Name _____

## Astronauts and the Wonders of Weightlessness: Exploring Microgravity in Space

### Open-Ended Response Answer Key

1. Answers may vary. Example response: Living and working in microgravity might make an astronaut appreciate the uniqueness of Earth and the value of gravity. They might gain a broader perspective on life's challenges and possibilities.
2. Answers may vary. Example response: Long-term effects of microgravity on the human body include muscle and bone loss. Astronauts counteract these effects through daily exercise and a carefully planned diet.
3. Answers may vary. Example response: In space, I would wake up and float out of my sleeping bag. I would secure my belongings, have a meal, and then start my scientific experiments. I would use my hands and feet to move around the spacecraft and exercise to stay healthy.
4. Scientists conduct experiments in microgravity to better understand fundamental scientific principles, which can lead to innovations in technology and medicine. For example, studying how materials behave in space can improve the development of new materials on Earth.