,15. Answers may vary. Sample answer: Gravitational force decreases as distance increases. I am 150 million kilometers away from the sun, and at this distance, the gravitational force between me and the sun is very small.
16. Answers may vary. Sample answer: Gravitational force is strong when the distance between two objects is small, but as the distance between two objects increases, gravitational force decreases rapidly.
17. C
18. A
19. A
20. Gravitational force is about the same everywhere on Earth, so the weight of an object is about the same everywhere. Since mass and weight are constant on Earth, the words mass and weight are often used to mean the same thing.
21. newton
22. kilogram
23. Answers may vary. Sample answer: grams and milligrams

Directed Reading B

SECTION: MEASURING MOTION

1. B
2. A
3. D
4. A
5. meters
6. speed
7. distance
8. speed
9. velocity
10. C
11. A
12. D
13. B
14. acceleration
15. positive
16. negative
17. deceleration
18. C
19. A
20. A
21. D

SECTION: WHAT IS A FORCE?

1. force
2. motion
3. newton
4. B
5. C
6. C
7. B
8. D
9. C
10. A
11. D
12. A
13. B
14. B

SECTION: FRICTION:

A FORCE THAT OPPOSES MOTION

1. A
2. D
3. B
4. D
5. D
6. A
7. B
8. C
9. A
10. C
11. A
12. C
13. B
14. A
15. A
16. A
17. B
18. D
19. A
20. A

SECTION: GRAVITY:

A FORCE OF ATTRACTION

1. B
2. D
3. C
4. B
5. B
6. B
7. C
8. A
9. C
10. C
11. D
12. A
13. B
14. C
15. D
16. B
17. D
18. A
19. B
20. B
21. A

Vocabulary and Section Summary

SECTION: MEASURING MOTION

1. motion: an object's change in position relative to a reference point
2. speed: the distance traveled divided by the time interval during which the motion occurred
3. velocity: the speed of an object in a particular direction
4. acceleration: the rate at which velocity changes over time; an object accelerates if its speed, direction, or both change

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