



## Grades 6–8

### 3.5.6-8.N (ETS) Technology and Engineering: Applying, Maintaining, and Assessing Technological Products and Systems

**Students who demonstrate understanding can** *analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.*

**Clarifying Statement:** There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem. Sometimes parts of different solutions can be combined to create a solution that is better than any of its predecessors.

**Assessment Boundary:** N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
<b>Analyzing and Interpreting Data</b> Analyzing data in 6–8 builds on K–5 experiences and progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis. <ul style="list-style-type: none"> <li>Analyze and interpret data to determine similarities and differences in findings.</li> </ul>	<b>Developing Possible Solutions</b> <ul style="list-style-type: none"> <li>There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem.</li> <li>Sometimes parts of different solutions can be combined to create a solution that is better than any of its predecessors.</li> </ul> <b>Optimizing the Design Solution</b> <ul style="list-style-type: none"> <li>Although one design may not perform the best across all tests, identifying the characteristics of the design that performed the best in each test can provide useful information for the redesign process—that is, some of those characteristics may be incorporated into the new design.</li> </ul>	<b>Optimism</b> Critiques technological products and systems to identify areas of improvement.

**Pennsylvania Context:** N/A

**Pennsylvania Career Ready Skills:** Analyze various perspectives on a situation.

### Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
<b>PA Core Standards: Reading and Writing in Science and Technical Areas</b>	CC.3.5.6-8.A: Cite specific textual evidence to support analysis of science and technical texts. CC.3.5.6-8.G: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). CC.3.5.6-8.I: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.



Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively.
Integrated Standards for Science, Environment & Ecology, and Technology & Engineering Standards Grades K–12	N/A