Journal Pages for Forces and Motion

Standards 3-5.1 Identify the position of an object relative to a reference point by using position terms such as “above,” “below,” “inside of,” “underneath,” or “on top of,” and a distance scale or measurement.

Standards 3-5.2 Compare the motion of common objects in terms of speed and direction.

Standards 3-5.3 Explain how the motion of an object is affected by the strength of a push or pull and the mass of the object.

Standards: 3-5.4 Explain the relationship between the motion of an object and the pull of gravity.

1. What is position? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. How is position important in reference to an object? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. What are the terms used to referring to an object’s position? A) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ B)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ D)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ E)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Look at the diagrams below. Label them correctly to explain the circle’s location in reference to the rectangle.

Diagram 1: Diagram 2: Diagram 3: Diagram 4

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Diagram 5:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. What is distance? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. How is distance important to learning an object’s location or position? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. What are the two units of measurements that can be used to measure distance?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. What are the customary units used to measure distance? A)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ B)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ D)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9.\_\_\_\_\_\_inches= 1 foot \_\_\_\_\_\_\_inches= 1 yard \_\_\_\_\_\_feet = 1 yard \_\_\_\_\_\_\_\_ feet = 1 mile

10. What are the metric units used to measure distance? A) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ B) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11. \_\_\_\_\_\_\_centimeters= 1 meter \_\_\_\_\_\_\_\_centimeters= 1 kilometer \_\_\_\_\_\_\_\_meters= 1 kilometer

12. What are the different types of tools used to measure distance? A) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ B)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ C)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13. What are the two terms used to describe motion? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14. What is direction? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

15. How is direction important to learning an object’s location or position? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

16. What are the terms used to referring to an object’s direction?

A) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ B)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_C)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ D)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ F)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ G)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ H)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17. Look at the diagrams below. Label them correctly to explain the star’s or smiley face’s location in reference to the compass or triangle.

Diagram 1: Diagram 2: Diagram 3: Diagram 4:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Diagram 5: Diagram 6: Diagram 7: Diagram 8:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

18. What is speed? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

19. Describe the outcome of an object moving fast. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

20. Describe the outcome of an object moving slowly. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

21. How can time help us to determine which object is moving faster than the other? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

22. Look at the diagram below. Which car moved the fastest? What car moved the slowest?

Car A

**FinishLine**

**Start Line**

Car B

Which car is moving the fastest? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Which car is moving the slowest? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

23. What are the two things that affect the motion of an object at rest?

A)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

24. What force do you think was applied to the ball? strong or weak

4 ft.

3 ft.

1 ft.

2 ft.

Why do think that type force was applied? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

25. What force do you think was applied to the ball? strong or weak

4 ft.

3 ft.

2 ft.

1 ft.

Why do think that type force was applied? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

26. Look at the diagram below. Which car had the greatest force applied to it? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Car A

**FinishLine**

**Start Line**

Car B

27. Look at the diagram below. What car had the weaker force applied to it? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Car A

**FinishLine**

**Start Line**

Car B

28. What is mass? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

29. What is the result if the strength of the push or pull is the same on an object with a heavy mass and an object with a lesser mass? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

30. What does the pull of gravity do? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

31. True or False: The pull of gravity is everywhere.

32. What does Earth’s gravity pull objects toward? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

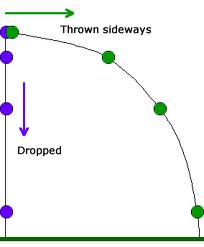
33. What keeps all these objects in place on Earth’s surface? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



34. Cause: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Effect: Things fall to Earth surface.

35. Look at the diagram.

[](http://www.google.com/imgres?imgurl=http://www.school-for-champions.com/science/images/gravity_sidways_motion_ball.gif&imgrefurl=http://www.school-for-champions.com/science/gravity_sideways_motion.htm&usg=__J1TX44y-DUoWAK2Nkj4h2P5dZrY=&h=345&w=284&sz=4&hl=en&start=12&zoom=1&tbnid=DWD9KqSCl9zCFM:&tbnh=120&tbnw=99&ei=O-XTTarDHY6gtweNibGrCg&prev=/search?q=two+objects+falling+at+the+same+rate&hl=en&biw=1020&bih=584&gbv=2&tbm=isch&itbs=1)

What will happen to the dropped and thrown ball?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_