

Name: _____ Period: _____

Light & Optics TEST: May 1

SPS9. Students will investigate the properties of waves.

- a. Recognize that all waves transfer energy.
- b. Relate frequency and wavelength to the energy of different types of electromagnetic waves and mechanical waves.
- c. Compare and contrast the characteristics of electromagnetic and mechanical (sound) waves.
- d. Investigate the phenomena of reflection, refraction, interference, and diffraction.

SP4. Students will analyze the properties and applications of waves.

- a. Explain the processes that results in the production and energy transfer of electromagnetic waves.
- b. Experimentally determine the behavior of waves in various media in terms of reflectionrefraction, and diffraction of waves.
- d. Demonstrate the transfer of energy through different mediums by mechanical waves.
- e. Determine the location and nature of images formed by the reflection or refraction of light

1. **State** the law of reflection; state the law of refraction
2. **Draw** light as a ray; draw and identify incident and reflected rays striking flat and curved surfaces
3. **Identify** angles of incidence, reflection, and refraction
4. **Draw** a normal to measure angle of incidence, angle of reflection, angle of refraction
5. **Find and describe** (4 properties) images formed by curved mirrors and lenses using easy rays.
6. **Identify** the following properties of an image relative to the object: type (real image or virtual image), orientation, size, and location
7. **Predict** the properties of an image based on the object's relative location to the mirror or lens
8. **Determine** the focal point and center of curvature of a concave mirror
9. **Draw** and label ray diagrams for light rays on concave and convex mirrors
10. **Compare/contrast** mirrors and lenses
11. **Identify** the speeding up or slowing down (and associated bending) of light as it passes from one medium to another

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Use this sheet to keep track of reading & homework assignments from your textbook. Due dates for all assignments are noted on this sheet and assignments must be turned in on time to receive credit. Late homework will NOT be accepted.

The story is pretty simple. Homework is the one grade you have FULL control of. Homework is graded on QUALITY and COMPLETION, not accuracy. Homework is exercise for your brain and preparation for quizzes and tests. If you are in pursuit of a good grade, not doing homework is not the route to take. Your grade will gradually go down as you fail to do homework despite the fact that it is only 10% of your grade. On a larger scale, the effect of not doing homework will be realized on the test grade.

The choice of doing or not doing homework lies completely with you. Know that old homework zeros cannot be made up at any time. That is completely unfair to those that sacrifice other things and time to do the assignments by the due dates. Look at the schedule below and budget your time. It is always an option to do the work ahead of schedule. Do not wait until the last minute.

Textbook Reference – Physics A First Course – CPO Science

Textbook Homework

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

Due Date	Read	Assignment	Teacher Signature
April 27	23.1 p. 498-502	p. 518-519 UV: 1-7 RC: 1-10 SP: 1-4 Define vocabulary (see terms below)	
April 28	23.2 p. 503-506	p. 518-519 UV: 8-10 RC: 11-15 SP: 5,6	
April 30	23.3 p. 507-515	p. 518-520 UV: 11,12 RC: 16-22 SP: 7-9	

Lingo to be Learned-

Define: optics, light ray, converging lens, diverging lens, prism, transparent, translucent, incident ray, normal line, reflected ray, law of reflection, ray diagram, index of refraction, angle of refraction, total internal reflection, critical angle, dispersion, object, image, virtual image, optical axis, focal point, real image, magnification,

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 → Spring Handouts → Current unit.