

<b>Engineering Technology I</b>		<b>8600570</b>	
<b>Outcome # 01.0 DEMONSTRATE AN UNDERSTANDING OF THE CHARACTERISTICS AND SCOPE OF TECHNOLOGY--THE STUDENT WILL BE ABLE TO:</b>			
<b>Performance Task# 01.01 Discuss the nature and development of technological knowledge and processes.</b>			
<b>SSS Strand: Writing</b>		<b>Essential Work Skills</b>	
<b>LA.B 2.4.4 L</b>	Selects and uses a variety of electronic media, such as the Internet, information services, and desktop publishing software programs, to create, revise, retrieve, and verify information.	<b>e03</b>	Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.
<b>SSS Strand: Listening, Viewing and Speaking</b>		<b>Essential Work Skills</b>	
<b>LA.C 3.4.2 L</b>	Selects and uses a variety of speaking strategies to clarify meaning and to reflect understanding, interpretation, application, and evaluation of content processes, or experiences, including asking relevant questions when necessary, making appropriate and meaningful comments, and making insightful observations.	<b>e59</b>	Respond orally to fellow student's opinions during presentations by asking questions, asking for clarification, agreeing and /or disagreeing courteously.
		<b>e69</b>	Participate in a one-on-one conference by relating essential information, asking questions on the topic, and using language to clarify information.
<b>SSS Strand: The Nature of Science</b>		<b>Essential Work Skills</b>	
<b>SC.H 3.4.6 H</b>	Knows that scientific knowledge is used by those who engage in design and technology to solve practical problems, taking human values and limitation into account.	<b>s115</b>	(Not Ranked) Plan and apply real or hypothetical models and constructions to facilitate investigation and learning and the solution to practical problems.
<b>Performance Task# 01.02 Explain the rapid increase in the rate of technological development and diffusion.</b>			
<b>SSS Strand: Writing</b>		<b>Essential Work Skills</b>	
<b>LA.B 2.4.3 L</b>	Writes fluently for a variety of occasions, audiences, and purposes, making appropriate choices regarding style, tone, level of detail, and organization.	<b>e22</b>	Understand and produce a variety of informative format such as business letters, memos, reports, news articles, brochures, proposals and critiques.
		<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
<b>SSS Strand: Language</b>		<b>Essential Work Skills</b>	
<b>LA.D 2.4.2 L</b>	Understands the subtleties of literary devices and techniques in the comprehension and creation of communication.	<b>e80</b>	Understand ways an author uses language and test characteristics to aid comprehension.
<b>SSS Strand: Measurement</b>		<b>Essential Work Skills</b>	
<b>MA.B 1.4.2 H</b>	Uses concrete and graphic models to derive formulas for finding rate, distance, time, angle measures and arc lengths.	<b>m14</b>	Understand the angle relationships in triangles (i.e., acute, obtuse, right, interior, and exterior).
		<b>m30</b>	Know how to measure circle quantities (e.g., area, angle formed by two secants, circumference, length of segments, etc.)
<b>MA.B 1.4.3 H</b>	Relates the concepts of measurement to similarity and proportionality in real-world situations.	<b>m52</b>	Find the solution of proportions with monomial and binomial terms (e.g., $x/(x-2) = 6/5$ , therefore, $x = 12$ ).

**Performance Task# 01.03 Conduct specific goal-directed research related to inventions and innovations.**

<b>SSS Strand: Reading</b>		<b>Essential Work Skills</b>	
<b>LA.A 1.4.3</b>	<b>L</b> Refines vocabulary for interpersonal, academic, and workplace situations, including figurative, idiomatic, and technical meanings.	<b>e09</b>	Know how to decipher unfamiliar words using such strategies as context cues, word structure analysis, letter sound relationships, and word histories.
		<b>e30</b>	Understand the nature and purpose of and be able to word process a variety of formats including essays, business letters, memos, instructions, policy statements, technical proposals, user manuals, lab reports, etc.
		<b>e49</b>	Read for main idea first and then read for detail.
<b>LA.A 1.4.4</b>	<b>L</b> Applies a variety of response strategies, including rereading, note taking, summarizing, outlining, writing a formal report, and relating what is read to his or her own experiences and feelings.	<b>e34</b>	Use ideas from journals, class discussion and literary criticism to write a paper that expresses a personal opinion, sustains a controlling idea, or uses specific evidence from literary texts to support an opinion.
		<b>e35</b>	Apply the information gathered from technical texts in real-life situations.
		<b>e53</b>	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
		<b>e60</b>	Relate situations, events, and characters in a reading selection to personal experience.
		<b>e72</b>	Evaluate the way an author uses language and text characteristics such as plot, setting, theme, character, point of view, genre etc. to evoke a response in a reader.
<b>LA.A 2.4.4</b>	<b>H</b> Locates, gathers, analyzes, and evaluates written information for a variety of purposes, including research projects, real-world tasks, and self-improvement.	<b>e94</b>	Use response journals to jot down ideas from reading literary texts.
		<b>e03</b>	Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.
<b>LA.A 2.4.6</b>	<b>L</b> Selects and uses appropriate study and research skills and tools according to the type of information being gathered or organized, including almanacs, government publications, microfiche, news sources, and information services.	<b>e03</b>	Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.

<b>SSS Strand: Writing</b>		<b>Essential Work Skills</b>	
<b>LA.B 2.4.2</b>	<b>L</b> Organizes information using appropriate systems.	<b>e12</b>	Draft a report that engages an audience and is concise, clear, well organized, accurate, and informative.
<b>LA.B 2.4.3</b>	<b>L</b> Writes fluently for a variety of occasions, audiences, and purposes, making appropriate choices regarding style, tone, level of detail, and organization.	<b>e22</b>	Understand and produce a variety of informative format such as business letters, memos, reports, news articles, brochures, proposals and critiques.
		<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.

**Performance Task# 01.04 Discuss current technological developments that are/were driven by profit motive and the market.**

<b>SSS Strand: Listening, Viewing and Speaking</b>		<b>Essential Work Skills</b>	
<b>LA.C 3.4.2</b>	<b>L</b> Selects and uses a variety of speaking strategies to clarify meaning and to reflect understanding, interpretation, application, and evaluation of content processes, or experiences, including asking relevant questions when necessary, making appropriate and meaningful comments, and making insightful observations.	<b>e59</b>	Respond orally to fellow student's opinions during presentations by asking questions, asking for clarification, agreeing and /or disagreeing courteously.

**e69** Participate in a one-on-one conference by relating essential information, asking questions on the topic, and using language to clarify information.

<b>SSS Strand: The Nature of Science</b>	<b>Essential Work Skills</b>
--	------------------------------

<p><b>SC.H 1.4.5 M</b> Understands that new ideas in science are limited by the context in which they are conceived, are often rejected by the scientific establishment, sometimes spring from unexpected findings, and usually grow slowly from many contributors.</p>	<p><b>s116</b> (Not Ranked) Understand the impact upon society and the environment of scientific and technological discoveries and the contributions of scientists. Understand how society may accept or reject scientific discoveries based upon need or refusal to change.</p>
---	--

<p><b>SC.H 3.4.3 M</b> Knows that scientists can bring information, insights, and analytical skills to matters of public concern and help people understand the possible causes and effects of events.</p>	<p><b>s116</b> (Not Ranked) Understand the impact upon society and the environment of scientific and technological discoveries and the contributions of scientists. Understand how society may accept or reject scientific discoveries based upon need or refusal to change.</p>
--	--

**Outcome # 02.0 DEMONSTRATE AN UNDERSTANDING OF THE CORE CONCEPTS OF TECHNOLOGY--THE STUDENT WILL BE ABLE TO:**

**Performance Task# 02.01 Identify systems thinking logic and creativity with appropriate compromises in complex real-life problems**

<b>SSS Strand:</b>	<b>Essential Work Skills</b>
--------------------	------------------------------

No SSS Link to this Student Performance Standard.	No Essential Work Skill
---	-------------------------

**Performance Task# 02.02 Define technological systems, which are the building blocks of technology and are embedded within larger technological, social, and environmental systems.**

<b>SSS Strand: Language</b>	<b>Essential Work Skills</b>
-----------------------------	------------------------------

<p><b>LA.D 2.4.4 L</b> Effectively integrates multimedia and technology into presentations.</p>	<p><b>e68</b> Apply an understanding of the meaning of graphics, layout, white space, italics, parentheses, and other visual aids.</p>
---	--

**Performance Task# 02.03 Identify resources involving trade-offs between competing values, such as availability, cost, desirability, and waste.**

<b>SSS Strand: Reading</b>	<b>Essential Work Skills</b>
----------------------------	------------------------------

<p><b>LA.A 1.4.2 H</b> Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.</p>	<p><b>e50</b> Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.</p>
	<p><b>e53</b> Apply personal or objective criteria for evaluating informational, persuasive and literary materials.</p>

<b>SSS Strand: Writing</b>	<b>Essential Work Skills</b>
----------------------------	------------------------------

<p><b>LA.B 2.4.1 L</b> Writes text, notes, outlines, comments, and observations that demonstrate comprehension and synthesis of content, processes, and experiences from a variety of media.</p>	<p><b>e03</b> Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.</p>
--	--

**Performance Task# 02.04 Identify the criteria and constraints of a product or system and determine how they affect the final design and development.**

**SSS Strand: Number Sense, Concepts and Operations** **Essential Work Skills**

<b>MA.A 5.4.1</b>	<b>M</b>	Applies special number relationships such as sequences and series to real-world problems.	<b>m48</b>	Understand the concepts and apply the uses of functions and limits (i.e., conduct limiting processes using functions to investigate infinite series and sequences).
-------------------	----------	---	------------	---

**SSS Strand: Measurement** **Essential Work Skills**

<b>MA.B 1.4.1</b>	<b>H</b>	Uses concrete and graphic models to derive formulas for finding perimeter, area, surface area, circumference, and volume of two- and three-dimensional shapes, including rectangular solids, cylinders, cones, and pyramids.	<b>m13</b>	Compute the perimeter and area of two-dimensional figures.
-------------------	----------	--	------------	--

			<b>m17</b>	Compute the volume of three-dimensional figures (solids).
--	--	--	------------	---

<b>MA.B 3.4.1</b>	<b>H</b>	Solves real-world and mathematical problems involving estimates of measurements, including length, time, weight/mass, temperature, money, perimeter, area, and volume, and estimates the effects of measurement errors on calculations.	<b>m33</b>	Use the technique of dimensional analysis to convert units of measure (e.g., convert km/hr to m/min) including drawing to scale and applying ratios. Understand and use various techniques for estimating, making and converting measure; and using these to perform dimensional analysis.
-------------------	----------	---	------------	--

<b>MA.B 4.4.1</b>	<b>L</b>	Determines the level of accuracy and precision, including absolute and relative errors or tolerance, required in real-world measurement situations.		No Essential Work Skill
-------------------	----------	---	--	-------------------------

**SSS Strand: Data Analysis and Probability** **Essential Work Skills**

<b>MA.E 3.4.2</b>	<b>H</b>	Explains the limitations of using statistical techniques and data in making inferences and valid arguments.	<b>m36</b>	Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).
-------------------	----------	---	------------	---

			<b>m42</b>	Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i.e., distributing individuals into one hundred groups of equal frequency).
--	--	--	------------	--

**SSS Strand: The Nature of Science** **Essential Work Skills**

<b>SC.H 1.4.1</b>	<b>H</b>	Knows that investigations are conducted to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories.	<b>s114</b>	(Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures)
-------------------	----------	--	-------------	--

**Performance Task# 02.05 List strategies for optimizing a technological process or methodology of designing or making a product, dependent on criteria and constraints.**

**SSS Strand: Writing** **Essential Work Skills**

<b>LA.B 2.4.2</b>	<b>L</b>	Organizes information using appropriate systems.	<b>e12</b>	Draft a report that engages an audience and is concise, clear, well organized, accurate, and informative.
-------------------	----------	--	------------	---

**SSS Strand: The Nature of Science** **Essential Work Skills**

<b>SC.H 1.4.2</b>	<b>M</b>	Knows that from time to time, major shifts occur in the scientific view of how the world works, but that more often the changes that take place in the body of scientific knowledge are small modifications of prior knowledge.	<b>s116</b>	(Not Ranked) Understand the impact upon society and the environment of scientific and technological discoveries and the contributions of scientists. Understand how society may accept or reject scientific discoveries based upon need or refusal to change.
-------------------	----------	---	-------------	---

Performance Task# 02.06 Identify new technologies that create new processes.		
SSS Strand: Writing		Essential Work Skills
LA.B 2.4.2	L Organizes information using appropriate systems.	e12 Draft a report that engages an audience and is concise, clear, well organized, accurate, and informative.
SSS Strand: The Nature of Science		Essential Work Skills
SC.H 1.4.2	M Knows that from time to time, major shifts occur in the scientific view of how the world works, but that more often the changes that take place in the body of scientific knowledge are small modifications of prior knowledge.	s116 (Not Ranked) Understand the impact upon society and the environment of scientific and technological discoveries and the contributions of scientists. Understand how society may accept or reject scientific discoveries based upon need or refusal to change.
Performance Task# 02.07 Describe a quality control process to ensure that a product, service or system meets established criteria.		
SSS Strand: Reading		Essential Work Skills
LA.A 2.4.6	L Selects and uses appropriate study and research skills and tools according to the type of information being gathered or organized, including almanacs, government publications, microfiche, news sources, and information services.	e03 Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.
SSS Strand: Writing		Essential Work Skills
LA.B 2.4.1	L Writes text, notes, outlines, comments, and observations that demonstrate comprehension and synthesis of content, processes, and experiences from a variety of media.	e03 Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.
Performance Task# 02.08 Define a management system as the process of planning, organizing, and controlling work.		
SSS Strand: Reading		Essential Work Skills
LA.A 1.4.2	H Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	e50 Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important. e53 Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
LA.A 1.4.3	L Refines vocabulary for interpersonal, academic, and workplace situations, including figurative, idiomatic, and technical meanings.	e09 Know how to decipher unfamiliar words using such strategies as context cues, word structure analysis, letter sound relationships, and word histories. e30 Understand the nature and purpose of and be able to word process a variety of formats including essays, business letters, memos, instructions, policy statements, technical proposals, user manuals, lab reports, etc. e49 Read for main idea first and then read for detail.

**Outcome # 03.0 DEMONSTRATE AN UNDERSTANDING OF THE RELATIONSHIPS AMONG TECHNOLOGIES AND THE CONNECTION BETWEEN TECHNOLOGY AND OTHER FIELDS OF STUDY--THE STUDENT WILL BE ABLE TO:**

**Performance Task# 03.01 Identify technology transfer occurring when a new user applies an existing innovation developed for one purpose in a different function.**

**SSS Strand: Writing**

**Essential Work Skills**

LA.B 2.4.2 L Organizes information using appropriate systems.

e12 Draft a report that engages an audience and is concise, clear, well organized, accurate, and informative.

**SSS Strand: The Nature of Science**

**Essential Work Skills**

SC.H 1.4.2 M Knows that from time to time, major shifts occur in the scientific view of how the world works, but that more often the changes that take place in the body of scientific knowledge are small modifications of prior knowledge.

s116 (Not Ranked) Understand the impact upon society and the environment of scientific and technological discoveries and the contributions of scientists. Understand how society may accept or reject scientific discoveries based upon need or refusal to change.

**Performance Task# 03.02 Identify technological innovation resulting when ideas, knowledge, or skills are shared within a technology, among technologies, or across other fields.**

**SSS Strand: Writing**

**Essential Work Skills**

LA.B 2.4.2 L Organizes information using appropriate systems.

e12 Draft a report that engages an audience and is concise, clear, well organized, accurate, and informative.

**SSS Strand: The Nature of Matter**

**Essential Work Skills**

SC.A 1.4.2 M Knows that the vast diversity of the properties of materials is primarily due to variations in the forces that hold molecules together.

s78 Understand the historical development of the periodic table and apply the principles inherent in its development, including the properties and atomic structure of elements and resultant chemical compounds the forces acting between and among atoms and molecules, and changes in substances as a result of chemical combination.

**Performance Task# 03.03 Identify technological progresses that promote the advancement of science and mathematics.**

**SSS Strand: Writing**

**Essential Work Skills**

LA.B 2.4.2 L Organizes information using appropriate systems.

e12 Draft a report that engages an audience and is concise, clear, well organized, accurate, and informative.

**SSS Strand: The Nature of Science**

**Essential Work Skills**

SC.H 1.4.2 M Knows that from time to time, major shifts occur in the scientific view of how the world works, but that more often the changes that take place in the body of scientific knowledge are small modifications of prior knowledge.

s116 (Not Ranked) Understand the impact upon society and the environment of scientific and technological discoveries and the contributions of scientists. Understand how society may accept or reject scientific discoveries based upon need or refusal to change.

**Outcome # 04.0 DEMONSTRATE AN UNDERSTANDING OF THE CULTURAL, SOCIAL, ECONOMIC, AND POLITICAL EFFECTS OF TECHNOLOGY--THE STUDENT WILL BE ABLE TO:**

**Performance Task# 04.01 Identify changes caused by the use of technology ranging from gradual to rapid and from subtle to obvious.**

**SSS Strand: Reading**

**Essential Work Skills**

<p><b>LA.A 2.4.6 L</b> Selects and uses appropriate study and research skills and tools according to the type of information being gathered or organized, including almanacs, government publications, microfiche, news sources, and information services.</p>	<p><b>e03</b> Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.</p>
--	--

**SSS Strand: The Nature of Science**

**Essential Work Skills**

<p><b>SC.H 1.4.2 M</b> Knows that from time to time, major shifts occur in the scientific view of how the world works, but that more often the changes that take place in the body of scientific knowledge are small modifications of prior knowledge.</p>	<p><b>s116</b> (Not Ranked) Understand the impact upon society and the environment of scientific and technological discoveries and the contributions of scientists. Understand how society may accept or reject scientific discoveries based upon need or refusal to change.</p>
--	--

**Performance Task# 04.02 Classify the use of technology involving weighing the trade-offs between the positive and the negative effects.**

**SSS Strand: Writing**

**Essential Work Skills**

<p><b>LA.B 2.4.1 L</b> Writes text, notes, outlines, comments, and observations that demonstrate comprehension and synthesis of content, processes, and experiences from a variety of media.</p>	<p><b>e03</b> Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.</p>
<p><b>LA.B 2.4.4 L</b> Selects and uses a variety of electronic media, such as the Internet, information services, and desktop publishing software programs, to create, revise, retrieve, and verify information.</p>	<p><b>e03</b> Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.</p>

**Performance Task# 04.03 Identify ethical considerations important in the development, selection, and use of technologies.**

**SSS Strand: The Nature of Science**

**Essential Work Skills**

<p><b>SC.H 1.4.1 H</b> Knows that investigations are conducted to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories.</p>	<p><b>s114</b> (Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures)</p>
<p><b>SC.H 1.4.4 M</b> Knows that scientists in any one research group tend to see things alike and that therefore scientific teams are expected to seek out the possible sources of bias in the design of their investigations and in their data analysis.</p>	<p><b>s114</b> (Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures)</p>
<p><b>SC.H 1.4.7 M</b> Understands the importance of a sense of responsibility, a commitment to peer review, truthful reporting of the methods and outcomes of investigations, and making the public aware of the findings.</p>	<p><b>s114</b> (Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures)</p>

**Performance Task# 04.04 List the cultural, social, economic, and political changes caused by the transfer of a technology from one society to another.**

<b>SSS Strand: Reading</b>		<b>Essential Work Skills</b>	
<b>LA.A 2.4.6 L</b>	Selects and uses appropriate study and research skills and tools according to the type of information being gathered or organized, including almanacs, government publications, microfiche, news sources, and information services.	<b>e03</b>	Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.

<b>SSS Strand: The Nature of Science</b>		<b>Essential Work Skills</b>	
<b>SC.H 1.4.2 M</b>	Knows that from time to time, major shifts occur in the scientific view of how the world works, but that more often the changes that take place in the body of scientific knowledge are small modifications of prior knowledge.	<b>s116</b>	(Not Ranked) Understand the impact upon society and the environment of scientific and technological discoveries and the contributions of scientists. Understand how society may accept or reject scientific discoveries based upon need or refusal to change.

**Outcome # 05.0 DEMONSTRATE AN UNDERSTANDING OF THE EFFECTS OF TECHNOLOGY ON THE ENVIRONMENT--THE STUDENT WILL BE ABLE TO:**

**Performance Task# 05.01 Select technologies to conserve water, soil, and energy through such techniques as reusing, reducing and recycling.**

**SSS Strand: How Living Things Interact with Their Environment**

<b>SSS Strand: How Living Things Interact with Their Environment</b>		<b>Essential Work Skills</b>	
<b>SC.G 1.4.1 H</b>	Knows of the great diversity and interdependence of living things.	<b>s13</b>	Understand ecology as the study of the interactions and relationships of organisms with their living and nonliving environments (i.e., the ecosystem, communities, and populations).
<b>SC.G 2.4.6 M</b>	Knows the ways in which humans today are placing their environmental support systems at risk (e.g., rapid human population growth, environmental degradation, and resource depletion).	<b>s40</b>	Know the survival requirements of animals and plants and the history and implications of population growth.

**Performance Task# 05.02 List trade-offs of developing technologies to reduce the use of resources.**

<b>SSS Strand: Writing</b>		<b>Essential Work Skills</b>	
<b>LA.B 2.4.1 L</b>	Writes text, notes, outlines, comments, and observations that demonstrate comprehension and synthesis of content, processes, and experiences from a variety of media.	<b>e03</b>	Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.

<b>SSS Strand: How Living Things Interact with Their Environment</b>		<b>Essential Work Skills</b>	
<b>SC.G 2.4.5 H</b>	Understands that the amount of life any environment can support is limited and that human activities can change the flow of energy and reduce the fertility of the Earth.	<b>s10</b>	Understand the human impact on the environment through pollution (air, water, and soil), and ways to improve it through education, research, laws, and conservation.
<b>SC.G 2.4.6 M</b>	Knows the ways in which humans today are placing their environmental support systems at risk (e.g., rapid human population growth, environmental degradation, and resource depletion).	<b>s40</b>	Know the survival requirements of animals and plants and the history and implications of population growth.

<b>Performance Task# 05.03 Identify technologies devised to reduce the negative consequences of other technologies.</b>		
<b>SSS Strand: Writing</b>		<b>Essential Work Skills</b>
<b>LA.B 2.4.1 L</b>	Writes text, notes, outlines, comments, and observations that demonstrate comprehension and synthesis of content, processes, and experiences from a variety of media.	<b>e03</b> Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.
<b>SSS Strand: The Nature of Matter</b>		<b>Essential Work Skills</b>
<b>SC.A 2.4.6 M</b>	Understands that matter may act as a wave, a particle, or something else entirely different with its own characteristic behavior.	<b>s106</b> Know that quantum theory was developed to explain phenomena that could not be explained by the classical theory of light. Examine the quantum and photon.
<b>SSS Strand: How Living Things Interact with Their Environment</b>		<b>Essential Work Skills</b>
<b>SC.G 1.4.1 H</b>	Knows of the great diversity and interdependence of living things.	<b>s13</b> Understand ecology as the study of the interactions and relationships of organisms with their living and nonliving environments (i.e., the ecosystem, communities, and populations).
<b>Performance Task# 05.04 Discuss the implementation of technologies involving the weighing of trade-offs between predicted positive and negative effects on the environment.</b>		
<b>SSS Strand: Writing</b>		<b>Essential Work Skills</b>
<b>LA.B 2.4.1 L</b>	Writes text, notes, outlines, comments, and observations that demonstrate comprehension and synthesis of content, processes, and experiences from a variety of media.	<b>e03</b> Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.
<b>SSS Strand: How Living Things Interact with Their Environment</b>		<b>Essential Work Skills</b>
<b>SC.G 2.4.6 M</b>	Knows the ways in which humans today are placing their environmental support systems at risk (e.g., rapid human population growth, environmental degradation, and resource depletion).	<b>s40</b> Know the survival requirements of animals and plants and the history and implications of population growth.
<b>SSS Strand: The Nature of Science</b>		<b>Essential Work Skills</b>
<b>SC.H 3.4.1 M</b>	Knows that performance testing is often conducted using small-scale models, computer simulations, or analogous systems to reduce the chance of system failure.	<b>s115</b> (Not Ranked) Plan and apply real or hypothetical models and constructions to facilitate investigation and learning and the solution to practical problems.
<b>Outcome # 06.0 DEMONSTRATE AN UNDERSTANDING OF THE ROLE OF SOCIETY IN THE DEVELOPMENT AND USE OF TECHNOLOGY--THE STUDENT WILL BE ABLE TO:</b>		
<b>Performance Task# 06.01 Collect societal opinions and demands, as well as corporate cultures to use as a basis for deciding whether or not to develop a technology.</b>		
<b>SSS Strand: Reading</b>		<b>Essential Work Skills</b>
<b>LA.A 2.4.6 L</b>	Selects and uses appropriate study and research skills and tools according to the type of information being gathered or organized, including almanacs, government publications, microfiche, news sources, and information services.	<b>e03</b> Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.
<b>SSS Strand: The Nature of Science</b>		<b>Essential Work Skills</b>

<p>SC.H 3.4.5 H</p>	<p>Knows that the value of a technology may differ for different people and at different times.</p>	<p>s116</p>	<p>(Not Ranked) Understand the impact upon society and the environment of scientific and technological discoveries and the contributions of scientists. Understand how society may accept or reject scientific discoveries based upon need or refusal to change.</p>
<p><b>Performance Task# 06.02 Identify a number of different factors, such as advertising, the strength of the economy, the goals of a company, and the latest fads as contributors to shaping the design of and demand for various technologies.</b></p>			
<p><b>SSS Strand: Reading</b></p>		<p><b>Essential Work Skills</b></p>	
<p>LA.A 2.4.6 L</p>	<p>Selects and uses appropriate study and research skills and tools according to the type of information being gathered or organized, including almanacs, government publications, microfiche, news sources, and information services.</p>	<p>e03</p>	<p>Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.</p>
<p><b>SSS Strand: The Nature of Science</b></p>		<p><b>Essential Work Skills</b></p>	
<p>SC.H 3.4.5 H</p>	<p>Knows that the value of a technology may differ for different people and at different times.</p>	<p>s116</p>	<p>(Not Ranked) Understand the impact upon society and the environment of scientific and technological discoveries and the contributions of scientists. Understand how society may accept or reject scientific discoveries based upon need or refusal to change.</p>
<p><b>Outcome # 07.0 DEMONSTRATE AN UNDERSTANDING OF THE INFLUENCE OF TECHNOLOGY ON HISTORY--THE STUDENT WILL BE ABLE TO:</b></p>			
<p><b>Performance Task# 07.01 Define the history of technology as a powerful force in reshaping the social, cultural, political, and economic landscape.</b></p>			
<p><b>SSS Strand: Writing</b></p>		<p><b>Essential Work Skills</b></p>	
<p>LA.B 2.4.1 L</p>	<p>Writes text, notes, outlines, comments, and observations that demonstrate comprehension and synthesis of content, processes, and experiences from a variety of media.</p>	<p>e03</p>	<p>Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.</p>
<p><b>SSS Strand: How Living Things Interact with Their Environment</b></p>		<p><b>Essential Work Skills</b></p>	
<p>SC.G 2.4.6 M</p>	<p>Knows the ways in which humans today are placing their environmental support systems at risk (e.g., rapid human population growth, environmental degradation, and resource depletion).</p>	<p>s40</p>	<p>Know the survival requirements of animals and plants and the history and implications of population growth.</p>
<p><b>SSS Strand: The Nature of Science</b></p>		<p><b>Essential Work Skills</b></p>	
<p>SC.H 3.4.1 M</p>	<p>Knows that performance testing is often conducted using small-scale models, computer simulations, or analogous systems to reduce the chance of system failure.</p>	<p>s115</p>	<p>(Not Ranked) Plan and apply real or hypothetical models and constructions to facilitate investigation and learning and the solution to practical problems.</p>
<p><b>Performance Task# 07.02 Discuss that early in the history of technology, the development of many tools and machines was based not on scientific knowledge but on technological know-how.</b></p>			
<p><b>SSS Strand: Reading</b></p>		<p><b>Essential Work Skills</b></p>	

<b>LA.A 2.4.6 L</b>	Selects and uses appropriate study and research skills and tools according to the type of information being gathered or organized, including almanacs, government publications, microfiche, news sources, and information services.	<b>e03</b>	Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.
---------------------	---	------------	--

<b>SSS Strand: The Nature of Science</b>	<b>Essential Work Skills</b>
--	------------------------------

<b>SC.H 3.4.5 H</b>	Knows that the value of a technology may differ for different people and at different times.	<b>s116</b>	(Not Ranked) Understand the impact upon society and the environment of scientific and technological discoveries and the contributions of scientists. Understand how society may accept or reject scientific discoveries based upon need or refusal to change.
---------------------	--	-------------	---

**Outcome # 08.0 DEMONSTRATE AN UNDERSTANDING OF THE ATTRIBUTES OF DESIGN--THE STUDENT WILL BE ABLE TO:**

**Performance Task# 08.01 Recognize the design process; including defining a problem, brainstorming, researching and generating ideas, identifying criteria and specifying constraints, exploring possibilities, selecting an approach, developing a design proposal, making a model or prototype, testing and evaluating the design using specifications, refining the design, creating or making it, and communicating processes and results.**

<b>SSS Strand: Reading</b>	<b>Essential Work Skills</b>
----------------------------	------------------------------

<b>LA.A 1.4.4 L</b>	Applies a variety of response strategies, including rereading, note taking, summarizing, outlining, writing a formal report, and relating what is read to his or her own experiences and feelings.	<b>e34</b>	Use ideas from journals, class discussion and literary criticism to write a paper that expresses a personal opinion, sustains a controlling idea, or uses specific evidence from literary texts to support an opinion.
		<b>e35</b>	Apply the information gathered from technical texts in real-life situations.
		<b>e53</b>	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
		<b>e60</b>	Relate situations, events, and characters in a reading selection to personal experience.
		<b>e72</b>	Evaluate the way an author uses language and text characteristics such as plot, setting, theme, character, point of view, genre etc. to evoke a response in a reader.
		<b>e94</b>	Use response journals to jot down ideas from reading literary texts.

**Performance Task# 08.02 Restate design problems that are seldom presented in a clearly defined form.**

<b>SSS Strand: Language</b>	<b>Essential Work Skills</b>
-----------------------------	------------------------------

<b>LA.D 2.4.4 L</b>	Effectively integrates multimedia and technology into presentations.	<b>e68</b>	Apply an understanding of the meaning of graphics, layout, white space, italics, parentheses, and other visual aids.
---------------------	--	------------	--

**Performance Task# 08.03 Check and critique a design continually, and improve and revise the idea of the design as needed**

**SSS Strand: The Nature of Science**

**Essential Work Skills**

<p><b>SC.H 1.4.3 M</b></p>	<p>Understands that no matter how well one theory fits observations, a new theory might fit them as well or better, or might fit a wider range of observations, because in science, the testing, revising, and occasional discarding of theories, new and old, never ends and leads to an increasingly better understanding of how things work in the world, but not to absolute truth.</p>	<p><b>s114</b></p>	<p>(Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures</p>
----------------------------	---	--------------------	--

**Performance Task# 08.04 List competing requirements of a design, such as criteria, constraints, and efficiency.**

**SSS Strand: Measurement**

**Essential Work Skills**

<p><b>MA.B 3.4.1 H</b></p>	<p>Solves real-world and mathematical problems involving estimates of measurements, including length, time, weight/mass, temperature, money, perimeter, area, and volume, and estimates the effects of measurement errors on calculations.</p>	<p><b>m33</b></p>	<p>Use the technique of dimensional analysis to convert units of measure (e.g., convert km/hr to m/min) including drawing to scale and applying ratios. Understand and use various techniques for estimating, making and converting measure; and using these to perform dimensional analysis.</p>
<p><b>MA.B 4.4.1 L</b></p>	<p>Determines the level of accuracy and precision, including absolute and relative errors or tolerance, required in real-world measurement situations.</p>		<p>No Essential Work Skill</p>
<p><b>MA.B 4.4.2 L</b></p>	<p>Selects and uses appropriate instruments, technology, and techniques to measure quantities in order to achieve specified degrees of accuracy in a problem situation.</p>		<p>No Essential Work Skill</p>

**SSS Strand: Data Analysis and Probability**

**Essential Work Skills**

<p><b>MA.E 1.4.1 H</b></p>	<p>Interprets data that has been collected, organized, and displayed in charts, tables, and plots.</p>	<p><b>m05</b></p>	<p>Understand the best procedures for statistical data collection, organization, and display including making estimates and predictions and drawing inferences.</p>
		<p><b>m36</b></p>	<p>Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).</p>
		<p><b>m42</b></p>	<p>Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i. e., distributing individuals into one hundred groups of equal frequency).</p>
<p><b>MA.E 1.4.3 H</b></p>	<p>Analyzes real-world data and makes predictions of larger populations by applying formulas to calculate measures of central tendency and dispersion using the sample population data, and using appropriate technology, including calculators and computers.</p>	<p><b>m36</b></p>	<p>Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).</p>
		<p><b>m42</b></p>	<p>Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i. e., distributing individuals into one hundred groups of equal frequency).</p>

**Outcome # 09.0 DEMONSTRATE AN UNDERSTANDING OF ENGINEERING DESIGN--THE STUDENT WILL BE ABLE TO:**

**Performance Task# 09.01 Identify design principles used to evaluate existing designs, to collect data, and to guide the design process.**

<b>SSS Strand: Reading</b>	<b>Essential Work Skills</b>
----------------------------	------------------------------

<b>LA.A 2.4.2 H</b> Determines the author's purpose and point of view and their effects on the text.	<b>e77</b> Assess the significance and importance of the themes in a literary text.
--	---

**Performance Task# 09.02 Describe the influence of personal characteristics, such as creativity, resourcefulness, and the ability to visualize and think abstractly on the Engineering Design process.**

<b>SSS Strand: The Nature of Science</b>	<b>Essential Work Skills</b>
--	------------------------------

<b>SC.H 1.4.3 M</b> Understands that no matter how well one theory fits observations, a new theory might fit them as well or better, or might fit a wider range of observations, because in science, the testing, revising, and occasional discarding of theories, new and old, never ends and leads to an increasingly better understanding of how things work in the world, but not to absolute truth.	<b>s114</b> (Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures
--	---

**Performance Task# 09.03 Construct a prototype or a working model used to test a design concept by making actual observations and necessary adjustments.**

<b>SSS Strand: The Nature of Science</b>	<b>Essential Work Skills</b>
--	------------------------------

<b>SC.H 1.4.3 M</b> Understands that no matter how well one theory fits observations, a new theory might fit them as well or better, or might fit a wider range of observations, because in science, the testing, revising, and occasional discarding of theories, new and old, never ends and leads to an increasingly better understanding of how things work in the world, but not to absolute truth.	<b>s114</b> (Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures
<b>SC.H 3.4.6 H</b> Knows that scientific knowledge is used by those who engage in design an technology to solve practical problems, taking human values and limitation into account.	<b>s115</b> (Not Ranked) Plan and apply real or hypothetical models and constructions to facilitate investigation and learning and the solution to practical problems.

**Performance Task# 09.04 Identify factors taken into account in the process of engineering.**

<b>SSS Strand:</b>	<b>Essential Work Skills</b>
--------------------	------------------------------

No SSS Link to this Student Performance Standard.	No Essential Work Skill
---	-------------------------

**Outcome # 10.0 DEMONSTRATE AN UNDERSTANDING OF THE ROLE OF TROUBLESHOOTING, RESEARCH AND DEVELOPMENT, INVENTION AND INNOVATION, AND EXPERIMENTATION IN PROBLEM SOLVING-- THE STUDENT WILL BE ABLE TO:**

**Performance Task# 10.01 Define research and development as a specific problem solving approach that is used intensively in business and industry to prepare devices and systems for the marketplace.**

SSS Strand: Reading		Essential Work Skills	
LA.A 1.4.4	L	Applies a variety of response strategies, including rereading, note taking, summarizing, outlining, writing a formal report, and relating what is read to his or her own experiences and feelings.	e34 Use ideas from journals, class discussion and literary criticism to write a paper that expresses a personal opinion, sustains a controlling idea, or uses specific evidence from literary texts to support an opinion.
			e35 Apply the information gathered from technical texts in real-life situations.
			e53 Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
			e60 Relate situations, events, and characters in a reading selection to personal experience.
			e72 Evaluate the way an author uses language and text characteristics such as plot, setting, theme, character, point of view, genre etc. to evoke a response in a reader.
			e94 Use response journals to jot down ideas from reading literary texts.

SSS Strand: The Nature of Science		Essential Work Skills	
SC.H 1.4.1	H	Knows that investigations are conducted to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories.	s114 (Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures

**Performance Task# 10.02 Identify research needed to solve technological problems.**

SSS Strand: Reading		Essential Work Skills	
LA.A 1.4.4	L	Applies a variety of response strategies, including rereading, note taking, summarizing, outlining, writing a formal report, and relating what is read to his or her own experiences and feelings.	e34 Use ideas from journals, class discussion and literary criticism to write a paper that expresses a personal opinion, sustains a controlling idea, or uses specific evidence from literary texts to support an opinion.
			e35 Apply the information gathered from technical texts in real-life situations.
			e53 Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
			e60 Relate situations, events, and characters in a reading selection to personal experience.
			e72 Evaluate the way an author uses language and text characteristics such as plot, setting, theme, character, point of view, genre etc. to evoke a response in a reader.
			e94 Use response journals to jot down ideas from reading literary texts.
LA.A 2.4.4	H	Locates, gathers, analyzes, and evaluates written information for a variety of purposes, including research projects, real-world tasks, and self-improvement.	e03 Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.

**Performance Task# 10.03 Differentiate between technological and non-technological problems, and identify which problems can be solved using technology.**

SSS Strand: The Nature of Science		Essential Work Skills	
-----------------------------------	--	-----------------------	--

<b>SC.H 1.4.1 H</b>	Knows that investigations are conducted to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories.	<b>s114</b>	(Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures)
---------------------	--	-------------	--

**Performance Task# 10.04 Utilize a multidisciplinary approach to solving technological problems.**

<b>SSS Strand: Number Sense, Concepts and Operations</b>		<b>Essential Work Skills</b>	
<b>MA.A 1.4.1 H</b>	Associates verbal names, written word names, and standard numerals with integers, rational numbers, irrational numbers, real numbers, and complex numbers.	<b>m19</b>	Understand the definitions and properties of rational and irrational numbers.
		<b>m60</b>	Understand the concept of the imaginary unit, $i$ , and know how to simplify square roots involving a negative radicand.
		<b>m61</b>	Understand the concepts recurrence relations and how they are applicable to such things as compound interest and annuity.
<b>MA.A 3.4.3 H</b>	Adds, subtracts, multiplies, and divides real numbers, including square roots and exponents, using appropriate methods of computing, such as mental mathematics, paper and pencil, and calculator.	<b>m01</b>	Perform operations with signed (positive and negative) numbers, including decimals, ratios, percents, and fractions.
		<b>m44</b>	Perform operations with radicals such as addition, subtraction, multiplication, and division of two or more irrational numbers and express as the square root of a positive integer or as the product of a rational number and the square root of a positive integer.
		<b>m62</b>	Understand the characteristics of algorithms and how they are used for finding the greatest common denominator of two numbers and the solutions of quadratic equations.

<b>SSS Strand: Measurement</b>		<b>Essential Work Skills</b>	
<b>MA.B 3.4.1 H</b>	Solves real-world and mathematical problems involving estimates of measurements, including length, time, weight/mass, temperature, money, perimeter, area, and volume, and estimates the effects of measurement errors on calculations.	<b>m33</b>	Use the technique of dimensional analysis to convert units of measure (e.g., convert km/hr to m/min) including drawing to scale and applying ratios. Understand and use various techniques for estimating, making and converting measure; and using these to perform dimensional analysis.
<b>MA.B 4.4.1 L</b>	Determines the level of accuracy and precision, including absolute and relative errors or tolerance, required in real-world measurement situations.		No Essential Work Skill
<b>MA.B 4.4.2 L</b>	Selects and uses appropriate instruments, technology, and techniques to measure quantities in order to achieve specified degrees of accuracy in a problem situation.		No Essential Work Skill

<b>SSS Strand: Data Analysis and Probability</b>		<b>Essential Work Skills</b>	
<b>MA.E 1.4.1 H</b>	Interprets data that has been collected, organized, and displayed in charts, tables, and plots.	<b>m05</b>	Understand the best procedures for statistical data collection, organization, and display including making estimates and predictions and drawing inferences.
		<b>m36</b>	Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).
		<b>m42</b>	Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i.e., distributing individuals into one hundred groups of equal frequency).
<b>MA.E 1.4.2 H</b>	Calculates measures of central tendency (mean, median, and mode) and dispersion (range, standard deviation, and variance) for complex sets of data and determines the most meaningful measure to describe the data.	<b>m36</b>	Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).

		<b>m42</b>	Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i. e., distributing individuals into one hundred groups of equal frequency).
<b>MA.E 1.4.3</b>	<b>H</b>	Analyzes real-world data and makes predictions of larger populations by applying formulas to calculate measures of central tendency and dispersion using the sample population data, and using appropriate technology, including calculators and computers.	<b>m36</b> Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).
		<b>m42</b>	Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i. e., distributing individuals into one hundred groups of equal frequency).
<b>MA.E 3.4.1</b>	<b>H</b>	Designs and performs real-world statistical experiments that involve more than one variable, then analyzes results and reports findings.	<b>m05</b> Understand the best procedures for statistical data collection, organization, and display including making estimates and predictions and drawing inferences.
<b>MA.E 3.4.2</b>	<b>H</b>	Explains the limitations of using statistical techniques and data in making inferences and valid arguments.	<b>m36</b> Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).
		<b>m42</b>	Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i. e., distributing individuals into one hundred groups of equal frequency).

<b>SSS Strand: The Nature of Science</b>	<b>Essential Work Skills</b>
--	------------------------------

<b>SC.H 1.4.1</b>	<b>H</b>	Knows that investigations are conducted to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories.	<b>s114</b> (Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures
-------------------	----------	--	---

**Outcome # 11.0 DEMONSTRATE THE ABILITIES TO APPLY THE DESIGN PROCESS--THE STUDENT WILL BE ABLE TO:**

**Performance Task# 11.01 Identify the design problem to solve and decide whether or not to address it.**

<b>SSS Strand: The Nature of Science</b>	<b>Essential Work Skills</b>
--	------------------------------

<b>SC.H 1.4.1</b>	<b>H</b>	Knows that investigations are conducted to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories.	<b>s114</b> (Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures
-------------------	----------	--	---

**Performance Task# 11.02 List criteria and constraints and determine how these will affect the design process.**

<b>SSS Strand: Number Sense, Concepts and Operations</b>	<b>Essential Work Skills</b>
--	------------------------------

<b>MA.A 3.4.3</b>	<b>H</b>	Adds, subtracts, multiplies, and divides real numbers, including square roots and exponents, using appropriate methods of computing, such as mental mathematics, paper and pencil, and calculator.	<b>m01</b> Perform operations with signed (positive and negative) numbers, including decimals, ratios, percents, and fractions.
-------------------	----------	--	---

		<b>m44</b>	Perform operations with radicals such as addition, subtraction, multiplication, and division of two or more irrational numbers and express as the square root of a positive integer or as the product of a rational number and the square root of a positive integer.
		<b>m62</b>	Understand the characteristics of algorithms and how they are used for finding the greatest common denominator of two numbers and the solutions of quadratic equations.
<b>SSS Strand: Measurement</b>		<b>Essential Work Skills</b>	
<b>MA.B 1.4.3</b>	<b>H</b> Relates the concepts of measurement to similarity and proportionality in real-world situations.	<b>m52</b>	Find the solution of proportions with monomial and binomial terms (e.g., $x/(x-2) = 6/5$ , therefore, $x = 12$ ).
<b>MA.B 3.4.1</b>	<b>H</b> Solves real-world and mathematical problems involving estimates of measurements, including length, time, weight/mass, temperature, money, perimeter, area, and volume, and estimates the effects of measurement errors on calculations.	<b>m33</b>	Use the technique of dimensional analysis to convert units of measure (e.g., convert km/hr to m/min) including drawing to scale and applying ratios. Understand and use various techniques for estimating, making and converting measure; and using these to perform dimensional analysis.
<b>MA.B 4.4.1</b>	<b>L</b> Determines the level of accuracy and precision, including absolute and relative errors or tolerance, required in real-world measurement situations.		No Essential Work Skill
<b>SSS Strand: Algebraic Thinking</b>		<b>Essential Work Skills</b>	
<b>MA.D 2.4.1</b>	<b>H</b> Represents real-world problem situations using finite graphs, matrices, sequences, series, and recursive relations.	<b>m48</b>	Understand the concepts and apply the uses of functions and limits (i.e., conduct limiting processes using functions to investigate infinite series and sequences).
		<b>m51</b>	Understand the concepts and uses of matrices in modeling (i.e., finite graphs (structures) can be represented geometrically and interpreted algebraically in the form of a matrix).
		<b>m61</b>	Understand the concepts recurrence relations and how they are applicable to such things as compound interest and annuity.
		<b>m72</b>	Understand the characteristics and uses of finite sequence and series (e.g., it allows a systematic and useful means of quantifying things).
<b>SSS Strand: Data Analysis and Probability</b>		<b>Essential Work Skills</b>	
<b>MA.E 1.4.1</b>	<b>H</b> Interprets data that has been collected, organized, and displayed in charts, tables, and plots.	<b>m05</b>	Understand the best procedures for statistical data collection, organization, and display including making estimates and predictions and drawing inferences.
		<b>m36</b>	Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).
		<b>m42</b>	Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i.e., distributing individuals into one hundred groups of equal frequency).
<b>SSS Strand: The Nature of Science</b>		<b>Essential Work Skills</b>	
<b>SC.H 1.4.3</b>	<b>M</b> Understands that no matter how well one theory fits observations, a new theory might fit them as well or better, or might fit a wider range of observations, because in science, the testing, revising, and occasional discarding of theories, new and old, never ends and leads to an increasingly better understanding of how things work in the world, but not to absolute truth.	<b>s114</b>	(Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures
<b>SC.H 3.4.5</b>	<b>H</b> Knows that the value of a technology may differ for different people and at different times.	<b>s116</b>	(Not Ranked) Understand the impact upon society and the environment of scientific and technological discoveries and the contributions of scientists. Understand how society may accept or reject scientific discoveries based upon need or refusal to change.

**Performance Task# 11.03 Refine a design by using prototypes and modeling to ensure quality, efficiency, and productivity of the final product.**

<b>SSS Strand: Data Analysis and Probability</b>		<b>Essential Work Skills</b>	
<b>MA.E 1.4.3 H</b>	Analyzes real-world data and makes predictions of larger populations by applying formulas to calculate measures of central tendency and dispersion using the sample population data, and using appropriate technology, including calculators and computers.	<b>m36</b>	Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).
		<b>m42</b>	Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i.e., distributing individuals into one hundred groups of equal frequency).

<b>SSS Strand: The Nature of Science</b>		<b>Essential Work Skills</b>	
<b>SC.H 1.4.1 H</b>	Knows that investigations are conducted to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories.	<b>s114</b>	(Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures

**Performance Task# 11.04 Evaluate the design solution using conceptual, physical, and mathematical models at various intervals of the design process in order to check for proper design and to note areas where improvements are needed.**

<b>SSS Strand: Number Sense, Concepts and Operations</b>		<b>Essential Work Skills</b>	
<b>MA.A 4.4.1 H</b>	Uses estimation strategies in complex situations to predict results and to check the reasonableness of results.		No Essential Work Skill

<b>SSS Strand: Measurement</b>		<b>Essential Work Skills</b>	
<b>MA.B 1.4.1 H</b>	Uses concrete and graphic models to derive formulas for finding perimeter, area, surface area, circumference, and volume of two- and three-dimensional shapes, including rectangular solids, cylinders, cones, and pyramids.	<b>m13</b>	Compute the perimeter and area of two-dimensional figures.
		<b>m17</b>	Compute the volume of three-dimensional figures (solids).
<b>MA.B 3.4.1 H</b>	Solves real-world and mathematical problems involving estimates of measurements, including length, time, weight/mass, temperature, money, perimeter, area, and volume, and estimates the effects of measurement errors on calculations.	<b>m33</b>	Use the technique of dimensional analysis to convert units of measure (e.g., convert km/hr to m/min) including drawing to scale and applying ratios. Understand and use various techniques for estimating, making and converting measure; and using these to perform dimensional analysis.
<b>MA.B 4.4.1 L</b>	Determines the level of accuracy and precision, including absolute and relative errors or tolerance, required in real-world measurement situations.		No Essential Work Skill

<b>SSS Strand: The Nature of Science</b>		<b>Essential Work Skills</b>	
<b>SC.H 1.4.1 H</b>	Knows that investigations are conducted to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories.	<b>s114</b>	(Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures
<b>SC.H 3.4.5 H</b>	Knows that the value of a technology may differ for different people and at different times.	<b>s116</b>	(Not Ranked) Understand the impact upon society and the environment of scientific and technological discoveries and the contributions of scientists. Understand how society may accept or reject scientific discoveries based upon need or refusal to change.

Performance Task# 11.05 Develop a product or system using a design process.		
SSS Strand: The Nature of Science		Essential Work Skills
SC.H 1.4.1 H	Knows that investigations are conducted to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories.	s114 (Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures)
Performance Task# 11.06 Evaluate final solutions and communicate observations, processes, and results of the entire design process, using verbal, graphic, quantitative, virtual, and written means, in addition to three-dimensional models.		
SSS Strand: Reading		Essential Work Skills
LA.A 2.4.2 H	Determines the author's purpose and point of view and their effects on the text.	e77 Assess the significance and importance of the themes in a literary text.
SSS Strand: Listening, Viewing and Speaking		Essential Work Skills
LA.C 3.4.2 L	Selects and uses a variety of speaking strategies to clarify meaning and to reflect understanding, interpretation, application, and evaluation of content processes, or experiences, including asking relevant questions when necessary, making appropriate and meaningful comments, and making insightful observations.	e59 Respond orally to fellow student's opinions during presentations by asking questions, asking for clarification, agreeing and /or disagreeing courteously.  e69 Participate in a one-on-one conference by relating essential information, asking questions on the topic, and using language to clarify information.
SSS Strand: Measurement		Essential Work Skills
MA.B 4.4.1 L	Determines the level of accuracy and precision, including absolute and relative errors or tolerance, required in real-world measurement situations.	No Essential Work Skill
SSS Strand: Algebraic Thinking		Essential Work Skills
MA.D 2.4.1 H	Represents real-world problem situations using finite graphs, matrices, sequences, series, and recursive relations.	m48 Understand the concepts and apply the uses of functions and limits (i.e., conduct limiting processes using functions to investigate infinite series and sequences).  m51 Understand the concepts and uses of matrices in modeling (i.e., finite graphs (structures) can be represented geometrically and interpreted algebraically in the form of a matrix).  m61 Understand the concepts recurrence relations and how they are applicable to such things as compound interest and annuity.  m72 Understand the characteristics and uses of finite sequence and series (e.g., it allows a systematic and useful means of quantifying things).
SSS Strand: Data Analysis and Probability		Essential Work Skills
MA.E 1.4.3 H	Analyzes real-world data and makes predictions of larger populations by applying formulas to calculate measures of central tendency and dispersion using the sample population data, and using appropriate technology, including calculators and computers.	m36 Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).  m42 Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i. e., distributing individuals into one hundred groups of equal frequency).

<b>MA.E 3.4.1</b>	<b>H</b>	Designs and performs real-world statistical experiments that involve more than one variable, then analyzes results and reports findings.	<b>m05</b>	Understand the best procedures for statistical data collection, organization, and display including making estimates and predictions and drawing inferences.
<b>MA.E 3.4.2</b>	<b>H</b>	Explains the limitations of using statistical techniques and data in making inferences and valid arguments.	<b>m36</b>	Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).
			<b>m42</b>	Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i.e., distributing individuals into one hundred groups of equal frequency).

<b>SSS Strand: The Nature of Science</b>	<b>Essential Work Skills</b>
--	------------------------------

<b>SC.H 1.4.1</b>	<b>H</b>	Knows that investigations are conducted to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories.	<b>s114</b>	(Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures
-------------------	----------	--	-------------	---

<b>SC.H 3.4.5</b>	<b>H</b>	Knows that the value of a technology may differ for different people and at different times.	<b>s116</b>	(Not Ranked) Understand the impact upon society and the environment of scientific and technological discoveries and the contributions of scientists. Understand how society may accept or reject scientific discoveries based upon need or refusal to change.
-------------------	----------	--	-------------	---

**Outcome # 12.0 DEMONSTRATE THE ABILITIES TO USE AND MAINTAIN TECHNOLOGICAL PRODUCTS AND SYSTEMS--THE STUDENT WILL BE ABLE TO:**

**Performance Task# 12.01 Document processes and procedures and communicate them to different audiences using appropriate oral and written techniques.**

<b>SSS Strand: Writing</b>	<b>Essential Work Skills</b>
----------------------------	------------------------------

<b>LA.B 1.4.1</b>	<b>L</b>	Selects and uses appropriate prewriting strategies, such as brainstorming, graphic organizers, and outlines.	<b>e34</b>	Use ideas from journals, class discussion and literary criticism to write a paper that expresses a personal opinion, sustains a controlling idea, or uses specific evidence from literary texts to support an opinion.
-------------------	----------	--	------------	--

			<b>e40</b>	Use writing as a tool for learning in formats such as learning logs, laboratory reports, note-taking, journals and portfolios.
--	--	--	------------	--

<b>LA.B 2.4.2</b>	<b>L</b>	Organizes information using appropriate systems.	<b>e12</b>	Draft a report that engages an audience and is concise, clear, well organized, accurate, and informative.
-------------------	----------	--	------------	---

<b>SSS Strand: Listening, Viewing and Speaking</b>	<b>Essential Work Skills</b>
--	------------------------------

<b>LA.C 3.4.2</b>	<b>L</b>	Selects and uses a variety of speaking strategies to clarify meaning and to reflect understanding, interpretation, application, and evaluation of content processes, or experiences, including asking relevant questions when necessary, making appropriate and meaningful comments, and making insightful observations.	<b>e59</b>	Respond orally to fellow student's opinions during presentations by asking questions, asking for clarification, agreeing and /or disagreeing courteously.
-------------------	----------	--	------------	---

			<b>e69</b>	Participate in a one-on-one conference by relating essential information, asking questions on the topic, and using language to clarify information.
--	--	--	------------	---

<b>Performance Task# 12.02 Diagnose a system that is malfunctioning and use tools, materials, machines, and knowledge to repair it.</b>	
<b>SSS Strand:</b>	<b>Essential Work Skills</b>
No SSS Link to this Student Performance Standard.	No Essential Work Skill
<b>Performance Task# 12.03 Troubleshoot, analyze, and maintain systems to ensure safe and proper function and precision.</b>	
<b>SSS Strand:</b>	<b>Essential Work Skills</b>
No SSS Link to this Student Performance Standard.	No Essential Work Skill
<b>Performance Task# 12.04 Operate systems so that they function in the way they were designed.</b>	
<b>SSS Strand:</b>	<b>Essential Work Skills</b>
No SSS Link to this Student Performance Standard.	No Essential Work Skill
<b>Performance Task# 12.05 Use computers and calculators to access, retrieve, organize, process, maintain, interpret, and evaluate data and information in order to communicate.</b>	
<b>SSS Strand: Reading</b>	<b>Essential Work Skills</b>
<b>LA.A 2.4.2 H</b> Determines the author's purpose and point of view and their effects on the text.	<b>e77</b> Assess the significance and importance of the themes in a literary text.
<b>SSS Strand: Data Analysis and Probability</b>	<b>Essential Work Skills</b>
<b>MA.E 1.4.3 H</b> Analyzes real-world data and makes predictions of larger populations by applying formulas to calculate measures of central tendency and dispersion using the sample population data, and using appropriate technology, including calculators and computers.	<b>m36</b> Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).  <b>m42</b> Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i. e., distributing individuals into one hundred groups of equal frequency).
<b>Outcome # 13.0 DEMONSTRATE THE ABILITIES TO ASSESS THE IMPACT OF PRODUCTS AND SYSTEMS--THE STUDENT WILL BE ABLE TO:</b>	
<b>Performance Task# 13.01 Collect information and evaluate its quality.</b>	
<b>SSS Strand: Reading</b>	<b>Essential Work Skills</b>
<b>LA.A 2.4.4 H</b> Locates, gathers, analyzes, and evaluates written information for a variety of purposes, including research projects, real-world tasks, and self-improvement.	<b>e03</b> Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.
<b>SSS Strand: The Nature of Science</b>	<b>Essential Work Skills</b>

<p><b>SC.H 1.4.1 H</b> Knows that investigations are conducted to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories.</p>		<p><b>s114</b> (Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures)</p>
<p><b>Performance Task# 13.02 Synthesize data, analyze trends, and draw conclusions regarding the effect of technology on the individual, society, and the environment.</b></p>		
<p><b>SSS Strand: Reading</b></p>		<p><b>Essential Work Skills</b></p>
<p><b>LA.A 2.4.2 H</b></p>	<p>Determines the author's purpose and point of view and their effects on the text.</p>	<p><b>e77</b> Assess the significance and importance of the themes in a literary text.</p>
<p><b>SSS Strand: The Nature of Science</b></p>		<p><b>Essential Work Skills</b></p>
<p><b>SC.H 1.4.1 H</b></p>	<p>Knows that investigations are conducted to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories.</p>	<p><b>s114</b> (Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures)</p>
<p><b>Performance Task# 13.03 Define assessment techniques, such as trend analysis and experimentation to make decisions about the future development of technology.</b></p>		
<p><b>SSS Strand: Reading</b></p>		<p><b>Essential Work Skills</b></p>
<p><b>LA.A 2.4.2 H</b></p>	<p>Determines the author's purpose and point of view and their effects on the text.</p>	<p><b>e77</b> Assess the significance and importance of the themes in a literary text.</p>
<p><b>SSS Strand: Data Analysis and Probability</b></p>		<p><b>Essential Work Skills</b></p>
<p><b>MA.E 1.4.1 H</b></p>	<p>Interprets data that has been collected, organized, and displayed in charts, tables, and plots.</p>	<p><b>m05</b> Understand the best procedures for statistical data collection, organization, and display including making estimates and predictions and drawing inferences.</p>
		<p><b>m36</b> Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).</p> <p><b>m42</b> Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i.e., distributing individuals into one hundred groups of equal frequency).</p>
<p><b>MA.E 2.4.1 H</b></p>	<p>Determines probabilities using counting procedures, tables, tree diagrams, and formulas for permutations and combinations.</p>	<p><b>m25</b> Determine the probability of single and compound events using the basic premise that the probability of an event is equal to the number of ways it can occur divided by the total number of outcomes.</p>
		<p><b>m43</b> Know how to determine combinations (i.e., the various grouping a set may be arranged in without regard to order).</p>
		<p><b>m56</b> Use the Counting Principle to determine the probability of events occurring jointly (e.g., if one activity can occur in any of m ways and another in any one of n ways, then the total number of ways both activities can occur is mn).</p> <p><b>m66a</b> Know how to determine permutation (i.e., arrangements of a set where order matters).</p>

<b>MA.E 3.4.1 H</b>	Designs and performs real-world statistical experiments that involve more than one variable, then analyzes results and reports findings.	<b>m05</b>	Understand the best procedures for statistical data collection, organization, and display including making estimates and predictions and drawing inferences.
<b>Performance Task# 13.04 Identify forecasting techniques to evaluate the results of altering natural systems.</b>			
<b>SSS Strand: Data Analysis and Probability</b>		<b>Essential Work Skills</b>	
<b>MA.E 3.4.2 H</b>	Explains the limitations of using statistical techniques and data in making inferences and valid arguments.	<b>m36</b>	Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).
		<b>m42</b>	Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i.e., distributing individuals into one hundred groups of equal frequency).
<b>Outcome # 14.0 DEMONSTRATE AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE ENERGY AND POWER TECHNOLOGIES--THE STUDENT WILL BE ABLE TO:</b>			
<b>Performance Task# 14.01 Discuss how energy cannot be created nor destroyed; however, it can be converted from one form to another.</b>			
<b>SSS Strand: Energy</b>		<b>Essential Work Skills</b>	
<b>SC.B 1.4.1 H</b>	Understands how knowledge of energy is fundamental to all the scientific disciplines (e.g., the energy required for biological processes in living organisms and the energy required for the building, erosion, and rebuilding of the Earth.	<b>s25</b>	Know the properties of electromagnetic energy (energy radiated from all objects not at a temperature of absolute zero), solar energy (energy from the sun), and earth energy (energy released from the decay of radioactive matter). Understand that weather and climate involve energy transfer in and out of the atmosphere by means of conduction, convection, and radiation.
		<b>s55</b>	Identify types of energy (e.g., heat, light, and electricity) and know how to apply measurements of energy (e.g., the calorie, and thermometry).
<b>SC.B 1.4.2 M</b>	Understands that there is conservation of mass and energy when matter is transformed.	<b>s57</b>	Understand physical/chemical change (e.g., change of phase between gases, liquids, and solids).
<b>SC.B 1.4.3 M</b>	Knows that temperature is a measure of the average translational kinetic energy of motion of the molecules in an object.	<b>s94</b>	Understand the concept of internal energy (the total potential and kinetic energies associated with the motion and relative position of the molecules of an object) and heat (the energy transfer from a warm body to a cold body).
<b>SC.B 1.4.6 M</b>	Knows that the first law of thermodynamics relates the transfer of energy to the work done and the heat transferred.	<b>s60</b>	Observe and interpret energy and change relationships with the understanding that change occurs simultaneously at the interface between two parts of the environment where there is an energy exchange.
<b>SC.B 1.4.7 M</b>	Knows that the total amount of usable energy always decreases, even though the total amount of energy is conserved in any transfer.	<b>s55</b>	Identify types of energy (e.g., heat, light, and electricity) and know how to apply measurements of energy (e.g., the calorie, and thermometry).

**Performance Task# 14.02 Categorize types of energy into major forms: thermal, radiant, electrical, mechanical, chemical, nuclear, and others.**

SSS Strand: Energy		Essential Work Skills	
SC.B 1.4.1 H	Understands how knowledge of energy is fundamental to all the scientific disciplines (e.g., the energy required for biological processes in living organisms and the energy required for the building, erosion, and rebuilding of the Earth.	s25	Know the properties of electromagnetic energy (energy radiated from all objects not at a temperature of absolute zero), solar energy (energy from the sun), and earth energy (energy released from the decay of radioactive matter). Understand that weather and climate involve energy transfer in and out of the atmosphere by means of conduction, convection, and radiation.
		s55	Identify types of energy (e.g., heat, light, and electricity) and know how to apply measurements of energy (e.g., the calorie, and thermometry).

**Performance Task# 14.03 Classify energy resources as renewable or nonrenewable.**

SSS Strand: Energy		Essential Work Skills	
SC.B 1.4.5 H	Knows that each source of energy presents advantages and disadvantages to its use in society (e.g., political and economic implications may determine society's selection of renewable or nonrenewable energy sources).	s60	Observe and interpret energy and change relationships with the understanding that change occurs simultaneously at the interface between two parts of the environment where there is an energy exchange.

**Performance Task# 14.04 Construct a power system having a source of energy, a process, and loads.**

SSS Strand:		Essential Work Skills	
No SSS Link to this Student Performance Standard.		No Essential Work Skill	
<b>Outcome # 15.0 DEMONSTRATE AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE INFORMATION AND COMMUNICATION TECHNOLOGIES-- THE STUDENT WILL BE ABLE TO:</b>			

**Performance Task# 15.01 Discuss information and communication technologies including the inputs, processes, and outputs associated with sending and receiving information.**

SSS Strand: Reading		Essential Work Skills	
LA.A 1.4.2 H	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	e50	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
		e53	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.

**Performance Task# 15.02 Classify information and communication systems that allow information to be transferred as human to human, human to machine, machine to human, or machine to machine.**

<b>SSS Strand: Reading</b>		<b>Essential Work Skills</b>	
<b>LA.A 1.4.2 H</b>	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
		<b>e53</b>	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.

**Performance Task# 15.03 Use information and communication systems to inform, persuade, entertain, control, manage, and educate.**

<b>SSS Strand: Reading</b>		<b>Essential Work Skills</b>	
<b>LA.A 1.4.2 H</b>	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
		<b>e53</b>	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
<b>LA.A 2.4.3 L</b>	Describes and evaluates personal preferences regarding fiction and nonfiction.	<b>e57</b>	Understand and relate to situations, events and characters in a reading selection.
		<b>e60</b>	Relate situations, events, and characters in a reading selection to personal experience.

**Performance Task# 15.04 Identify components of a communications system, including source, encoder, transmitter, receiver, decoder, storage, retrieval, and destination.**

<b>SSS Strand: Reading</b>		<b>Essential Work Skills</b>	
<b>LA.A 1.4.2 H</b>	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
		<b>e53</b>	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
<b>LA.A 1.4.3 L</b>	Refines vocabulary for interpersonal, academic, and workplace situations, including figurative, idiomatic, and technical meanings.	<b>e09</b>	Know how to decipher unfamiliar words using such strategies as context cues, word structure analysis, letter sound relationships, and word histories.
		<b>e30</b>	Understand the nature and purpose of and be able to word process a variety of formats including essays, business letters, memos, instructions, policy statements, technical proposals, user manuals, lab reports, etc.
		<b>e49</b>	Read for main idea first and then read for detail.

**Performance Task# 15.05 Identify many ways to communicate information, such as graphic and electronic means.**

<b>SSS Strand: Reading</b>		<b>Essential Work Skills</b>	
----------------------------	--	------------------------------	--

<b>LA.A 1.4.2 H</b>	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
		<b>e53</b>	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
<b>Performance Task# 15.06 Communicate technological knowledge and processes using symbols, measurement, conventions, icons, graphic images, and languages that incorporate a variety of visual, auditory, and tactile stimuli.</b>			

<b>SSS Strand: Writing</b>	<b>Essential Work Skills</b>
----------------------------	------------------------------

<b>LA.B 1.4.2 H</b>	Drafts and revises writing that: is focused, purposeful, and reflects insight into the writing situation; has an organizational pattern that provides for a logical progression of ideas; has effective use of transitional devices that contribute to a sense of completeness; has support that is substantial, specific, relevant, and concrete; demonstrates a commitment to and involvement with the subject; uses creative writing strategies as appropriate to the purposes of the paper; demonstrates a mature command of language with freshness of expression; has varied sentence structure; has few, if any, convention errors in mechanics, usage, punctuation and spelling.	<b>e12</b>	Draft a report that engages an audience and is concise, clear, well organized, accurate, and informative.
		<b>e14</b>	Use editing and revising skills to improve effectiveness and accuracy of drafts.
		<b>e27</b>	Define a position on a controversial topic and write a persuasive essay or make an oral presentation likely to persuade a specific audience to change an opinion or take a particular action.
		<b>e54</b>	Organize supporting detail in logical and convincing patterns.
<b>LA.B 2.4.3 L</b>	Writes fluently for a variety of occasions, audiences, and purposes, making appropriate choices regarding style, tone, level of detail, and organization.	<b>e22</b>	Understand and produce a variety of informative format such as business letters, memos, reports, news articles, brochures, proposals and critiques.
		<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.

**Outcome # 16.0 DEMONSTRATE AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE TRANSPORTATION TECHNOLOGIES--THE STUDENT WILL BE ABLE TO:**

<b>Performance Task# 16.01</b>	<b>Analyze the vital role played by transportation in the operation of other technologies, such as manufacturing, construction, communication, health and safety, and agriculture.</b>
--------------------------------	--

<b>SSS Strand: Writing</b>	<b>Essential Work Skills</b>
----------------------------	------------------------------

--	--

<b>LA.B 1.4.2 H</b>	Drafts and revises writing that: is focused, purposeful, and reflects insight into the writing situation; has an organizational pattern that provides for a logical progression of ideas; has effective use of transitional devices that contribute to a sense of completeness; has support that is substantial, specific, relevant, and concrete; demonstrates a commitment to and involvement with the subject; uses creative writing strategies as appropriate to the purposes of the paper; demonstrates a mature command of language with freshness of expression; has varied sentence structure; has few, if any, convention errors in mechanics, usage, punctuation and spelling.	<b>e12</b> Draft a report that engages an audience and is concise, clear, well organized, accurate, and informative.
		<b>e14</b> Use editing and revising skills to improve effectiveness and accuracy of drafts.
		<b>e27</b> Define a position on a controversial topic and write a persuasive essay or make an oral presentation likely to persuade a specific audience to change an opinion or take a particular action.
		<b>e54</b> Organize supporting detail in logical and convincing patterns.
<b>LA.B 2.4.3 L</b>	Writes fluently for a variety of occasions, audiences, and purposes, making appropriate choices regarding style, tone, level of detail, and organization.	<b>e22</b> Understand and produce a variety of informative format such as business letters, memos, reports, news articles, brochures, proposals and critiques.
		<b>e50</b> Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
<b>Performance Task# 16.02 Define intermodalism as the use of different modes of transportation, such as highways, railways, and waterways as part of an interconnected system that can move people and goods easily from one mode to another.</b>		
<b>SSS Strand: Reading</b>		<b>Essential Work Skills</b>
<b>LA.A 1.4.2 H</b>	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b> Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
		<b>e53</b> Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
<b>LA.A 1.4.3 L</b>	Refines vocabulary for interpersonal, academic, and workplace situations, including figurative, idiomatic, and technical meanings.	<b>e09</b> Know how to decipher unfamiliar words using such strategies as context cues, word structure analysis, letter sound relationships, and word histories.
		<b>e30</b> Understand the nature and purpose of and be able to word process a variety of formats including essays, business letters, memos, instructions, policy statements, technical proposals, user manuals, lab reports, etc.
		<b>e49</b> Read for main idea first and then read for detail.
<b>Performance Task# 16.03 Discuss how transportation services and methods have led to a population that is regularly on the move.</b>		
<b>SSS Strand: Reading</b>		<b>Essential Work Skills</b>

<b>LA.A 1.4.2 H</b>	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
		<b>e53</b>	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.

<b>SSS Strand: Listening, Viewing and Speaking</b>	<b>Essential Work Skills</b>
--	------------------------------

<b>LA.C 3.4.2 L</b>	Selects and uses a variety of speaking strategies to clarify meaning and to reflect understanding, interpretation, application, and evaluation of content processes, or experiences, including asking relevant questions when necessary, making appropriate and meaningful comments, and making insightful observations.	<b>e59</b>	Respond orally to fellow student's opinions during presentations by asking questions, asking for clarification, agreeing and /or disagreeing courteously.
---------------------	--	------------	---

		<b>e69</b>	Participate in a one-on-one conference by relating essential information, asking questions on the topic, and using language to clarify information.
--	--	------------	---

<b>Performance Task# 16.04</b>	<b>Identify processes and innovative techniques involved in the design of intelligent and nonintelligent transportation systems.</b>
--------------------------------	--

<b>SSS Strand: Reading</b>	<b>Essential Work Skills</b>
----------------------------	------------------------------

<b>LA.A 1.4.2 H</b>	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
---------------------	---	------------	---

		<b>e53</b>	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
--	--	------------	---

<b>LA.A 1.4.3 L</b>	Refines vocabulary for interpersonal, academic, and workplace situations, including figurative, idiomatic, and technical meanings.	<b>e09</b>	Know how to decipher unfamiliar words using such strategies as context cues, word structure analysis, letter sound relationships, and word histories.
---------------------	--	------------	---

		<b>e30</b>	Understand the nature and purpose of and be able to word process a variety of formats including essays, business letters, memos, instructions, policy statements, technical proposals, user manuals, lab reports, etc.
--	--	------------	--

		<b>e49</b>	Read for main idea first and then read for detail.
--	--	------------	--

<b>Outcome # 17.0</b>	<b>DEMONSTRATE AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE MANUFACTURING TECHNOLOGIES--THE STUDENT WILL BE ABLE TO:</b>
-----------------------	---

<b>Performance Task# 17.01</b>	<b>Service products to keep them in good operating condition</b>
--------------------------------	--

<b>SSS Strand:</b>	<b>Essential Work Skills</b>
--------------------	------------------------------

No SSS Link to this Student Performance Standard.	No Essential Work Skill
---	-------------------------

<b>Performance Task# 17.02</b>	<b>Classify materials based on their qualities as natural, synthetic, or mixed.</b>
--------------------------------	---

<b>SSS Strand: Reading</b>	<b>Essential Work Skills</b>
----------------------------	------------------------------

--	--

<b>LA.A 1.4.2 H</b>	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
		<b>e53</b>	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.

<b>SSS Strand: The Nature of Matter</b>	<b>Essential Work Skills</b>
---	------------------------------

<b>SC.A 1.4.2 M</b>	Knows that the vast diversity of the properties of materials is primarily due to variations in the forces that hold molecules together.	<b>s78</b>	Understand the historical development of the periodic table and apply the principles inherent in its development, including the properties and atomic structure of elements and resultant chemical compounds the forces acting between and among atoms and molecules, and changes in substances as a result of chemical combination.
<b>SC.A 2.4.2 M</b>	Knows the difference between an element, a molecule, and a compound.	<b>s78</b>	Understand the historical development of the periodic table and apply the principles inherent in its development, including the properties and atomic structure of elements and resultant chemical compounds the forces acting between and among atoms and molecules, and changes in substances as a result of chemical combination.

<b>Performance Task# 17.03</b>	<b>Classify goods as durable goods designed to operate for a long period of time, or non-durable goods designed to operate for a short period of time.</b>
--------------------------------	--

<b>SSS Strand: Reading</b>	<b>Essential Work Skills</b>
----------------------------	------------------------------

<b>LA.A 1.4.2 H</b>	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
		<b>e53</b>	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.

<b>SSS Strand: The Nature of Matter</b>	<b>Essential Work Skills</b>
---	------------------------------

<b>SC.A 1.4.2 M</b>	Knows that the vast diversity of the properties of materials is primarily due to variations in the forces that hold molecules together.	<b>s78</b>	Understand the historical development of the periodic table and apply the principles inherent in its development, including the properties and atomic structure of elements and resultant chemical compounds the forces acting between and among atoms and molecules, and changes in substances as a result of chemical combination.
<b>SC.A 2.4.2 M</b>	Knows the difference between an element, a molecule, and a compound.	<b>s78</b>	Understand the historical development of the periodic table and apply the principles inherent in its development, including the properties and atomic structure of elements and resultant chemical compounds the forces acting between and among atoms and molecules, and changes in substances as a result of chemical combination.

<b>Performance Task# 17.04</b>	<b>Identify and classify manufacturing systems into types, such as customized production, batch production, and continuous production.</b>
--------------------------------	--

SSS Strand: Reading		Essential Work Skills	
LA.A 1.4.2	H	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	e50 Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
			e53 Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
<b>Performance Task# 17.05 Discuss the interchangeability of parts to increase the effectiveness of manufacturing processes.</b>			
SSS Strand: Reading		Essential Work Skills	
LA.A 1.4.2	H	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	e50 Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
			e53 Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
<b>Performance Task# 17.06 Employ marketing techniques involving establishing a product's identity, conducting research on its potential, advertising it, distributing it, and selling it.</b>			
SSS Strand: Writing		Essential Work Skills	
LA.B 1.4.3	L	Produces final documents that have been edited for: correct spelling; correct punctuation, including commas, colons, and common use of semicolons; correct capitalization; correct sentence formation; correct instances of possessives, subject/verb agreement, instances of noun/pronoun agreement and the intentional use of fragments for effect; and correct formatting that appeals to readers, including appropriate use of a variety of graphics, table: charts and illustrations in both standard and innovative forms.	e14 Use editing and revising skills to improve effectiveness and accuracy of drafts.
<b>Outcome # 18.0 DEMONSTRATE AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE CONSTRUCTION TECHNOLOGIES--THE STUDENT WILL BE ABLE TO:</b>			
<b>Performance Task# 18.01 Define infrastructure as the underlying base or basic framework of a system.</b>			
SSS Strand: Reading		Essential Work Skills	
LA.A 1.4.2	H	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	e50 Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
			e53 Apply personal or objective criteria for evaluating informational, persuasive and literary materials.

**Performance Task# 18.02 Identify a variety of processes and procedures used in constructing structures.**

<b>SSS Strand: Writing</b>		<b>Essential Work Skills</b>	
<b>LA.B 2.4.1 L</b>	Writes text, notes, outlines, comments, and observations that demonstrate comprehension and synthesis of content, processes, and experiences from a variety of media.	<b>e03</b>	Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.

**Performance Task# 18.03 Identify requirements involved in the design of structures.**

<b>SSS Strand: Reading</b>		<b>Essential Work Skills</b>	
<b>LA.A 1.4.2 H</b>	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
		<b>e53</b>	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.

<b>SSS Strand: Writing</b>		<b>Essential Work Skills</b>	
<b>LA.B 2.4.1 L</b>	Writes text, notes, outlines, comments, and observations that demonstrate comprehension and synthesis of content, processes, and experiences from a variety of media.	<b>e03</b>	Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.

**Performance Task# 18.04 Recommend maintenance, alterations, or renovations to improve a structure or alter its intended use.**

<b>SSS Strand:</b>		<b>Essential Work Skills</b>	
No SSS Link to this Student Performance Standard.		No Essential Work Skill	

**Performance Task# 18.05 Identify prefabricated materials used in some structures.**

<b>SSS Strand: Reading</b>		<b>Essential Work Skills</b>	
<b>LA.A 2.4.6 L</b>	Selects and uses appropriate study and research skills and tools according to the type of information being gathered or organized, including almanacs, government publications, microfiche, news sources, and information services.	<b>e03</b>	Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.

**Outcome # 19.0 DEMONSTRATE SAFE AND APPROPRIATE USE OF TOOLS AND MACHINES IN ENGINEERING TECHNOLOGY--THE STUDENT WILL BE ABLE TO:**

**Performance Task# 19.01 Select appropriate tools, procedures, and/or equipment.**

<b>SSS Strand:</b>		<b>Essential Work Skills</b>	
No SSS Link to this Student Performance Standard.		No Essential Work Skill	

<b>Performance Task# 19.02 Demonstrate the safe usage of appropriate tools, procedures, and operation of equipment.</b>		
<b>SSS Strand:</b>		<b>Essential Work Skills</b>
No SSS Link to this Student Performance Standard.		No Essential Work Skill
<b>Performance Task# 19.03 Follow laboratory safety rules and procedures.</b>		
<b>SSS Strand: Reading</b>		<b>Essential Work Skills</b>
<b>LA.A 1.4.2 H</b>	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b> Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
		<b>e53</b> Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
<b>Performance Task# 19.04 Demonstrate good housekeeping at workstation within total laboratory.</b>		
<b>SSS Strand:</b>		<b>Essential Work Skills</b>
No SSS Link to this Student Performance Standard.		No Essential Work Skill
<b>Performance Task# 19.05 Identify color-coding safety standards.</b>		
<b>SSS Strand: Reading</b>		<b>Essential Work Skills</b>
<b>LA.A 1.4.2 H</b>	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b> Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
		<b>e53</b> Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
<b>Performance Task# 19.06 Explain fire prevention and safety precautions and practices for extinguishing fires.</b>		
<b>SSS Strand: Reading</b>		<b>Essential Work Skills</b>
<b>LA.A 1.4.2 H</b>	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b> Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
		<b>e53</b> Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
<b>SSS Strand: Writing</b>		<b>Essential Work Skills</b>
<b>LA.B 2.4.2 L</b>	Organizes information using appropriate systems.	<b>e12</b> Draft a report that engages an audience and is concise, clear, well organized, accurate, and informative.

**Performance Task# 19.07 Identify harmful effects/potential dangers of familiar hazardous substances/devices to people and the environment.**

<b>SSS Strand: Reading</b>	<b>Essential Work Skills</b>
<b>LA.A 2.4.6 L</b> Selects and uses appropriate study and research skills and tools according to the type of information being gathered or organized, including almanacs, government publications, microfiche, news sources, and information services.	<b>e03</b> Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.

<b>SSS Strand: Writing</b>	<b>Essential Work Skills</b>
<b>LA.B 2.4.3 L</b> Writes fluently for a variety of occasions, audiences, and purposes, making appropriate choices regarding style, tone, level of detail, and organization.	<b>e22</b> Understand and produce a variety of informative format such as business letters, memos, reports, news articles, brochures, proposals and critiques.  <b>e50</b> Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.

<b>SSS Strand: Processes of Life</b>	<b>Essential Work Skills</b>
<b>SC.F 1.4.7 M</b> Knows that organisms respond to internal and external stimuli.	<b>s45</b> Understand nerve regulation - the nervous system and related disorders such as cerebral palsy, meningitis, and polio; and chemical regulation - the endocrine system, hormones and related disorders such as goiter and diabetes.

**Outcome # 20.0 DEMONSTRATE THE ABILITY TO PROPERLY IDENTIFY, ORGANIZE, PLAN, AND ALLOCATE RESOURCES--THE STUDENT WILL BE ABLE TO:**

**Performance Task# 20.01 Demonstrate the ability to select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.**

<b>SSS Strand: Reading</b>	<b>Essential Work Skills</b>
<b>LA.A 1.4.2 H</b> Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b> Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.  <b>e53</b> Apply personal or objective criteria for evaluating informational, persuasive and literary materials.

<b>SSS Strand: Writing</b>	<b>Essential Work Skills</b>
<b>LA.B 2.4.3 L</b> Writes fluently for a variety of occasions, audiences, and purposes, making appropriate choices regarding style, tone, level of detail, and organization.	<b>e22</b> Understand and produce a variety of informative format such as business letters, memos, reports, news articles, brochures, proposals and critiques.  <b>e50</b> Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.

**Performance Task# 20.02 Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives.**

<b>SSS Strand: Reading</b>	<b>Essential Work Skills</b>
----------------------------	------------------------------

<b>LA.A 1.4.2 H</b>	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
		<b>e53</b>	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
<b>SSS Strand: Writing</b>		<b>Essential Work Skills</b>	
<b>LA.B 2.4.3 L</b>	Writes fluently for a variety of occasions, audiences, and purposes, making appropriate choices regarding style, tone, level of detail, and organization.	<b>e22</b>	Understand and produce a variety of informative format such as business letters, memos, reports, news articles, brochures, proposals and critiques.
		<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
<b>Performance Task# 20.03 Demonstrate the ability to acquire, store, allocate, and use materials or space efficiently.</b>			
<b>SSS Strand:</b>		<b>Essential Work Skills</b>	
No SSS Link to this Student Performance Standard.		No Essential Work Skill	
<b>Performance Task# 20.04 Display knowledge of the efficient use of human resources.</b>			
<b>SSS Strand:</b>		<b>Essential Work Skills</b>	
No SSS Link to this Student Performance Standard.		No Essential Work Skill	
<b>Outcome # 21.0 DEMONSTRATE THE FUNCTIONAL CHARACTERISTICS OF THE ENGINEERING DESIGN TEAM--THE STUDENT WILL BE ABLE TO:</b>			
<b>Performance Task# 21.01 Describe work breakdown organization.</b>			
<b>SSS Strand: Reading</b>		<b>Essential Work Skills</b>	
<b>LA.A 1.4.1 L</b>	Selects and uses prereading strategies that are appropriate to the text, such as discussion, making predictions, brainstorming, generating questions, and previewing, to anticipate content, purpose, and organization of a reading selection.	<b>e52</b>	Preview textbooks for informational text to anticipate content.
		<b>e80</b>	Understand ways an author uses language and text characteristics to aid comprehension.
<b>LA.A 1.4.2 H</b>	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
		<b>e53</b>	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
<b>LA.A 1.4.4 L</b>	Applies a variety of response strategies, including rereading, note taking, summarizing, outlining, writing a formal report, and relating what is read to his or her own experiences and feelings.	<b>e34</b>	Use ideas from journals, class discussion and literary criticism to write a paper that expresses a personal opinion, sustains a controlling idea, or uses specific evidence from literary texts to support an opinion.
		<b>e35</b>	Apply the information gathered from technical texts in real-life situations.

	<b>e53</b>	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
	<b>e60</b>	Relate situations, events, and characters in a reading selection to personal experience.
	<b>e72</b>	Evaluate the way an author uses language and text characteristics such as plot, setting, theme, character, point of view, genre etc. to evoke a response in a reader.
	<b>e94</b>	Use response journals to jot down ideas from reading literary texts.

<b>SSS Strand: Writing</b>		<b>Essential Work Skills</b>
<b>LA.B 2.4.2</b>	<b>L</b> Organizes information using appropriate systems.	<b>e12</b> Draft a report that engages an audience and is concise, clear, well organized, accurate, and informative.

**Performance Task# 21.02 Describe work group organization schemes including functional and hierarchical schemes.**

<b>SSS Strand: Reading</b>		<b>Essential Work Skills</b>
<b>LA.A 1.4.1</b>	<b>L</b> Selects and uses prereading strategies that are appropriate to the text, such as discussion, making predictions, brainstorming, generating questions, and previewing, to anticipate content, purpose, and organization of a reading selection.	<b>e52</b> Preview textbooks for informational text to anticipate content.
		<b>e80</b> Understand ways an author uses language and text characteristics to aid comprehension.
<b>LA.A 1.4.2</b>	<b>H</b> Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b> Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
		<b>e53</b> Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
<b>LA.A 1.4.4</b>	<b>L</b> Applies a variety of response strategies, including rereading, note taking, summarizing, outlining, writing a formal report, and relating what is read to his or her own experiences and feelings.	<b>e34</b> Use ideas from journals, class discussion and literary criticism to write a paper that expresses a personal opinion, sustains a controlling idea, or uses specific evidence from literary texts to support an opinion.
		<b>e35</b> Apply the information gathered from technical texts in real-life situations.
		<b>e53</b> Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
		<b>e60</b> Relate situations, events, and characters in a reading selection to personal experience.
		<b>e72</b> Evaluate the way an author uses language and text characteristics such as plot, setting, theme, character, point of view, genre etc. to evoke a response in a reader.
		<b>e94</b> Use response journals to jot down ideas from reading literary texts.

<b>SSS Strand: Writing</b>		<b>Essential Work Skills</b>
<b>LA.B 2.4.2</b>	<b>L</b> Organizes information using appropriate systems.	<b>e12</b> Draft a report that engages an audience and is concise, clear, well organized, accurate, and informative.

**Performance Task# 21.03 Describe the function of management in general and project management in particular.**

<b>SSS Strand: Reading</b>		<b>Essential Work Skills</b>
----------------------------	--	------------------------------

<b>LA.A 1.4.1</b>	<b>L</b>	Selects and uses prereading strategies that are appropriate to the text, such as discussion, making predictions, brainstorming, generating questions, and previewing, to anticipate content, purpose, and organization of a reading selection.	<b>e52</b>	Preview textbooks for informational text to anticipate content.
			<b>e80</b>	Understand ways an author uses language and text characteristics to aid comprehension.
<b>LA.A 1.4.2</b>	<b>H</b>	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
			<b>e53</b>	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
<b>LA.A 1.4.4</b>	<b>L</b>	Applies a variety of response strategies, including rereading, note taking, summarizing, outlining, writing a formal report, and relating what is read to his or her own experiences and feelings.	<b>e34</b>	Use ideas from journals, class discussion and literary criticism to write a paper that expresses a personal opinion, sustains a controlling idea, or uses specific evidence from literary texts to support an opinion.
			<b>e35</b>	Apply the information gathered from technical texts in real-life situations.
			<b>e53</b>	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
			<b>e60</b>	Relate situations, events, and characters in a reading selection to personal experience.
			<b>e72</b>	Evaluate the way an author uses language and text characteristics such as plot, setting, theme, character, point of view, genre etc. to evoke a response in a reader.
			<b>e94</b>	Use response journals to jot down ideas from reading literary texts.

**SSS Strand: Writing**

**Essential Work Skills**

**LA.B 2.4.2** **L** Organizes information using appropriate systems.

**e12** Draft a report that engages an audience and is concise, clear, well organized, accurate, and informative.

**Performance Task# 21.04 Describe a typical design project team structure.**

**SSS Strand: Reading**

**Essential Work Skills**

**LA.A 1.4.1** **L** Selects and uses prereading strategies that are appropriate to the text, such as discussion, making predictions, brainstorming, generating questions, and previewing, to anticipate content, purpose, and organization of a reading selection.

**e52** Preview textbooks for informational text to anticipate content.

**e80** Understand ways an author uses language and text characteristics to aid comprehension.

**LA.A 1.4.2** **H** Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.

**e50** Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.

**e53** Apply personal or objective criteria for evaluating informational, persuasive and literary materials.

**LA.A 1.4.4** **L** Applies a variety of response strategies, including rereading, note taking, summarizing, outlining, writing a formal report, and relating what is read to his or her own experiences and feelings.

**e34** Use ideas from journals, class discussion and literary criticism to write a paper that expresses a personal opinion, sustains a controlling idea, or uses specific evidence from literary texts to support an opinion.

**e35** Apply the information gathered from technical texts in real-life situations.

**e53** Apply personal or objective criteria for evaluating informational, persuasive and literary materials.

	<b>e60</b>	Relate situations, events, and characters in a reading selection to personal experience.
	<b>e72</b>	Evaluate the way an author uses language and text characteristics such as plot, setting, theme, character, point of view, genre etc. to evoke a response in a reader.
	<b>e94</b>	Use response journals to jot down ideas from reading literary texts.

<b>SSS Strand: Writing</b>	<b>Essential Work Skills</b>
----------------------------	------------------------------

<b>LA.B 2.4.3</b>	<b>L</b>	Writes fluently for a variety of occasions, audiences, and purposes, making appropriate choices regarding style, tone, level of detail, and organization.	<b>e22</b>	Understand and produce a variety of informative format such as business letters, memos, reports, news articles, brochures, proposals and critiques.
-------------------	----------	---	------------	---

			<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
--	--	--	------------	---

**Performance Task# 21.05 Outline a research methodology.**

<b>SSS Strand: Reading</b>	<b>Essential Work Skills</b>
----------------------------	------------------------------

<b>LA.A 1.4.1</b>	<b>L</b>	Selects and uses prereading strategies that are appropriate to the text, such as discussion, making predictions, brainstorming, generating questions, and previewing, to anticipate content, purpose, and organization of a reading selection.	<b>e52</b>	Preview textbooks for informational text to anticipate content.
			<b>e80</b>	Understand ways an author uses language and text characteristics to aid comprehension.

<b>LA.A 1.4.2</b>	<b>H</b>	Selects and uses strategies to understand words and text, and to make and confirm inferences from what is read, including interpreting diagrams, graphs, and statistical illustrations.	<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
-------------------	----------	---	------------	---

			<b>e53</b>	Apply personal or objective criteria for evaluating informational, persuasive and literary materials.
--	--	--	------------	---

<b>LA.A 2.4.1</b>	<b>H</b>	Determines the main idea and identifies relevant details, methods of development, and their effectiveness in a variety of types of written materi	<b>e15</b>	Discriminate important ideas from unimportant ideas while reading.
-------------------	----------	---	------------	--

			<b>e24</b>	Summarize, synthesize and organize information while reading.
--	--	--	------------	---

			<b>e46</b>	Apply, extend, and expand on information while reading
--	--	--	------------	--

<b>SSS Strand: Writing</b>	<b>Essential Work Skills</b>
----------------------------	------------------------------

<b>LA.B 2.4.2</b>	<b>L</b>	Organizes information using appropriate systems.	<b>e12</b>	Draft a report that engages an audience and is concise, clear, well organized, accurate, and informative.
-------------------	----------	--	------------	---

**Performance Task# 21.06 Demonstrate brainstorming techniques.**

<b>SSS Strand: Listening, Viewing and Speaking</b>	<b>Essential Work Skills</b>
--	------------------------------

<b>LA.C 1.4.1</b>	<b>L</b>	Selects and uses appropriate listening strategies according to the intended purpose, such as solving problems, interpreting and evaluating the techniques and intent of a presentation, and taking action in career-related situations.	<b>e25</b>	Listen, comprehend and summarize essential information from a variety of sources such as speeches, plays, commercials on radio and television, and political debates.
-------------------	----------	---	------------	---

<b>LA.C 1.4.3</b>	<b>L</b>	Uses effective strategies for informal and formal discussions, including listening actively and reflectively, connecting to and building on the ideas of a previous speaker, and respecting the viewpoints of others.	<b>e32</b>	Make informed judgments about the content, organization, and delivery of spoken communication.
-------------------	----------	---	------------	--

- e59 Respond orally to fellow student's opinions during presentations by asking questions, asking for clarification, agreeing and /or disagreeing courteously.
- e69 Participate in a one-on-one conference by relating essential information, asking questions on the topic, and using language to clarify information.
- e70 Analyze and evaluate a speaker's statements of opinion, personal preference and values.

**Outcome # 22.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS IN THE PROCESSES AND SYSTEMS RELATED TO ENGINEERING--THE STUDENT WILL BE ABLE TO:**

**Performance Task# 22.01 Assemble, operate, and identify the parts of a fluid system.**

**SSS Strand: Listening, Viewing and Speaking**

**Essential Work Skills**

LA.C 2.4.1 L Determines main concept and supporting details in order to analyze and evaluate nonprint media messages.

e66 Demonstrate knowledge of persuasive techniques used in visual advertisements.

**Performance Task# 22.02 Demonstrate and apply principles of force, work, rate, resistance, energy, power, and force transformers relating to fluid systems.**

**SSS Strand: Listening, Viewing and Speaking**

**Essential Work Skills**

LA.C 2.4.1 L Determines main concept and supporting details in order to analyze and evaluate nonprint media messages.

e66 Demonstrate knowledge of persuasive techniques used in visual advertisements.

**Performance Task# 22.03 Assemble, operate, and identify the parts of a thermal system.**

**SSS Strand: Listening, Viewing and Speaking**

**Essential Work Skills**

LA.C 2.4.1 L Determines main concept and supporting details in order to analyze and evaluate nonprint media messages.

e66 Demonstrate knowledge of persuasive techniques used in visual advertisements.

**Performance Task# 22.04 Demonstrate and apply principles of force, work, rate, resistance, energy, power, and force transformers relating to thermal systems.**

**SSS Strand: Listening, Viewing and Speaking**

**Essential Work Skills**

LA.C 2.4.1 L Determines main concept and supporting details in order to analyze and evaluate nonprint media messages.

e66 Demonstrate knowledge of persuasive techniques used in visual advertisements.

**Performance Task# 22.05 Assemble, operate, and identify the parts of an electrical system.**

**SSS Strand: Listening, Viewing and Speaking**

**Essential Work Skills**

LA.C 2.4.1 L Determines main concept and supporting details in order to analyze and evaluate nonprint media messages.

e66 Demonstrate knowledge of persuasive techniques used in visual advertisements.

**Performance Task# 22.06 Demonstrate and apply principles of force, work, rate, resistance, energy, power, and force transformers relating to electrical systems.**

<b>SSS Strand: Listening, Viewing and Speaking</b>	<b>Essential Work Skills</b>
--	------------------------------

<b>LA.C 2.4.1 L</b> Determines main concept and supporting details in order to analyze and evaluate nonprint media messages.	<b>e66</b> Demonstrate knowledge of persuasive techniques used in visual advertisements.
--	--

**Performance Task# 22.07 Assemble, operate, and identify the parts of a mechanical system.**

<b>SSS Strand: Listening, Viewing and Speaking</b>	<b>Essential Work Skills</b>
--	------------------------------

<b>LA.C 2.4.1 L</b> Determines main concept and supporting details in order to analyze and evaluate nonprint media messages.	<b>e66</b> Demonstrate knowledge of persuasive techniques used in visual advertisements.
--	--

**Performance Task# 22.08 Demonstrate and apply principles of force, work, rate, resistance, energy, power, and force transformers relating to mechanical systems.**

<b>SSS Strand: Listening, Viewing and Speaking</b>	<b>Essential Work Skills</b>
--	------------------------------

<b>LA.C 2.4.1 L</b> Determines main concept and supporting details in order to analyze and evaluate nonprint media messages.	<b>e66</b> Demonstrate knowledge of persuasive techniques used in visual advertisements.
--	--

**Outcome # 23.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS IN THE DESIGNING, ENGINEERING, AND ANALYSIS OF CONSTRUCTED WORKS--THE STUDENT WILL BE ABLE TO:**

**Performance Task# 23.01 Define terminology associated with engineering products and systems.**

<b>SSS Strand: Reading</b>	<b>Essential Work Skills</b>
----------------------------	------------------------------

<b>LA.A 1.4.3 L</b> Refines vocabulary for interpersonal, academic, and workplace situations, including figurative, idiomatic, and technical meanings.	<b>e09</b> Know how to decipher unfamiliar words using such strategies as context cues, word structure analysis, letter sound relationships, and word histories.
	<b>e30</b> Understand the nature and purpose of and be able to word process a variety of formats including essays, business letters, memos, instructions, policy statements, technical proposals, user manuals, lab reports, etc.
	<b>e49</b> Read for main idea first and then read for detail.

**Performance Task# 23.02 Define and describe the experimental method as it is applied to design.**

<b>SSS Strand: Reading</b>	<b>Essential Work Skills</b>
----------------------------	------------------------------

<b>LA.A 1.4.3 L</b> Refines vocabulary for interpersonal, academic, and workplace situations, including figurative, idiomatic, and technical meanings.	<b>e09</b> Know how to decipher unfamiliar words using such strategies as context cues, word structure analysis, letter sound relationships, and word histories.
	<b>e30</b> Understand the nature and purpose of and be able to word process a variety of formats including essays, business letters, memos, instructions, policy statements, technical proposals, user manuals, lab reports, etc.

e49 Read for main idea first and then read for detail.

**Performance Task# 23.03 Describe simulation.**

**SSS Strand: Reading**

**Essential Work Skills**

LA.A 1.4.3 L Refines vocabulary for interpersonal, academic, and workplace situations, including figurative, idiomatic, and technical meanings.

e09 Know how to decipher unfamiliar words using such strategies as context cues, word structure analysis, letter sound relationships, and word histories.

e30 Understand the nature and purpose of and be able to word process a variety of formats including essays, business letters, memos, instructions, policy statements, technical proposals, user manuals, lab reports, etc.

e49 Read for main idea first and then read for detail.

**Performance Task# 23.04 Prepare a model of a design solution to an engineering problem.**

**SSS Strand: Writing**

**Essential Work Skills**

LA.B 2.4.2 L Organizes information using appropriate systems.

e12 Draft a report that engages an audience and is concise, clear, well organized, accurate, and informative.

**Performance Task# 23.05 Prepare a graphical solution to an engineering problem.**

**SSS Strand: Writing**

**Essential Work Skills**

LA.B 2.4.2 L Organizes information using appropriate systems.

e12 Draft a report that engages an audience and is concise, clear, well organized, accurate, and informative.

**Performance Task# 23.06 Prepare a mathematical solution to an engineering problem (using either a calculator or computer).**

**SSS Strand: Measurement**

**Essential Work Skills**

MA.B 1.4.1 H Uses concrete and graphic models to derive formulas for finding perimeter, area, surface area, circumference, and volume of two- and three-dimensional shapes, including rectangular solids, cylinders, cones, and pyramids.

m13 Compute the perimeter and area of two-dimensional figures.

m17 Compute the volume of three-dimensional figures (solids).

MA.B 1.4.2 H Uses concrete and graphic models to derive formulas for finding rate, distance, time, angle measures and arc lengths.

m14 Understand the angle relationships in triangles (i.e., acute, obtuse, right, interior, and exterior).

m30 Know how to measure circle quantities (e.g., area, angle formed by two secants, circumference, length of segments, etc.)

**Performance Task# 23.07 Present a technical report on an engineering design problem, concept or issue.**

**SSS Strand: Writing**

**Essential Work Skills**

<b>L.A.B 1.4.2 H</b>	Drafts and revises writing that: is focused, purposeful, and reflects insight into the writing situation; has an organizational pattern that provides for a logical progression of ideas; has effective use of transitional devices that contribute to a sense of completeness; has support that is substantial, specific, relevant, and concrete; demonstrates a commitment to and involvement with the subject; uses creative writing strategies as appropriate to the purposes of the paper; demonstrates a mature command of language with freshness of expression; has varied sentence structure; has few, if any, convention errors in mechanics, usage, punctuation and spelling.	<b>e12</b>	Draft a report that engages an audience and is concise, clear, well organized, accurate, and informative.
		<b>e14</b>	Use editing and revising skills to improve effectiveness and accuracy of drafts.
		<b>e27</b>	Define a position on a controversial topic and write a persuasive essay or make an oral presentation likely to persuade a specific audience to change an opinion or take a particular action.
		<b>e54</b>	Organize supporting detail in logical and convincing patterns.
<b>L.A.B 2.4.3 L</b>	Writes fluently for a variety of occasions, audiences, and purposes, making appropriate choices regarding style, tone, level of detail, and organization.	<b>e22</b>	Understand and produce a variety of informative format such as business letters, memos, reports, news articles, brochures, proposals and critiques.
		<b>e50</b>	Understand and use a variety of organizational formats such as compare/contrast, cause/effect, inductive/deductive, most important to least important, and least important to most important.
<b>L.A.B 2.4.4 L</b>	Selects and uses a variety of electronic media, such as the Internet, information services, and desktop publishing software programs, to create, revise, retrieve, and verify information.	<b>e03</b>	Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.

**Total Number of Student Performance Standards in this course:**

**111**

**- End of File -**