



# Space Exploration

## Unit E - Section 4 -

Society and the environment are affected by space exploration and the development of space technologies.

Name \_\_\_\_\_

Class \_\_\_\_\_

### 4.1 The Risks and Dangers of Space exploration

1. There have been three disasters, emphasizing how dangerous space travel is for astronauts. The disaster that occurred shortly after lift-off was the ...
  - A. Apollo 1
  - B. Apollo 13
  - C. Challenger
  - D. Columbia
2. There are risks to sending astronauts to the moon as well. During a routine mission to the moon, Apollo 11 had to readjust their landing site, when the original site was found to be too rocky. Their precise fuel supply restricted them to ....
  - A. try 1 more landing
  - B. try 2 additional landings
  - C. try 3 additional landings
  - D. scrub their mission and return to Earth.
3. A hazard for satellites in space is the Sun. Without adequate protection from a surge of electrically charged particles (a 'coronal mass ejection' – also called 'solar flares') this could occur ...
  - A. misdirection of signals
  - B. fried electrical circuits
  - C. orbital failure
  - D. system software glitches
4. A 'coronal mass ejection' can also harm astronauts by killing cells in vital organs and damaging bone marrow. They are protected when they ...
  - A. wear their space suits
  - B. wear metallic vests
  - C. use reflective vests
  - D. use polyethylene shielding
5. One hazard to us on Earth is the re-entry of a satellite. Most of the satellite will burn up, but this type of debris can cause us great harm ...
  - A. reflective
  - B. radioactive
  - C. reactive
  - D. re-entry

### 4.2 Canadian Contributions to Space Exploration and Observation

6. Probably the most famous contribution to the space exploration program is the **Canadarm**. It was designed to be deployed and used on the shuttle missions and is a permanent part of the International Space Station. It made its debut in space on the shuttle **Columbia** in ...
  - A. 1977
  - B. 1981
  - C. 1995
  - D. 2001



7. There are three main systems of the Canadarm 2 used on the International Space Station. The part that travels along a rail system to move into different positions on the station is called ...
- A. Monorail Repair Unit
  - B. **Mobile Base System**
  - C. Remote Manipulator System
  - D. Special Purpose Dexterous Manipulator
8. Canada launched a satellite in 1972 making it the 1<sup>st</sup> nation to use a satellite for ...
- A. GPS locator beacons
  - B. finding natural resources
  - C. **broadcasting television signals**
  - D. military use
9. The 1<sup>st</sup> module to land on the moon was aided by this, which was built in Canada ...
- A. **landing gear**
  - B. Canadarm L2
  - C. retro rockets
  - D. heat shield
10. The 1<sup>st</sup> Canadian to go into space was ...
- A. Sir Edward Sabine
  - B. Chris Hadfield
  - C. Robert Thirsk
  - D. **Marc Garneau**

#### 4.3 Issues Related to Space Exploration

11. Do you think there is oxygen on the Moon? Scientists believe they can produce it by heating this ...
- A. carbon
  - B. carbon dioxide
  - C. **volcanic rock**
  - D. cosmic dust
12. One of the benefits to spending all that money on space exploration is the potential for 'mining' natural resources. The place where these natural resources hold the greatest promise is on the ...
- A. Moon
  - B. Mars
  - C. Jupiter
  - D. **Asteroid Belt**
13. Although space exploration holds great promise and potential, there are political, ethical, economic and environmental issues associated with continued exploration endeavors. ***Do we have the right to spend money on space exploration rather than fixing our problems here on Earth?*** This issue would be classified as ...
- A. **ethical**
  - B. political
  - C. economic
  - D. environmental
14. ***Who owns space?*** In order to establish an answer to a question such as this, it must be discussed and reflected upon. This type of question is considered to be ...
- A. a decision
  - B. **an issue**
  - C. rhetorical
  - D. a solution