



PlaneWorkds
in Whyville

Standards

PlaneWorks

Common Core Standards,
Next Generation Science Standards,
and Texas Standards (TEKS)

Next Generation Science Standards (NGSS)

NGSS Subcategory	Standard ID	Standard Description
Interdependence of Science, Engineering, and Technology	MS-PS1-3	Engineering advances have led to important discoveries in virtually every field of science, and scientific discoveries have led to the development of entire industries and engineered systems.
Analyzing and Interpreting Data	MS-PS1-2	Analyze and interpret data to determine similarities and differences in findings.
Constructing Explanations and Designing Solutions	MS-PS1-6	Undertake a design project, engaging in the design cycle, to construct and/or implement a solution that meets specific design criteria and constraints.
Constructing Explanations and Designing Solutions	MS-PS3-3	Apply scientific ideas or principles to design, construct, and test a design of an object, tool, process or system.
Engaging in Argument from Evidence	MS-LS2-5	Evaluate competing design solutions based on jointly developed and agreed-upon design criteria.
Engineering Design	MS-ETS1-2	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
Engineering Design	MS-ETS1-3	Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.
Engaging in Argument from Evidence	MS-PS3-5	Construct, use, and present oral and written arguments supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon.
ETS1.A: Defining and Delimiting Engineering Problems	MS-ETS1-1	The more precisely a design task's criteria and constraints can be defined, the more likely it is that the designed solution will be successful. Specification of constraints includes consideration of scientific principles and other relevant knowledge that are likely to limit possible solutions.

NGSS Subcategory	Standard ID	Standard Description
ETS1.B: Developing Possible Solutions	MS-ETS1-4	A solution needs to be tested, and then modified on the basis of the test results, in order to improve it.
ETS1.B: Developing Possible Solutions	MS-ETS1-2, MS-ETS1-3	There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem.
ETS1.B: Developing Possible Solutions	MS-ETS1-3	Sometimes parts of different solutions can be combined to create a solution that is better than any of its predecessors.
ETS1.C: Optimizing the Design Solution	MS-ETS1-4	The iterative process of testing the most promising solutions and modifying what is proposed on the basis of the test results leads to greater refinement and ultimately to an optimal solution.
ETS1.C: Optimizing the Design Solution	MS-ETS1-3	Although one design may not perform the best across all tests, identifying the characteristics of the design that performed the best in each test can provide useful information for the redesign process—that is, some of those characteristics may be incorporated into the new design.

Common Core – ELA: Science and Technical Subjects (CC-ELA)

CC Subcategory	Standard ID	Standard Description
Writing for History/Social Studies, Science and Technical Subjects	WHST.6-8.1	Write arguments focused on discipline content.
Writing for History/Social Studies, Science and Technical Subjects	WHST.6-8.7	Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

<i>CC Subcategory</i>	<i>Standard ID</i>	<i>Standard Description</i>
Speaking & Listening	SL.8.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.
Speaking & Listening	SL.8.1.c	Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas.

Texas Essential Knowledge & Skills (TEKS)

<i>TEKS Category</i>	<i>Chapter</i>	<i>Standard ID</i>	<i>Standard Description</i>
CTE – Career Portals	127.4	1.A	The student explores one or more career clusters of interest. The student is expected to: (A) identify the various career opportunities within one or more career clusters.
CTE – Career Portals	127.4	2.A	The student explores pathways of interest within one or more career clusters. The student is expected to: (A) investigate career opportunities within the pathways.
CTE – Exploring Careers	127.3	4.A	The student evaluates skills for personal success. The student is expected to: (A) implement effective study skills for academic success.
CTE – Exploring Careers	127.3	4.C	Use a problem-solving model and critical-thinking skills to make informed decisions.
CTE – Exploring Careers	127.3	4.D	Use effective time-management and goal-setting strategies.
CTE – Exploring Careers	127.3	4.E	Effectively use information and communication technology tools.
CTE – Exploring Careers	127.3	7.E	The student develops skills for professional success. The student is expected to: (E) explore and model characteristics necessary for professional success such as work ethics, integrity, dedication, perseverance, and the ability to interact with a diverse population.
CTE – Exploring Careers	127.3	7.F	Complete activities using project- and time-management techniques.

TEKS Category	Chapter	Standard ID	Standard Description
CTE – Exploring Careers	127.3	8.A	The student identifies and explores technical skills essential to careers in multiple occupations, including those that are high skill, high wage, or high demand. The student is expected to: (A) complete actual or virtual labs to simulate the technical skills required in various occupations.

Next Generation Science Standards (NGSS)

<i>NGSS Subcategory</i>	<i>Standard ID</i>	<i>Standard Description</i>
Developing and Using Models	MS-ETS1-4	Develop a model to generate data to test ideas about designed systems, including those representing inputs and outputs.
Engineering Design	MS-ETS1-4	Models of all kinds are important for testing solutions.
Engaging in Argument from Evidence	MS-PS3-5	Construct, use, and present oral and written arguments supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon.

Common Core – ELA: Science and Technical Subjects (CC-ELA)

<i>CC Subcategory</i>	<i>Standard ID</i>	<i>Standard Description</i>
Writing for History/Social Studies, Science and Technical Subjects	WHST.6-8.1	Write arguments focused on discipline content.
Writing for History/Social Studies, Science and Technical Subjects	WHST.6-8.7	Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
Reading for Science and Technical Subjects	RST.6-8.1	Cite specific textual evidence to support analysis of science and technical texts.
Speaking & Listening	SL.8.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.
Speaking & Listening	SL.8.1.c	Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas.

Texas Essential Knowledge & Skills (TEKS)

TEKS Category	Chapter	Standard ID	Standard Description
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CTE – Career Portals	127.4	2.A	The student explores pathways of interest within one or more career clusters. The student is expected to: (A) investigate career opportunities within the pathways.
CTE – Exploring Careers	127.3	4.A	The student evaluates skills for personal success. The student is expected to: (A) implement effective study skills for academic success.
CTE – Exploring Careers	127.3	4.C	Use a problem-solving model and critical-thinking skills to make informed decisions.
CTE – Exploring Careers	127.3	4.D	Use effective time-management and goal-setting strategies.
CTE – Exploring Careers	127.3	4.E	Effectively use information and communication technology tools.
CTE – Exploring Careers	127.3	7.E	The student develops skills for professional success. The student is expected to: (E) explore and model characteristics necessary for professional success such as work ethics, integrity, dedication, perseverance, and the ability to interact with a diverse population.
CTE – Exploring Careers	127.3	7.F	Complete activities using project- and time-management techniques.
CTE – Exploring Careers	127.3	8.A	The student identifies and explores technical skills essential to careers in multiple occupations, including those that are high skill, high wage, or high demand. The student is expected to: (A) complete actual or virtual labs to simulate the technical skills required in various occupations.