PreAP Physics
Ms. Zimmer

Lesson Title:	Snell's Law PhET Investigation
Objective(s):	• Verify Snell's Law through a student developed investigation. • Determine the relationship between the angle of incidence and the angle of reflection experimentally.
Assessment:	Exit Ticket

AGENDA	KEY POINTS
1. Hook 2. PhET Lab 3. Exit Ticket	 Credit – www.cstphenmurray.com

Time	Learning Activity
5	Hook – students will watch a short video on a laser diffracting through different mediums. http://www.youtube.com/watch?v=fD1544bM_c4 **(start at 0:22 and end at 0:54)** Follow up Questions: 1. What happens to the laser beam as it travels through different mediums? 2. As a wave enters a new substance, what happens to the frequency? Wave speed? 3. How do you know the direction the light is going to bend when entering a new medium?
5	Students will receive the "Light Reflection and Refraction using PhET" handout. Using their homework from the previous evening, they will answer the PreLab Q's. Teacher will initial student responses to verify answers. Once initialed, students will receive a laptop to begin their investigations.
45	Part 1 – Qualitative Observations The purpose of this section is for students to observe how light is refracted. Part 2 – Quantitative Observations Students will develop two experiments 1) find the relationship between the angle of incident light and the reflected light 2) the relationship between the angle of incidence and angle of refraction when the index of refraction changes.
5	Exit Ticket 1. Write out the equation for Snell's Law and explain the components in one or two sentences. (Include words like incident angle, refracted angle, index of refraction and normal in your statement). 2. A ray of light passes from air to water. List at least <u>two</u> things wrong with the picture below.

(1)

Incident ray   normal

$n_{air} = 1.0$

$n_{glass} = 1.47$