

Quiz Dates: Oct. 20th (Lingo) & Oct. 22th (CPQ)

TEST- Oct. 24th

Honors Freshman Physics

Work & Simple Machines

The goals of this unit will allow each student to:

- a. gain a better understanding of the scientific concept of work, and their application to the simple machines
- a. continue making proper scientific measurements and calculations w/ significant digits
- b. define and properly use all vocabulary
- c. properly apply all terms in describing/explaining real world examples
- d. continue constructing and interpreting scientific graphs of motion
- e. teach someone else the concepts discussed
- f. practice proper laboratory safety & use of lab equipment and computers.

Performance Objectives: After completing this unit, when asked in class or on a written test or quiz, each student will:

1. **Define** work in terms of force and distance and in terms of energy.
2. **Calculate** work done when moving an object
3. **Explain** the relationship between work and power.
4. **Recognize** the units for work, energy, & power
5. **Explain** how machines make work easier.
6. **Know** that simple machines are classified into 2 main groups..
7. **Identify** and provide examples of the six types of simple machines
8. **Describe** and provide examples of the 3 classes of levers.
9. **Distinguish** between input/effort force and output/resistance force
10. **Calculate** the mechanical advantage and efficiency of each machine
11. **Explain** the actual usefulness of a machine based on the (ideal) mechanical advantage
12. **Relate** an ideal machine to its work output and work input
13. **Describe** the relationship between work and energy transfer in machines..
14. **Define** power and solve problems using the equation for power
15. **Calculate** power in watts & kilowatts.

The list of objectives above are the items you will be tested on and will serve as your study guide for the unit. It is recommended that you read through this list frequently as material is presented in class. "Questions" or "confusion" about concepts presented in class need to be addressed prior to the test date. **No help will be given on the test date .**

Questions about concepts cannot be answered during the test. "Confusion" can be eliminated by being prepared. Being prepared means knowing the posted date of the test, reviewing the objectives, studying the material daily, being engaged in lab, and asking meaningful questions during class discussions. Confusion is the result of cramming which is - looking at the material the day before the test.

Additional help is available before school, after school and during WEB, if desired.

It is recommended that you read the chapter and study for at least 15-30 minutes each night without distractions such as cell phone, text messaging, and TV. Paying attention in class, participating in the lab, reviewing printed class notes, keeping up with homework, and completing CPQ worksheets are other ways that will help you be successful in class and do well on assessments.

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Name: _____ Period: _____

This sheet will be used to keep track of reading & homework assignments. Each homework assignment is **worth 25pts** and must be turned in on the **DUE DATE**. Late homework will not be accepted. **5 points** will be added to the unit test for any student that has all the homework completed, turned in **on time** and reflecting **quality work**.

Quality Work is having the answer reflect the question. On **UV** assignments, the terms and definitions are written out. (Answering with the “term” only is not quality.) Each assignment turned in must be labeled with the following in the right-hand corner of the paper. Your Name, Date, Period, Homework # , Unit Name (Conservation of momentum)

Each section must be clearly labeled with a heading UV, RC, SP or AYK and the problem numbers. Example:

Section 3.1 UV: 1- 4 (then number & do the problems). Repeat for RC, SP and/or AYK

Textbook Reference – Physics A First Course – CPO Science
Chapter 4 [pg. 85-108] Work, Power and Machines

Textbook Homework

UV-Understanding Vocabulary RC-Reviewing Concepts SP- Solving Problems AYK- Applying Your Knowledge

Due Date	Read	Homework Assignments 1 - 4	Teacher Signature
Oct. 17	4.1- p. 85-90	p. 106-107 UV: 1-4 RC: 1-6 SP: 1-7	
Oct.20	4.2- p. 91-100	p. 106-107 UV: 5-12 RC: 7, 9-11, 13, 14	
Oct. 21	4.2- p. 91-100	p. 107-108 SP: 8-13 15-17	
Oct. 22	4.3- p.101-105	p. 106-107 UV: 13-14 RC: 15-17 SP: 18-20	
Total Homework Score			
Points Added to Test			

Check the class Website to get updates or to print out a new assignment sheet or other docs.

www.waltonhigh.org → Departments→ Science →Honors Freshmen Physics → Fall Handouts → Current unit.

Lingo to be learned - definitions are provided on-line

work, mechanical energy, law of conservation of energy, machine, simple machine, input or effort force, output or resistance force, ideal machine, mechanical advantage, lever, fulcrum, input or effort arm, output or resistance arm, pulley, wheel and axle, inclined plane, screw, wedge, compound machine, efficiency, power, watt.