

Topic: Causes (Dynamics) of SHM
 Subject Area(s):

Days: 5
 Grade(s):

Key Learning: All simple harmonic motion can be explained using force and/or torque.



Unit Essential Question(s): What causes an object to oscillate instead of moving off in a straight line?

↓	↓	↓
<p>Concept: a) description of SHM <u>S11.C.3.1.3, S8.A.2.1.1, S8.A.2.1.2, S11.A.3.3.1, S11.A.3.3.3, 3.1.12.C, 3.4.12.C</u></p>	<p>Concept: b) introduction of sine and cosine <u>S11.A.1.3.1, S8.A.2.1.1, S8.A.2.1.2, S11.A.3.3.1, S11.A.3.3.3, 3.1.12.C, 3.4.12.C</u></p>	<p>Concept: c,d,e,g) measurement and relationship of mass/return force, w/ angular frequency <u>S11.C.3.1.3, S11.A.1.3.1, S8.A.2.1.1, S8.A.2.1.2, S11.A.3.3.1, S11.A.3.3.3, 3.4.12.C</u></p>
↓	↓	↓
<p>Lesson Essential Question(s): What are the basic parts of simple harmonic motion? (A)</p>	<p>Lesson Essential Question(s): How can sine and cosine functions be used to represent the motion of an oscillator? (A)</p>	<p>Lesson Essential Question(s): How does the interplay between the return force and inertial mass create simple harmonic motion? (A)</p>
↓	↓	↓
<p>Vocabulary:</p>	<p>Vocabulary: Sine, Cosine</p>	<p>Vocabulary: Return Force</p>
↓	↓	↓
<p>Concept: F) oscillations of matter states <u>S8.A.2.1.1, S11.A.3.3.3, 3.1.12.C, 3.4.12.C</u></p>	<p>Concept: h,i) LC, (shm) LRC (damped) <u>S11.A.1.3.1, S8.A.2.1.1, S8.A.2.1.2, S11.A.3.3.1, S11.A.3.3.3, 3.1.12.C, 3.4.12.C</u></p>	<p>Concept: j) applications <u>S8.A.2.1.2, S11.A.3.3.3, S11.A.1.1.4, 3.4.12.C</u></p>
↓	↓	↓
<p>Lesson Essential Question(s): How do solids, liquids and gasses react to a displacement from equilibrium? (A)</p>	<p>Lesson Essential Question(s): How can simple harmonic motion be created in electrical systems? (A)</p>	<p>Lesson Essential Question(s): How is simple harmonic motion used in the design and evaluation of many technologies? (A)</p>
↓	↓	↓
<p>Vocabulary:</p>	<p>Vocabulary: Resistor, Capacitor, Inductor, Resistance, Capacitance, Inductance, LC circuit</p>	<p>Vocabulary:</p>
<p>Additional Information:</p>		
<p>Attached Document(s):</p>		