

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

Unit V
Energy
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Video: Work and Energy

Objective: Develop an understanding of the energy, the states of energy and the concept of work as a function of energy.

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

1. The man trying to move the rock was NOT working because _____.
2. The formula for work is _____.
3. In the metric system, the _____ is used to measure force.
4. A Newton-meter is the same as a _____.
5. One joule equals one _____ lifted one _____.
6. Energy is defined as the ability to do _____.
7. Energy comes in many forms. Name two of them. _____ and _____.
8. Energy is changed from one _____ into another.
9. The Law of Conservation of Energy states that the total amount of energy _____.
10. You can't get more energy from a machine than you _____.
11. _____ wastes a lot of energy.
12. _____ is a force that opposes motion.
13. Objects that are moving have _____ energy.
14. Kinetic energy is equal to the _____ and _____ of an object.
15. Potential energy is the energy of _____.
16. Potential energy is calculated by multiplying _____ x _____.
17. As a person goes down the slide _____ energy changes to _____ energy.
18. On a roller coaster, the first hill is the _____ on the whole ride.
19. Forces like friction and _____ oppose kinetic energy.

20. Friction enables people to _____, _____ and _____.
21. Motors and engines use _____ to reduce friction.
22. _____ is the amount of work done in a certain period of time.
23. The formula is $\text{Power} = \text{work} \div \text{time}$ to finish it.
24. In the English system of measurement _____ is the unit of power.
25. James Watt wanted to compare his _____ to the amount of work a horse could do.
26. An average horse can lift _____ pounds _____ foot in _____ second.
27. Today's cars range from 70 to over _____ horsepower.

The Silver Balls Challenge

28. One ball is lifted to a certain height against gravity. What will happen when the ball is released?
Circle one A B C or D
29. What will happen if two balls are dropped from the same side? Circle one A B C or D
30. What will happen if three balls are released from one side? Circle one A B C or D
31. What will happen if one ball is released at the same time from each side? Circle one A B C or D
32. What if two balls are released from each side? Circle one A B C or D
33. Make a sketch showing how the silver balls reacted when three balls were released from one side.