

8th Grade Physical Science

Motion & Forces - Study Guide:

Test: 02-28-08

Understand and learn the meanings of the following Key Science Words/Terms:

Position, reference point, motion, speed, velocity, vector, acceleration, inertia, balanced forces, force, friction, net force, centripetal force and Newton's 3 laws of motion.

The following key concepts should be studied in preparation for this test:

1. Concept: An object in motion changes position.

Be able to describe the position and motion of an object in relation to a reference point. Understand relative motion.

Text Pp: 9-14

2. Concept: Speed measures how fast position changes.

Be able to calculate speed, distance or time given any two of the variables. Know how to read and interpret a distance/time graph to identify motion. Be able to compare and contrast speed and velocity.

Text Pp: 16-23

3. Concept: Acceleration measures how fast velocity changes.

Know how acceleration is related to velocity. Know the different types of acceleration. Be able to calculate acceleration using the correct units. Be able to read a velocity-time graph.

Text Pp 25-31

4. Concept: Forces change motion.

Know what a force is. Realize how balanced and unbalanced forces affect objects at rest and in motion. State inertia and understand its relation to mass and Newton's 1st Law of Motion.

Text Pp 41-47

5. Concept: Force and mass determine acceleration.

Explain how force, mass and acceleration are related as stated in Newton's 2nd Law of Motion. Be able to calculate any of the variables in the 2nd law of motion and use correct units. Describe how force works in a circular motion.

Text Pp 49-55

6. Concept: Forces act in pairs.

Explain how Newton's 3rd law relates action/reaction pairs of forces. Be able to explain how all of Newton's laws work together to describe and predict motion.

Text Pp 57-61

Some helpful strategies for active studying:

- Review the applicable chapter 1 & 2 summaries, vocabulary and review questions
- Write summaries of the topics using the Chapter review sections of the textbook.
- Review class work, activities, questions, worksheets and other homework.
- Use Flash cards for vocabulary practice.
- Write notes on each of the sections listed above.
- Create drawings and tables to help compare and contrast.
- Work with a friend and discuss the information.
- Check with your teacher on anything you are not clear about.
- Try to attend the morning review class.