Repeat Steps 5 and 6 until you have moved as many Event Cards as possible to the right side of the Date Cards.

8. Compare your timeline to the one provided by your teacher. For any cards still on the left side of the Date Cards, move them to the right side of the correct Date Cards.
9. When all Events are in the correct order, copy all the Events onto Student Sheet 85.2, “Space Exploration Timeline.”

ANALYSIS



1. Which of the Space Exploration Event Cards that did not have dates did you place:
 - a. closest to the correct date?
Explain how you made your decision.
 - b. farthest from the correct date?
Explain how you made your decision.
2. Why do you think many space exploration events occurred between 1960 and 1980?



3. **Reflection:** If you had to choose a place in space to explore, what would it be? Explain why you chose this place.