



Why Rockets Curve Instead of Launching Straight Up

Description

A rocket launched into space from Earth. This rocket was part of NASA's important mission, Artemis II. After it lifted off, the rocket did not stay straight up. It started to curve as it went higher. This may look strange, but it is necessary for the rocket's journey.

Rockets face gravity, the force that pulls things down. They start vertically to get as much speed as possible. But staying straight up uses a lot of fuel. If a rocket runs out of fuel, it could fall back to Earth. This would be dangerous for the astronauts and people below. So, rockets need to curve to save fuel and reach space.

When rockets leave the thick part of the atmosphere, they perform a gravity turn. This helps them use gravity to go faster instead of using more fuel. To stay in orbit means balancing speed and gravity. For Artemis II, the spacecraft had to do another move called the translunar injection burn to get to the moon and back safely.

Vocabulary List:

1. **mission** //ˈmɪʃən// (noun): an important job or task with a goal
2. **curve** //kɜːv// (verb): to move in a rounded or bent line
3. **gravity** //ˈgrævəti// (noun): the force that pulls things toward Earth
4. **atmosphere** //ˈætməsfɪr// (noun): the layer of air around a planet
5. **orbit** //ˈɔːrbɪt// (noun): a path one body follows around another
6. **fuel** //ˈfjuəl// (noun): material used to make power or energy

Comprehension Questions

Multiple Choice

1. What is the name of the NASA mission the rocket was part of?

Option: Apollo 11

Option: Artemis II

Option: Voyager

Option: Discovery



2. What force do rockets face when launched?

Option: Magnetism

Option: Friction

Option: Gravity

Option: Inertia

3. Why do rockets start vertically?

Option: To look impressive

Option: To minimize noise

Option: To get as much speed as possible

Option: To avoid running out of fuel

4. What does a gravity turn help rockets to do?

Option: Go slower

Option: Use fuel more efficiently

Option: Launch without guidance

Option: Stay straight up

5. What is the purpose of the translunar injection burn?

Option: To return to Earth

Option: To land safely

Option: To get to the moon and back safely

Option: To increase fuel consumption

6. What is necessary for a rocket's journey in space?

Option: Curving

Option: Staying straight up

Option: Flying horizontally

Option: Landing softly

True-False

7. The rocket stayed straight up after it lifted off.

8. Rockets need to curve to save fuel.

9. Running out of fuel is not dangerous for astronauts.



10. The thick part of the atmosphere helps rockets go faster.
11. To stay in orbit, rockets need to balance speed and gravity.
12. The rocket performs a gravity turn after leaving Earth's atmosphere.

Gap-Fill

13. A rocket is launched into space from Earth as part of NASA's important mission, Artemis II. After it lifted off, the rocket did not stay straight up; it started to curve as it went higher. This is _____ for the rocket's journey.
14. Rockets face _____, the force that pulls things down.
15. Staying straight up uses a lot of _____ for rockets.
16. Rockets perform a gravity turn to use gravity to go faster instead of using more _____.
17. For Artemis II, the spacecraft had to do another move called the translunar injection burn to get to the moon and _____ safely.
18. To balance speed and gravity is necessary to _____ in orbit.

Answer

Multiple Choice: 1. Artemis II 2. Gravity 3. To get as much speed as possible 4. Use fuel more efficiently 5. To get to the moon and back safely 6. Curving

True-False: 7. False 8. True 9. False 10. False 11. True 12. True

Gap-Fill: 13. necessary 14. gravity 15. fuel 17. back 18. stay

CATEGORY

1. Sci/Tech - LEVEL1

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