Directed Reading for Content Mastery

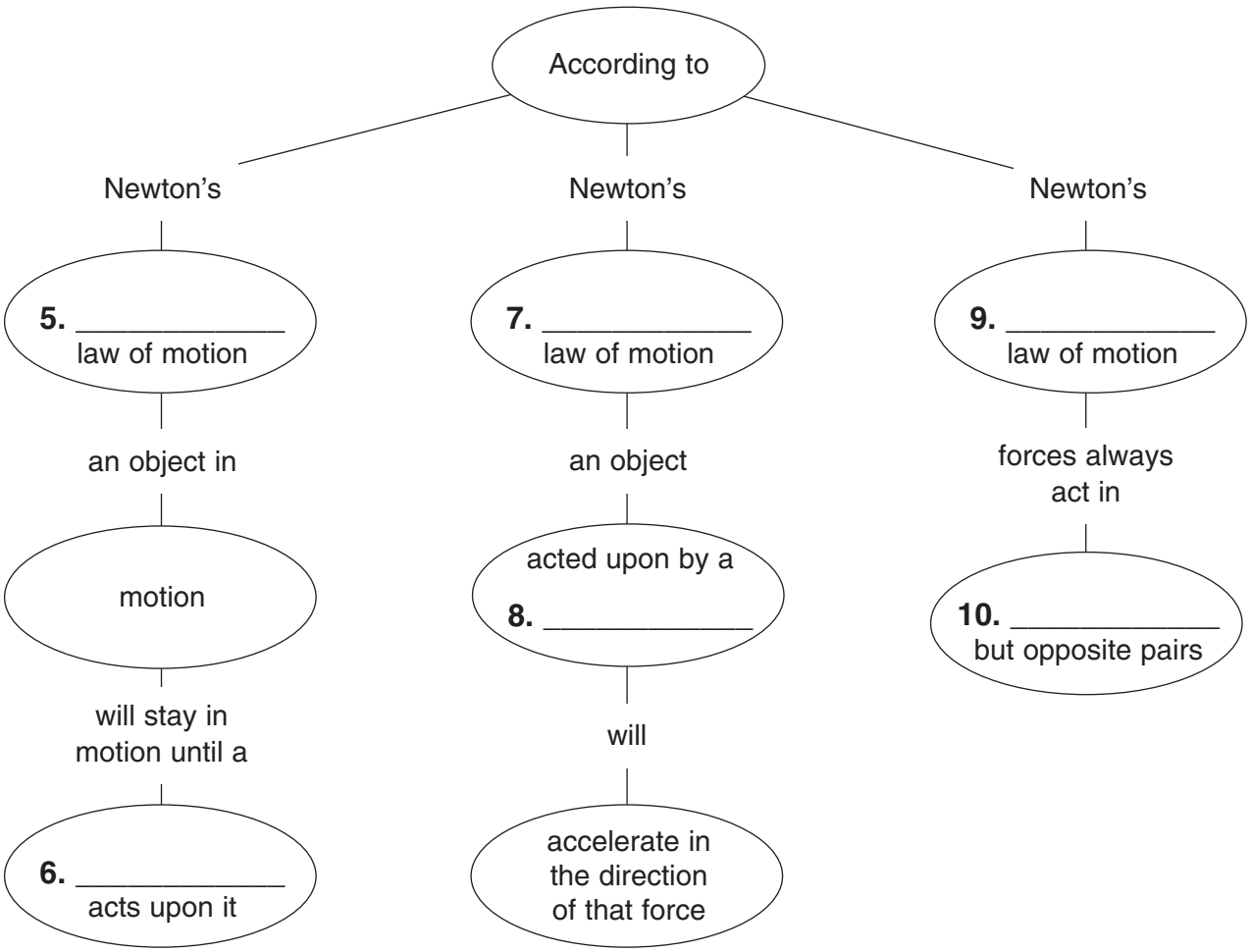
# *Overview* Newton's Laws of Motion

**Directions:** *Complete the following sentences.*

1. If you walk from your house to your friend's house, the distance and direction between your house and your friend's house is your _____.
2. The distance traveled divided by the time needed to travel the distance is _____.
3. Displacement divided by time is _____.
4. Forces that cancel each other out are _____.

**Directions:** *Complete the concept map using the terms below. Some terms may be used more than once.*

**force** **second** **first** **equal** **third**



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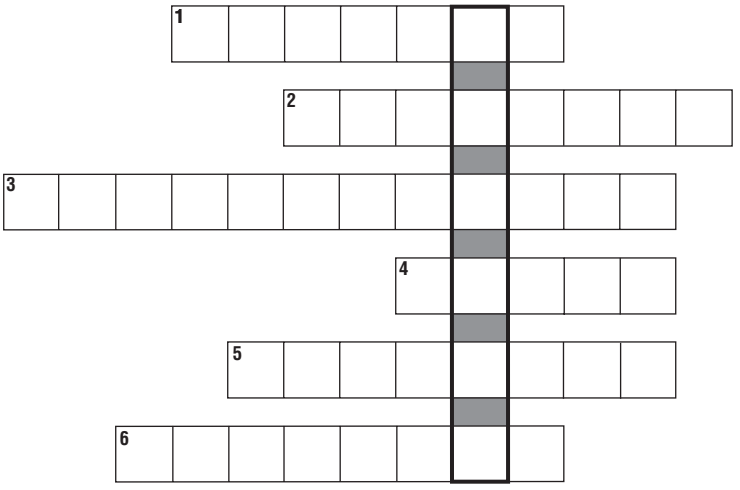
# *Section 1* ▪ Motion
# *Section 2* ▪ Newton's First Law

**Directions:** *Write the term that matches each description in items 1 through 6 below on the spaces provided. Unscramble the boxed letters to spell the term that answers question 7.*




1. A measure of an object's tendency to remain at rest or continue at constant speed
2. How far something travels
3. How far something ends up from its starting place
4. A push or a pull
5. Forces that result in no change in an object's motion
6. The force that resists motion
7. An object will remain at rest or move in a straight line with constant speed unless it is acted upon by a force. This is the definition of Newton's first law of _____ .

**Directions:** *Circle the term in parentheses that makes the statement correct.*

8. (Velocity, Speed) is an object's displacement divided by time.
9. (Displacement, Acceleration) is the change in an object's velocity divided by the amount of time required for the change to occur.
10. A (force, motion) is a push or a pull.
11. When scientists need to measure force, they use the (newton, degree).
12. The first law of motion is sometimes called the law of (inertia, force).

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# *Section 3* ▪ Newton's Second Law
# *Section 4* ▪ Newton's Third Law

**Directions:** *For each of the following, write the letter of the choice that best completes the sentence.*

_____ **1.** When you exert a force on an object it exerts _____ force back on you.

**a.** a stronger **b.** the same

_____ **2.** When volleyball players jump into the air, the primary force acting to make them land back on the ground is _____.

**a.** mass **b.** gravity

_____ **3.** Forces always act in _____.

**a.** pairs **b.** singles

_____ **4.** In a game of tug-o-war, the team that wins has exerted a greater _____ force.

**a.** unbalanced **b.** mass

_____ **5.** When you are pushing on a large door, _____ friction keeps you from sliding backwards.

**a.** unbalanced **b.** static

_____ **6.** _____ is determined by gravity.

**a.** weight **b.** mass

_____ **7.** A component of inertia is _____.

**a.** mass **b.** friction

_____ **8.** _____ friction causes a car tire to turn on the road.

**a.** Static **b.** Rolling

_____ **9.** _____ friction keeps an object from moving when a force is applied.

**a.** Static **b.** Sliding

_____ **10.** If the same force is applied to two different objects, the one with the _____ mass has a smaller acceleration.

**a.** larger **b.** smaller

Meeting Individual Needs

Directed Reading for Content Mastery

# *Key Terms*
# Newton's Laws of Motion

**Directions:** *Complete the following sentences using the terms listed below.*

| | | |
|---|---|---|
| **unbalanced** | **force** | **first** |
| **third** | **friction** | **speed** |

1. A _____ is a push or pull on an object.
2. When an object remains at rest or moves in a straight line with constant speed until it is acted upon by an unbalanced force, the _____ law of motion is demonstrated.
3. A(n) _____ force allows you to pick up your book bag.
4. The _____ law of motion says that for every action there is an equal but opposite reaction.
5. _____ is a way to measure the rate of motion.
6. If you are trying to ice skate and you fall, the _____ was too great between your skates and the ice.

**Directions:** *Unscramble the terms in italics to complete the sentences below. Write the terms on the lines provided.*

_____ **7.** A car travels down the road at 30 miles per hour in a northwest direction which means it has *tylovcei*.

_____ **8.** A student walks west from the school to the bus stop and has a *pmaseeilncdt* of 50 meters west.

_____ **9.** The train slows down as it comes to the station producing *reectoclanai*.

_____ **10.** When you roll a ball along the ground the ball is experiencing *gsiidln* friction.

_____ **11.** Acceleration = force/mass is an example of Newton's *noceds* law of motion.

_____ **12.** *tonoiM* is all around you.

_____ **13.** *dalcenaB* forces will not change the motion of an object.