### Grades 9–12

|----------------------------------------|-------------------------------|-------------------------------------------|
| Constructing Explanations and Designing Solutions | **ETS1.B: Developing Possible Solutions**  
- Evaluate a solution to a complex real-world problem, based on scientific knowledge, student-generated sources of evidence, prioritized criteria, and trade-off considerations. | **Critical Thinking**  
- Uses evidence to better understand and solve problems in technology and engineering, including applying computational thinking. |

**Clarifying Statement:** When evaluating solutions, it is important to take into account a range of constraints, including cost, safety, reliability, and aesthetics, and to consider social, cultural, and environmental impacts.

**Assessment Boundary:** N/A

**Pennsylvania Context:** N/A

**Pennsylvania Career Ready Skills:** Evaluate consequences from a personal, and civic perspective to inform decision making.

**Connections to Other Standards Content and Practices**
<table>
<thead>
<tr>
<th>Standard Source</th>
<th>Possible Connections to Other Standard(s) or Practice(s)</th>
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| **PA Core Standards: Reading and Writing in Science and Technical Areas**        | CC.3.5.9-10.G: Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.  
CC.3.5.11-12.G: Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.  
CC.3.5.9-10.H: Assess the extent to which the reasoning and evidence in a text support the author’s claim or a recommendation for solving a scientific or technical problem.  
CC.3.5.11-12.H: Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.  
CC.3.5.9-10.I: Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.  
CC.3.5.11-12.I: Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. |
| **PA Core Standards and Practices: Math**                                       | MP.2: Reason abstractly and quantitatively.  
MP.4: Model with mathematics.                                                                                                                                                                                                                                 |
| **Integrated Standards for Science, Environment & Ecology, and Technology & Engineering Standards Grades K–12** | N/A                                                                                                                                                                                                                                                         |