Name _____ Date _____ Class _____

THINKING CRITICALLY

Made in Space

For people in the twenty-first century, living and working in space is slowly becoming a reality. Humans, having previously explored the moon, are now living in orbit around the earth for periods of many months.

Living and working in space allows researchers to experiment under unique conditions. One advantage of working in space is the state known as *freefall*. In a weightless environment, virtually defect-free products can be manufactured. For example, on the space shuttle, astronauts were able to make perfectly shaped spherical beads, all exactly the same. While this may not seem to be such a great accomplishment, it shows that certain manufacturing processes can someday be refined to produce a nearly perfect product.

Your Turn to Think

1. What industries would benefit the most from a weightless environment?

2. Computers and semiconductors sometimes require chips with a uniform silicon base. Silicon exists in several crystal forms on the earth. How might a weightless environment be helpful in manufacturing these silicon chips?

3. Scientists are now conducting research on growing vegetables without soil in a weightless environment. How do you think the plants will get the water and nutrients they need in order to grow?

4. Do you think the vegetables grown in a weightless environment would still need a source of light and warmth? Explain your answer.

5. How would beads manufactured on the surface of the moon compare with beads manufactured on the earth? in space? Explain your answer.

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