

REVIEW AND REINFORCEMENT GUIDE
CHAPTER 1 ■ *What Is Motion?*

SECTION _____
1-1 **Frames of Reference**

(pages 12–13)

KEY CONCEPTS

▲ Whenever you describe something that is moving, you are comparing it with something that is assumed to be stationary, or not moving.

■ **Building Vocabulary Skills: Writing Definitions**

Use the following words to write a definition of **frame of reference**. You may write more than one sentence if you need to.

background

moving

compare

stationary

object

■ **Frames of Reference: Understanding the Main Ideas**

Now use your definition to help you identify the frame of reference in each of the following situations.

1. The sun rises over the horizon.

Frame of reference: _____

2. A bus moves past people standing on the sidewalk.

Frame of reference: _____

3. A passenger on a train sees a ball roll down the aisle.

Frame of reference: _____

4. Two express subway trains traveling at the same speed on parallel tracks whiz past passengers waiting on the platform of a local station.

Frame of reference: _____

5. A passenger on one of the subway trains looks out the window and sees another train standing still.

Frame of reference: _____

6. A person standing near a railroad track sees a train pass by, then notices an airplane fly overhead in the same direction as the train, but at a much faster speed.

Frame of reference: _____

7. A passenger in the airplane looks down and sees the train moving backward.

Frame of reference: _____

■ A Star-tling Discovery: Extending the Main Ideas

Until 1930, scientists thought that the planet Pluto was just another star. Then they looked at two photographs of this “star” that were taken twenty-four hours apart. What they saw led to the discovery that Pluto is a planet, not a star.

Look at the illustrations of the two photographs and see for yourself. (The arrows point to Pluto.) Then answer the questions.

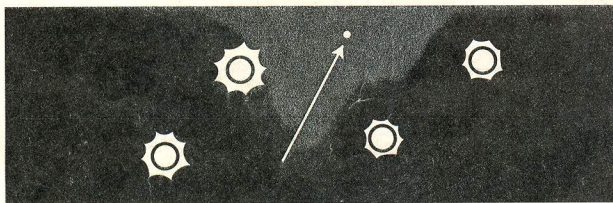


Illustration A

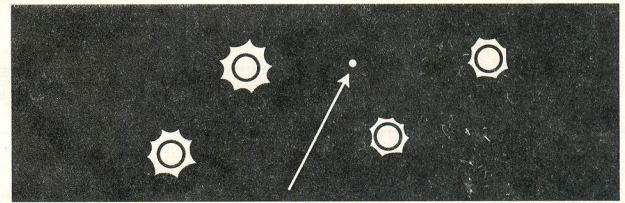


Illustration B

1. What has happened to Pluto from the time of photo A to the time of photo B?

2. What frame of reference did you use to describe the change in Pluto?

3. Is this frame of reference also moving? If you think so, use another frame of reference to describe its motion.

4. Why do you think these photographs helped scientists realize that Pluto was not just another star?

