

Conservation of Energy

TEST- Oct. 31st

Honors Freshman Physics

The goals of this unit will allow each student to:

- a. gain a better understanding of the work and energy in the interaction of objects around us.
- 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. **Distinguish** between gravitational potential energy and kinetic energy
2. **Define** potential energy and **calculate** gravitational potential energy.
3. **Define** kinetic energy. and **calculate** kinetic energy.
4. **Demonstrate** an understanding of the relationship between work and energy transfer
5. **State** the work-energy theorem
6. **Apply** the work energy theorem to real situations in conjunction with energy conservation
7. **State** the law of conservation of energy
8. **Apply** the law of conservation of energy to explain the motion of objects acted on by gravity.

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, keep up with homework, and completing CPQ worksheets are other ways that will help you be successful in class and do well on assessments.

Energy Packet- Teacher provided and available on Website

-Homework Guide – this sheet w/objectives and textbook reading & assignments

-Lingo – Key vocabulary

-Energy Notes

-Energy CPQ Worksheet- contains advanced conceptual & calculation problems to be done on own paper & used on CPQ- quiz. (CPQ = conceptual physics questions)

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Name: _____ Date: _____ Period: _____

This sheet will be used to keep track of reading & homework assignments. Each homework assignment is **worth 50pts** 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

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 3 [pg. 66-72] Conservation of Energy

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. 27	3.2- p. 65-67 4.1- p.87-88	p. 80-81	UV: 5-10	RC: 13-17	SP: 10-13	
Oct. 29	3.2- p. 68-72	p. 80-81		RC: 18-22	SP: 14 & 15	
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

energy, kinetic energy, potential energy, gravitational potential energy, work, mechanical energy, law of conservation of energy, joule

Equations Used in the Unit:

$$KE = \frac{m \cdot \vec{v}}{2}$$

$$PE = mgh$$

$$W = \vec{F} \Delta \vec{x}$$

$$\vec{F} = mg$$