Physics Curriculum Bundle # 8

Title	Suggested Dates
Sound & Light	2/1 – 2/19 (13 days)

Big Idea/Enduring Understanding	Guiding Questions
Sound energy is carried by compression waves traveling through a medium. Light energy can be modeled as an electromagnetic wave.	How do sound waves propagate? What is the electromagnetic spectrum?

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)
8 The student knows the characteristics and behavior of waves 8B Identify the characteristics and behaviors of sound and electromagnetic waves.	Including • Explain how sound waves are produced • Describe properties of sound waves Including o Intensity & relative intensity o Frequency & pitch (including beats) o Harmonics – quality & timbre (including standing waves w/ stringed and pipe instruments) o Resonance o The Doppler effect	Speed of sound lab – measure speed of sound with 2 microphones (phys_7_speedofsound) Resonance Lab – closed end tube in graduated cylinder. (phys_7_ResonanceLab) Suggested Equipment – springs, slinky, wave generator, tuning forks, large graduated cylinder & pipes, musical instruments, oscilloscope, frequency generator, sound meter.
8 The student knows the characteristics and behavior of waves 8B Identify the characteristics and behaviors of sound and electromagnetic waves.	Including • Extend general properties & behaviors of waves to electromagnetic waves Including: o reflection	Reflection Lab – comparing angle of incidence and angle of reflection of reflected light ray. (phys_8_reflectionlab) Electromagnetic Spectrum Applet – http://lectureonline.cl.msu.edu/~mmp/applist/Spectrum/s.htm
8 The student knows the characteristics and behavior of waves 8C Interpret the role of wave characteristics and behaviors found in medicinal (medical) and industrial applications.	Including • Ultrasound (sonograms) • Doppler weather • Police radar • Sonar/Echolocation • Radio/TV communications	Suggested Equipment – spectral tube, spectroscope, light ray box, plane mirror, light meter.