

# 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](#)

**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

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**b Solve decimal/fraction conversions.** STS.HS.27.5.B

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**c Employ math functions and formulas to complete an energy job and workplace tasks.** STS.HS.27.5.C

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**d Communicate principles and terminology associated with the study and use of mathematics and physics.** STS.HS.27.5.D

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**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

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**b Determine the correct tools and equipment needed to produce a specific product.** STS.HS.27.6.B

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**c Identify components of an effective plan to build an energy product.** STS.HS.27.6.C

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**Produce an energy product.** STS.HS.27.7

**a Devise a plan to build an energy product.** STS.HS.27.7.A

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**b Execute a plan to create an energy product.** STS.HS.27.7.B

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**c Identify the elements of a finished energy product.** STS.HS.27.7.C