


## Physics Curriculum Bundle # 9

<b>Title</b>		<b>Suggested Dates</b>
Optics		2/22 – 3/12 (14 days)

<b>Big Idea/Enduring Understanding</b>	<b>Guiding Questions</b>
Light waves traveling from one medium into another refract, or change their direction of travel. Interference is a result of the wave nature of light.	How do light waves interact with different media?

The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the district curriculum.

Knowledge & Skills with Student Expectations	Specificity & Examples	Suggested Resources (Read the note above)
<b>Allow one day for College Board MyRoads Major Search activity within this bundle.</b>		
<p><b>8 The student knows the characteristics and behavior of waves.</b></p> <p>8A Examine and describe a variety of waves propagated in various types of media and describe wave characteristics</p>	<p>Such as</p> <ul style="list-style-type: none"> <li>• Describe wave behaviors Such as Including               <ul style="list-style-type: none"> <li>○ Reflection (fixed &amp; loose end)</li> <li>○ Refraction</li> <li>○ Interference (including constructive &amp; destructive)</li> <li>○ Diffraction</li> <li>○ Polarization</li> </ul> </li> </ul>	<p>Dan Russell’s acoustics website – <a href="http://www.kettering.edu/~drussell/demos.html">http://www.kettering.edu/~drussell/demos.html</a></p>
<p><b>8 The student knows the characteristics and behavior of waves</b></p> <p>8B Identify the characteristics and behaviors of sound and electromagnetic waves.</p>	<p>Including</p> <ul style="list-style-type: none"> <li>• Extend general properties &amp; behaviors of waves to electromagnetic waves Including:               <ul style="list-style-type: none"> <li>○ reflection</li> <li>○ mirrors</li> <li>○ refraction</li> <li>○ Snell’s Law</li> <li>○ total internal reflection &amp; critical angle</li> <li>○ lenses</li> </ul> </li> </ul>	<p>Mirror Lab – forming images with mirrors on an optics bench. (phys_8_MirrorLab)</p> <p>Refraction Lab – Finding index of refraction using Snell’s Law. (phys_8_RefractionLab)</p> <p>Lens Lab – forming images with lenses on an optics bench and finding the focal length. (phys_8_LensLab)</p> <p>Optics Applet – <a href="http://www.mhhe.com/physsci/physical/giambattista/optics/optics.html">http://www.mhhe.com/physsci/physical/giambattista/optics/optics.html</a></p> <p>Suggested Equipment – laser pointer, lenses, mirrors, diffraction gratings, optics bench, protractor, prisms, glass blocks, polarized lens.</p>

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