

Innovations in Science and Technology
Year 1: Course I – The Nature of Science and Technology
St. Lawrence-Lewis BOCES Career and Technical Education

Unit of Study	Unit Hours	Math Hours	Science Hours
I. The Science of Survival			
<p>Essential Question (EQ): How can we best use existing power sources found in the wilderness to create electrical power for modern communication devices?</p> <p>A. Devise a way to charge a phone using only the available materials.</p>		5	7
II. Earthquake-Resistant Shelter			
<p>Essential Question (EQ): How can we design shelters that survive earthquakes?</p> <p>A. Build an earthquake-resistant dwelling.</p>		6	6
III. Cleaning Up Our Water Supply			
<p>Essential Question (EQ): Can we clean our water supply after containment?</p> <p>A. Evaluate effective purification options to make our water safe to drink.</p>		4	5
IV. Wave Energy			
<p>Essential Question (EQ): How can the energy found in ocean waves be captured and used to generate electricity?</p> <p>A. Develop a prototype of a wave generator using available materials that will produce 12 volts of voltage (20 watts of power).</p>		4	7
V. Laser Perimeter System			
<p>Essential Question (EQ): How can electronics and sensors be combined to create a system capable of establishing a perimeter and monitoring it with other devices?</p> <p>A. Develop an inexpensive surveillance system capable of providing photographic evidence of local fauna using lasers, electronics, cameras, and other available parts.</p>		4	5
VI. Mail Delivery System			
<p>Essential Question (EQ): How can we design a method for transporting mail from the street side mailbox to the house</p> <p>A. Develop a scale model of a system to deliver 8 oz. of mail from the mailbox on the street to a house 20' away.</p>		5	6
Total Hours	225*	28	36

*Each of the units within the course is delivered through Project-Based Learning and average 15 days per project which is equivalent to 225 hours.