

**ACROSS**

1. If the acceleration and velocity vectors are in the same direction, the object will \_\_\_\_\_ (up or down).
2. Newton's 2nd law..acceleration is \_\_\_\_\_ proportional to the net-force
4. Variable friction force between bodies in contact with NO relative motion.
6. Action-reaction pairs act on \_\_\_\_\_ objects.
7. Went to college with Newton
10. Gravity and magnetism are examples of a \_\_\_\_\_ force.
14. \_\_\_\_\_ diagram; shows all the force vectors acting on a single body.
16. Unit of force.
20. You push on the wall, the wall pushes back with \_\_\_\_\_ and opposite force.
21. If the mass of an object is doubled (force remains the same), its acceleration is \_\_\_\_\_
23. \_\_\_\_\_ force...attractive force between masses; the weakest of the four fundamental forces
25. The amount of matter in an object.
26. A force is a \_\_\_\_\_ or pull.
29. Galileo's idea; Newton's 1st law.
30. \_\_\_\_\_ - \_\_\_\_\_ forces... all forces occur in these pairs.
32. Three factors affect air resistance; size, shape and \_\_\_\_\_
33. A net-force of zero means the velocity is constant or \_\_\_\_\_.
34. If the acceleration and velocity vectors are in opposite directions, the object is \_\_\_\_\_ (up or down).
35. Compared to its weight on Earth, the weight of an object on the moon is \_\_\_\_\_.

**DOWN**

1. Acceleration is always in the \_\_\_\_\_ direction as the net-force.
3. Newton's \_\_\_\_\_ law..."for every action there is an equal and opposite reaction"
5. \_\_\_\_\_ resistance; the drag force air exerts on moving objects.
8. \_\_\_\_\_ of friction; a constant that depends on the two surfaces in contact.
9. Newton's \_\_\_\_\_ law...a net-force will cause an acceleration ( $F = ma$ )
11. \_\_\_\_\_ force; the vector sum of all the force.
12. \_\_\_\_\_ force: force perpendicular to a supporting surface
13. \_\_\_\_\_ velocity; force of gravity is balanced by air resistance.
15. A push or a pull...or "may the net-\_\_\_\_\_ be with you, Luke"
17. Newton's \_\_\_\_\_ law...law of inertia; an object with no force acting on it remains at rest or moves with constant velocity in a straight line.
18. Measure of the force of gravity on an object (= mg)
19. A measure of inertia.
22. If the net-force acting on an object is doubled, its acceleration is \_\_\_\_\_
24. Newton's 2nd law..acceleration is \_\_\_\_\_ proportional to the mass
27. Constant friction force between bodies moving relative to each other.
28. Force that opposes the motion between two surfaces that are in contact.
30. If you're in an elevator that is accelerating upward, your \_\_\_\_\_ weight would be greater than mg.
31. Produce accelerations.