

Name: _____
Mr. Willis
Conceptual Physics: _____
Date: _____

Unit II
Motion (Velocity/Acceleration)
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Video: Motion, Force and Gravity

Directions: Answer the following questions as you watch the video.

1. Discoveries of physics in the last _____ years that have truly revolutionized the way we understand our universe.
2. The greatest insights have come from trying to understand the _____ concepts.
3. Aristotle believed that heavy things fell _____ than lighter things.
4. Galileo proved Aristotle was wrong by _____ his ideas which caused him to be called the Father of Modern Science.
5. Galileo determined that objects fall at a _____.
6. The formula for change of velocity equals acceleration multiplied by _____.
7. Kepler used mathematics to determine the _____ of planets around the Sun.
8. Newton's work was called the first _____ in physics.
9. The motion of falling bodies and the movement of planets were both due to being acted upon by a _____.
10. The first law states that an object in motion _____ in motion.
11. An object's _____ is a measure of its inertia.
12. In space all objects are weightless but they never lose their _____.
13. The second law describes how an object accelerates or changes _____ when a force is applied to it.
14. The larger the mass the greater the _____ needed to make it accelerate or change direction.
15. The formula for the second law is force = _____.
16. Newton's third law deals with interacting _____.
17. The law states that for every action there is an equal and _____ reaction.
18. In the building of bridges the calculation of _____ force is vital.

19. Force is any action that affects the _____ of an object.
20. A force has both a direction and a _____ or strength.
21. Friction is a force _____ to the contacting surface between objects.
22. Issac Newton's most important contribution to Physics was his explanation of _____.
23. Gravitational force between two objects is proportional to the _____ of their masses.
24. Newton developed an new mathematical tool called _____.
25. Albert Einstein was a revolutionary thinker who presented the General Theory of _____.
26. Einstein added the space - _____ continuum.
27. _____ rays follow the curvature of space-time caused by the mass of the Sun.
28. Einstein believed that gravity, electromagnetism and the strong and weak nuclear forces were all aspects of the _____ force.
29. Galileo is often called the "father of science" because he was the first to test his ideas by experimentation and observation. True or False
30. Galileo studied the rate of _____, or change in velocity of a falling object.
31. Copernicus concluded that the earth was the center of the universe. True or False
32. Newton's first law of motion is sometimes called the principle of _____.
33. The second law can be written as $F = ma$, when applied force (F) equals mass (m) times acceleration (a). True or False
34. The third law of motion states: "For every action there is another action." True or False
35. Vector analysis is a means of analyzing different forces on an object. Together these forces combine to make up _____ force.
36. Without friction the balls on a pool table would roll forever. True or False
37. Newton was the first to understand that gravitation caused planets to follow irregular orbits. True or False
38. Einstein's general theory of relativity looks at the impact of gravitational force on _____.