Nebraska CTE

Physics and Mathematics of Energy

Apply safety principles, practices, philosophy, and guidelines to the work environment. STS.HS.27.1	a	**Complete applicable safety assessment with 100% accuracy.** STS.HS.27.1.A
	b	**Employ appropriate Personal Protective Equipment (PPE) while in the lab setting.** STS.HS.27.1.B
	c	**Employ eye protection in compliance with Neb. Rev. Statute 79–715.** STS.HS.27.1.C
	d	**Employ the safe application of tools and machines.** STS.HS.27.1.D
	e	**Explain the main hazards that are possible in the lab setting.** STS.HS.27.1.E
	f	**Demonstrate proper handling and storing of materials.** STS.HS.27.1.F
Identify career opportunities in fields related to the physics and mathematics of energy. STS.HS.27.2	a	**Identify the responsibilities and characteristics of professionals in the energy industry.** STS.HS.27.2.A
	b	**Identify career opportunities in the energy field.** STS.HS.27.2.B
	c	**Identify the training, education, certification, and licensing requirements for various careers in the energy industry.** STS.HS.27.2.C
Execute accurate measurements using measurement tools. STS.HS.27.3	a	**Identify types of measurement tools.** STS.HS.27.3.A
	b	**Categorize measurement tools by use.** STS.HS.27.3.B
	c	**Demonstrate the accurate use of measurement and layout tools to 1/16" precision.** STS.HS.27.3.C
Apply principles of physics and mathematics to the energy industry. STS.HS.27.4	a	**Identify the applications of physics in energy production, distribution, and use.** STS.HS.27.4.A
	b	**Identify the applications of mathematics in energy production, distribution, and use.** STS.HS.27.4.B
	c	**Apply principles of physics and mathematics to the problem solving and product creation process.** STS.HS.27.4.C

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Apply appropriate academic and technical skills to energy-centric activities and projects. STS.HS.27.5	**a** Identify whole numbers, decimals, fractions, and complex numbers. STS.HS.27.5.A
	b Solve decimal/fraction conversions. STS.HS.27.5.B
	c Employ math functions and formulas to complete an energy job and workplace tasks. STS.HS.27.5.C
	d Communicate principles and terminology associated with the study and use of mathematics and physics. STS.HS.27.5.D
Identify the materials, tools, and equipment needed to manufacture a product used in the energy industry. STS.HS.27.6	**a** Determine types of materials, fasteners, adhesives, and finishes needed to produce an energy product. STS.HS.27.6.A
	b Determine the correct tools and equipment needed to produce a specific product. STS.HS.27.6.B
	c Identify components of an effective plan to build an energy product. STS.HS.27.6.C
Produce an energy product. STS.HS.27.7	**a** Devise a plan to build an energy product. STS.HS.27.7.A
	b Execute a plan to create an energy product. STS.HS.27.7.B
	c Identify the elements of a finished energy product. STS.HS.27.7.C