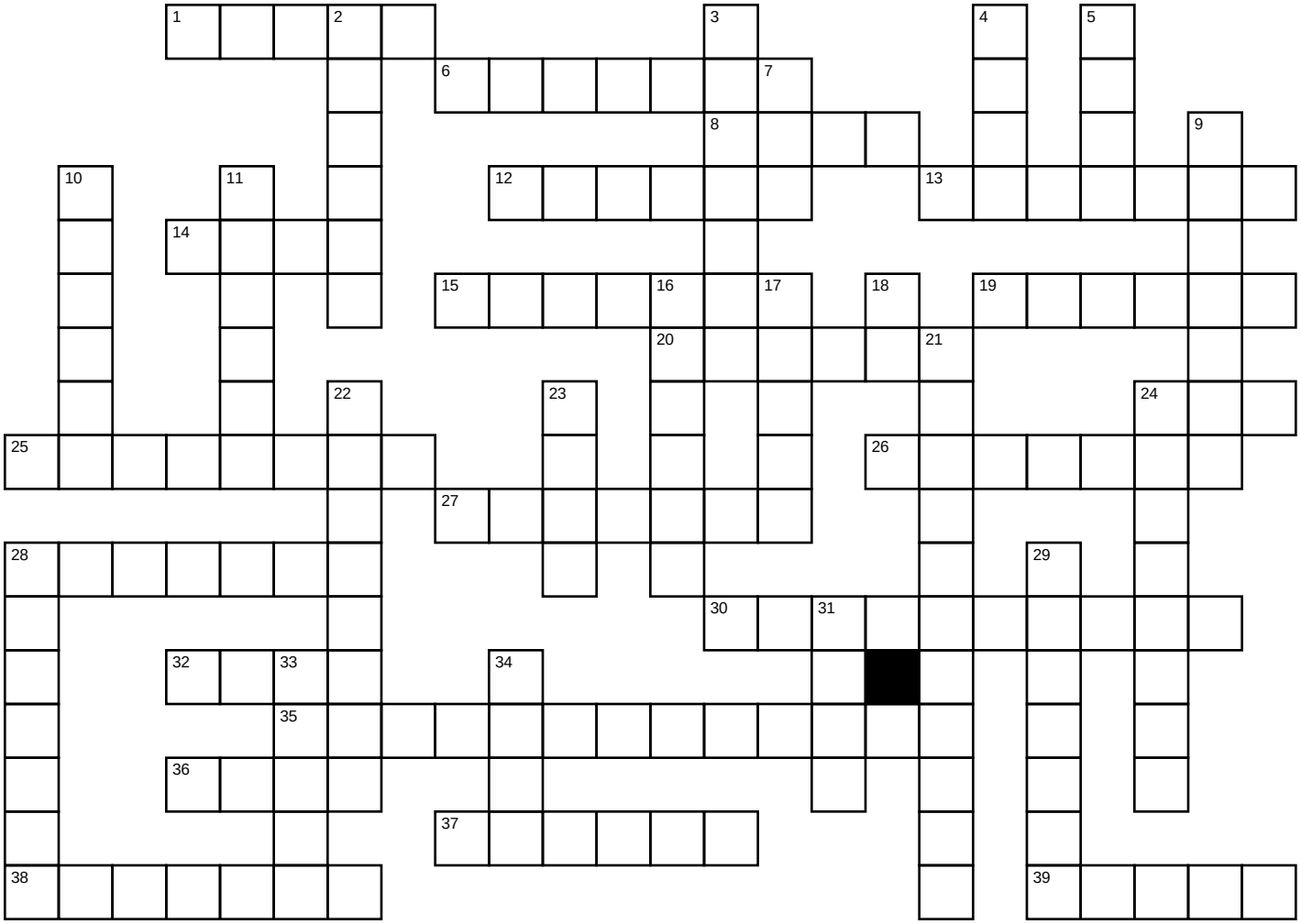
Chapter 5: Force

Integrated Science: Physics & Engineering Design

Name_____Period_____



Across

1. The English unit of force is the ___.
6. Weight depends on mass and ___.
8. If an object is a ___, the net force on it must be zero.
12. A system that is part of a bike or car that increases friction to slow the motion of the machine.
13. A pulling force that acts in a rope, string, etc.
14. Balanced forces result in a net force of ___.
15. Some forces affect objects through direct ___.
19. The __ force is the perpendicular force that a surface exerts on an object that is pressing on it.
20. If the net force on an object is NOT zero, the motion of the obejct will ___.
24. The sum of all forces acting on an object is called the ___ force.
25. ___ is a force that resists motion.
26. If 2 people pull on a rope in opposite directions, and each person pulls with a 100N force, the tension is the rope is 1 ___ newtons.

Down

2. The SI unit of force is the ___.
3. Extension is a "___" or increase in size
4. You can keep track of the many forces acting on an object in different directions by drawing a ___-body diagram.
5. At Earth's surface, gravity exerts a force of 9.8 N on every kilogram of ___.
7. Is it possible for an object to be moving and the net force on the object is zero?
9. An object's weight depends on where it is ___, since gravity varies from place to place.
10. Because it has direction, force is a ___ quantity.
11. Forces, such as ___, are present even when objects are not moving.
16. Force is the ___ that has the ability to change motion.
17. Understanding forces is fundamental to understanding how ___ are best accomplished in nature and by people.

Across

27. Motion through water will result in ___ friction.
28. A compression is a "___" or a decrease in size
30. ___ reduce friction in machines.
32. A force is a ___ or a pull.
35. In mathematics, "normal" means "___."
36. Friction causes ___.
37. Friction force that resists motion between 2 surfaces that are not moving. ___ friction.
38. ___ tire treads allow space for water to be channeled away from the road-tire contact point, increasing friction in wet conditions.
39. the normal force has ___ strength to the force pressing the object into the surface, which is often the object's weight.

Down

18. One Newton (N) is the force it takes to accelerate a 1 ___ mass by 1 m/s/s.
21. The state in which the net force on an object is zero.
22. The greater the force squeezing 2 surfaces ___, the greater the friction force.
23. Objects have the same ___ no matter where they are in the universe.
24. Becuase force has direction, it may be assigned positive or ___ values.
28. Force that resists the motion of an object moving across a surface. ___ friction.
29. In order for an object to move in a straight line at constant speed, the forces must all ___.
31. ___ bearing reduce friction in rotating motion.
33. Some forces act through ___, like the force of gravity.
34. Every ___ releases heat from friction.