Nebraska CTE

Fundamentals of Energy

Apply safety principles, practice, philosophy, and guidelines to the work environment. STS.HS.16.1	**a** Complete applicable safety assessment with 100% accuracy. STS.HS.16.1.A
	b Employ appropriate Personal Protective Equipment (PPE) while in the lab setting. STS.HS.16.1.B
	c Employ eye protection in compliance with Neb. Rev. Statute 79–715. STS.HS.16.1.C
	d Employ the safe application of tools and machines. STS.HS.16.1.D
	e Explain the main hazards that are possible in the lab setting. STS.HS.16.1.E
	f Demonstrate proper handling and storing of materials. STS.HS.16.1.F
Determine career opportunities in the energy field. STS.HS.16.2	**a** Identify opportunities and employment trends in various energy sectors. STS.HS.16.2.A
	b Identify the training, education, certification, and licensing requirements for energy occupation choices. STS.HS.16.2.B
	c Identify the responsibilities of professionals in the energy industry. STS.HS.16.2.C
Summarize the history of energy generation and distribution. STS.HS.16.3	**a** Summarize the history of electric power generation and distribution. STS.HS.16.3.A
	b Summarize the history of fluid and liquid fuel production and distribution. STS.HS.16.3.B
	c Identify emerging trends in energy generation and distribution. STS.HS.16.3.C
Identify legal and societal influences affecting energy production and distribution. STS.HS.16.4	**a** Identify the legal factors that impact the production and distribution of energy. STS.HS.16.4.A
	b Identify the impact society has on energy production and distribution. STS.HS.16.4.B
	c Identify the design and project creation process for energy production and distribution. STS.HS.16.4.C

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Classify the types of energy and their uses. STS.HS.16.5	a	**Identify the seven forms of energy.** STS.HS.16.5.A
	b	**Recognize energy transformations in various settings.** STS.HS.16.5.B
	c	**Recognize renewable and non-renewable energy sources.** STS.HS.16.5.C
	d	**Identify the law of conservation of energy.** STS.HS.16.5.D
Appraise energy storage and distribution methods. STS.HS.16.6	a	**Summarize the components of an energy delivery system.** STS.HS.16.6.A
	b	**Identify key pieces of equipment used in the distribution and storage of fluid fuels and electrical power.** STS.HS.16.6.B
	c	**Compare centralized power generation to distributed generation.** STS.HS.16.6.C
Apply units of measure used in the evaluation of energy production and delivery. STS.HS.16.7	a	**Calculate equations using Ohm's Law.** STS.HS.16.7.A
	b	**Calculate equations using thermal energy formulas.** STS.HS.16.7.B
Produce an energy-related product or structure. STS.HS.16.8	a	**Generate sketches and plans for an energy-related product or structure.** STS.HS.16.8.A
	b	**Determine structural requirements, specifications, and estimate costs of structures.** STS.HS.16.8.B
	c	**Execute plans for construction of energy related products or structures.** STS.HS.16.8.C