

Grade 10-12

Distance Learning Module 6: Week of: May 11<sup>th</sup> -May 15<sup>th</sup>

## **Physics Level 2 - Modified from Unit #6 - Waves and Harmonic Motion**

### **Targeted Goals from Stage 1: Desired Results**

Students will use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.

Students will communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.

**Content Knowledge:** *Students will demonstrate Knowledge of the following:*

- Students will understand the cause of every wave is a vibrating source
- Students will be able to define the word medium and be able to identify the mediums of common waves.
- Students will be able to diagram a wave by identifying features (amplitude, wavelength, frequency etc)
- students will be able to define simple harmonic motion and identify the force(s) creating this motion in pendula, springs and other situations

**Vocabulary:** waves, anatomy of waves, types of waves, and wave interactions, oscillators, repetitive motions, pendulums and springs, periodic motion.

**Skills:** *Students will demonstrate the following skills:*

- solve spring and pendulum problems for period, frequency or force
- calculate the period and frequency for an object in simple harmonic motion (SHM)
- draw standing waves and identify wavelength, amplitude and calculate velocity of the wave
- describe how the spring constant affects the period of a spring in SHM

**Expectation:** Complete the notes, work the UTexas problems, and the basic practice problems (no check in on that one), notes check in

Description of Task (s):	Resources and Materials:	Daily Checks (Return to Google Classroom or snapshots from a cell phone)
<p>Monday: Students are to attend class lecture on Google meets, or else watch assigned lecture</p>	<p>Notes that are posted on the Google Classroom</p> <p>Textbook, online copy posted on the Google Classroom</p> <p>Videos posted that are going over the notes</p> <p>Use of the Zoom classroom</p> <p>Crash Course Physics Videos:</p> <p>Simple Harmonic Motion: Crash Course Physics #16</p> <p>Traveling Waves: Crash Course Physics #17</p> <p>Sound: Crash Course Physics #18</p> <p>The Physics of Music: Crash Course Physics #19</p> <p>Flipping Physics Videos: flippingphysics.com -waves.html</p> <p>Khan Academy Physics Videos: khanacademy.org Introduction-to-Waves</p> <p>The Physics Classroom tutorials – Vibrational Motion Lesson</p>	<p>Participation in Google Meets meetings as required/needed</p>

Description of Task (s):	Resources and Materials:	Daily Checks (Return to Google Classroom or snapshots from a cell phone)
Tuesday:	Same as above	Participation in Google Meets meetings as required/needed. Completion of UTexas with a 75% or higher
Wednesday: Students are to attend class lecture on Google meets, or else watch assigned lecture	Same as above	Participation in Google Meets meetings as required/needed
Thursday: Students are to complete any work they have missing, and are to prepare for the quiz. This can be reviewing previous materials, or else	Same as above	
Friday: Students will take end of unit quiz on UTexas platform	Same as above	Participation in Google Meets meetings as required/needed

**Week criteria for success** (attach student checklists or rubrics): Greater than 75 % on Assigned UTexas Assessments

**Supportive resources and tutorials for the week** (plans for re-teaching): Textbook; Finals site resources (PowerPoints, worksheets with answer keys, pdf notes); Khan Academy; Crash Physics videos; PHeT simulators from University of Colorado; Flipping Physics videos; Interactions with teacher using Zoom.