

Proficiency Scales

Science
GRADE 8
2020



SOUTHWESTERN UNION
EDUCATION

PROFICIENCY SCALES

Proficiency scales serve as a starting point for unit planning, creating assessments, delivering instruction, grading, and reporting progress, as well as making teaching visible to students and guiding their growth on the standards. Specifically, a proficiency scale is a continuum or learning progression that articulates distinct levels of knowledge and skills relative to specific standards. It shows teachers and students what proficiency looks like, what knowledge and skills students need to achieve proficiency, and how students might go beyond proficiency.

A proficiency scale is composed of a series of levels as follows:

Score 3.0—Heart of the proficiency scale; it defines the target content that teachers expect all students to know and be able to do. I CAN statements are provided for this level.

Score 2.0—Simpler content; it describes the foundational knowledge and skills that students will need to master before progressing to proficiency.

Score 4.0—Challenging content; it provides students the opportunity to go above and beyond expectations by applying their knowledge in new situations or demonstrating understanding beyond what the teacher teaches in class. A generic statement is provided for this level.

Scores 1.0 and 0.0—No specific content; 1.0 indicates that a student can demonstrate some knowledge or skill with help from the teacher, but not independently; 0.0 means that, even with help, a student cannot show any understanding. Generic statements are provided for these levels.

Half-point Scores—More precise measurement of knowledge and skills that is between two levels. Generic statements are provided for these levels.

Proficiency scales become the centerpiece of communication and understanding in the classroom, as well as the common language for discussing learning between teacher and student.

The proficiency scales are organized according to the domains and strands in the NAD standards.

The cognitive rigor or complexity of the 3.0 learning targets has also been included, for it impacts the selection of instructional activities as well as assessment tasks. The Depth of Knowledge (DOK) model is generally used for this purpose, which is a taxonomy of four levels of cognitive demand. The levels are:

- **Level 1**—Recall
- **Level 2**—Skill/Concept
- **Level 3**—Strategic Thinking
- **Level 4**—Extended Thinking

Depth of Knowledge (DOK) Levels



Level One Activities	Level Two Activities	Level Three Activities	Level Four Activities
<p>Recall elements and details of story structure, such as sequence of events, character, plot and setting.</p> <p>Conduct basic mathematical calculations.</p> <p>Label locations on a map.</p> <p>Represent in words or diagrams a scientific concept or relationship.</p> <p>Perform routine procedures like measuring length or using punctuation marks correctly.</p> <p>Describe the features of a place or people.</p>	<p>Identify and summarize the major events in a narrative.</p> <p>Use context cues to identify the meaning of unfamiliar words.</p> <p>Solve routine multiple-step problems.</p> <p>Describe the cause/effect of a particular event.</p> <p>Identify patterns in events or behavior.</p> <p>Formulate a routine problem given data and conditions.</p> <p>Organize, represent and interpret data.</p>	<p>Support ideas with details and examples.</p> <p>Use voice appropriate to the purpose and audience.</p> <p>Identify research questions and design investigations for a scientific problem.</p> <p>Develop a scientific model for a complex situation.</p> <p>Determine the author's purpose and describe how it affects the interpretation of a reading selection.</p> <p>Apply a concept in other contexts.</p>	<p>Conduct a project that requires specifying a problem, designing and conducting an experiment, analyzing its data, and reporting results/ solutions.</p> <p>Apply mathematical model to illuminate a problem or situation.</p> <p>Analyze and synthesize information from multiple sources.</p> <p>Describe and illustrate how common themes are found across texts from different cultures.</p> <p>Design a mathematical model to inform and solve a practical or abstract situation.</p>

Webb, Norman L. and others. "Web Alignment Tool" 24 July 2005. Wisconsin Center of Educational Research. University of Wisconsin-Madison. 2 Feb. 2006. <<http://www.wcer.wisc.edu/WAT/index.aspx>>

DISCIPLINARY TRANSFER GOALS

There are a small number of overarching, long-term transfer goals in each subject area. They are meant to be integrated within and across grade-level instruction. Below are the transfer goals for science

1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

ESSENTIAL QUESTIONS AND BIG IDEAS

for SCIENCE DOMAINS

K-8

Life Sciences

Essential Question: How do living organisms give evidence of God as the Designer, Creator, and Sustainer of life?

Big Idea: The complexity, order, and design of living organisms provide strong evidence of God as the Designer, Creator and Sustainer of life.

Physical Sciences

Essential Question: How does the order and consistency of natural laws provide evidence of God as the Designer, Creator, and Sustainer of the physical world?

Big Idea: Matter and energy are organized and behave according to natural laws that cannot be explained by chance, but are consistent and give evidence of God as the Designer, Creator, and Sustainer.

Health Sciences

Essential Question: Why does God want human beings to choose to have a healthy mind and body?

Big Idea: God designed a plan for healthful living that leads to optimum spiritual, physical, mental, and emotional health.

Earth and Space Sciences

Essential Question: How do the structure and physical phenomena of Earth and space provide evidence of God as Designer, Creator, and Sustainer of the universe?

Big Idea: The structure and processes of Earth and space are organized and governed by natural laws that give evidence of God as Designer, Creator, and Sustainer.

Engineering, Technology, and Applications of Science

Essential Question: How has God equipped humans to apply knowledge of science to solve problems for the benefit of His Creation?

Big Idea: God designed humans to wonder, question, and develop an attitude of inquiry as scientific principles are applied to the materials and forces of nature for the benefit of His Creation.



Subject: Science		Domain: Physical Sciences	Grade: 8
		Strand: Matter and Its Interactions	
Standard: S.6-8.PS.5 Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved (MS-PS1-5)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	<ul style="list-style-type: none">Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved (<i>e.g., apply the law of conservation of matter to create physical models or drawings that represent atoms before and after a chemical reaction</i>) DOK 3 I can develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	<p>The student will recognize or recall vocabulary such as:</p> <ul style="list-style-type: none"><i>Atom, chemical reaction, conserve, law of conservation of matter, mass, molecule, property</i> <p>The student will perform basic processes, such as:</p> <ul style="list-style-type: none">Describe the basic nature of a chemical reactionDescribe the atomic structure of a molecule		
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content	
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content		
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content	
Score 0.0	Even with help, no success		

Subject: **Science**Domain: **Physical Sciences**
Strand: **Matter and Its Interactions**Grade: **8****Standard:** S.6-8.PS.6 Design, construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes (MS-PS1-6)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none">Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes (<i>e.g., create a device whose substances chemically react, and modify the type and concentration of those substances to control the transfer of energy into the environment</i>) DOK 3 <p>I can design, construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.</p>	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	<p>The student will recognize or recall vocabulary such as:</p> <ul style="list-style-type: none"><i>Absorb, chemical compound, chemical element, chemical energy, chemical process, chemical reaction, concentration, concentration of reactants, device, energy, environment, release, substance, thermal energy, transfer of energy</i> <p>The student will perform basic processes, such as:</p> <ul style="list-style-type: none">Describe chemical processes that release or absorb thermal energy	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Science**Domain: **Life Sciences**
Strand: **Molecules to Organisms, Life**Grade: **8**

Standards: S.6-8.LS.4 Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors (e.g., nest building, herding, vocalization, colorful plumage) and specialized plant structures (e.g., bright flowers, flower nectar, odors that attract insects that transfer pollen, hard shells on nuts that squirrels bury) affect the probability of successful reproduction of animals and plants respectively (MS-LS1-4)

S.6-8.LS.5 Construct a scientific explanation based on evidence (e.g., drought decreasing plant growth, fertilizer increasing plant growth, different varieties of plant seeds growing at different rates in different conditions, fish growing larger in large ponds) for how environmental (e.g., availability of food, light, space, water) and genetic (e.g., large breed cattle and species of grass affecting growth) factors influence the growth of organisms (MS-LS1-5)

S.6-8.LS.21 Apply scientific principles to construct and share a personal model that explains origins of life on earth and acknowledges God as the Creator

Score 4.0

In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught

Score
3.5

In addition to score 3.0 performance, partial success at score 4.0 content

Score 3.0

The student will:

- Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively (*e.g., using empirical evidence and scientific reasoning, make and defend the claim that specific animal behaviors affect the probability of animal and plant reproduction [such as nest building to protect young from cold, herding to protect young from predators, transferring pollen or seeds to create conditions for seed germination, or animal vocalization and colorful plumage to attract mates for breeding] and that specific plant structures affect the probability of successful plant reproduction [such as bright flowers attracting butterflies that transfer pollen, flower nectar and odors attracting insects that transfer pollen, and hard shells on nuts that squirrels bury]*) **DOK 3**
I can support an explanation for how animal behaviors and plant structures affect the probability of successful reproduction of animals and plants.
- Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms (*e.g., use evidence [such as drought decreasing plant growth, fertilizer increasing plant growth, different varieties of plant seeds growing at different rates in different conditions, and fish growing larger or smaller depending on habitat size] to explain how genetic factors and environmental factors [such as availability of food, light, space, and water] affect the growth of organisms*) **DOK 3**
I can use evidence to explain how environmental and genetic factors

	influence the growth of organisms.	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	<p>The student will recognize or recall vocabulary such as:</p> <ul style="list-style-type: none"> <i>Animal, animal behavior, attract, breed, characteristic, mate, nectar, plant, plant structure, pollen, probability, reproduction, reproductive capacity, reproductive system, specialized</i> <i>Characteristics of life, drought, environmental, factor, fertilizer, genetic, growth, organism, soil fertility</i> <p>The student will perform basic processes, such as:</p> <ul style="list-style-type: none"> Describe the animal behaviors that affect the probability of successful reproduction Describe plant structures that affect the probability of successful reproduction Describe environmental and genetic factors that influence the growth of organisms Apply scientific principles to construct and share a personal model that explains origins of life on earth and acknowledges God as the Creator 	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Science**Domain: **Life Sciences**
Strand: **Ecosystems**Grade: **8**

Standards: S.6-8.LS.9 Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem (MS-LS2-1)
S.6-8.LS12 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations (MS-LS2-4)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none">Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem (e.g., <i>analyze and interpret data to support claims about the cause and effect relationships between resources, growth of individual organisms, and the numbers of organisms in an ecosystem during periods of abundant and scarce resources</i>) DOK 3 I can analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations (e.g., <i>recognize patterns in data, make warranted inferences about changes in populations, and evaluate empirical evidence about ecosystem changes to make and defend the claim that biological or physical changes to an ecosystem can affect populations</i>) DOK 3 I can support the idea that changes to physical or biological components of an ecosystem affect populations.	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	<p>The student will recognize or recall vocabulary such as:</p> <ul style="list-style-type: none"><i>Abundant, cause, ecosystem effect, environmental condition, growth, organism, population, relationship, resource, resource availability, scarce</i><i>Biological, change, component, ecosystem, environmental change, physical, population, population density, relationship</i> <p>The student will perform basic processes, such as:</p> <ul style="list-style-type: none">Describe the effects of varying levels of resource availability on organisms and populationsDescribe the relationship between populations and the physical and biological	

	components of an ecosystem	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Science**Domain: **Life Sciences**
Strand: **Ecosystems**Grade: **8**

Standard: S.6-8.LS.10 Construct an explanation that predicts patterns of interactions (e.g., competitive, predatory, mutually beneficial) among organisms across multiple ecosystems (MS-LS2-2)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: <ul style="list-style-type: none">Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems (<i>e.g., explain how one might predict consistent patterns of interactions—such as competitive, predatory, and mutually beneficial—in different ecosystems in terms of the relationships among and between organisms and abiotic components of an ecosystem</i>) DOK 3 I can develop an explanation that predicts patterns of interactions among organisms across multiple ecosystems.	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: <ul style="list-style-type: none"><i>Abiotic, competitive, component, ecological role, ecosystem, host, infection, interaction, mutualism, mutually beneficial, organism, parasite, predatory, relationship</i> The student will perform basic processes, such as: <ul style="list-style-type: none">Describe patterns of interactions among organisms across multiple ecosystems	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	



Subject: Science		Domain: Life Sciences	Grade: 8
		Strand: Ecosystems	
Standard: S.6-8.LS.13 Evaluate competing design solutions (e.g., scientific, economic, social considerations) for maintaining biodiversity and ecosystem services (e.g., water purification, nutrient recycling, soil erosion prevention, habitat enhancement) (MS-LS2-5)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	The student will: <ul style="list-style-type: none">Evaluate competing design solutions for maintaining biodiversity and ecosystem services (<i>e.g., based on scientific, economic, and social constraints, evaluate competing design solutions for maintaining biodiversity and ecosystem services, such as water purification, nutrient recycling, and soil erosion prevention</i>) DOK 3 I can evaluate competing design solutions for maintaining biodiversity and ecosystem services.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	The student will recognize or recall vocabulary such as: <ul style="list-style-type: none"><i>Biodiversity, economic constraint, ecosystem, nutrient recycling, prevention, scientific constraint, service, social constraint, soil erosion, water purification</i> The student will perform basic processes, such as: <ul style="list-style-type: none">Describe the evaluation criteria used to evaluate design solutionsSummarize competing design solutions for maintaining biodiversity and ecosystem services		
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content	
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content		
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content	
Score 0.0	Even with help, no success		

Subject: **Science**Domain: **Life Sciences**Grade: **8**Strand: **Life: Origins, Unity, and Diversity**

Standard: S.6-8.LS.20 Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time (MS-LS4-6)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none">Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time (<i>e.g., use mathematical models, probability statements, and proportional reasoning to support explanations of trends in changes to populations over time</i>) DOK 3 <p>I can use math to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.</p>	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	<p>The student will recognize or recall vocabulary such as:</p> <ul style="list-style-type: none"><i>Acquired trait, adaptive characteristic, behavioral change, decrease, emergence of life forms, increase, life form change, natural selection, population, probability, proportional, trait, trend</i> <p>The student will perform basic processes, such as:</p> <ul style="list-style-type: none">Describe the relationship between natural selection and trends in population traits over time	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	



Subject: Science		Domain: Life Sciences	Grade: 8
		Strand: Life: Origins, Unity, and Diversity	
Standard: S.6-8.LS.18 Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment (MS-LS4-4)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none">Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment (<i>e.g., use simple probability statements and proportional reasoning to defend the claim that genetic variations of traits in a population increase some individuals' probability of surviving and reproducing</i>) DOK 3 <p>I can use evidence to explain how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.</p>		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	<p>The student will recognize or recall vocabulary such as:</p> <ul style="list-style-type: none"><i>Continuation of species, environment, genetic variation, natural selection, population, probability, reproduce, survive, trait</i> <p>The student will perform basic processes, such as:</p> <ul style="list-style-type: none">Describe how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing		
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content	
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content		
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content	
Score 0.0	Even with help, no success		



Subject: Science		Domain: Life Science	Grade: 8
		Strand: Life: Origins, Unity, and Diversity	
Standard: N/A (MS-LS3-4)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	The student will: <ul style="list-style-type: none">Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy (<i>e.g., compare the macroscopic appearance of embryological development in diagrams and pictures to infer general patterns of relatedness among embryos of different organisms</i>) DOK 3 I can analyze pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	The student will recognize or recall vocabulary such as: <ul style="list-style-type: none"><i>Anatomy, appearance, development, embryo, embryological, macroscopic, organism, pattern, relatedness, relationship, similarity, species</i> The student will perform basic processes, such as: <ul style="list-style-type: none">Describe macroscopic similarities among different organisms in embryological development		
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content	
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content		
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content	
Score 0.0	Even with help, no success		



Subject: Science		Domain: Earth and Space Sciences	Grade: 8
		Strand: Earth's Systems	
Standard: S.6-8.ES.5 Collect data (e.g., weather maps, diagrams, visualizations, laboratory experiments) to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions (MS-ESS2-5)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none">Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions (<i>e.g., use student-collected laboratory experiment data or teacher-provided data [such as weather maps, diagrams, and visualizations] as evidence for how weather can be predicted within probabilistic ranges; for instance, air masses flow from regions of high pressure to low pressure causing weather [defined by temperature, pressure, humidity, precipitation, and wind] at a fixed location to change over time, and sudden changes in weather can result when different air masses collide</i>) DOK 3 <p>I can collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.</p>		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	<p>The student will recognize or recall vocabulary such as:</p> <ul style="list-style-type: none"><i>Air mass, air mass circulation, collide, condensation, flow, high pressure, humidity, interaction, low pressure, motion, precipitation, predict, pressure, probabilistic, range, temperature, weather condition, weather map, wind</i> <p>The student will perform basic processes, such as:</p> <ul style="list-style-type: none">Describe the relationship between weather conditions and the motions and interactions of air masses		
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content	
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content		
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content	
Score 0.0	Even with help, no success		

Subject: **Science**Domain: **Earth and Space Sciences**
Strand: **Earth's Systems**Grade: **8****Standard:** S.6-8.ES.4 Develop a model (conceptual or physical) to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity (MS-ESS2-4)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: <ul style="list-style-type: none">Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity (<i>e.g., create a conceptual or physical model to explain how water changes state as it moves through the multiple pathways of the hydrologic cycle</i>) DOK 3 I can develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: <ul style="list-style-type: none"><i>Cycle, Earth system, energy, force, gravity, hydrologic cycle, percolation, water cycle</i> The student will perform basic processes, such as: <ul style="list-style-type: none">Describe each phase of the hydrologic cycle	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	



Subject: Science		Domain: Earth and Space Sciences	Grade: 8
		Strand: Earth's Place in the Universe	
Standard: S.6-8.ES.15 Apply scientific principles to construct an explanation, based on evidence from rock, for how the geologic column is used to organize Earth's relative age and geologic history, comparing and contrasting creationist and naturalistic perspectives (MS-ESS1-4)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	The student will: <ul style="list-style-type: none">Construct a scientific explanation based on evidence from rock strata for how the geologic column is used to organize Earth's history, comparing and contrasting creationist and naturalistic perspectives (<i>e.g., use evidence to explain how rock formations and the fossils they contain [such as the formation of mountain chains and ocean basins, the extinction of particular living organisms, or significant volcanic eruptions] are used to establish relative ages of major events in Earth's history, which could range from being very recent to very old</i>) DOK 3 I can use evidence from rock strata to explain how the geologic column is used to organize Earth's history, and compare and contrast creationist and naturalistic perspectives.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	The student will recognize or recall vocabulary such as: <ul style="list-style-type: none"><i>Earth's age, evidence, evolution, extinction, formation, fossil, geologic, geologic evidence, history, living organism, mountain chain, ocean basin, relative, rock formation, rock layer movement, rock strata, sedimentary rock, time scale, volcanic eruption</i> The student will perform basic processes, such as: <ul style="list-style-type: none">Explain how the geologic time scale is used to organize major events in Earth's history		
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content	
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content		
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content	
Score 0.0	Even with help, no success		



Subject: Science		Domain: Earth and Space Sciences	Grade: 8
		Strand: Earth and Human Activity	
Standard: S.6-8.ES.9 Apply scientific principles to design a method for monitoring and minimizing a human impact (e.g., water usage, soil usage, pollution) on the environment (MS-ESS3-3)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	The student will: <ul style="list-style-type: none">Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment (<i>e.g., examine human environmental impacts, assess the kinds of solutions that are feasible, and design and evaluate solutions that could reduce human impacts on the environment; for instance, possible solutions could address water usage, including the withdrawal of water from streams and aquifers or the construction of dams and levees; land usage, including urban development, agriculture, or the removal of wetlands; or pollution, including that of the air, water, or land</i>) DOK 3 I can apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	The student will recognize or recall vocabulary such as: <ul style="list-style-type: none"><i>Agriculture, aquifer, construction, dam, environment, human impact, land usage, levee, minimize, monitor, pollution, stream, urban development, water usage, wetland</i> The student will perform basic processes, such as: <ul style="list-style-type: none">Describe how humans have impacted the environmentDescribe how possible solutions mitigate human impacts		
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content	
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content		
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content	
Score 0.0	Even with help, no success		



Subject: Science		Domain: Earth and Space Sciences	Grade: 8
		Strand: Earth and Human Activity	
Standard: S.6-8.ES.10 Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth’s systems (MS-ESS3-4)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	The student will: <ul style="list-style-type: none">Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth’s systems (<i>e.g., using evidence from grade-appropriate databases on human populations and the rates of consumption of food and natural resources [such as fresh water, minerals, and energy], make and defend the claim that increases in human populations and per-capita consumption of natural resources have an impact on Earth’s systems [such as changes to the appearance, composition, and structure of Earth’s systems as well as the rates at which they change]</i>) DOK 3 I can use evidence to support the idea that increases in human population and per-capita consumption of natural resources impact Earth’s systems.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	The student will recognize or recall vocabulary such as: <ul style="list-style-type: none"><i>Appearance, composition, consumption, Earth system, energy, fresh water, human population, impact, mineral, natural resource, per-capita, rate</i> The student will perform basic processes, such as: <ul style="list-style-type: none">Describe impacts of the increasing human population and consumption of natural resources		
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content	
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content		
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content	
Score 0.0	Even with help, no success		



Subject: Science		Domain: Earth and Space Sciences	Grade: 8
		Strand: Earth and Human Activity	
Standard: S.6-8.ES.11 Ask questions to clarify evidence (e.g., tables, graphs, maps of global and regional temperatures, atmospheric levels of gases, rates of human activities) of the factors that have caused the rise in global temperatures over the past century (e.g., fossil fuel combustion, cement production, agricultural activity, change in incoming solar radiation, volcanic activity) (MS-ESS3-5)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	The student will: <ul style="list-style-type: none">Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century (<i>e.g., ask questions about tables, graphs, and maps of global and regional temperatures, atmospheric levels of gases such as carbon dioxide and methane, and the rates of human activities to clarify evidence of the factors that have caused the rise in global temperatures, including natural processes [such as changes in incoming solar radiation or volcanic activity] and, especially, human activities [such as fossil fuel combustion, cement production, and agricultural activity]</i>) DOK 3 I can ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	The student will recognize or recall vocabulary such as: <ul style="list-style-type: none"><i>Agriculture, atmospheric, carbon dioxide, combustion, factor, fossil fuel, gas, global, human activity, methane, natural process, rate, regional, solar radiation, temperature, volcanic activity</i> The student will perform basic processes, such as: <ul style="list-style-type: none">Describe the different factors that have caused the rise in global temperature		
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content	
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content		
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content	
Score 0.0	Even with help, no success		

Subject: **Science**Domain: **Engineering**
Strand: **Engineering Design**Grade: **8**

Standards: S.6-8.ET.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 (MS-ETS1-3)

S.6-8.ET.4 Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved (MS-ETS1-4)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none">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 (<i>e.g., during the redesign process, identify the characteristics of the design that performed the best in each test—even if one design does not perform the best across all tests—to determine which characteristics should be incorporated into a new design or combined to create a solution that is better than any of its predecessors</i>) DOK 3 I can analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved (<i>e.g., develop various kinds of models to test the most promising solutions, and modify the design based off the test results to continually refine a design solution until an optimal iteration can be achieved</i>) DOK 3 I can develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	<p>The student will recognize or recall vocabulary such as:</p> <ul style="list-style-type: none"><i>Characteristic, combine, criteria, data, design, design solution, determine, difference, identify, incorporate, perform, predecessor, redesign process, similarity, solution</i><i>Data, design, design solution, iteration, iterative process, iterative testing, model, modification, modify, optimal, promising, propose, refine, solution, test</i>	

	<p><i>result</i></p> <p>The student will perform basic processes, such as:</p> <ul style="list-style-type: none"> • Describe similarities and differences of design solutions • Describe the purpose and need for iterative testing • Describe the procedures for iterative testing 	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	



Subject: Science		Domain: Health Sciences	Grade: 8
		Strand: Health Promotion and Disease Prevention, Health Resources	
Standards: S.6-8.HS.3 Gather and synthesize information to identify barriers to obtaining appropriate health care and to practicing healthy behaviors, and suggest ways to overcome these barriers			
S.6-8.HS.7 Develop guidelines for evaluating health information, products, and services, and conduct an investigation designed to assess the validity of health-related resources			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none">Gather and synthesize information to identify barriers to obtaining appropriate health care and to practicing healthy behaviors, and suggest ways to overcome these barriers (e.g., <i>use resources such as the internet to identify barriers to obtaining appropriate health care and to practicing healthy behaviors, and suggest ways to overcome the barriers</i>) DOK 3 I can identify barriers to obtaining health care and to practicing healthy behaviors, and suggest ways to overcome the barriers.Conduct an investigation designed to assess the validity of health-related resources (e.g., <i>evaluate a health-related product using the guidelines for evaluating health information, products, and services</i>) DOK 3 I can use a set of guidelines to evaluate health-related information, products, or services.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	<p>The student will recognize or recall vocabulary such as:</p> <ul style="list-style-type: none"><i>Barrier, evaluate, guideline, health, health care, investigation, synthesize, validity</i> <p>The student will perform basic processes, such as:</p> <ul style="list-style-type: none">Define what is meant by appropriate health careIdentify healthy behaviorsDevelop guidelines for evaluating health information, products, and services		
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content	
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content		

	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	



Subject: Science		Domain: Health Sciences	Grade: 8
		Strand: Healthy Lifestyle Choices	
Standards: S.6-8.HS.9 Plan and conduct an investigation that provides evidence that peers and perceptions of norms influence the health of adolescents S.6-8.HS.10 Construct a model that demonstrates how public health policies can influence health promotion and disease prevention			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	The student will: <ul style="list-style-type: none">Plan and conduct an investigation that provides evidence that peers and perceptions of norms influence the health of adolescents (<i>e.g., survey classmates to determine how health-related beliefs of their peers influence their health</i>) DOK 3 I can provide evidence that peers and perceptions of norms influence the health of adolescents.Construct a model that demonstrates how public health policies can influence health promotion and disease prevention (<i>e.g., create a graphic organizer to show how public health policies can influence health promotion and disease prevention</i>) DOK 3 I can develop a model to show how public health policies can influence the promotion of good health and disease prevention.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	The student will recognize or recall vocabulary such as: <ul style="list-style-type: none"><i>Evidence, investigation, model, norm, perception, policy, prevention, promotion, public health</i> The student will perform basic processes, such as: <ul style="list-style-type: none">Identify health-related beliefs of peersIdentify public health policies		
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content	
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content		
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content	

Score 0.0	Even with help, no success
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