

OUT OF THIS WORLD

Alien Cave Explorers

Have you ever explored a cave? What about a cave on Mars? What do you think you would find in a Martian cave? Read *Alien Cave Explorers* to find out more!

What did you learn?

QUESTIONS

- 1. Most caves on Earth are formed by ...
 - a. Earthquakes
 - b. Drought
 - c. Tectonic plates
 - d. Water
- 2. William Whittaker got his nickname because of his ...
 - a. Red hat
 - b. Red hair
 - c. Red cheeks
 - d. Red shoes
- 3. Alien cave exploration begins with ...
 - a. Descending
 - b. Observing
 - c. Climbing
 - d. Scouting

- 4. Scientists want to explore alien caves because they are ...
 - a. Clean and untouched environments
 - b. Empty and easy to access
 - c. Interesting
 - d. Safe
- 5. What does NIAC stand for?
- 6. Who is this?



TRUE OR FALSE?

- 1. Water is plentiful on other planets in the solar system.
- 2. The larger the mass, the stronger the gravitational pull.
- 3. The information gathered during pit-scouting can tell us if there are caves connected underground.
- 4. Jules Verne wrote some of the first fantasy novels.
- 5. The rover carries its own energy in the cave because there is no sunlight.
- 6. Caves can also be used as shields for astronauts.



ANSWERS

- d. Water. According to section "Caves" on page 9, we know that "Most caves on Earth, such as this one in the Central American country of Belize, are formed by the action of water." So, the correct answer is D.
- 2. b. Red hair. According to section "Inventor Feature: Spelunker (and what's in a name)" on page 13, we know that "As a child, William Whittaker picked up the nickname 'Red," in reference to his red hair." So, the correct answer is B.
- **3. d. Scouting.** According to section "Stage one: Orbital scouting" on page 18, we know that "A mission of alien cave exploration begins with scouting, or looking, for a location while the spacecraft is in orbit." So, the correct answer is D.

4. a. Clean and untouched

environments. According to section "Why study caves?" on page 40, we know that "Scientists want to explore alien caves for many reasons. For one thing, caves may offer fairly *pristine* (clean and untouched) environments." So, the correct answer is A.

- According to page 7, NIAC stands for NASA Innovative Advanced Concepts.
- **6.** As can be seen on page 7, the illustration shows Red Whittaker.

TRUE OR FALSE? ANSWERS

- **1. False.** According to section "Lava tubes" on page 10, we know that "Water is much less plentiful on the other rocky worlds of our solar system." So, the correct answer is False.
- **2. True.** According to section "Stage one: Orbital scouting" on page 20, we know that "The more mass, the stronger the gravitational pull." So, the correct answer is True.
- **3. True.** According to section "Stage two: Scouting by aerial and surface craft" on page 24, we know that "Information gathered by the pit-scouting rover will help determine whether or not the pit connects to any underground caves." So, the correct answer is True.
- **4. False.** According to section "Inventor feature: Jules Verne" on page 27, we know that "Jules Verne (1828-1905), a French novelist, wrote some of the first science-fiction stories." So, the correct answer is False.
- **5. False.** According to section "Stage four: Underground exploration" on page 34, we know that "Most rovers get their energy from solar power." So, the correct answer is False.
- **6. True.** According to section "Big idea: Future cave dwellers" on page 43, we know that "Living in caves could shield astronauts on the moon and Mars from such radiation." So, the correct answer is True.