

Read the history article. Then answer the questions that follow.

from
“**And Away
We Go: Rockets**”

from *Kids Discover*

- 1 From blastoff to touchdown, a rocket is an awesome sight. The Saturn 5 rocket that sent astronauts to the moon stood 363 feet high, about the height of a 30-story building. It weighed more than six million pounds. With rocket engines, it sent a spacecraft weighing more than 100,000 pounds to a lunar landing.
- 2 In 1930, Robert Goddard was a Massachusetts-born scientist working almost totally alone. He was the first to set earthlings on a path out of this world and into space. Thirty-nine years after Goddard shot off his first rocket, United States astronaut Neil Armstrong took his first step on the moon. Since that time, rockets have lifted hundreds of spacecraft and satellites into orbit around Earth. They have carried space shuttles to and from the *International Space Station*. They have sent unmanned spacecraft to Mars and Jupiter. Satellites put in orbit by rockets beam back information about Earth’s atmosphere and weather.



Each Saturn 5 rocket could be used only once.

- 3 Robert Goddard once called himself a “one-dream-man.” His dream was to send a rocket into space. It began on October 19, 1899, when he was 17 years old. He climbed a ladder to trim branches from a cherry tree. As he looked up, he had a vision of traveling into space.
- 4 Throughout his career, Goddard worked mostly alone. He had little money or support. Rocket research was not considered a proper subject for a serious scientist. Goddard experimented with rockets in his free time. Most of his experiments took place on his aunt’s Massachusetts farm.



Robert Goddard on March 16, 1926, holding the launch frame for a rocket of his own design.

Up, Up, and Away!

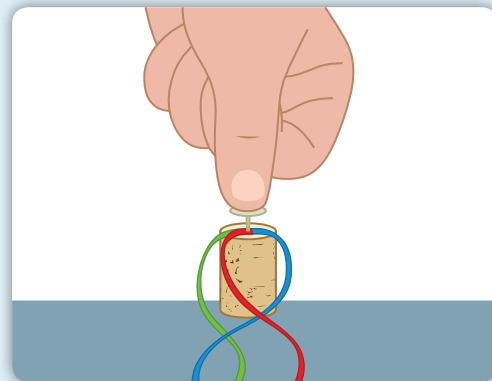
Launch a rocket in your backyard with these simple household materials.

Materials:

- empty quart or liter plastic bottle
- cork
- paper towels
- 3 or 4 streamers (made from paper towels or crepe paper)
- thumbtack
- 1/2 cup water
- 1/2 cup vinegar
- 1 teaspoon baking soda

Directions:

1. Make your rocket by attaching streamers to the top of the cork with the thumbtack. Make sure the cork will fit tightly into the bottle. If it is too tight, ask an adult to help you trim the cork with a knife. If it’s too loose, wrap pieces of paper towel around it until it fits snugly in the bottle top.

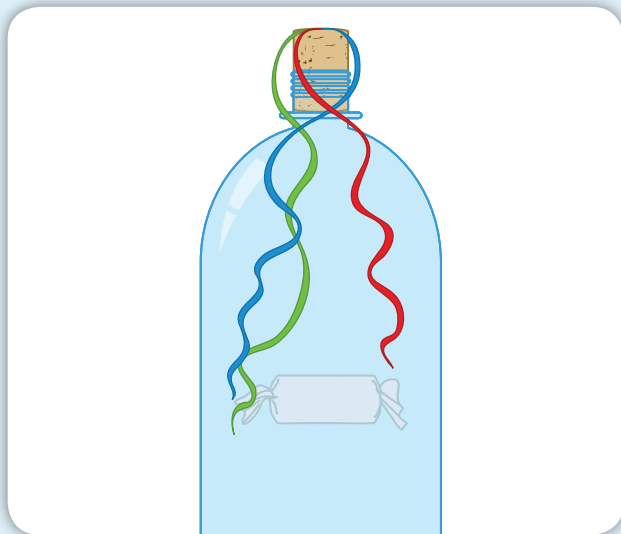




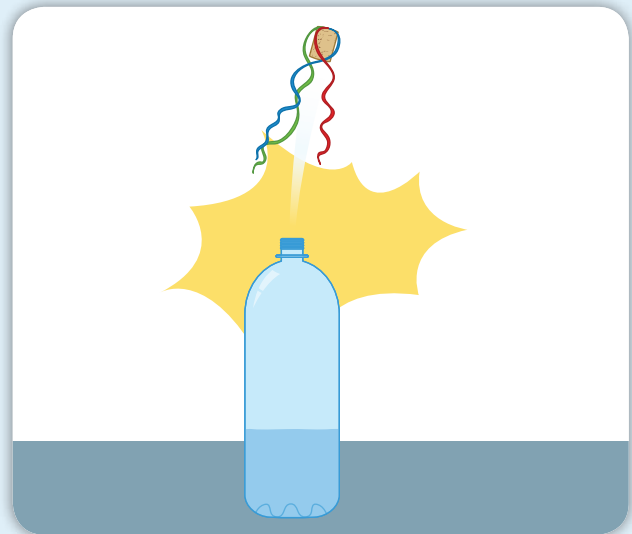
2. With the cork out of the bottle, put the water and the vinegar into the bottle.



3. Cut a 4-inch by 4-inch piece of paper towel. Wrap the baking soda in the paper towel, twisting the ends to keep the baking soda in.



4. Go outside where there is plenty of space. Drop the paper-towel-wrapped baking soda into the bottle. Fit the cork into the bottle top. Set the bottle upright away from any people.



5. WAIT. As the liquid soaks through the paper towel, the vinegar will react with the baking soda and produce carbon dioxide gas. As more and more gas forms, the pressure will build up inside the bottle. Eventually, the bottle will blow its cork. The streamers will help you trace its flight.

 **Think**

1 Which sentence **best** explains why the last step in making a rocket is to wait?

- A** The cork has to fit tightly into the bottle top.
- B** It takes time for gas to build up in the bottle.
- C** It is safer to take the bottle outside to launch.
- D** You must wrap the baking soda in a paper towel.

2 Read this sentence from paragraph 3.

Robert Goddard once called himself a “one-dream-man.”

Which **two** sentences from the text explain why Goddard said this?

- A** “Throughout his career, Goddard worked mostly alone.”
- B** “Most of his experiments took place on his aunt’s Massachusetts farm.”
- C** “It began on October 19, 1899, when he was 17 years old.”
- D** “As he looked up, he had a vision of traveling into space.”
- E** “His dream was to send a rocket into space.”
- F** “Thirty-nine years after Goddard shot off his first rocket, United States astronaut Neil Armstrong took his first step on the moon.”

3 This question has two parts. First, answer Part A. Then answer Part B.

Part A

Which sentence below **best** tells the main idea of the article?

- A** Robert Goddard helped build the rocket that took the astronaut Neil Armstrong to the moon.
- B** Robert Goddard was a scientist whose work led to the Saturn 5 rockets, which were 30 stories tall.
- C** Robert Goddard did most of his rocket research in his spare time on his aunt’s farm in Massachusetts.
- D** Robert Goddard worked alone for many years to develop the rockets that led to space travel and exploration.

Part B

Which details in the chart below **best** support your answer to Part A? Draw an X next to two key details that support the main idea.

Detail from the Article	Supports the Main Idea
The Saturn 5 Rocket that sent astronauts to the moon stood 363 feet high, about the height of a 30-story building.	
Thirty-nine years after Goddard shot off his first rocket, United States astronaut Neil Armstrong took his first step on the moon.	
Satellites put in orbit by rockets beam back information about Earth’s atmosphere and weather.	
Throughout his career, Goddard worked mostly alone.	

- 4 Answer Parts A and B below.

Part A

Which statement **best** explains why Robert Goddard worked “almost totally alone”?

- A Other scientists did not take rockets seriously.
- B Goddard did not like working with other scientists.
- C The farm was too far away from other people.
- D Goddard wanted to keep his research a secret.

Part B

Which sentence from the text **best** supports the answer to Part A?

- A “Throughout his career, Goddard worked mostly alone.”
- B “Most of his experiments took place on his aunt’s Massachusetts farm.”
- C “Rocket research was not considered a proper subject for a serious scientist.”
- D “Robert Goddard once called himself a ‘one-dream-man.’”

- 5 Underline the sentence that **best** explains why the cork blows out of the bottle.

WAIT. As the liquid soaks through the paper towel, the vinegar will react with the baking soda and produce carbon dioxide gas. As more and more gas forms, the pressure will build up inside the bottle. Eventually, the bottle will blow its cork. The streamers will help you trace its flight.

6 Answer Parts A and B below.

Part A

The first instruction in “Up, Up, and Away!” is to attach streamers to the top of the cork. Why are the streamers important?

- A They bring liquid into the bottle.
- B They help people follow the flight of the cork.
- C They make the cork fit tightly into the bottle top.
- D They react with the baking soda and vinegar to make gas.

Part B

Which sentence from the text **best** supports the answer to Part A?

- A “The streamers will help you trace its flight.”
- B “As the liquid soaks through the paper towel, the vinegar will react with the baking soda and produce carbon dioxide gas.”
- C “Make your rocket by attaching streamers to the top of the cork with the thumbtack.”
- D “Make sure the cork will fit tightly into the bottle.”

7 In paragraph 2, what is the meaning of the word earthlings?

- A animals
- B people
- C objects
- D rockets

