HISI - Module Overview

Module Title__Waves___ LS Team__Barrett, Clancy, Phillips, Wahlund, Walston___ Grade level(s): ____11_____

<table>
<tr><td># of lessons: 5</td><td>Natural Resources_X____ Renewable Energy_____</td></tr>
<tr><td>Big Idea – Student Learning

Students will see the concept of harmonic motion and waves across a variety of core math and science classes.</td><td rowspan="2">Learning Targets – “I Can” Statements
(Pre-Calculus) I can model biorhthyms with sinusoidal functions and use the functions to make predictions about my intellectual, physical and emotional cycles.

(Physics) I can select an independant and dependant variable and control all other variables in order to investigate a relationship.

(Algebra 2) I can identify the effects of each parameter of a sinusoidal function.

(Math Studies) I can predict how far sound waves travel and if there is an effect on common local species.</td></tr>
<tr><td>Prior Knowledge:
Varies depending on lesson/subject area (i.e. understanding of basic graphing for physics lesson; understanding of sinusoidal functions and their components for pre-calculus lesson)</td></tr>
<tr><td>How are STEM integrated?
(Physics) Use of computer graphing program to analyze data collected in a science experiment designed by the student.
(Pre-Calculus) Use of a graphing calculator to analyze personal biorythm models and make predictions
(Algebra 2) Use of an interactive website and online graphing website (DESMOS) to analyze tide data and explore the parameters of a sinusoidal function</td><td>Community/Place-based connections:
Our students live in a coastal community, so tides are an everyday part of our lives.</td></tr>
<tr><td>What will be some community benefits?
None</td><td>STEM College/Career Connections:
Students who wish to pursue a STEM related field will benefit from exposure to the concept of waves, whether in the form of water, sound, or cyclical</td></tr>
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Assessment: What evidence of learning will you gather across the module's implementation? Assessment will look different in each course based on the class that the lesson is taught in.	General Outline of the Module: This module is not meant to be taught all in one class in a specific sequence, but rather to be taught across a variety of curricular areas (Physics, Pre-Calculus, Marine Biology, Algebra 2, Math Studies) in order to increase student understanding of the span of and connections within our general topic.