Appendices for CMAS Science and Social Studies Technical Report 2018–2019

List of Appendices

APPENDIX A: ITEM WRITING WORKSHOP DOCUMENTS

Reporting Category	Colorado Academic Standards Summative Assessment Framework Social Studies Grade 4 - FINAL (Topics explicitly identified in the standards are legitimate content for the assessment in addition to the standards' concept and skills.)	% of Score Points	Points
1	**History**	25%	19
	1. Organize and sequence events to understand the concepts of chronology and cause and effect in the history of Colorado a. Construct a timeline of events showing the relationship of events in Colorado history with events in United States and world history (DOK 1-2) b. Analyze primary source historical accounts related to Colorado history to understand cause-and-effect relationships (DOC 2-3) c. Explain the cause-and-effect relationships in the interactions among people and cultures that have lived in or migrated to Colorado (DOK 1-2) d. Identify and describe how major political and cultural groups have affected the development of the region (DOK 1-2)		
	2. The historical eras, individuals, groups, ideas and themes in Colorado history and their relationships to key events in the United States a. Analyze various eras in Colorado history and the relationship between these eras and eras in United States history, and the changes in Colorado over time (DOK 1-3) b. Describe interactions among people and cultures that have lived in Colorado (DOK 1-2) c. Describe the development of the political structure in Colorado history. Topics to include but not limited to an understanding of the Colorado Constitution and the relationship between state and national government (DOK 1-2) d. Describe the impact of various technological developments. Topics to include but not limited to the state of Colorado, including changes in mining technology; changes in transportation; early 20th century industrial changes; and mid- to late 20th century nuclear and computer technological changes (DOK 1-2)		
2	**Geography**	27%	20
	1. Use several types of geographic tools to answer questions about the geography of Colorado a. Answer questions about Colorado regions using maps and other geographic tools (DOK 1-2) b. Use geographic grids to locate places on maps and images to answer questions (DOK 1-2) c. Create and investigate geographic questions about Colorado in relation to other places (DOK 1-3) d. Illustrate, using geographic tools, how places in Colorado have changed and developed over time due to human activity (DOK 1-3) e. Describe similarities and differences between the physical geography of Colorado and its neighboring states (DOK 1-2)		
	2. Connections within and across human and physical systems are developed a. Describe how the physical environment provides opportunities for and places constraints on human activities (DOK 1-2) b. Explain how physical environments influenced and limited immigration into the state (DOK 1-2) c. Analyze how people use geographic factors in creating settlements and have adapted to and modified the local physical environment (DOK 1-3) d. Describe how places in Colorado are connected by movement of goods and services and technology (DOK 1-2)		

Reporting Category	Colorado Academic Standards Summative Assessment Framework Social Studies Grade 4 - FINAL (Topics explicitly identified in the standards are legitimate content for the assessment in addition to the standards' concept and skills.)	% of Score Points	Points
3	**Economics (PFL)**	23%	17
	1. People respond to positive and negative incentives a. Define positive and negative economic incentives (DOK 1) b. Give examples of the kinds of goods and services produced in Colorado in different historical periods and their connection to economic incentives (DOK 1-3) c. Explain how the productive resources – natural, human, and capital – of Colorado have influenced the types of goods produced and services provided (DOK 1-2)		
	2. The relationship between choice and opportunity cost (PFL) a. Define choice and opportunity cost (DOK 1) b. Analyze different choices and their opportunity costs (DOK 2-3) c. Give examples of the opportunity costs for individual decisions (DOK 1-2) d. Identify risks that individuals face (PFL) (DOK 1-2) e. Analyze methods of limiting financial risk (PFL) (DOK 2-3)		
4	**Civics**	25%	19
	1. Analyze and debate multiple perspectives on an issue a. Give examples of issues faced by the state and develop possible solutions (DOK 1-3) b. Provide supportive arguments for both sides of a current public policy debate (DOK 1-3) c. Discuss how various individuals and groups influence the way an issue affecting the state is viewed and resolved (DOK 1-3)		
	2. The origins, structure, and functions of the Colorado government a. Explain the origins, structure, and functions of the three branches of the state government and the relationships among them (DOK 1-2) b. Identify and explain a variety of roles leaders, citizens, and others play in state government (DOK 1-2) c. Identify and explain the services state government provides and how those services are funded (DOK 1-2) d. Explain the historical foundation and the events that led to the formation of the Colorado government (DOK 1-2) e. Describe how the decisions of the state government affect local government and interact with federal law (DOK 1-3)		
	TOTAL	**100%**	**75**

Notes:

Each standard may be assessed with various item types

Each standard will be assessed with items representing all DOK levels

PFL = Personal Financial Literacy is included in Economics

Reporting Category	Colorado Academic Standards Summative Assessment Framework - FINAL Science Grade 5	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
1	**Physical Science**	25%	12	8	20
	1. Mixtures of matter can be separated regardless of how they were created; all weight and mass of the mixture are the same as the sum of weight and mass of its parts a. Develop, communicate, and justify a procedure to separate simple mixtures based on physical properties (DOK 1-3) b. Share evidence-based conclusions and an understanding of the impact on the weight/mass of a liquid or gas mixture before and after it is separated into parts (DOK 1-3)				
2	**Life Science**	37.5%	20	10	30
	1. All organisms have structures and systems with separate functions a. Develop and communicate an evidence-based scientific explanation of the role of different organs or structures that are important for an organism's survival – in both plants and animals (DOK 1-3) b. Analyze and interpret data to generate evidence that all organisms have structures that are required for survival in both plants and animals (DOK 1-2) c. Create and evaluate models of plant and/or animal systems or parts (DOK 2-3)				
	2. Human body systems have basic structures, functions, and needs a. Develop and communicate an evidence-based scientific explanation regarding how humans address basic survival needs (DOK 1-3) b. Analyze and interpret data to generate evidence that human systems are interdependent (DOK 1-2) c. Assess further scientific explanations regarding basic human body system functions (DOK 1-3) d. Create and evaluate models of human body systems and organs (DOK 2-3) e. Compare and contrast a human system to that of another organism, and provide hypotheses about why the similarities and differences exist (DOK 2-3)				

Reporting Category	Colorado Academic Standards Summative Assessment Framework - FINAL Science Grade 5	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
3	**Earth Systems Science**	37.5%	18	12	30
	1. Earth and sun provide a diversity of renewable and nonrenewable resources a. Develop and communicate a scientific explanation addressing a question of local relevance about resources generated by the sun or Earth (DOK 1-3) b. Analyze and interpret a variety of data to understand the origin, utilization, and concerns associated with natural resources (DOK 1-3)				
	2. Earth's surface changes constantly through a variety of processes and forces a. Analyze and interpret data identifying ways Earth's surface is constantly changing through a variety of processes and forces such as plate tectonics, erosion, deposition, solar influences, climate, and human activity (DOK 1-2) b. Develop and communicate an evidence based scientific explanation around one or more factors that change Earth's surface (DOK 2-3)				
	3. Weather conditions change because of the uneven heating of Earth's surface by the Sun's energy. Weather changes are measured by differences in temperature, air pressure, wind, and water in the atmosphere and type of precipitation a. Develop and communicate an evidence-based scientific explanation for changes in weather conditions (DOK 1-3) b. Gather, analyze, and interpret data such as temperature, air pressure, wind, and humidity in relation to daily weather conditions (DOK 1-3) c. Describe weather conditions based on data collected using a variety of weather tools (DOK 1-2) d. Use data collection tools and measuring devices to gather, organize, and analyze data such as temperature, air pressure, wind, and humidity in relation to daily weather conditions (DOK 1-2)				

Reporting Category	Colorado Academic Standards Summative Assessment Framework - FINAL Science Grade 5	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
4	**Scientific Investigations and the Nature of Science (SI/NS)**	37.5%	The 30 points for SI will be distributed among the 3 standards.		
	Asking testable questions, make a falsifiable hypothesis, design an inquiry based method of finding the answer				
SC09-GR.5-S.1-GLE.1-N.1	Ask testable questions about mixtures, make a falsifiable hypothesis, design an inquiry based method of finding the answer, collect data, and form a conclusion. (DOK 2-3)				
SC09-GR.5-S.3-GLE.2-N.1	Ask testable questions about how the earth surface changes. (DOK 2)				
	Share results of experiments with others and respectfully discuss results				
SC09-GR.5-S.1-GLE.1-N.3	Share results of experiments with others and respectfully discuss results that are not expected. (DOK 2-3)				
SC09-GR.5-S.3-GLE.3-N.1	Support explanations of weather using evidence. (DOK 2-3)				
	Critically evaluate scientific models				
SC09-GR.5-S.2-GLE.2-N.2	Critically evaluate models of the human body, identifying the strengths and weaknesses of the model in representing complex natural phenomena. (DOK 2-3)				
	Review and analyze information presented by peers and provide feedback on their evidence and scientific reasoning				
SC09-GR.5-S.1-GLE.1-N.4	Review and analyze information presented by peers and provide feedback on their evidence and scientific reasoning about the separation of mixtures and how the separation impacts its total weight/mass. (DOK 2-3)				
SC09-GR.5-S.2-GLE.1-N.1	Review and analyze information presented by peers and provide feedback on their evidence regarding the importance of various structures to plants and animals. (DOK 2-3)				
SC09-GR.5-S.2-GLE.2-N.1	Review and analyze information presented by peers on the structure and function of the human body and provide feedback on their evidence and scientific conclusions. (DOK 2-3)				
SC09-GR.5-S.3-GLE.1-N.1	Review and analyze scientific explanations about natural resources presented by their peers, and provide feedback to push their peers to be scientifically accurate and base their claims on adequate and reasonable scientific evidence, not opinion. (DOK 2-3)				
SC09-GR.5-S.3-GLE.2-N.3	Assess and provide feedback on other's scientific explanations about factors that change Earth's surface, pushing for reasoning based on evidence and scientific principles (DOK 2-3)				
SC09-GR.5-S.3-GLE.3-N.3	Assess and provide feedback on other student's scientific explanations about weather, pushing for reasoning based on evidence and scientific principles. (DOK 2-3)				
	Select and use appropriate tools				
SC09-GR.5-S.3-GLE.3-N.2	Understand how weather maps are utilized to predict the weather from day to day. (DOK 1-2)				
SC09-GR.5-S.1-GLE.1-N.2	Select appropriate tools to conduct an experiment, use them correctly, and report the data in proper units. (DOK 1-2)				
	Utilize a variety of media sources to collect data for analysis				
SC09-GR.5-S.3-GLE.2-N.2	Utilize a variety of media sources to collect data for analysis regarding Earth processes and the changing surface. (DOK 1-2)				
	TOTAL	100%	**50**	**30**	**80**

Reporting Category	Colorado Academic Standards Summative Assessment Framework - FINAL Social Studies Grade 7 (Topics explicitly identified in the standards are legitimate content for the assessment in addition to the standards' concept and skills.)	% of Score Points	Points
1	**History**	28%	20
	1. Seek and evaluate multiple historical sources with different points of view to investigate a historical question and to formulate and defend a thesis with evidence a. Determine and explain the interdependence of people around the world during significant eras or events (DOK 1-3) b. Analyze historical sources for accuracy and point of view while formulating historical questions. Sources to include but not limited to art, artifacts, eyewitness accounts, letters and diaries, artifacts, real or simulated historical sites, charts, graphs, diagrams, and written texts (DOK 1-3)		
	2. The historical eras, individuals, groups, ideas and themes within regions of the Eastern Hemisphere and their relationships with one another a. Explain how people interact and are interconnected over key periods or eras in history in the Eastern Hemisphere (DOK 1-2) b. Determine and explain the historical context of key people, events, and ideas over time and include the examination of different perspectives from people involved (DOK 1-3) c. Describe the foundation and development of key historical topics. Topics to include but not limited to early civilizations, Greece, Rome, ancient China and ancient African civilizations, and the Medieval World incorporating the Crusades and Feudalism (DOK 1-2) d. Analyze the social, political, cultural, economic, and technological development within the topics listed in above in evidence outcome "c" (DOK 1-3) e. Describe the history, interactions, and contributions of various peoples and cultures that have lived in or migrated to the Eastern Hemisphere. Topics to include but not limited to world religions, the Silk Road, East/West contact and settlement patterns (DOK 1-2)		
2	**Geography**	25%	18
	1. Use geographic tools to gather data and make geographic inferences and predictions a. Interpret maps and other geographic tools to find patterns in human and physical systems (DOK 1-3) b. Describe the characteristics and distribution of physical systems, cultural patterns and economic interdependence to make predictions. Topics to include but not limited to environmental issues and cultural diffusion (DOK 1-3) c. Collect and analyze data to make geographic inferences and predictions regarding the Eastern Hemisphere (DOK 1-3) d. Ask and answer questions after examining geographic sources (DOK 1-3)		
	2. Regions have different issues and perspectives a. Classify data to construct thematic maps and make inferences (DOK 1-3) b. Analyze and interpret data using geographic tools and create maps (DOK 1-3) c. Construct maps using fundamental principles to identify key information and analyze regional issues and perspectives in the Eastern Hemisphere (DOK 1-3) d. Explain how the physical environment of a place influences its economy, culture, and trade patterns (DOK 1-2)		

Reporting Category	Colorado Academic Standards Summative Assessment Framework - FINAL Social Studies Grade 7 (Topics explicitly identified in the standards are legitimate content for the assessment in addition to the standards' concept and skills.)	% of Score Points	Points
3	**Economics (PFL)**	22%	16
	1. Supply and demand influence price and profit in a market economy a. Define supply and demand (DOK 1) b. Identify factors that cause changes in supply and demand (DOK 1) c. Define and identify factors that impact price (DOK 1) d. Identify examples to illustrate that consumers ultimately determine what is produced in a market economy (DOK 1-2) e. Explain the function of profit in a market economy (DOK 1-2) f. Demonstrate how supply and demand determine equilibrium price and quantity (DOK 1-2)		
	2. The distribution of resources influences economic production and individual choices (PFL) a. Give examples that illustrate connections between resources and manufacturing (DOK 1-2) b. Identify patterns of trade between places based on distribution of resources (DOK 1-2) c. Compare and contrast the relative value and different uses of several types of resources (DOK 2-3) d. Use supply and demand analysis to explain how prices allocate scarce goods in a market economy (DOK 1-2) e. Define resources from an economic and personal finance perspective (DOK 1-2) f. Explain the role of taxes in economic production and distribution of resources (PFL) (DOK 1-2) g. Define the various types of taxes students will pay as adults (PFL) (DOK 1) h. Demonstrate the impact of taxes on individual income and spending (PFL) (DOK 1-2)		
4	**Civics**	25%	18
	1. Compare how various nations define the rights, responsibilities, and roles of citizens a. Compare the definition of citizen in various governments (DOK 1-2) b. List the responsibilities of citizens in various governments (DOK 1) c. Define the roles of citizens in various governments (DOK 1) d. Give national and international examples of ethics and quality in government policies and practices (DOK 1-3) e. Give examples illustrating how various governments and citizens interact and analyze how these interactions have changed over time (DOK 1-3)		
	2. Different forms of government and international organizations and their influence in the world community a. Compare different forms of government in the world and how they derive their authority (DOK 1-2) b. Evaluate how various nations interact, resolve their differences, and cooperate (DOK 2-3) c. Analyze conflicts among nations including causes and consequences (DOK 2-3) d. Describe common interests and evaluate examples of global collaboration (DOK 1-3) e. Use criteria that identify the attributes of a good government and apply to specific examples (DOK 1-2)		
	TOTAL	**100%**	**72**

Notes:

Each standard may be assessed with various item types

Each standard will be assessed with items representing DOK levels 1-3

PFL = Personal Financial Literacy is included in Economics

Reporting Category	Colorado Academic Standards Summative Assessment Framework Science Grade 8	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
1	**Physical Science**	36%	22	7	29
	1. Identify and calculate the direction and magnitude of forces that act on an object, and explain the results in the object's change of motion a. Predict and evaluate the movement of an object by examining the forces applied to it (DOK 1-2) b. Use mathematical expressions to describe the movement of an object (DOK 1-2) c. Develop and design a scientific investigation to collect and analyze speed and acceleration data to determine the net forces acting on a moving object (DOK 2-3)				
	2. There are different forms of energy, and those forms of energy can be changed from one form to another – but total energy is conserved a. Gather, analyze, and interpret data to describe the different forms of energy and energy transfer (DOK 1-2) b. Develop a research-based analysis of different forms of energy and energy transfer (DOK 1-3) c. Use research-based models to describe energy transfer mechanisms, and predict amounts of energy transferred (DOK 1-2)				
	3. Distinguish between physical and chemical changes, noting that mass is conserved during any change a. Identify the distinguishing characteristics between a chemical and a physical change (DOK 1) b. Gather, analyze, and interpret data on physical and chemical changes (DOK 1-2) c. Gather, analyze, and interpret data that show mass is conserved in a given chemical or physical change (DOK 1-2) d. Identify evidence that suggests that matter is always conserved in physical and chemical changes (DOK 1) e. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate physical and chemical changes (DOK 1-2)				
	4. Recognize that waves such as electromagnetic, sound, seismic, and water have common characteristics and unique properties a. Compare and contrast different types of waves (DOK 1-2) b. Describe for various waves the amplitude, frequency, wavelength, and speed (DOK 1) c. Describe the relationship between pitch and frequency in sound (DOK 1) d. Develop and design a scientific investigation regarding absorption, reflection, and refraction of light (DOK 2-3)				

* Scientific Investigations and the Nature of Science (SI/NS).

Reporting Category	Colorado Academic Standards Summative Assessment Framework Science Grade 8	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
2	**Life Science**	30%	18	6	24
	1. Human activities can deliberately or inadvertently alter ecosystems and their resiliency a. Develop, communicate, and justify an evidence-based scientific example of how humans can alter ecosystems (DOK 1-3) b. Analyze and interpret data about human impact on local ecosystems (DOK 1-3) c. Recognize and infer bias in print and digital resources while researching an environmental issue (DOK 1-3) d. Use technology resources such as online encyclopedias, online databases, and credible websites to locate, organize, analyze, evaluate, and synthesize information about human impact on local ecosystems (DOK 1-2) e. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate an environmental issue (DOK 1-2)				
	2. Organisms reproduce and transmit genetic information (genes) to offspring, which influences individuals' traits in the next generation a. Develop, communicate, and justify an evidence-based scientific explanation for how genetic information is passed to the next generation (DOK 1-3) b. Use direct and indirect observations, evidence, and data to support claims about genetic reproduction and traits of individuals (DOK 1-3) c. Gather, analyze, and interpret data on transmitting genetic information (DOK 1-2) d. Use models and diagrams to predict the phenotype and genotype of offspring based on the genotype of the parents (DOK 1-2) e. Use computer simulations to model and predict phenotype and genotype of offspring based on the genotype of the parents (DOK 1-2)				

* Scientific Investigations and the Nature of Science (SI/NS).

Reporting Category	Colorado Academic Standards Summative Assessment Framework Science Grade 8	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
3	**Earth Systems Science**	34%	20	7	27
	1. Weather is a result of complex interactions of Earth's atmosphere, land and water, that are driven by energy from the sun, and can be predicted and described through complex models a. Differentiate between basic and severe weather conditions, and develop an appropriate action plan for personal safety and the safety of others (DOK 1-3) b. Observe and gather data for various weather conditions and compare to historical data for that date and location (DOK 1-2) c. Use models to develop and communicate a weather prediction (DOK 1-2)				
	2. Earth has a variety of climates defined by average temperature, precipitation, humidity, air pressure, and wind that have changed over time in a particular location a. Develop, communicate and justify an evidence-based scientific explanation to account for Earth's different climates (DOK 1-3) b. Research and evaluate direct and indirect evidence to explain how climates vary from one location to another on Earth (DOK 2-3) c. Examine, evaluate, and question information from a variety of sources and media to investigate how climates vary from one location to another on Earth (DOK 2-3)				
	3. The solar system is comprised of various objects that orbit the Sun and are classified based on their characteristics a. Construct a scale model of the solar system, and use it to explain the motion of objects in the system such as planets, Sun, Moons, asteroids, comets, and dwarf planets (DOK 2-3) b. Describe methods and equipment used to explore the solar system and beyond (DOK 1) c. Design an investigation that involves direct observation of objects in the sky, and analyze and explain results (DOK 2-3) d. Research, critique, and communicate scientific theories that explain how the solar system was formed (DOK 1-3) e. Use computer data sets and simulations to explore objects in the solar system (DOK 1-2) f. Recognize that mathematical models are used to predict orbital paths and events (DOK 1)				
	4. The relative positions and motions of Earth, Moon, and Sun can be used to explain observable effects such as seasons, eclipses, and Moon phases a. Develop, communicate, and justify an evidence-based explanation using relative positions of Earth, Moon, and Sun to explain the following natural phenomenon: 1. Tides 2. Eclipses of the Sun and Moon 3. Different shapes of the Moon as viewed from Earth (DOK 1-3) b. Analyze and interpret data to explain why we have seasons (DOK 1-2)				

* Scientific Investigations and the Nature of Science (SI/NS).

Reporting Category	Colorado Academic Standards Summative Assessment Framework Science Grade 8	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
	c. Use models to explain the relative motions of Earth, Moon, and Sun over time (DOK 1-2)				
4	**Scientific Investigations and the Nature of Science (SI/NS)**	25%	The 20 points for SI will be distributed among the 3 standards.		
	Asking testable questions, make a falsifiable hypothesis, design an inquiry based method of finding the answer				
SC09-GR.8-S.3-GLE.2-N.1	Ask testable questions and make a falsifiable hypothesis about earth's climate and use an inquiry based approach to find an answer. (DOK 1-3)				
	Share results of experiments with others and respectfully discuss results				
SC09-GR.8-S.1-GLE.2-N.1	Share experimental data, and respectfully discuss conflicting results. (DOK 2-3)				
SC09-GR.8-S.1-GLE.3-N.2	Share experimental data, and respectfully discuss conflicting results emulating the practice of scientists. (DOK 2-3)				
	Use and understand historical context to refine current understanding				
SC09-GR.8-S.1-GLE.1-N.1	Recognize that our current understanding of forces has developed over centuries of studies by many scientists, and that we will continue to refine our understanding of forces through continued scientific investigations and advances in data collection. (DOK 1)				
SC09-GR.8-S.2-GLE.2-N.2	Recognize that current understanding of genetics has developed over time and become more sophisticated as new technologies have lead to new evidence. (DOK 1)				
SC09-GR.8-S.3-GLE.1-N.2	Use the historical context and impact of early weather research and consider the potential implications for current weather studies on science and our society. (DOK 1-3)				
SC09-GR.8-S.3-GLE.3-N.2	Recognize that our current understanding of the solar system has developed over centuries of studies by many scientists, and that through continued scientific investigations and advances in data collection, we will continue to refine our understanding of the solar system. (DOK 1)				
	Critically evaluate scienctific models				
SC09-GR.8-S.1-GLE.4-N.1	Evaluate models used to explain and predict wave phenomena that cannot be directly measured. (DOK 2-3)				
SC09-GR.8-S.2-GLE.2-N.3	Critically evaluate models used to represent deoxyribonucleic acid (DNA) and genes; identify strengths and weaknesses of these models for representing complex natural phenomena. (DOK 2-3)				
	Critically evaluate scientific claims generated by the media and by peers				
SC09-GR.8-S.2-GLE.1-N.1	Critically evaluate scientific claims in popular media and peer generated explanations regarding interactions in ecosystems, and determine if the evidence presented is appropriate and sufficient to support the claims. (DOK 2-3)				
SC09-GR.8-S.3-GLE.4-N.2	Evaluate visual and print media for scientific evidence, bias, and conjecture related to the historical ideas about relative positions of the Earth, Moon and Sun. (DOK 1-3)				
	Evaluate the reproducibility of an experiment and critically examine experimental results				

* Scientific Investigations and the Nature of Science (SI/NS).

Reporting Category	Colorado Academic Standards Summative Assessment Framework Science Grade 8	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
SC09-GR.8-S.1-GLE.3-N.1	Evaluate the reproducibility of an experiment, and critically examine conflicts in experimental results. (DOK 2-3)				
SC09-GR.8-S.3-GLE.2-N.2	Describe various techniques that scientists use to study climate, and suggest ways that each technique can be used to better understand various climates and changes in climate. (DOK 1-2)				
	Recognize and describe the ethical traditions of science				
SC09-GR.8-S.1-GLE.2-N.2	Recognize and describe the ethical traditions of science: value peer review; truthful reporting of methods and outcomes; making work public; and sharing a lens of professional skepticism when reviewing the work of others. (DOK 1)				
	Understand that scientists work from the assumption that the universe is a single system in which the basic rules are the same everywhere				
SC09-GR.8-S.1-GLE.4-N.2	Understand that scientists work from the assumption that the universe is a single system in which the basic rules are the same everywhere. For example, the speed of light in a vacuum is constant across space and time. (DOK 1)				
SC09-GR.8-S.3-GLE.3-N.1	Understand that scientists work from the assumption that the universe is a single system in which the basic rules are the same everywhere - that planets follow the same rules about forces as other objects. (DOK 1)				
	Select and use appropriate tools				
SC09-GR.8-S.1-GLE.2-N.3	Use tools to gather, view, analyze, and report results for scientific investigations designed to answer questions about energy transformations. (DOK 1-2)				
SC09-GR.8-S.3-GLE.1-N.1	Evaluate of the accuracy of various tools used in forecasting weather. (DOK 2-3)				
SC09-GR.8-S.1-GLE.4-N.3	Select and use technology tools to gather, view, analyze, and report results for scientific investigations about the characteristics and properties of waves. (DOK 1-2)				
	Find, evaluate, and select appropriate information from a variety of media sources to answer scientific questions				
SC09-GR.8-S.1-GLE.1-N.2	Find, evaluate, and select appropriate information from reference books, journals, magazines, online references, and databases to answer scientific questions about motion and acceleration. (DOK 1-2)				
	Understand and explore the interrelationships of science				
SC09-GR.8-S.2-GLE.2-N.1	Understand the interconnected nature of math and science by utilizing math in the prediction of future generations. (DOK 2)				
SC09-GR.8-S.3-GLE.4-N.1	Explore the global consequences of the interrelationships among science, technology and human activity. (DOK 1-3)				
	TOTAL	100%	**60**	**20**	**80**

* Scientific Investigations and the Nature of Science (SI/NS).

Reporting Category	Colorado Acadamic Standards Summative Assessment Framework -FINAL Science High School	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
1	**Physical Science**	**33%**	20	6	26
	1. Newton's laws of motion and gravitation describe the relationships among forces acting on and between objects, their masses, and changes in their motion - but have limitations a. Gather, analyze and interpret data and create graphs regarding position, velocity and acceleration of moving objects (DOK 1-3) b. Develop, communicate and justify an evidence-based analysis of the forces acting on an object and the resultant acceleration produced by a net force (DOK 1-3) c. Develop, communicate and justify an evidence-based scientific prediction regarding the effects of the action-reaction force pairs on the motion of two interacting objects (DOK 1-3) d. Examine the effect of changing masses and distance when applying Newton's law of universal gravitation to a system of two bodies (DOK 1-2) e. Identify the limitations of Newton's laws in extreme situations (DOK 1)				
	2. Matter has definite structure that determines characteristic physical and chemical properties a. Develop, communicate, and justify an evidence-based scientific explanation supporting the current model of an atom (DOK 1-3) b. Gather, analyze and interpret data on chemical and physical properties of elements such as density, melting point, boiling point, and conductivity (DOK 1-2) c. Use characteristic physical and chemical properties to develop predictions and supporting claims about elements' positions on the periodic table (DOK 1-2) d. Develop a model that differentiates atoms and molecules, elements and compounds, and pure substances and mixtures (DOK 2-3)				
	3. Matter can change form through chemical or nuclear reactions abiding by the laws of conservation of mass and energy a. Recognize, analyze, interpret, and balance chemical equations (synthesis, decomposition, combustion, and replacement) or nuclear equations (fusion and fission) (DOK 1-2) b. Predict reactants and products for different types of chemical and nuclear reactions (DOK 1-2) c. Predict and calculate the amount of products produced in a chemical reaction based on the amount of reactants (DOK 1-2) d. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate the conservation of mass and energy (DOK 1-2)				

* Scientific Investigations and the Nature of Science (SI/NS)

Reporting Category	Colorado Acadamic Standards Summative Assessment Framework -FINAL Science High School	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
	4. Atoms bond in different ways to form molecules and compounds that have definite properties a. Develop, communicate, and justify an evidence-based scientific explanation supporting the current models of chemical bonding (DOK 1-3) b. Gather, analyze, and interpret data on chemical and physical properties of different compounds such as density, melting point, boiling point, pH, and conductivity (DOK 1-2) c. Use characteristic physical and chemical properties to develop predictions and supporting claims about compounds' classification as ionic, polar or covalent (DOK 1-2) d. Describe the role electrons play in atomic bonding (DOK 1) e. Predict the type of bonding that will occur among elements based on their position in the periodic table (DOK 1-2)				
	5. Energy exists in many forms such as mechanical, chemical, electrical, radiant, thermal, and nuclear, that can be quantified and experimentally determined a. Develop, communicate, and justify an evidence-based scientific explanation regarding the potential and kinetic nature of mechanical energy (DOK 1-3) b. Use appropriate measurements, equations and graphs to gather, analyze, and interpret data on the quantity of energy in a system or an object (DOK 1-3) c. Use direct and indirect evidence to develop predictions of the types of energy associated with objects (DOK 2-3) d. Identify different energy forms, and calculate their amounts by measuring their defining characteristics (DOK 1-2)				
	6. When energy changes form, it is neither created not destroyed; however, because some is necessarily lost as heat, the amount of energy available to do work decreases a. Use direct and indirect evidence to develop and support claims about the conservation of energy in a variety of systems, including transformations to heat (DOK 1-3) b. Evaluate the energy conversion efficiency of a variety of energy transformations (DOK 1-2) c. Describe energy transformations both quantitatively and qualitatively (DOK 1-2) d. Differentiate among the characteristics of mechanical and electromagnetic waves that determine their energy (DOK 2) e. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate energy conservation and loss (DOK 1-2)				

* Scientific Investigations and the Nature of Science (SI/NS)

Reporting Category	Colorado Acadamic Standards Summative Assessment Framework -FINAL Science High School	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
2	**Life Science**	**34%**	20	7	27
	1. Matter tends to be cycled within an ecosystem, while energy is transformed and eventually exits an ecosystem a. Analyze how energy flows through trophic levels (DOK 1-2) b. Evaluate the potential ecological impacts of a plant-based or meat-based diet (DOK 2) c. Analyze and interpret data from experiments on ecosystems where matter such as fertilizer has been added or withdrawn such as through drought (DOK 1-3) d. Develop, communicate, and justify an evidence-based scientific explanation showing how ecosystems follow the laws of conservation of matter and energy (DOK 1-3) e. Define and distinguish between matter and energy, and how they are cycled or lost through life processes (DOK 1-2) f. Describe how carbon, nitrogen, phosphorus, and water cycles work (DOK 1) g. Use computer simulations to analyze how energy flows through trophic levels (DOK 1-2)				
	2. The size and persistence of populations depend on their interactions with each other and on the abiotic factors in an ecosystem a. Analyze and interpret data about the impact of removing keystone species from an ecosystem or introducing non-native species into an ecosystem (DOK 1-3) b. Describe or evaluate communities in terms of primary and secondary succession as they progress over time (DOK 1-2) c. Evaluate data and assumptions regarding different scenarios for future human population growth and their projected consequences (DOK 1-3) d. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate ecosystem interactions (DOK 1-2)				
	3. Cellular metabolic activities are carried out by biomolecules produced by organisms a. Identify biomolecules and their precursors/building blocks (DOK 1) b. Develop, communicate, and justify an evidence-based explanation that biomolecules follow the same rules of chemistry as any other molecule (DOK 1-3) c. Develop, communicate, and justify an evidence-based explanation regarding the optimal conditions required for enzyme activity (DOK 1-3) d. Infer the consequences to organisms of suboptimal enzyme function – such as altered blood pH or high fever – using direct and indirect evidence (DOK 1-3) e. Analyze and interpret data on the body's utilization of carbohydrates, lipids, and proteins (DOK 1-2)				

* Scientific Investigations and the Nature of Science (SI/NS)

Reporting Category	Colorado Acadamic Standards Summative Assessment Framework -FINAL Science High School	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
	4. The energy for life primarily derives from the interrelated processes of photosynthesis and cellular respiration. Photosynthesis transforms the sun's light energy into the chemical energy of molecular bonds. Cellular respiration allows cells to utilize chemical energy when these bonds are broken a. Develop, communicate, and justify an evidence-based scientific explanation the optimal environment for photosynthetic activity (DOK 1-3) b. Discuss the interdependence of autotrophic and heterotrophic life forms such as depicting the flow of a carbon atom from the atmosphere, to a leaf, through the food chain, and back to the atmosphere (DOK 1-2) c. Explain how carbon compounds are gradually oxidized to provide energy in the form of adenosine triphosphate (ATP), which drives many chemical reactions in the cell (DOK 1-2)				
	5. Cells use the passive and active transport of substances across membranes to maintain relatively stable intracellular environments a. Analyze and interpret data to determine the energy requirements and/or rates of substance transport across cell membranes (DOK 1-2) b. Compare organisms that live in freshwater and marine environments, and identify the challenges of osmotic regulation for these organisms (DOK 2) c. Diagram the cell membrane schematically, and highlight receptor proteins as targets of hormones, neurotransmitters, or drugs that serve as active links between intra and extracellular environments (DOK 1) d. Use tools to gather, view, analyze, and interpret data produced during scientific investigations that involve passive and active transport (DOK 1-2) e. Use computer simulations and models to analyze cell transport mechanisms (DOK 1-2)				
	6. Cells, tissues, organs, and organ systems maintain relatively stable internal environments, even in the face of changing external environments a. Discuss how two or more body systems interact to promote health for the whole organism (DOK 1-2) b. Analyze and interpret data on homeostatic mechanisms using direct and indirect evidence to develop and support claims about the effectiveness of feedback loops to maintain homeostasis (DOK 1-2) c. Distinguish between causation and correlation in epidemiological data, such as examining scientifically valid evidence regarding disrupted homeostasis in particular diseases (DOK 2) d. Use computer simulations and models of homeostatic mechanisms (DOK 1-2)				

* Scientific Investigations and the Nature of Science (SI/NS)

Reporting Category	Colorado Acadamic Standards Summative Assessment Framework -FINAL Science High School	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
	7. Physical and behavioral characteristics of an organism are influenced to varying degrees by heritable genes, many of which encode instructions for the production of proteins a. Analyze and interpret data that genes are expressed portions of DNA (DOK 1-2) b. Analyze and interpret data on the processes of DNA replication, transcription, translation, and gene regulation, and show how these processes are the same in all organisms (DOK 1-2) c. Recognize that proteins carry out most cell activities and mediate the effect of genes on physical and behavioral traits in an organism (DOK 1) d. Evaluate data showing that offspring are not clones of their parents or siblings due to the meiotic processes of independent assortment of chromosomes, crossing over, and mutations (DOK 1-2) e. Explain using examples how genetic mutations can benefit, harm, or have neutral effects on an organism (DOK 1-2)				
	8. Multicellularity makes possible a division of labor at the cellular level through the expression of select genes, but not the entire genome a. Develop, communicate, and justify an evidence-based scientific explanation of how cells form specialized tissues due to the expression of some genes and not others (DOK 1-3) b. Analyze and interpret data that show most eukaryotic deoxyribonucleic acid (DNA) does not actively code for proteins within cells (DOK 1-2) c. Develop, communicate, and justify an evidence-based scientific explanation for how a whole organism can be cloned from a differentiated – or adult – cell (DOK 1-3) d. Analyze and interpret data on medical problems using direct and indirect evidence in developing and supporting claims that genetic mutations and cancer are brought about by exposure to environmental toxins, radiation, or smoking (DOK 1-3)				
	9. Evolution occurs as the heritable characteristics of populations change across generations and can lead populations to become better adapted to their environment a. Develop, communicate, and justify an evidence-based scientific explanation for how Earth's diverse life forms today evolved from common ancestors (DOK 1-3) b. Analyze and interpret multiple lines of evidence supporting the idea that all species are related by common ancestry such as molecular studies, comparative anatomy, biogeography, fossil record and embryology (DOK 2-3) c. Analyze and interpret data suggesting that over geologic time, discrete bursts of rapid genetic changes and gradual changes have resulted in speciation (DOK 1-3) d. Analyze and interpret data on how evolution can be driven by three key components of natural selection – heritability, genetic variation, and differential survival and reproduction (DOK 1-3) e. Generate a model – an evolutionary tree – showing how a group of organisms is most likely diverged from common ancestry (DOK 2-3)				

* Scientific Investigations and the Nature of Science (SI/NS)

Reporting Category	Colorado Acadamic Standards Summative Assessment Framework -FINAL Science High School	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
3	**Earth Systems Science**	**34%**	20	7	27
	1. The history of the universe, solar system and Earth can be inferred from evidence left from past events a. Develop, communicate, and justify an evidence-based scientific explanation addressing questions about Earth's history (DOK 1-3) b. Analyze and interpret data regarding Earth's history using direct and indirect evidence (DOK 1-2) c. Analyze and interpret data regarding the history of the universe using direct and indirect evidence (DOK 1-2) d. Seek, evaluate, and use a variety of specialized resources available from libraries, the Internet, and the community to find scientific information on Earth's history (DOK 1-2) e. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate the history of the universe, solar system and Earth (DOK 1-2)				
	2. As part of the solar system, Earth interacts with various extraterrestrial forces and energies such as gravity, solar phenomena, electromagnetic radiation, and impact events that influence the planet's geosphere, atmosphere, and biosphere in a variety of ways a. Develop, communicate, and justify an evidence-based scientific explanation addressing questions around the extraterrestrial forces and energies that influence Earth (DOK 1-3) b. Analyze and interpret data regarding extraterrestrial forces and energies (DOK 1-2) c. Clearly identify assumptions behind conclusions regarding extraterrestrial forces and energies and provide feedback on the validity of alternative explanations (DOK 2-3) d. Use specific equipment, technology, and resources such as satellite imagery, global positioning systems (GPS), global information systems (GIS), telescopes, video and image libraries, and computers to explore the universe (DOK 1-2)				
	3. The theory of plate tectonics helps to explain geological, physical, and geographical features of Earth a. Develop, communicate, and justify an evidence-based scientific explanation about the theory of plate tectonics and how it can be used to understand geological, physical, and geographical features of Earth (DOK 1-3) b. Analyze and interpret data on plate tectonics and the geological, physical, and geographical features of Earth (DOK 1-2) c. Understand the role plate tectonics has had with respect to long-term global changes in Earth's systems such as continental buildup, glaciations, sea-level fluctuations, and climate change (DOK 1-2) d. Investigate and explain how new conceptual interpretations of data and innovative geophysical technologies led to the current theory of plate tectonics (DOK 2-3)				

* Scientific Investigations and the Nature of Science (SI/NS)

Reporting Category	Colorado Acadamic Standards Summative Assessment Framework -FINAL Science High School	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
	4. Climate is the result of energy transfer among interactions of the atmosphere, hydrosphere, geosphere, and biosphere a. Develop, communicate, and justify an evidence-based scientific explanation that shows climate is a result of energy transfer among the atmosphere, hydrosphere, geosphere and biosphere (DOK 1-3) b. Analyze and interpret data on Earth's climate (DOK 1-2) c. Explain how a combination of factors such as Earth's tilt, seasons, geophysical location, proximity to oceans, landmass location, latitude, and elevation determine a location's climate (DOK 1-3) d. Identify mechanisms in the past and present that have changed Earth's climate (DOK 1) e. Analyze the evidence and assumptions regarding climate change (DOK 1-3) f. Interpret evidence from weather stations, buoys, satellites, radars, ice and ocean sediment cores, tree rings, cave deposits, native knowledge, and other sources in relation to climate change (DOK 1-3)				
	5. There are costs, benefits, and consequences of exploration, development, and consumption of renewable and nonrenewable resources a. Develop, communicate, and justify an evidence-based scientific explanation regarding the costs and benefits of exploration, development, and consumption of renewable and nonrenewable resources (DOK 1-3) b. Evaluate positive and negative impacts on the geosphere, atmosphere, hydrosphere, and biosphere in regards to resource use (DOK 2-3) c. Create a plan to reduce environmental impacts due to resource consumption (DOK 2-3) d. Analyze and interpret data about the effect of resource consumption and development on resource reserves to draw conclusions about sustainable use (DOK 1-3)				
	6. The interaction of Earth's surface with water, air, gravity, and biological activity causes physical and chemical changes a. Develop, communicate, and justify an evidence-based scientific explanation addressing questions regarding the interaction of Earth's surface with water, air, gravity, and biological activity (DOK 1-3) b. Analyze and interpret data, maps, and models concerning the direct and indirect evidence produced by physical and chemical changes that water, air, gravity, and biological activity create (DOK 1-3) c. Evaluate negative and positive consequences of physical and chemical changes on the geosphere (DOK 2-3) d. Use remote sensing and geographic information systems (GIS) data to interpret landforms and landform impact on human activity (DOK 1-2)				
	7. Natural hazards have local, national and global impacts such as volcanoes, earthquakes, tsunamis, hurricanes, and thunderstorms a. Develop, communicate, and justify an evidence-based scientific explanation regarding natural hazards, and explain their potential local and global impacts (DOK 1-3) b. Analyze and interpret data about natural hazards using direct and indirect evidence (DOK 1-2) c. Make predictions and draw conclusions about the impact of natural hazards on human activity – locally and globally (DOK 2-3)				

* Scientific Investigations and the Nature of Science (SI/NS)

Reporting Category	Colorado Acadamic Standards Summative Assessment Framework -FINAL Science High School	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
4	**Scientific Investigations and the Nature of Science (SI/NS)**	25%	The 20 points for SI/NS will be distributed among the 3 content standards.		
	Asking testable questions, make a falsifiable hypothesis, design an inquiry based method of finding the answer				
SC09-GR.HS-S.1-GLE.2-N.2	Ask testable questions about the nature of matter, and use an inquiry approach to investigate it. (DOK 1-3)				
SC09-GR.HS-S.1-GLE.6-N.2	Ask testable questions and make a falsifiable hypothesis about the conservation of energy, and use an inquiry approach to find an answer. (DOK 1-3)				
SC09-GR.HS-S.2-GLE.5-N.1	Ask testable questions and make a falsifiable hypothesis about how cells transport materials into and out of the cell and use an inquiry approach to find the answer. (DOK 1-3)				
SC09-GR.HS-S.3-GLE.3-N.2	Ask testable questions and make a falsifiable hypothesis about plate tectonics and design a method to find an answer. (DOK 2-3)				
SC09-GR.HS-S.3-GLE.6-N.1	Ask testable questions and make a falsifiable hypothesis about physical and chemical changes on the geosphere and use an inquiry based approach to find an answer. (DOK 1-3)				
	Use an inquiry approach to answer testable questions				
SC09-GR.HS-S.1-GLE.1-N.1	Use an inquiry approach to answer a testable question about an application of Newton's laws of motion. (DOK 1-3)				
SC09-GR.HS-S.1-GLE.3-N.3	Use an inquiry approach to test predictions about chemical reactions. (DOK 1-3)				
	Share results of experiments with others and respectfully discuss results				
SC09-GR.HS-S.1-GLE.1-N.2	Share experimental data, respectfully discuss conflicting results, and analyze ways to minimize error and uncertainty in measurement. (DOK 2-3)				
SC09-GR.HS-S.1-GLE.3-N.4	Share experimental data, and respectfully discuss conflicting results. (DOK 2-3)				
SC09-GR.HS-S.1-GLE.6-N.3	Share experimental data, and respectfully discuss conflicting results emulating the practice of scientists. (DOK 2-3)				
SC09-GR.HS-S.2-GLE.1-N.2	Share experimental data, and respectfully discuss conflicting results emulating the practice of scientists. (DOK 2-3)				
SC09-GR.HS-S.2-GLE.5-N.2	Share experimental data, and respectfully discuss conflicting results emulating the practice of scientists. (DOK 2-3)				
SC09-GR.HS-S.3-GLE.3-N.3	Share experimental data, and respectfully discuss conflicting results. (DOK 2-3)				
SC09-GR.HS-S.3-GLE.6-N.2	Share experimental data, and respectfully discuss conflicting results. (DOK 2-3)				
	Differentiate among the use of the terms "law," "theory," and "hypothesis"				
SC09-GR.HS-S.1-GLE.1-N.3	Differentiate between the use of the terms "law" and "theory" as they are defined and used in science compared to how they are used in other disciplines or common use. (DOK 1-2)				
SC09-GR.HS-S.2-GLE.9-N.2	Differentiate among the use of the terms "hypothesis," "theory," and "law" as they are defined and used in science compared to the usage of these terms in other disciplines or everyday use. (DOK 1-2)				
	Use technology to perform calculations, to gather, view, analyze, interpret and report data, and to communicate information				
SC09-GR.HS-S.1-GLE.1-N.4	Use technology to perform calculations and to organize, analyze and report data. (DOK 1-2)				
SC09-GR.HS-S.1-GLE.4-N.2	Employ data-collection technology to gather, view, analyze, and interpret data about chemical and physical properties of different compounds. (DOK 1-2)				
SC09-GR.HS-S.3-GLE.6-N.3	Use appropriate technology to help gather and analyze data, find background information, and communicate scientific information on physical and chemical changes. (DOK 1-2)				

* Scientific Investigations and the Nature of Science (SI/NS)

Reporting Category	Colorado Acadamic Standards Summative Assessment Framework -FINAL Science High School	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
	Use and understand historical context to refine current understanding				
SC09-GR.HS-S.1-GLE.2-N.1	Recognize that the current understanding of molecular structure related to the physical and chemical properties of matter has developed over time and become more sophisticated as new technologies have led to new evidence. (DOK 1)				
SC09-GR.HS-S.1-GLE.4-N.1	Recognize that the current understanding of molecular structure related to the physical and chemical properties of matter has developed over time and become more sophisticated as new technologies have led to new evidence. (DOK 1)				
SC09-GR.HS-S.1-GLE.5-N.2	Use the historical context and impact of early energy research and consider the potential implications for current energy studies on science and our society. (DOK 1-3)				
SC09-GR.HS-S.2-GLE.4-N.1	Recognize that the current understanding of photosynthesis and cellular respiration has developed over time and become more sophisticated as new technologies have lead to new evidence. (DOK 1)				
SC09-GR.HS-S.3-GLE.3-N.4	Recognize that the current understanding of plate tectonics has developed over time and become more sophisticated as new technologies have lead to new evidence. (DOK 1)				
	Critically evaluate scienctific models				
SC09-GR.HS-S.1-GLE.3-N.1	Critically evaluate chemical and nuclear change models. (DOK 2-3)				
SC09-GR.HS-S.1-GLE.3-N.2	Identify the strengths and weaknesses of a model which represents complex natural phenomenon. (DOK 2-3)				
SC09-GR.HS-S.2-GLE.4-N.2	Critically evaluate models for photosynthesis and cellular respiration, and identify their strengths and weaknesses. (DOK 2-3)				
SC09-GR.HS-S.3-GLE.2-N.2	Critically evaluate strengths and weaknesses of a model which represents complex natural phenomena. (DOK 2-3)				
SC09-GR.HS-S.3-GLE.4-N.1	Understand how observations, experiments, and theory are used to construct and refine computer models. (DOK 1)				
SC09-GR.HS-S.3-GLE.4-N.2	Examine how computer models are used in predicting the impacts of climate change. (DOK 1-2)				
	Critically evaluate scientific claims generated by the media and by peers				
SC09-GR.HS-S.1-GLE.5-N.1	Critically evaluate scientific claims made in popular media or by peers regarding the application of energy forms, and determine if the evidence presented is appropriate and sufficient to support the claims. (DOK 2-3)				
SC09-GR.HS-S.1-GLE.6-N.1	Critically evaluate scientific claims made in popular media or by peers regarding the application of energy transformations, and determine if the evidence presented is appropriate and sufficient to support the claims. (DOK 2-3)				
SC09-GR.HS-S.2-GLE.2-N.1	Critically evaluate scientific explanations in popular media to determine if the research methodology and evidence presented are appropriate and sufficient to support the claims. (DOK 2-3)				
SC09-GR.HS-S.2-GLE.3-N.1	Critically evaluate scientific explanations in popular media to determine if the research methodology and evidence presented are appropriate and sufficient to support the claims. (DOK 2-3)				
SC09-GR.HS-S.2-GLE.6-N.3	Differentiate between scientific evidence evaluated by the Food and Drug Administration (FDA) for drug approval and anecdotal evidence shared among individuals or in magazines/newspapers that a food or supplement is effective for a given problem. (DOK 2)				
SC09-GR.HS-S.3-GLE.1-N.2	Critically evaluate scientific claims in popular media and by peers regarding Earth's history, and determine if evidence presented is appropriate and sufficient to support the claims. (DOK 2-3)				
SC09-GR.HS-S.3-GLE.4-N.3	Critically evaluate scientific claims in popular media and by peers regarding climate and climate change, and determine if the evidence presented is appropriate and sufficient to support the claims. (DOK 2-3)				
SC09-GR.HS-S.3-GLE.5-N.1	Infer assumptions behind emotional, political, and data-driven conclusions about renewable and nonrenewable resource use. (DOK 2-3)				
SC09-GR.HS-S.3-GLE.5-N.2	Critically evaluate scientific claims in popular media and by peers, and determine if evidence presented is appropriate and sufficient to support the claims. (DOK 2-3)				

* Scientific Investigations and the Nature of Science (SI/NS)

Reporting Category	Colorado Acadamic Standards Summative Assessment Framework -FINAL Science High School	% of Score Points of Total Test	Points		
			For Concept/ Skill	For SI/NS*	Total
	Understand and critically evaluate scientific theory, experiments and experimental results; design scientfic experiments				
SC09-GR.HS-S.2-GLE.1-N.1	Address differences between experiments where variables can be controlled and those where extensive observations on a highly variable natural system are necessary to determine what is happening - such as dead zones in the Gulf of Mexico. (DOK 2)				
SC09-GR.HS-S.2-GLE.1-N.3	Design ecological experiments in a closed system. (DOK 2-3)				
SC09-GR.HS-S.2-GLE.9-N.1	Understand that all scientific knowledge is subject to new findings and that reproducible, corroborated, and converging lines of data yield a scientific theory. (DOK 1)				
SC09-GR.HS-S.3-GLE.1-N.1	Understand that all scientific knowledge is subject to new evidence and that the presence of reproducible results yields a scientific theory. (DOK 1)				
SC09-GR.HS-S.3-GLE.3-N.1	Understand that all scientific knowledge is subject to new findings and that the presence of reproducible results yields a scientific theory. (DOK 1)				
	Recognize, describe and analyze the ethical traditions of science				
SC09-GR.HS-S.2-GLE.5-N.3	Recognize and describe the ethical traditions of science: value peer review; truthful reporting of methods and outcomes; making work public; and sharing a lens of professional skepticism when reviewing the work of others. (DOK 1)				
SC09-GR.HS-S.2-GLE.7-N.1	Recognizing that research on genetically modified organisms is done in university laboratories and seed companies, discuss the implications of different types of funding and the ethical traditions of science: value peer review; truthful reporting of methods and outcomes; making work public; and sharing a lens of professional skepticism when reviewing the work of others. (DOK 1-2)				
SC09-GR.HS-S.2-GLE.8-N.2	Science is influenced by the cultural norms of a society. Discuss the ethical and political issues associated with stem cell research and how these have impacted both the research done and its applications. (DOK 1-3)				
	Understand that scientists work from the assumption that the universe is a single system in which the basic rules are the same everywhere				
SC09-GR.HS-S.2-GLE.7-N.2	Understand that scientists work from the assumption that the universe is a single system in which the basic rules are the same everywhere - that basic principles for genetics apply to all organisms. (DOK 1)				
SC09-GR.HS-S.3-GLE.2-N.1	Understand the physical laws that govern Earth are the same physical laws that govern the rest of the universe. (DOK 1)				
	Find, evaluate, and select appropriate information from a variety of media sources to answer scientific questions				
SC09-GR.HS-S.2-GLE.6-N.1	Research and present findings about the results of dietary deficiencies or excesses. (DOK 1-2)				
SC09-GR.HS-S.2-GLE.6-N.2	Research and present findings about how medical problems that impact life span have changed throughout history due to altered lifestyles and advances in medicine. (DOK 1-2)				
	TOTAL	**100%**	**60**	**20**	**80**

* Scientific Investigations and the Nature of Science (SI/NS)

Colorado Measure of Academic Success (CMAS)
Grade 4 Item Specifications

General Item Specifications: While some Evidence Outcomes (EOs) can be assessed with stand-alone items, many EOs will lend themselves better to the use of stimuli. Items should not assume prior content knowledge or experience, unless the concept is specifically listed in the EO; therefore, stimuli to accompany the items are especially important. See specific EOs for further instruction. Creative new ways to measure each EO are always welcome.

Art/Stimulus Specifications: Item submissions should include a variety of stimuli, although the use of stimuli should not be forced. Stimuli may include maps, charts, tables, graphs, graphic organizers, diagrams, images, and text boxes. Excerpts may be from primary or secondary sources. When possible, submit original images for photographs, political cartoons, and posters. Minimum resolution for images is 300 dpi. Maps should be submitted with *a minimum* of *2* reliable sources, unless it is a permissioned map.

Item-writing Specifics

Bias/Sensitivity Concerns: Items should avoid subjective, value-laden terms such as "positive" or "negative." All items should be written in a neutral, factual manner. Bias implied in the wording of a student expectation should not be reflected in items.

Answer Option Order: Order selected-response or multiple-select answer options from longest to shortest. One-word answer choices should be ordered alphabetically. Answer choices containing dates or numbers should be in chronological or numerical order. Answer choices with grid coordinates containing letters and numbers (e.g., A1, B3, C2, etc.) should be placed in alphabetical order. Answer choices containing latitudinal and longitudinal coordinates should be ordered clockwise.

Attribution lines: Align right (it is acceptable to be more than one line). For stimuli in SS items requiring an attribution line, follow the *Chicago Manual of Style*:

Book: author, name of work, year

Internet site: author, name of work, website, access date
Example:
Rodney Frey, "Jericho and Domestication," http://www.lib.uidaho.edu/digital/turning,
Accessed October 4, 2013

Translations: use the translated title and follow with the name of the translator:
The Travels of Marco Polo, translated by Ronald E. Latham, 1958

BC, AD Capital letters without periods: BC and AD. With dates, BC follows the date and AD precedes the date. (e.g., 150 BC; AD 975.)

Content words that should be capitalized:

- Cold War
- General Assembly (refers to CO state government)
- Northern Hemisphere
- Southern Hemisphere
- Earth
- Sun

- Moon

Emphasis words that should be bolded:

- best
- most
- most likely
- least
- not
- except
- the number of responses required, when specified, for CRs and TEIs (*e.g.*, List **two** events…)

Excerpts: Excerpts should use language that is appropriate for Fourth Grade students. It is acceptable for excerpts to be a single sentence.

American Indian The specific name, e.g., Navajo, Cherokee, Iroquois, etc., is preferred. Use *American Indian* rather than *Native American*. Do not hyphenate when used as an adjective.

Negative stems: Whenever possible, avoid writing items with negative stems (*e.g.*, least, not, except). Bold negative words, if used, for clarity.

Referring students to art or information: Avoid referring students to art or information in the stem or direction lines by using "above," "below," or "the following." Instead, direct the students to study or read the information.

Sources, Documentation, and Permissions: Please refer to the **CO SS and Science Item Writer Guide** and the **CMAS source list** for reliable sources of documentation and stimuli. To facilitate Permissions please provide the following:

- **Online Stimuli:** Please provide the website homepage, URL to the exact stimulus, and a pdf of the web page.
- **Printed Books:** Please scan or copy the following information:
  - Front Cover: Title, Author Name, Publisher
  - Inside Cover: Title, Author, Publisher, ISBN Number, Copyright dates
  - Interior Pages: Exact page the excerpt or image is located
  - For excerpts, please also submit the page before and after the page the excerpt is located (for context).
- **Printed Magazines, Newspapers, Journals, or Other Periodicals:** Please scan or copy the acknowledgements, credit page(s), and masthead (column listing staff members and addresses), in addition to the relevant excerpt/image pages (see Printed Books).

Colorado Measure of Academic Success (CMAS)
Grade 4 Item Specifications

Reporting Category	Standard (GLE or EO)	EO Breakouts	Item Specification
History 1	**1. Organize and sequence events to understand the concepts of chronology and cause and effect in the history of Colorado**		
	a. Construct a timeline of events showing the relationship of events in Colorado history with events in United States and world history (DOK 1-2)	• Construct a timeline of events showing the relationship of events in Colorado history with events in United States **and** world history • Construct a timeline of events showing the relationship of events in Colorado history with events in United States history • Construct a timeline of events showing the relationship of events in Colorado history with events in world history	When creating TEIs assessing this EO, we need to make sure we try to use item types that have TTS readable text (and not text in images as many older timeline items are).
	b. Analyze primary source historical accounts related to Colorado history to understand cause-and-effect relationships (DOC 2-3)	No break out for this EO	Items should require students to analyze a primary source to understand a cause or an effect.
	c. Explain the cause-and-effect relationships in the interactions among people and cultures that have lived in or migrated to Colorado (DOK 1-2)	• Explain the cause-and-effect relationships in the interactions among people **and** cultures that have lived in to Colorado • Explain the cause-and-effect relationships in the interactions among people **and** cultures that have migrated to Colorado • Explain the cause-and-effect relationships in the interactions among people that have lived in Colorado • Explain the cause-and-effect relationships in the interactions among cultures that have lived in Colorado • Explain the cause-and-effect relationships in the interactions	

		among people that have migrated to Colorado • Explain the cause-and-effect relationships in the interactions among cultures that have migrated to Colorado	
	d. Identify and describe how major political and cultural groups have affected the development of the region (DOK 1-2)	• Identify **and** describe how major political **and** cultural groups have affected the development of the region • Identify how major political **and** cultural groups have affected the development of the region • Identify how major political groups have affected the development of the region • Identify how major cultural groups have affected the development of the region • Describe how major political **and** cultural groups have affected the development of the region • Describe how major political groups have affected the development of the region • Describe how major cultural groups have affected the development of the region	
	2. The historical eras, individuals, groups, ideas and themes in Colorado history and their relationships to key events in the United States		
	a. Analyze various eras in Colorado history and the relationship between these eras and eras in United States history, and the changes in Colorado over time (DOK 1-3)	• Analyze various eras in Colorado history **and** the relationship between these eras **and** eras in United States history • Analyze various eras in Colorado history • Analyze various eras in Colorado history **and** the changes in Colorado	Items should not require students to have knowledge of the eras in United States History. It can be assumed students have knowledge of Colorado History.

		over time • Analyze the changes in Colorado over time • Analyze one era in Colorado history and its relationship to one or more eras in United States History	
	b. Describe interactions among people and cultures that have lived in Colorado (DOK 1-2)	• Describe interactions among people **and** cultures that have lived in Colorado • Describe interactions among people that have lived in Colorado • Describe interactions among cultures that have lived in Colorado	
	c. Describe the development of the political structure in Colorado history. Topics to include but not limited to an understanding of the Colorado Constitution and the relationship between state and national government (DOK 1-2)	No break out for this EO.	Items can assume students have content knowledge of the suggested topics listed in the EO "including" statement: • An understanding of the Colorado Constitution • The **relationship** between state **and** national government Refer to the general note about excerpts on page 2. Items should not require students to read excerpts of the CO Constitution
	d. Describe the impact of various technological developments. Topics to include but not limited to the state of Colorado, including changes in mining technology; changes in transportation; early 20th century industrial changes; and mid- to late 20th century nuclear and computer technological changes (DOK 1-2)	No break out for this EO.	Items can assume content knowledge of the suggested topics listed in the EO "including" statement: • the state of Colorado, including changes in mining technology; changes in transportation; early 20th century industrial changes; and mid- to late 20th century nuclear and computer technological changes • changes in mining technology; • changes in transportation; • early 20th century industrial changes; • mid- to late 20th century nuclear changes

			• mid- to late 20th computer technological changes Suggested topics: • The work of Professor Temple Grandin (Colorado State University)

Colorado Measure of Academic Success (CMAS)
Grade 4 Item Specifications

Reporting Category	Standard (GLE or EO)	EO Breakouts	Item Specification
Geography 2	**1. Use several types of geographic tools to answer questions about the geography of Colorado**		
	a. Answer questions about Colorado regions using maps and other geographic tools (DOK 1-2)	• Answer questions about Colorado regions using maps **and** other geographic tools • Answer questions about Colorado regions using maps • Answer questions about Colorado regions using geographic tools (other than maps)	Items should focus on the general types of regions and the characteristics and features that define them. For example, items may compare the characteristics or features of agricultural and metropolitan regions. Items should not ask about specific activities that occur within regions, for example farming.
	b. Use geographic grids to locate places on maps and images to answer questions (DOK 1-2)	• Use geographic grids to locate places on maps • Use images to answer questions	
	c. Create and investigate geographic questions about Colorado in relation to other places (DOK 1-3)	• Create **and** investigate geographic questions about Colorado in relation to other places • Create geographic questions about Colorado in relation to other places • Investigate geographic questions about Colorado in relation to other places	Items may be scenario-based with real life situations that a Fourth Grader would understand, for example, "What type of question would a geographer ask?"
	d. Illustrate, using geographic tools, how places in Colorado have changed and developed over time due to human activity (DOK 1-3)	• Illustrate, using geographic tools, how places in Colorado have changed **and** developed over time due to human activity • Illustrate, using geographic tools, how places in Colorado have changed over time due to human activity • Illustrate, using geographic tools, how places in Colorado have developed over time due to human activity	Items **must** address the role of human activity in the changes and development of places in CO over time. Please submit mostly CR items for this EO. Refer to Item Writing Assignment for clarification.

	e. Describe similarities and differences between the physical geography of Colorado and its neighboring states (DOK 1-2)	• Describe similarities **and** differences between the physical geography of Colorado and its neighboring states • Describe similarities between the physical geography of Colorado and its neighboring states • Describe differences between the physical geography of Colorado and its neighboring states	
	2. Connections within and across human and physical systems are developed		
	a. Describe how the physical environment provides opportunities for and places constraints on human activities (DOK 1-2)	• Describe how the physical environment provides opportunities for **and** places constraints on human activities • Describe how the physical environment provides opportunities for human activities • Describe how the physical environment places constraints on human activities	
	b. Explain how physical environments influenced and limited immigration into the state (DOK 1-2)	• Explain how physical environments influenced **and** limited immigration into the state • Explain how physical environments influenced immigration into the state • Explain how physical environments limited immigration into the state	

	c. Analyze how people use geographic factors in creating settlements and have adapted to and modified the local physical environment (DOK 1-3)	• Analyze how people use geographic factors in creating settlements **and** have adapted to **and** modified the local physical environment • Analyze how people use geographic factors in creating settlements • Analyze how people have adapted to **and** modified the local physical environment • Analyze how people have adapted to the local physical environment • Analyze how people have modified the local physical environment	
	d. Describe how places in Colorado are connected by movement of goods and services and technology (DOK 1-2	• Describe how places in Colorado are connected by movement of goods **and** services **and** technology • Describe how places in Colorado are connected by movement of goods **and** services • Describe how places in Colorado are connected by technology	

Colorado Measure of Academic Success (CMAS)
Grade 4 Item Specifications

Reporting Category	Standard (GLE or EO)	EO Breakouts	Item Specification
Economics (PFL) 3	**1. People respond to positive and negative incentives**		**For all EOs, items can relate to the experiences of a Fourth Grader.**
	a. Define positive and negative economic incentives (DOK 1)	• Define positive **and** negative economic incentives • Define positive economic incentives • Define negative economic incentives	
	b. Give examples of the kinds of goods and services produced in Colorado in different historical periods and their connection to economic incentives (DOK 1-3)	• Give examples of the kinds of goods **and** services produced in Colorado in different historical periods **and** their connection to economic incentives • Give examples of the kinds of goods and services produced in Colorado in one historical period and its connection to economic incentives • Give examples of one kind of good or service produced in Colorado in different historical periods and its connection to economic incentives.	Items must be linked to economic incentives. Items should reflect goods and services produced by types of industries, for example, mining, livestock.
	c. Explain how the productive resources – natural, human, and capital – of Colorado have influenced the types of goods produced and services provided (DOK 1-2)	• Explain how the productive resources – natural, human, **and** capital – of Colorado have influenced the types of goods produced **and** services provided • Explain how the productive resources – natural – of Colorado have influenced the types of goods produced **and** services provided • Explain how the productive resources – human – of Colorado have influenced the types of goods produced **and** services provided • Explain how the productive resources –capital – of Colorado have influenced the types of goods produced **and** services provided	
	2. The relationship between choice and opportunity cost (PFL)		**For all EOs, please make sure that items contain content that is Fourth Grade appropriate.**

	a. Define choice and opportunity cost (DOK 1)	• Define choice **and** opportunity cost • Define choice • Define opportunity cost	
	b. Analyze different choices and their opportunity costs (DOK 2-3)	No break out for this EO.	
	c. Give examples of the opportunity costs for individual decisions (DOK 1-2)	No break out for this EO.	
	d. Identify risks that individuals face (PFL) (DOK 1-2)	No break out for this EO.	
	e. Analyze methods of limiting financial risk (PFL) (DOK 2-3)	No break out for this EO.	

Colorado Measure of Academic Success (CMAS)
Grade 4 Item Specifications

Reporting Category	Standard (GLE or EO)	EO Breakouts	Item Specification
Civics 4	**1. Analyze and debate multiple perspectives on an issue**		**For all EOs, avoid topics and conclusions that are sensitive or biased toward one perspective/group over another.** **Controversial topics not appropriate as a correct answer, for example, mass transit. Instead, write items giving choices in the types of mass transit proposed.**
	a. Give examples of issues faced by the state and develop possible solutions (DOK 1-3)	• Give examples of issues faced by the state **and** develop possible solutions • Give examples of issues faced by the state • Develop possible solutions (to issues faced by the state)	
	b. Provide supportive arguments for both sides of a current public policy debate (DOK 1-3)	No break out for this EO.	Both sides of the debate must be present in the item.
	c. Discuss how various individuals and groups influence the way an issue affecting the state is viewed and resolved (DOK 1-3)	• Discuss how various individuals **and** groups influence the way an issue affecting the state is viewed • Discuss how various individuals **and** groups influence the way an issue affecting the state is resolved • Discuss how various individuals influence the way an issue affecting the state is viewed **and** resolved • Discuss how various individuals influence the way an issue affecting the state is viewed • Discuss how various individuals influence the way an issue affecting the state is resolved • Discuss how various groups influence the way an issue affecting the state is viewed **and** resolved • Discuss how various groups influence the way an issue affecting the state is viewed	

		• Discuss how various groups influence the way an issue affecting the state is resolved	
	2. The origins, structure, and functions of the Colorado government		
	a. Explain the origins, structure, and functions of the three branches of the state government and the relationships among them (DOK 1-2)	• Explain the origins of the three branches of the state government • Explain the structure of the three branches of the state government • Explain the functions of the three branches of the state government • Explain the three branches of the state government **and** the relationships among them • Explain the relationships among the three branches of government • Explain the relationship among two of the branches of government • Explain the origin of one of the three branches of government • Explain the structure of one of the three branches of government • Explain the functions of one of the three branches of government	Items may focus on a single branch of government.
	b. Identify and explain a variety of roles leaders, citizens, and others play in state government (DOK 1-2)	• Identify **and** explain a variety of roles leaders, citizens, **and** others play in state government • Identify a variety of roles leaders play in state government • Explain a variety of roles leaders play in state government • Identify a variety of roles citizens play in state government • Explain a variety of roles citizens play in state government • Identify a variety of roles others (not leaders or citizens) play in state government • Explain a variety of roles others (not	

		leaders or citizens) play in state government	
	c. Identify and explain the services state government provides and how those services are funded (DOK 1-2)	• Identify **and** explain the services state government provides **and** how those services are funded • Identify the services state government provides **and** how those services are funded • Explain the services state government provides **and** how those services are funded • Identify the services state government provides • Explain the services state government provides • Identify how those(government) services are funded • Explain how those(government) services are funded	
	d. Explain the historical foundation and the events that led to the formation of the Colorado government (DOK 1-2)	• Explain the historical foundation **and** the events that led to the formation of the Colorado government • Explain the historical foundation that led to the formation of the Colorado government • Explain the events that led to the formation of the Colorado government	Stimuli should be appropriate for Fourth Graders.
	e. Describe how the decisions of the state government affect local government and interact with federal law (DOK 1-3)	• Describe how the decisions of the state government affect local government **and** interact with federal law • Describe how the decisions of the state government affect local government • Describe how the decisions of the state government interact with federal law	Stimuli should be appropriate for Fourth Graders. Items should avoid sensitive political issues.

Colorado Measure of Academic Success (CMAS)
Grade 5 Science Item Specifications

General Item Specifications: Most student expectations can be assessed by either a stand-alone item or a stimulus-based item, although some student expectations will lend themselves to maps, graphs, tables, textboxes, excerpts, graphic organizers, photographs, diagrams, etc. Items should not assume prior content knowledge or experiences, unless the concept is specifically listed in the Evidence Outcome (EO). See specific evidence outcomes (EOs) for further instruction. Creative new ways to measure each student expectation are always welcome.

Answer option order: Order selected response or multiple select item answer options from longest to shortest. One-word answer choices should be ordered alphabetically. Answer choices containing dates or numbers should be in chronological or numerical order.

Art/Stimulus Specifications: Use of stimuli should not be forced. Stimuli may include maps, charts, tables, graphs, graphic organizers, images, or textboxes with excerpts from primary sources. Item submissions should include a variety of stimuli, not a concentration of a single type of stimuli, for example graphic organizers. Whenever possible, submit images (for example, photographs) with a minimum resolution of 300 dpi.

Bias/Sensitivity Concerns: Items should avoid subjective, value-laden terms such as "positive" or "negative." All items should be written in a neutral, factual manner. Bias implied in the wording of a student expectation should not be reflected in items.

Topics to avoid (list is non-exhaustive): fracking, climate change, evolution (consult with Pearson content staff if you have questions)

BC, AD: Capital letters without periods: BC and AD. With dates, BC follows the date and AD precedes the date (e.g., 150 BC; AD 975).

AM/PM: Use lowercase and periods (e.g., a.m. and p.m.).

Content words that should be capitalized:

- Northern Hemisphere
- Southern Hemisphere
- Earth
- Sun

Emphasis words: Bold emphasis words used in stems. Emphasis words include:

- best
- least
- most
- not
- except
- most likely
- The number of responses required in certain types of items (e.g., List two events…)

Negative stems: Avoid writing items with negative stems whenever possible (e.g., least, not, except).

Referring students to art or information: Avoid referring students to art or information in the stem or direction lines using "above," "below," or "the following."

State Names: Spell out state names following a city name (e.g., Denver, Colorado; Miami, Florida). Use the state abbreviations after a city name when in a list, table, artwork, mailing address, or bibliography (e.g., Denver, CO; Miami, FL). Use the two-letter postal code when abbreviating state names.

United States: Spell out United States when used as a noun. Use the adjectival form U.S. when describing a feature of the United States (e.g., U.S. government; U.S. Congress).

Data: Data presented may or may not reflect actual experiments that have been previously performed and published.

- Documentation must be provided for actual experiments.
- Documentation must be provided for any published data used to create tables, charts, or graphs.
- Any other data must be "realistic."

Colorado Measure of Academic Success (CMAS)
Grade 5 Science Item Specifications

Standard	Student Expectations: Prepared Graduate Competency (PGC), Grade Level Expectation(GLE) Evidence Outcome(EO)	EO Breakouts	Item Specifications
Physical Science	**PGC: Apply an understanding of atomic and molecular structure to explain the properties of matter, and predict outcomes of chemical and nuclear reactions**		
	1. Mixtures of matter can be separated regardless of how they were created; all weight and mass of the mixture are the same as the sum of the weight and mass of its parts		
	a. Develop, communicate, and justify a procedure to separate simple mixtures based on physical properties (DOK 1-3)	• Develop and communicate a procedure to separate simple mixtures based on physical properties • Justify a procedure to separate simple mixtures based on physical properties	CR2, CR3, SR, or TE items; DOK 1-3
	b. Share evidence-based conclusions and an understanding of the impact on the weight/mass of a liquid or gas mixture before and after it is separated into parts (DOK 1-3)	• Share evidence-based conclusions of the impact on the weight/mass of a liquid mixture before and after it is separated into parts • Share evidence-based conclusions of the impact on the weight/mass of a gas mixture before and after it is separated into parts • Share an understanding of the impact on the weight/mass of a liquid mixture before and after it is separated into parts • Share an understanding of the impact on the weight/mass of a gas mixture before and after it is separated into parts • Any combination of the above	CR2, CR3, SR, or TE items; DOK 1-3.
Life Science	**PGC: Analyze how various organisms grow, develop, and differentiate during their lifetimes based on an interplay between genetics and their environment**		
	1. All organisms have structure and systems with separate functions		
	a. Develop and communicate an evidence-based scientific explanation of the role of different organs or structures that are important for an organism's survival – in both plants and animals (DOK 1-3)	• Develop and communicate an evidence-based scientific explanation of the role of different organs that are important for an organism's survival in plants • Develop and communicate an evidence-based scientific explanation of the role of different organs that are important for an organism's survival in animals • Develop and communicate an evidence-based scientific explanation of the role of different structures that are important for an organism's survival in plants • Develop and communicate an evidence-based scientific explanation of the role of different structures that are important for an organism's survival in animals • Any combination of the above	CR2, CR3, SR, or TE items; DOK 1-3

	b. Analyze and interpret data to generate evidence that all organisms have structures that are required for survival in both plant and animals (DOK 1-2)	• Analyze data to generate evidence that all organisms have structures that are required for survival in plants • Analyze data to generate evidence that all organisms have structures that are required for survival in animals • Interpret data to generate evidence that all organisms have structures that are required for survival in plants • Interpret data to generate evidence that all organisms have structures that are required for survival in animals • Any combination of the above	CR2, CR3, SR, or TE items; DOK 1-2
	c. Create and evaluate models of plant and/or animal systems or parts (DOK 2-3)	• Create models of plant systems • Create models of animal systems • Create models of plant parts • Create models of animal parts • Evaluate models of plant systems • Evaluate models of animal systems • Evaluate models of plant parts • Evaluate models of animal plants • Any combination of the above	CR2, CR3, SR, or TE items; DOK 2-3
	PGC: Analyze the relationship between structure and function in living systems at a variety of organizational levels, and recognize living systems' dependence on natural selection		
	2. Human body systems have basic structures, functions, and needs		
	a. Develop and communicate an evidence-based scientific explanation regarding how humans address basic survival needs (DOK 1-3)	• No breakout for this EO	CR2, CR3, SR, or TE items; DOK 1-3
	b. Analyze and interpret data to generate evidence that human systems are interdependent (DOK 1-2)	• Analyze data to generate evidence that human systems are interdependent • Interpret data to generate evidence that human systems are interdependent	CR2, CR3, SR, or TE items; DOK 1-2
	c. Assess further scientific explanations regarding basic human body system functions (DOK 1-3)	• No break out for this EO	CR2, CR3, SR, or TE items; DOK 1-3
	d. Create and evaluate models of human body systems and organs (DOK 2-3)	• Create models of human body systems • Create models of human organs • Evaluate models of human body systems • Evaluate models of human organs • Any combination of the above	CR2, CR3, SR, or TE items; DOK 2-3

	e. Compare and contrast a human system to that of another organism, and provide hypotheses about why the similarities and differences exist (DOK 2-3)	• Compare a human system to that of another organism • Contrast a human system to that of another organism • Provide hypotheses about why similarities exist between a human system and that of another organism • Provide hypotheses about why differences exist between a human system and that of another organism • Any combination of the above	CR2, CR3, SR, or TE items; DOK 2-3
Earth Systems Science	**PGC: Describe how humans are dependent on the diversity of resources provided by Earth and Sun**		
	1. Earth and Sun provide a diversity of renewable and nonrenewable resources		
	a. Develop and communicate a scientific explanation addressing a question of local relevance about resources generated by the sun or Earth (DOK 1-3)	• Develop and communicate a scientific explanation addressing a question of local relevance about resources generated by the sun • Develop and communicate a scientific explanation addressing a question of local relevance about resources generated by Earth	CR2, CR3, SR, or TE items; DOK 1-3
	b. Analyze and interpret a variety of data to understand the origin, utilization, and concerns associated with natural resources (DOK 1-3)	• Analyze a variety of data to understand the origin of natural resources • Analyze a variety of data to understand the utilization of natural resources • Analyze a variety of data to understand concerns associated with natural resources • Interpret a variety of data to understand the origin of natural resources • Interpret a variety of data to understand the utilization of natural resources • Interpret a variety of data to understand concerns associated with natural resources • Any combination of the above	CR2, CR3, SR, or TE items; DOK 1-3 Note: One set of data is allowable in a single item. Not all items should use the same types of data though, so the test bank and form shows a variety of data.
	PGC: Evaluate evidence that Earth's geosphere, atmosphere, hydrosphere, and biosphere interact as a complex system		
	2. Earth's surface changes constantly through a variety of processes and forces		

	a. Analyze and interpret data identifying ways Earth's surface is constantly changing through a variety of processes and forces such as plate tectonics, erosion, deposition, solar influences, climate, and human activity (DOK 1-2)	• Analyze data identifying ways Earth's surface is constantly changing through a variety of processes and forces such as plate tectonics • Analyze data identifying ways Earth's surface is constantly changing through a variety of processes and forces such as erosion • Analyze data identifying ways Earth's surface is constantly changing through a variety of processes and forces such as deposition • Analyze data identifying ways Earth's surface is constantly changing through a variety of processes and forces such as solar influences • Analyze data identifying ways Earth's surface is constantly changing through a variety of processes and forces such as climate • Analyze data identifying ways Earth's surface is constantly changing through a variety of processes and forces such as human activity • Interpret data identifying ways Earth's surface is constantly changing through a variety of processes and forces such as plate tectonics • Interpret data identifying ways Earth's surface is constantly changing through a variety of processes and forces such as erosion • Interpret data identifying ways Earth's surface is constantly changing through a variety of processes and forces such as deposition • Interpret data identifying ways Earth's surface is constantly changing through a variety of processes and forces such as solar influences • Interpret data identifying ways Earth's surface is constantly changing through a variety of processes and forces such as climate • Interpret data identifying ways Earth's surface is constantly changing through a variety of processes and forces such as human activity • Any combination of the above	CR2, CR3, SR, or TE items; DOK 1-2 Note: Items can assume content knowledge of the topics listed in the EO. (ex: plate tectonics, erosion, deposition, solar influences, climate, and human activity) Other processes and forces can be assessed if background knowledge is provided/defined in the item stem (ex: glaciation as a form of erosion)
	b. Develop and communicate an evidence-based scientific explanation around one or more factors that change Earth's surface (DOK 2-3)	• No breakout for this EO	CR2, CR3, SR, or TE items; DOK 2-3 Note: Content knowledge expectations are bounded by EO 3.2.a.
	PGC: Evaluate evidence that Earth's geosphere, atmosphere, hydrosphere, and biosphere interact as a complex system		
	3. Weather conditions change because of the uneven heating of Earth's surface by the Sun's energy. Weather changes are measured by differences in temperature, air pressure, wind and water in the atmosphere and type of precipitation		
	a. Develop and communicate an evidence-based scientific explanation for changes in weather conditions (DOK 1-3)	• No breakout for this EO.	CR2, CR3, SR, or TE items; DOK 1-3

	b. Gather, analyze, and interpret data such as temperature, air pressure, wind, and humidity in relation to daily weather conditions (DOK 1-3)	• Gather data such as temperature in relation to daily weather conditions • Gather data such as air pressure in relation to daily weather conditions • Gather data such as wind in relation to daily weather conditions • Gather data such as humidity in relation to daily weather conditions • Analyze data such as temperature in relation to daily weather conditions • Analyze data such as air pressure in relation to daily weather conditions • Analyze data such as wind in relation to daily weather conditions • Analyze data such as humidity in relation to daily weather conditions • Interpret data such as temperature in relation to daily weather conditions • Interpret data such as air pressure in relation to daily weather conditions • Interpret data such as wind in relation to daily weather conditions • Interpret data such as humidity in relation to daily weather conditions • Any combination of the above	CR2, CR3, SR, or TE items; DOK 1-3 Note: Items can assume content knowledge of the topics listed in the EO. (ex: temperature, air pressure, wind, and humidity in relation to daily weather conditions) Other processes and forces can be assessed if background knowledge is provided/defined in the item stem (ex: wind chill factor, UV Index)
	c. Describe weather conditions based on data collected using a variety of weather tools (DOK 1-2)	No break out for this EO	CR2, CR3, SR, or TE items; DOK 1-2 Note: Content knowledge expectations are bounded by EO 3.3.b.

	d. Use data collection tools and measuring devices to gather, organize, and analyze data such as temperature, air pressure, wind, and humidity in relation to daily weather conditions (DOK 1-2)	• Use data collection tools to gather data such as temperature in relation to daily weather conditions • Use data collection tools to gather data such as air pressure in relation to daily weather conditions • Use data collection tools to gather data such as wind in relation to daily weather conditions • Use data collection tools to gather data such as humidity in relation to daily weather conditions • Use data collection tools to organize data such as temperature in relation to daily weather conditions • Use data collection tools to organize data such as air pressure in relation to daily weather conditions • Use data collection tools to organize data such as wind in relation to daily weather conditions • Use data collection tools to organize data such as humidity in relation to daily weather conditions • Use data collection tools to analyze data such as temperature in relation to daily weather conditions • Use data collection tools to analyze data such as air pressure in relation to daily weather conditions • Use data collection tools to analyze data such as wind in relation to daily weather conditions • Use data collection tools to analyze data such as humidity in relation to daily weather conditions • Use measuring devices to gather data such as temperature in relation to daily weather conditions • Use measuring devices to gather data such as air pressure in relation to daily weather conditions • Use measuring devices to gather data such as wind in relation to daily weather conditions • Use measuring devices to gather data such as humidity in relation to daily weather conditions • Use measuring devices to organize data such as temperature in relation to daily weather conditions • Use measuring devices to organize data such as air pressure in relation to daily weather conditions • Use measuring devices to organize data such as wind in relation to daily weather conditions • Use measuring devices to organize data such as humidity in relation to daily weather conditions • Use measuring devices to analyze data such as temperature in relation to daily weather conditions • Use measuring devices to analyze data such as air pressure in relation to daily weather conditions • Use measuring devices to analyze data such as wind in relation to daily weather conditions • Use measuring devices to analyze data such as humidity in relation to daily weather conditions • Any combination of the above	CR2, CR3, SR, or TE items; DOK 1-2 Note: Items can assume content knowledge of the topics listed in the EO. (ex: temperature, air pressure, wind, and humidity in relation to daily weather conditions) Other processes and forces can be assessed if background knowledge is provided/defined in the item stem (ex: wind chill factor, UV Index)

CMAS Science and Social Studies Item Writer Checklist

PE and SIM, stem, and answer choices	
	language is clear and concise
	written to the appropriate grade level (both content and context)
	includes accurate content information
	is grammatically correct (e.g., answer choices are similarly constructed)
	no spelling errors
	stem contains only information that is necessary to answer the item
Key, Distractors, Scoring Guidelines	
	key(s) is correct
	the distractors are plausible yet incorrect (for SR and TE items)
	answer choices are parallel and do not include outliers (for SR and TE items)
	the answer can be found using the PE sources/simulations information (if applicable); the distractors are incorrect but are included in the text
	scoring guidelines/rubric includes an exemplar response and complete responses for all score points (except for 0)
	scoring guidelines/rubric is written in grade-appropriate language
Artwork (graphics, pictures -- not photographs, tables, maps)	
	is uncluttered
	is needed to answer the item(s)
	is relevant to the item/PE/SIM
	is accessible to all students
Overall item	
	is clearly and closely aligned to a single EO
	measures the appropriate DOK specified by the EO
	all relevant metadata is complete and correct (key, EO, DOK)
	approach is testing a relevant point
	is clearly and closely aligned to a NS (if applicable)
	is free from potential bias and sensitivity issues

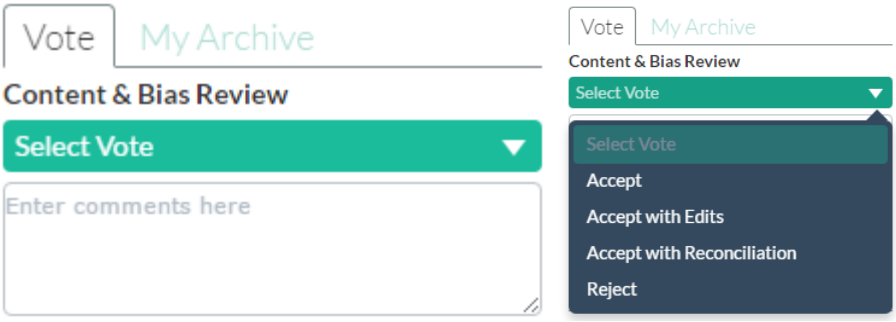
APPENDIX B: CONTENT AND BIAS REVIEW CHECKLIST

Content and Bias Item Review Checklist

1. First, review the item using the checklist below.

   The item should:
   - be clearly and closely aligned to a single Evidence Outcome (EO)
   - be clearly and closely aligned to a Nature of Science (NS; if applicable)
   - measure the appropriate DOK that falls within the range specified by the EO
   - be written to the appropriate grade level, both in content and context
   - contain accurate content information
   - function properly in TN8 Preview Mode, including scoring the intended correct answer(s)
   - have a rubric that matches the prompts (Constructed Response items only)
   - have accurate Art that is free from clutter or extraneous information (not all items have or need Art)
   - be free of potential bias or sensitivity concerns
   - be clear and concise
   - be grammatically correct

2. Then use the Vote menu in ABBI to record your vote and any comments on the item.



Vote Descriptions

- **Accept -** The item is ready for testing as-is and does not require revision.
- **Accept with Edits -** In the Comments field, describe in clear terms how the item should be modified/revised.
- **Accept with Reconciliation -** All item edits will be reconciled with CDE; do not use this vote.
- **Reject -** In the Comments field, document with short phrases the reason(s) for rejecting.

Other notes to document in the Comments field

- **Bias or Sensitivity Concerns**
  Begin the comment with “Bias Concern: ... “ or “Sensitivity Concern: ... “

- **Exemplar items**
  - Does the item stand as an example of a well-written, well-aligned item?
  - Enter “Exemplar Item,” but a rationale is not necessary.
  - This may or may not be paired with the Accept vote; an exemplar item can still require some minor edits.

APPENDIX C: SAMPLE SCORE REPORTS

Social Studies Performance Level Descriptions

Students demonstrate mastery of social studies concepts and 21st century skills aligned to the Colorado Academic Standards at various performance levels. The performance level descriptors are organized in a manner that assumes students demonstrating higher levels of command have mastered the concepts and skills within the lower levels. For example, a student who approached expectations has also mastered the concepts and skills included in the partially met expectations performance level.

Students who Exceeded Expectations demonstrated distinguished command of the Colorado Academic Standards and can typically

- Analyze primary source documents and connect the various eras and events in Colorado history to events in U.S. and World History
- Use geographic tools to investigate and analyze settlement patterns, how people adapt to and modify the physical environment, and how places in Colorado have changed over time
- Analyze opportunity costs and ways to reduce financial risk to make financial decisions
- Analyze multiple perspectives on an issue and provide solutions

Students who Met Expectations demonstrated strong command of the Colorado Academic Standards and can typically

- Explain cause-and-effect relationships present in Colorado history using historical tools such as organizing and sequencing events and reading primary sources
- Create and investigate questions about Colorado in relation to other places and examine the connections between the physical environment and human activities such as migration
- Explain how the natural, human, and capital resources of Colorado have influenced the types of goods and services provided
- Analyze opportunity costs and risk to make financial decisions
- Compare arguments for both sides of a public policy debate
- Explain the origins, structure, and functions of the Colorado government and its relationship with local and federal governments

Students who Approached Expectations demonstrated moderate command of the Colorado Academic Standards and can typically

- Describe how the people and cultures who have lived in Colorado have interacted with each other and have affected the development of Colorado
- Describe how Colorado's political structure developed, including the Colorado Constitution and the relationship between state and national government
- Compare the physical geography of Colorado with that of neighboring states and describe how places in Colorado are connected by technology and the movement of goods and services
- Identify and define types of economic incentives, choices, opportunity costs, and risks that individuals face
- Connect goods and services produced throughout Colorado's history to economic incentives
- Provide examples of civic and political issues faced by the state

Students who Partially Met Expectations demonstrated limited command of the Colorado Academic Standards and can typically

- Recognize that major political and cultural groups have affected the development of Colorado
- Use maps, grids, and other geographic tools to answer questions about Colorado
- Describe various technological developments, including those that affect Colorado industries
- Identify goods and services produced in Colorado
- Identify the structure and functions of the Colorado government and the services it provides

For more information about the standards included in this assessment, please visit the Colorado Department of Education's website at
http://www.cde.state.co.us/cosocialstudies/statestandards

Confidential Student Performance Report

Colorado Measures of Academic Success

Student: **FIRSTNAME A. LASTNAME201**
SASID: **9999990001** Birthdate: **01/01/2006**
School: **SAMPLE SCHOOL1 (0115)**
District: **SAMPLE DISTRICT (0100)**

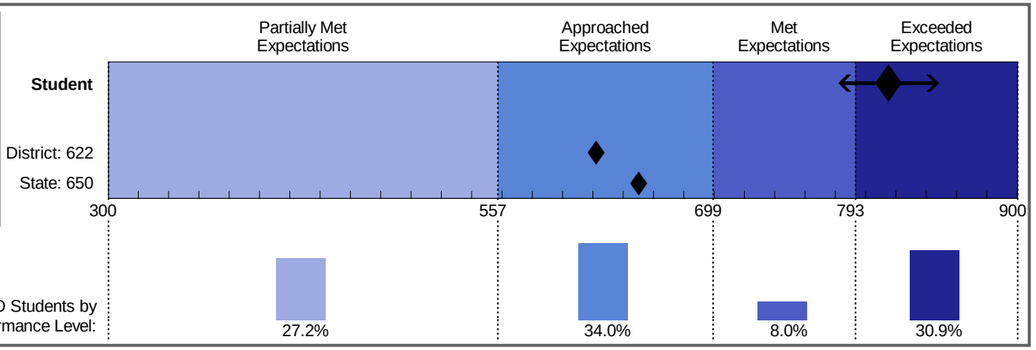
Spring 2019

Social Studies — Grade 4

This score report provides information about your student's performance on the Colorado Measures of Academic Success (CMAS) Social Studies Assessment.

- Your student's performance is represented by a scale score, a performance level, and a percentile rank. Scores are placed on a scale so that student performance can be compared across years.
- On the graph, scale scores are represented by diamonds. The arrows around your student's diamond show the range of scores that your student would likely receive if the assessment was taken multiple times.
- School, district, and state averages are provided so that you can compare your student's performance to the performance of others. The percentage of students in each performance level across the state is reported below the graph.
- Dotted lines show where the range of scores is divided into performance levels. Descriptions of the performance levels can be found at the end of this report.
- You are encouraged to discuss this report with your student's teacher.
- To protect student privacy, scores are not displayed for schools and districts that do not meet the minimum student population for reporting.

Your Student's Score
815
Exceeded Expectations
35th Percentile



Subscale Performance

- The shaded areas in the table below represent approximately 70% of student scores across the state.
- Scores outside of the shaded area indicate a potential weakness or strength compared to the state.

Reporting Category Description	Subscale Score		Potential Relative Weakness (300) / Typical / Potential Relative Strength (900)
History			459 – 739
History develops moral understanding, defines identity and creates an appreciation of how things change while building skills in judgment and decision-making. History enhances the ability to read varied sources and develop the skills to analyze, interpret and communicate.	**705**	**Student**	
	618	District	
Geography			479 – 740
Geography provides students with an understanding of spatial perspectives and technologies for spatial analysis, awareness of interdependence of world regions and resources and how places are connected at local, national and global scales.	**793**	**Student**	
	610	District	
Economics			475 – 738
Economics teaches how society manages its scarce resources, how people make decisions, how people interact in the domestic and international markets, and how forces and trends affect the economy as a whole. Personal financial literacy applies the economic way of thinking to help individuals understand how to manage their own scarce resources.	**890**	**Student**	
	617	District	
Civics			450 – 739
Civics teaches the complexity of the origins, structure, and functions of governments; the rights, roles and responsibilities of ethical citizenship; the importance of law; and the skills necessary to participate in all levels of government.	**900**	**Student**	
	619	District	

Purpose
This report describes your student's mastery of the Colorado Academic Standards in Social Studies.

For more information on the CMAS assessment program, visit: **http://www.cde.state.co.us/assessment/cmas**

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4

Colorado Measures of Academic Success

Social Studies

Confidential

Performance by Prepared Graduate Competencies (PGCs) and Grade Level Expectations (GLEs)

- Within each standard, PGCs are identified. PGCs represent the concepts and skills that students need to master in order to be college and career ready.
- GLEs are grade-specific expectations that indicate a student is making progress toward the PGCs.
- The figure below shows the percent of points that your student earned for each GLE represented in the grade. If there is more than one GLE for a PGC, the PGC is also provided.

Student's performance
District average
State average
Average of students who just crossed into the Met Expectations performance level

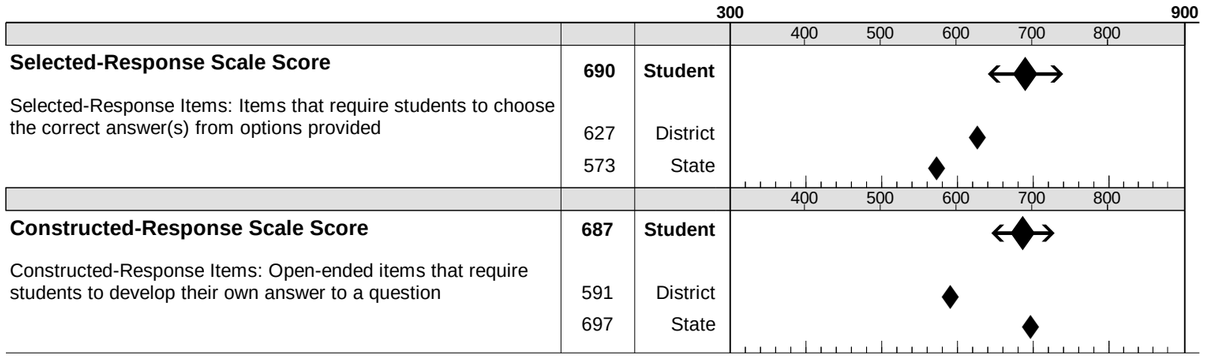
Standard, PGC, and GLE	Points Possible	Percent of Points Earned* 0% 25% 50% 75% 100%
History		
PGC 1: Develop an understanding of how people view, construct, and interpret history		
GLE 1: Organize and sequence events to understand the concepts of chronology and cause and effect in the history of Colorado	9	44%
PGC 2: Analyze key historical periods and patterns of change over time within and across nations and cultures		
GLE 2: The historical eras, individuals, groups, ideas and themes in Colorado history and their relationships to key events in the United States	10	70%
Geography		
PGC 1: Develop spatial understanding, perspectives, and personal connections to the world		
GLE 1: Use several types of geographic tools to answer questions about the geography of Colorado	11	91%
PGC 2: Examine places and regions and the connections among them		
GLE 2: Connections within and across human and physical systems are developed	9	67%
Economics		
PGC 1: Understand the allocation of scarce resources in societies through analysis of individual choice, market interaction, and public policy		
GLE 1: People respond to positive and negative incentives	9	78%
PGC 2: Acquire the knowledge and economic reasoning skills to make sound financial decisions (PFL)		
GLE 2: The relationship between choice and opportunity cost (PFL)	8	100%
Civics		
PGC 1: Analyze and practice rights, roles, and responsibilities of citizens		
GLE 1: Analyze and debate multiple perspectives on an issue	9	100%
PGC 2: Analyze the origins, structure, and functions of governments and their impacts on societies and citizens		
GLE 2: The origins, structure, and functions of the Colorado government	10	90%

***Percent of points earned cannot be compared across years because individual items change from year to year. They also cannot be compared across GLEs and PGCs because the number of items and the difficulty of items may not be the same.

Grade 4

Performance by Item Type

CMAS assessments include selected-response and constructed-response items. The figure below shows your student's scale score for each item type in relation to school, district, and state averages.



Selected-Response Items: Items that require students to choose the correct answer(s) from options provided

Constructed-Response Items: Open-ended items that require students to develop their own answer to a question

Content Standards Roster

Colorado Measures of Academic Success — Spring 2019

School: **SCHOOL NAME (9999)**
District: **DISTRICT NAME (9999)**

Social Studies

CONFIDENTIAL - DO NOT DISTRIBUTE

Grade 4

Purpose: This report shows performance on the overall test, content standards, prepared graduate competencies (PGCs), and grade level expectations (GLEs) for each student in the school. The percent of points earned for each GLE is presented on the following page of the report. If there is more than one GLE within a PGC, the percent of points earned is provided separately at the PGC and GLE levels. School, district, and state averages are provided for comparison.

Performance Levels	Scale Score Ranges
Exceeded Expectations	793 - 900
Met Expectations	699 - 792
Approached Expectations	557 - 698
Partially Met Expectations	300 - 556

● = Potential Relative Strength (PRS)
◒ = Typical
○ = Potential Relative Weakness (PRW)

Content Standards Performance School Summary

	History			Geography			Economics			Civics		
	●	◒	○	●	◒	○	●	◒	○	●	◒	○
# of students in school:	6	4	4	8	3	3	7	4	3	5	5	5
% of students in school:	43%	28%	29%	57%	21%	22%	50%	28%	21%	33%	33%	33%

	Overall Scale Score	SEM Range	Percentile	Content Standard Scale Score (SS) and Performance Indicator (PI)							
				History SS	History PI	Geography SS	Geography PI	Economics SS	Economics PI	Civics SS	Civics PI
State Average:	599			619		643		640		638	
District Average:	595			603		627		626		623	
School Average:	595			584		589		606		597	
Student	**Performance Level**										
1 ALASTNAMEWWWWWW, FIRST NAME A.	Partially Met Expectations	509	482-536	18	497	○	567	○	614	○	534	○
2 BLAST, FIRST	Met Expectations	708	685-731	81	717	●	731	●	686	●	713	●
3 CLASTNAME, FIRSTNAME A.	Partially Met Expectations	519	482-536	20	567	●	474	●	485	○	536	○
4 DLAST, FIRSTNAME C.	Exceeded Expectations	793	761-818	97	821	●	834	●	799	●	831	●
5 ELAST, FIRST X.	Partially Met Expectations	467	437-497	12	578	◒	521	○	498	○	468	○
6 FLASTNAME, FIRST B.	Approached Expectations	649	624-674	60	567	○	621	○	589	○	601	○
7 GLAST, FIRST X.	No Score	-	-	-	-	-	-	-	-	-	-	-
8 HLASTNAME, FIRST B.	Approached Expectations	672	631-713	68	601	○	677	◒	597	○	613	○
9 ILASTNAMEWWWWWW, FIRSTWWABCDWWWW B.	Partially Met Expectations	569	545-593	32	489	○	521	○	561	○	486	◒
10 JLASTNAME, FIRST B.	Met Expectations	750	727-773	91	821	●	778	●	743	◒	849	●
11 KLASTNAME, FIRST B.	Exceeded Expectations	821	796-844	99	844	●	783	●	750	◒	869	●
12 LLASTNAME, FIRST B.	No Score	-	-	-	-	-	-	-	-	-	-	-
13 MLASTNAME, FIRST B.	Approached Expectations	611	589-633	46	489	○	533	○	621	●	547	○
14 NLAST, FIRSTNAME C.	Exceeded Expectations	842	823-865	99	844	●	851	●	889	●	798	●
15 OLAST, FIRST X.	Approached Expectations	581	558-604	36	573	◒	468	○	539	○	541	○
16 PLASTNAME, FIRST B.	Approached Expectations	649	627-671	60	621	○	586	○	633	○	633	○

Note: Students without scores are not included in summary calculations.

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Content Standards Roster

Colorado Measures of Academic Success — Spring 2019

School: **SCHOOL NAME (9999)**
District: **DISTRICT NAME (9999)**

Social Studies

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Grade 4

Student	Prepared Graduate Competencies (PGC) and Grade Level Expectations (GLE) Performance							
	History		Geography		Economics		Civics	
	PGC1 GLE1	PGC2 GLE2	PGC1 GLE1	PGC2 GLE2	PGC1 GLE1	PGC2 GLE2	PGC1 GLE1	PGC2 GLE2
	Points Possible							
	9-10	9-10	10-11	9-10	8-9	8-9	8-9	10-11
	Percent of Points Earned							
State Average:	49%	55%	48%	46%	52%	52%	49%	52%
District Average:	50%	53%	52%	44%	48%	49%	42%	53%
School Average:	50%	54%	59%	43%	49%	48%	49%	53%
1 ALASTNAMEWWWWWW, FIRST NAME A.	30%	71%	68%	73%	61%	67%	58%	55%
2 BLAST, FIRST	70%	35%	83%	54%	53%	58%	58%	64%
3 CLASTNAME, FIRSTNAME A.	40%	44%	56%	39%	43%	48%	51%	73%
4 DLAST, FIRSTNAME C.	49%	53%	58%	46%	48%	53%	56%	63%
5 ELAST, FIRST X.	51%	49%	45%	49%	63%	67%	61%	49%
6 FLASTNAME, FIRST B.	42%	63%	68%	74%	68%	78%	69%	69%
7 GLAST, FIRST X.	-	-	-	-	-	-	-	-
8 HLASTNAME, FIRST B.	55%	49%	39%	59%	45%	48%	47%	38%
9 ILASTNAMEWWWWWW, FIRSTWWABCDWWWW B.	38%	61%	72%	63%	79%	48%	73%	57%
10 JLASTNAME, FIRST B.	62%	65%	64%	64%	65%	67%	63%	63%
11 KLASTNAME, FIRST B.	63%	62%	79%	72%	78%	74%	76%	71%
12 LLASTNAME, FIRST B.	-	-	-	-	-	-	-	-
13 MLASTNAME, FIRST B.	42%	57%	64%	48%	69%	57%	58%	48%
14 NLAST, FIRSTNAME C.	66%	69%	75%	74%	81%	76%	57%	73%
15 OLAST, FIRST X.	61%	73%	78%	81%	73%	88%	76%	69%
16 PLASTNAME, FIRST B.	56%	39%	45%	44%	47%	47%	41%	45%

Note: Students without scores are not included in summary calculations.

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Content Standards Roster

Colorado Measures of Academic Success

Spring 2019

School: **SCHOOL NAME (9999)**
District: **DISTRICT NAME (9999)**

Social Studies

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Grade 4

Purpose: This report shows performance on the overall test, content standards, prepared graduate competencies (PGCs), and grade level expectations (GLEs) for each student in the school. The percent of points earned for each GLE is presented on the following page of the report. If there is more than one GLE within a PGC, the percent of points earned is provided separately at the PGC and GLE levels. School, district, and state averages are provided for comparison.

Performance Levels	Scale Score Ranges
Exceeded Expectations	793 - 900
Met Expectations	699 - 792
Approached Expectations	557 - 698
Partially Met Expectations	300 - 556

● = Potential Relative Strength (PRS)
◒ = Typical
○ = Potential Relative Weakness (PRW)

Content Standards Performance School Summary

	History			Geography			Economics			Civics		
	●	◒	○	●	◒	○	●	◒	○	●	◒	○
# of students in school:	6	4	4	8	3	3	7	4	3	5	5	5
% of students in school:	43%	28%	29%	57%	21%	22%	50%	28%	21%	33%	33%	33%

Student	Performance Level	Overall Scale Score	SEM Range	Percentile	History SS	History PI	Geography SS	Geography PI	Economics SS	Economics PI	Civics SS	Civics PI
State Average:		**599**			619		643		640		638	
District Average:		**595**			603		627		626		623	
School Average:		**595**			584		589		606		597	
17 QLASTNAMEWWWWWW, FIRST NAME A.	Partially Met Expectations	**509**	482-536	18	497	○	567	○	614	○	534	○
18 RLAST, FIRST	Met Expectations	**708**	685-731	81	717	●	731	●	686	●	713	●
19 SLASTNAME, FIRSTNAME A.	Partially Met Expectations	**519**	482-536	20	567	●	474	●	485	○	536	○
20 TLAST, FIRSTNAME C.	Exceeded Expectations	**793**	761-818	97	821	●	834	●	799	●	831	●
21 ULAST, FIRST X.	Partially Met Expectations	**467**	437-497	12	578	◒	521	○	498	○	468	○
22 VLASTNAME, FIRST B.	Approached Expectations	**649**	624-674	60	567	○	621	○	589	○	601	○
23 WLAST, FIRST X.	No Score	**-**	-	-	-	-	-	-	-	-	-	-
24 XLASTNAME, FIRST B.	Approached Expectations	**672**	631-713	68	601	○	677	◒	597	○	613	○
25 YLASTNAMEWWWWWW, FIRSTWWABCDWWWW B.	Partially Met Expectations	**569**	545-593	32	489	○	521	○	561	○	486	◒
26 ZLASTNAME, FIRST B.	Met Expectations	**750**	727-773	91	821	●	778	●	743	◒	849	●
27 ZALASTNAME, FIRST B.	Exceeded Expectations	**821**	796-844	99	844	●	783	●	750	◒	869	●
28 ZBLASTNAME, FIRST B.	No Score	**-**	-	-	-	-	-	-	-	-	-	-
29 ZCLASTNAME, FIRST B.	Approached Expectations	**611**	589-633	46	489	○	533	○	621	●	547	○
30 ZDLAST, FIRSTNAME C.	Exceeded Expectations	**842**	823-865	99	844	●	851	●	889	●	798	●
31 ZELAST, FIRST X.	Approached Expectations	**581**	558-604	36	573	◒	468	○	539	○	541	○
32 ZFLASTNAME, FIRST B.	Approached Expectations	**649**	627-671	60	621	○	586	○	633	○	633	○

Note: Students without scores are not included in summary calculations.

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Content Standards Roster

Colorado Measures of Academic Success — Spring 2019

School: **SCHOOL NAME (9999)**
District: **DISTRICT NAME (9999)**

Social Studies

CONFIDENTIAL - DO NOT DISTRIBUTE

Grade 4

Student	Prepared Graduate Competencies (PGC) and Grade Level Expectations (GLE) Performance							
	History		Geography		Economics		Civics	
	PGC1 GLE1	PGC2 GLE2	PGC1 GLE1	PGC2 GLE2	PGC1 GLE1	PGC2 GLE2	PGC1 GLE1	PGC2 GLE2
	Points Possible							
	9-10	9-10	10-11	9-10	8-9	8-9	8-9	10-11
	Percent of Points Earned							
State Average:	49%	55%	48%	46%	52%	52%	49%	52%
District Average:	50%	53%	52%	44%	48%	49%	42%	53%
School Average:	50%	54%	59%	43%	49%	48%	49%	53%
17 QLASTNAMEWWWWWW, FIRST NAME A.	30%	71%	68%	73%	61%	67%	58%	55%
18 RLAST, FIRST	70%	35%	83%	54%	53%	58%	58%	54%
19 SLASTNAME, FIRSTNAME A.	40%	44%	56%	39%	43%	48%	51%	73%
20 TLAST, FIRSTNAME C.	49%	53%	58%	46%	48%	51%	53%	63%
21 ULAST, FIRST X.	51%	49%	45%	63%	67%	61%	64%	49%
22 VLASTNAME, FIRST B.	39%	42%	63%	68%	74%	68%	78%	69%
23 WLAST, FIRST X.	-	-	-	-	-	-	-	-
24 XLASTNAME, FIRST B.	55%	49%	39%	59%	45%	48%	47%	38%
25 YLASTNAMEWWWWWW, FIRSTWWABCDWWWW B.	38%	61%	72%	63%	79%	48%	47%	38%
26 ZLASTNAME, FIRST B.	62%	65%	64%	64%	65%	67%	63%	63%
27 ZALASTNAME, FIRST B.	63%	62%	65%	79%	38%	44%	48%	51%
28 ZBLASTNAME, FIRST B.	-	-	-	-	-	-	-	-
29 ZCLASTNAME, FIRST B.	42%	39%	46%	59%	48%	45%	63%	71%
30 ZDLAST, FIRSTNAME C.	53%	55%	53%	48%	56%	39%	47%	72%
31 ZELAST, FIRST X.	47%	58%	45%	53%	57%	59%	44%	62%
32 ZFLASTNAME, FIRST B.	55%	63%	69%	46%	44%	47%	56%	51%

Note: Students without scores are not included in summary calculations.

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School Performance Level Summary

Colorado Measures of Academic Success

Spring 2019

School: **SCHOOL NAME (9999)**

District: **DISTRICT NAME (9999)**

Social Studies

CONFIDENTIAL - DO NOT DISTRIBUTE

Grade 4

Purpose: This report describes group achievement in terms of mean scale scores and performance levels.

	Number of Valid Scores	Overall Mean Scale Score	Performance Levels								Met and Exceeded		No Scores Reported	Total Number of Students
			Partially Met Expectations		Approached Expectations		Met Expectations		Exceeded Expectations					
			#	%	#	%	#	%	#	%	#	%	#	#
State	21,441	**609**	6,163	28.7%	10,469	48.8%	4,160	19.4%	649	3.0%	4,809	22.4%	991	22,432
District	46	**590**	17	37.0%	18	39.1%	0	0.0%	11	23.9%	11	23.9%	104	150
School	16	**638**	7	43.8%	0	0.0%	0	0.0%	9	56.3%	9	56.3%	17	33
Gender														
Female	7	**643**	3	42.9%	0	0.0%	0	0.0%	4	57.1%	4	57.1%	7	14
Male	9	**633**	4	44.4%	0	0.0%	0	0.0%	5	55.6%	5	55.6%	10	19
Ethnicity/Race														
Hispanic or Latino	3	**700**	1	33.3%	0	0.0%	0	0.0%	2	66.7%	2	66.7%	0	3
American Indian or Alaska Native	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1
Asian	2	**900**	0	0.0%	0	0.0%	0	0.0%	2	100.0%	2	100.0%	3	5
Black or African American	2	**300**	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	4
Native Hawaiian or Other Pacific Islander	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1
White	1	**900**	0	0.0%	0	0.0%	0	0.0%	1	100.0%	1	100.0%	0	1
Two or more races	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
Not Indicated	8	**600**	4	50.0%	0	0.0%	0	0.0%	4	50.0%	4	50.0%	10	18
Gifted and Talented														
Yes	2	**600**	1	50.0%	0	0.0%	0	0.0%	1	50.0%	1	50.0%	2	4
No	14	**643**	6	42.9%	0	0.0%	0	0.0%	8	57.1%	8	57.1%	15	29
Migrant														
No	16	**638**	7	43.8%	0	0.0%	0	0.0%	9	56.3%	9	56.3%	15	31
Yes	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	2
Economic Disadvantage														
Free/Reduced Lunch Eligible	1	**300**	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	2
Not Eligible for Free/Reduced Lunch	15	**660**	6	40.0%	0	0.0%	0	0.0%	9	60.0%	9	60.0%	16	31

School Performance Level Summary

Colorado Measures of Academic Success — Spring 2019

School: **SCHOOL NAME (9999)**

District: **DISTRICT NAME (9999)**

Social Studies

CONFIDENTIAL - DO NOT DISTRIBUTE

Grade 4

Purpose: This report describes group achievement in terms of mean scale scores and performance levels.

	Number of Valid Scores	Overall Mean Scale Score	Performance Levels								Met and Exceeded		No Scores Reported	Total Number of Students
			Partially Met Expectations		Approached Expectations		Met Expectations		Exceeded Expectations					
			#	%	#	%	#	%	#	%	#	%	#	#
Students with Disabilities														
IEP - Yes	10	**540**	6	60.0%	0	0.0%	0	0.0%	4	40.0%	4	40.0%	8	18
IEP - No	6	**800**	1	16.7%	0	0.0%	0	0.0%	5	83.3%	5	83.3%	9	15
504	1	**900**	0	0.0%	0	0.0%	0	0.0%	1	100.0%	1	100.0%	1	2
Primary Disability														
Autism Spectrum Disorders	3	**300**	3	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	5
Deaf-Blindness	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	2
Developmental Delay	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1
Emotional Disturbance	1	**300**	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	1
Hearing Impairment, including Deafness	1	**900**	0	0.0%	0	0.0%	0	0.0%	1	100.0%	1	100.0%	0	1
Intellectual Disability	1	**300**	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	1
Multiple Disabilities	1	**300**	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	1
Orthopedic Impairment	1	**900**	0	0.0%	0	0.0%	0	0.0%	1	100.0%	1	100.0%	0	1
Other Health Impairment	1	**900**	0	0.0%	0	0.0%	0	0.0%	1	100.0%	1	100.0%	0	1
Specific Learning Disability	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1
Speech or Language Impairment	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1
Traumatic Brain Injury (TBI)	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1
Visual Impairment, including Blindness	1	**900**	0	0.0%	0	0.0%	0	0.0%	1	100.0%	1	100.0%	0	1
None	6	**800**	1	16.7%	0	0.0%	0	0.0%	5	83.3%	5	83.3%	9	15
Homeless														
No	15	**620**	7	46.7%	0	0.0%	0	0.0%	8	53.3%	8	53.3%	16	31
Yes and in Physical Custody	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1
Yes and Not in Physical Custody	1	**900**	0	0.0%	0	0.0%	0	0.0%	1	100.0%	1	100.0%	0	1

School Performance Level Summary

Colorado Measures of Academic Success

Spring 2019

School: **SCHOOL NAME (9999)**

District: **DISTRICT NAME (9999)**

Social Studies

CONFIDENTIAL - DO NOT DISTRIBUTE

Grade 4

Purpose: This report describes group achievement in terms of mean scale scores and performance levels.

	Number of Valid Scores	Overall Mean Scale Score	Performance Levels								Met and Exceeded		No Scores Reported	Total Number of Students
			Partially Met Expectations		Approached Expectations		Met Expectations		Exceeded Expectations					
			#	%	#	%	#	%	#	%	#	%	#	#
Language Background														
English	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	2
Spanish	1	**900**	0	0.0%	0	0.0%	0	0.0%	1	100.0%	1	100.0%	3	4
Other	2	**600**	1	50.0%	0	0.0%	0	0.0%	1	50.0%	1	50.0%	1	3
Not Indicated	13	**623**	6	46.2%	0	0.0%	0	0.0%	7	53.8%	7	53.8%	11	24
Language Proficiency														
Not English Proficient (NEP)	2	**900**	0	0.0%	0	0.0%	0	0.0%	2	100.0%	2	100.0%	6	8
Limited English Proficient (LEP)	2	**600**	1	50.0%	0	0.0%	0	0.0%	1	50.0%	1	50.0%	2	4
NEP and LEP	4	**750**	1	25.0%	0	0.0%	0	0.0%	3	75.0%	3	75.0%	8	12
Not NEP or LEP	3	**500**	2	66.7%	0	0.0%	0	0.0%	1	33.3%	1	33.3%	2	5
Primary Home Language other than English	1	**900**	0	0.0%	0	0.0%	0	0.0%	1	100.0%	1	100.0%	0	1
Former English Language Learner	1	**300**	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	2
FEP - Monitor Year 1	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
FEP - Monitor Year 2	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
FEP - Exited Year 1	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
FEP - Exited Year 2	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
English Background	10	**600**	5	50.0%	0	0.0%	0	0.0%	5	50.0%	5	50.0%	8	18

School Performance Level Summary

Colorado Measures of Academic Success

Spring 2019

School: **SCHOOL NAME (9999)**

District: **DISTRICT NAME (9999)**

Social Studies

CONFIDENTIAL - DO NOT DISTRIBUTE

Grade 4

Purpose: This report describes group achievement in terms of mean scale scores and performance levels.

	Number of Valid Scores	Overall Mean Scale Score	Performance Levels								Met and Exceeded		No Scores Reported	Total Number of Students
			Partially Met Expectations		Approached Expectations		Met Expectations		Exceeded Expectations					
			#	%	#	%	#	%	#	%	#	%	#	#
Language Instruction Program														
No or Not Applicable	12	**600**	6	50.0%	0	0.0%	0	0.0%	6	50.0%	6	50.0%	9	21
ESL or ELD	1	**900**	0	0.0%	0	0.0%	0	0.0%	1	100.0%	1	100.0%	2	3
Dual Language	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	4
Transitional	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
Content Classes	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
Newcomer	3	**700**	1	33.3%	0	0.0%	0	0.0%	2	66.7%	2	66.7%	2	5
Other	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
Parent Choice	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
Title 1														
No	1	**900**	0	0.0%	0	0.0%	0	0.0%	1	100.0%	1	100.0%	1	2
Yes	2	**600**	1	50.0%	0	0.0%	0	0.0%	1	50.0%	1	50.0%	3	5
Continuous in District														
No	1	**900**	0	0.0%	0	0.0%	0	0.0%	1	100.0%	1	100.0%	3	4
Yes	15	**620**	7	46.7%	0	0.0%	0	0.0%	8	53.3%	8	53.3%	14	29
Continuous in School														
No	3	**900**	0	0.0%	0	0.0%	0	0.0%	3	100.0%	3	100.0%	2	5
Yes	13	**577**	7	53.8%	0	0.0%	0	0.0%	6	46.2%	6	46.2%	15	28
Color Contrast														
Yes	5	**660**	2	40.0%	0	0.0%	0	0.0%	3	60.0%	3	60.0%	5	10

School Performance Level Summary

Colorado Measures of Academic Success

Spring 2019

School: **SCHOOL NAME (9999)**

District: **DISTRICT NAME (9999)**

Social Studies

CONFIDENTIAL - DO NOT DISTRIBUTE

Grade 4

Purpose: This report describes group achievement in terms of mean scale scores and performance levels.

	Number of Valid Scores	Overall Mean Scale Score	Performance Levels								Met and Exceeded		No Scores Reported	Total Number of Students
			Partially Met Expectations		Approached Expectations		Met Expectations		Exceeded Expectations					
			#	%	#	%	#	%	#	%	#	%	#	#
Accommodations and Accessibility Features♦														
Braille	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	2
Large Print	1	**900**	0	0.0%	0	0.0%	0	0.0%	1	100.0%	1	100.0%	0	1
Extended Time - EL	3	**900**	0	0.0%	0	0.0%	0	0.0%	3	100.0%	3	100.0%	3	6
Extended Time - IEP/504	3	**500**	2	66.7%	0	0.0%	0	0.0%	1	33.3%	1	33.3%	3	6
Extended Time - Both	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
Directions in Native Language - Spanish	3	**900**	0	0.0%	0	0.0%	0	0.0%	3	100.0%	3	100.0%	1	4
Directions in Native Language - Translator	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	2
Auditory Presentation - Signer/Lang other than Eng/Spa	5	**660**	2	40.0%	0	0.0%	0	0.0%	3	60.0%	3	60.0%	7	12
Auditory Presentation - Oral Script	1	**300**	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	3
Auditory Presentation - Text-to-Speech (TTS)	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
Auditory Presentation - TTS Spanish and Online Spanish	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
Spanish - Paper	2	**600**	1	50.0%	0	0.0%	0	0.0%	1	50.0%	1	50.0%	0	2
Word Prediction	2	**300**	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	4
Word to Word Dictionary	3	**900**	0	0.0%	0	0.0%	0	0.0%	3	100.0%	3	100.0%	3	6
Response Accom - Technology	3	**300**	3	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	5
Response Accom - Scribe/Signer	3	**900**	0	0.0%	0	0.0%	0	0.0%	3	100.0%	3	100.0%	6	9
Non-English Response - Spanish Written	1	**900**	0	0.0%	0	0.0%	0	0.0%	1	100.0%	1	100.0%	1	2
Non-English Response - Spanish Oral	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	2
Non-English Response - Lang other than Eng/Spa Written	2	**900**	0	0.0%	0	0.0%	0	0.0%	2	100.0%	2	100.0%	0	2
Non-English Response - Lang other than Eng/Spa Oral	0	**0**	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0

♦ Students with multiple accommodations may appear in the subgroups multiple times; therefore, the total of all accommodations may not equal the total number of students.

School Performance Level Summary

Colorado Measures of Academic Success

Spring 2019

School: **SCHOOL NAME (9999)**

District: **DISTRICT NAME (9999)**

Social Studies

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Grade 4

Purpose: This report describes group achievement in terms of mean scale scores and performance levels.

	Total Number of Students
Total Number of Students with No Scores Reported by Category	
Absent	0
Interrupted and Not Completed	0
Student Test Refusal	0
Non-approved Accommodation	0
Misadministration	0
Medical Exemption*	0
Part Time Public and Part Time Home School Student*	0
Parent Excuse	0
Attempt not Met	17

* Not included in "Total Number Tested" and "No Scores Reported".

District Item Analysis Report

Colorado Measures of Academic Success

Spring 2019

District: **SAMPLE DISTRICT NAME (5555)**

Social Studies

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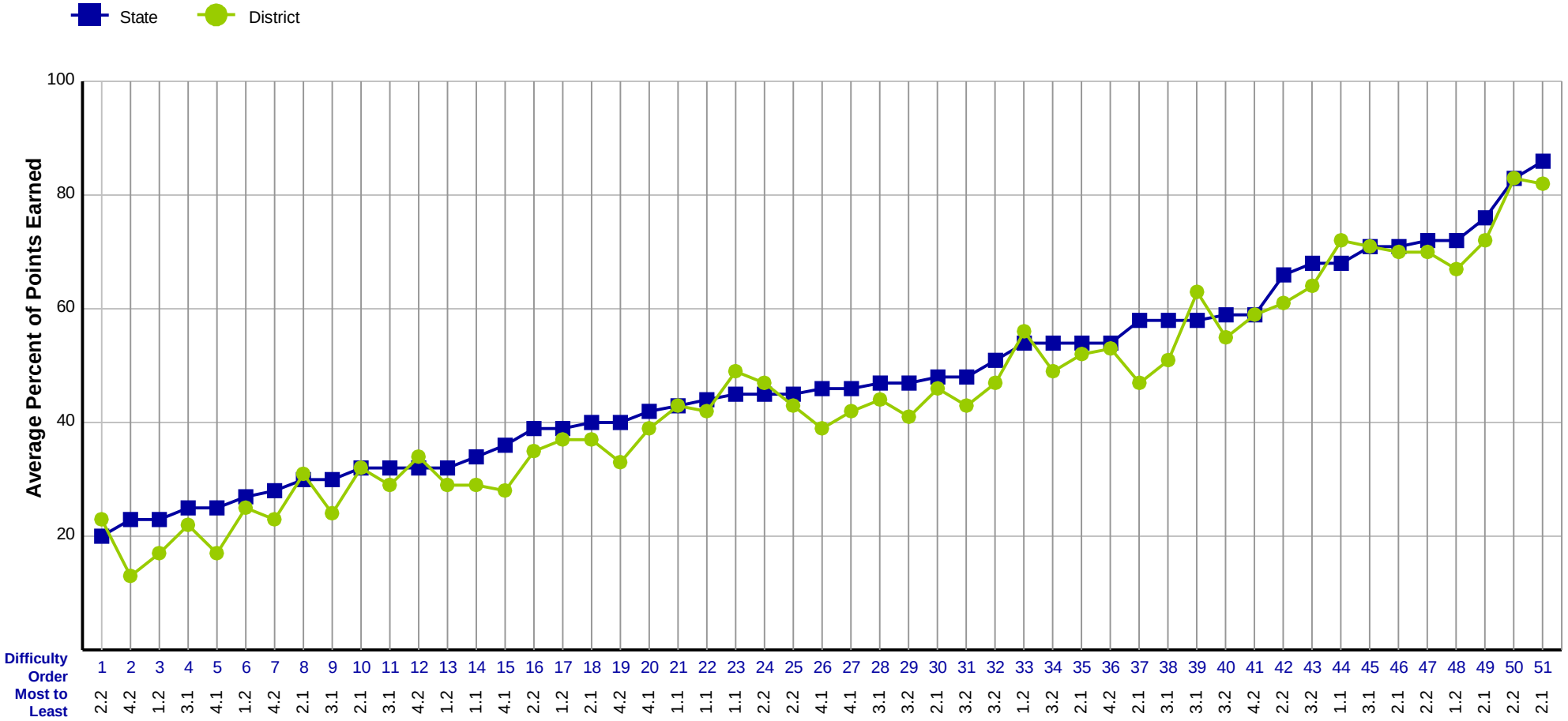
Grade 4

Purpose: This report presents the average percent of points earned by item for the district and state.

Students with Valid Scores (326)



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Item Analysis Report Detail

Colorado Measures of Academic Success Spring 2019

This report shows the operational items for the given grade and subject sorted by difficulty.

Social Studies

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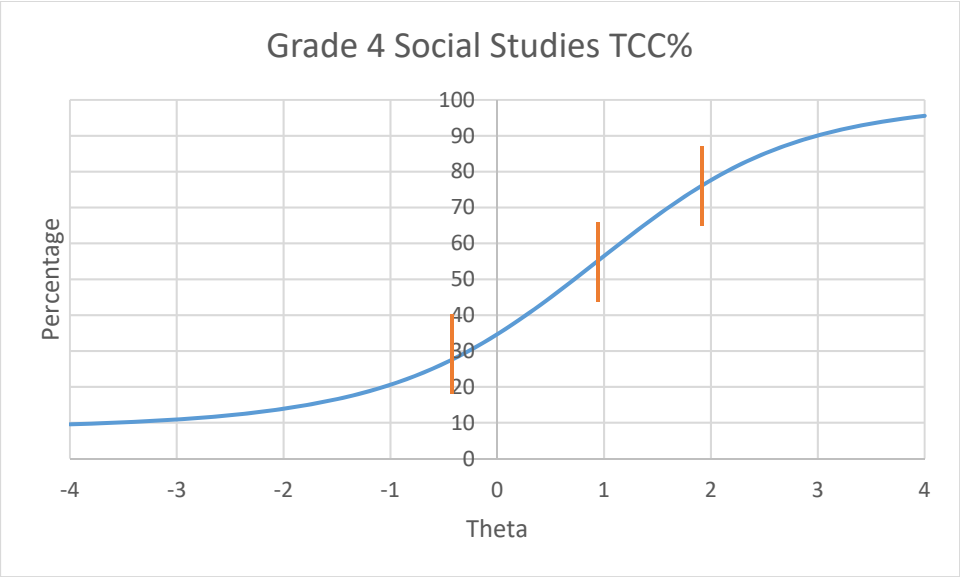
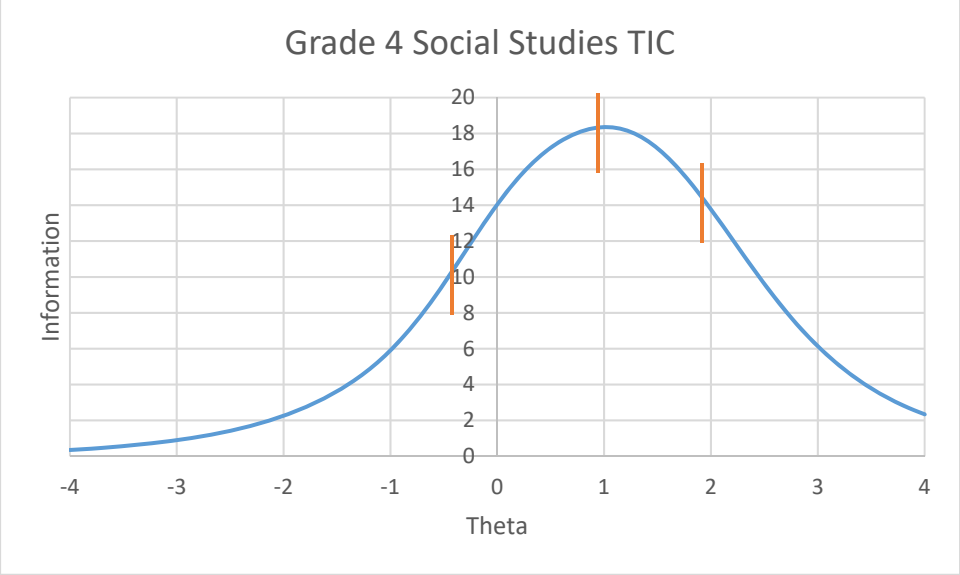
Grade 4

Difficulty Order Most to Least	Standard.GLE	Unit-Item Number	Standard	Prepared Graduate Competency (PGC)	Grade Level Expectation (GLE)	Item Type Selected Response (SR) Constructed Response (CR)
1	2.2	1-008	Geography	PGC2	GLE2	SR
2	4.2	1-006	Civics	PGC2	GLE2	CR-3
3	1.2	1-010	History	PGC2	GLE2	SR
4	3.1	1-014	Economics	PGC1	GLE1	CR-3
5	4.1	3-019	Civics	PGC1	GLE1	CR-3
6	1.2	3-012	History	PGC2	GLE2	CR-3
7	4.2	2-019	Civics	PGC2	GLE2	CR-3
8	2.1	3-009	Geography	PGC1	GLE1	SR
9	3.1	3-017	Economics	PGC1	GLE1	SR
10	2.1	1-012	Geography	PGC1	GLE1	CR-3
11	3.1	2-020	Economics	PGC1	GLE1	SR
12	4.2	3-007	Civics	PGC2	GLE2	SR
13	1.2	3-014	History	PGC2	GLE2	CR-3
14	1.1	3-013	History	PGC1	GLE1	CR-3
15	4.1	2-002	Civics	PGC1	GLE1	SR
16	2.2	1-013	Geography	PGC2	GLE2	CR-3
17	1.2	2-007	History	PGC2	GLE2	SR
18	2.1	1-011	Geography	PGC1	GLE1	SR
19	4.2	3-015	Civics	PGC2	GLE2	SR
20	4.1	1-019	Civics	PGC1	GLE1	CR-3
21	1.1	1-009	History	PGC1	GLE1	SR
22	1.1	3-006	History	PGC1	GLE1	CR-3
23	1.1	1-015	History	PGC1	GLE1	SR
24	2.2	2-021	Geography	PGC2	GLE2	SR
25	2.2	3-018	Geography	PGC2	GLE2	SR
26	4.1	1-021	Civics	PGC1	GLE1	SR
27	4.1	3-023	Civics	PGC1	GLE1	SR
28	3.1	2-005	Economics	PGC1	GLE1	SR
29	3.2	3-001	Economics	PGC2	GLE2	SR
30	2.1	2-017	Geography	PGC1	GLE1	SR
31	3.2	3-008	Economics	PGC2	GLE2	SR
32	3.2	3-021	Economics	PGC2	GLE2	SR
33	1.2	2-001	History	PGC2	GLE2	SR
34	3.2	2-006	Economics	PGC2	GLE2	CR-3
35	2.1	3-010	Geography	PGC1	GLE1	SR
36	4.2	3-016	Civics	PGC2	GLE2	SR
37	2.1	1-020	Geography	PGC1	GLE1	SR
38	3.1	3-011	Economics	PGC1	GLE1	SR
39	3.1	3-022	Economics	PGC1	GLE1	SR
40	3.2	1-001	Economics	PGC2	GLE2	SR
41	4.2	1-002	Civics	PGC2	GLE2	SR
42	2.2	3-003	Geography	PGC2	GLE2	SR
43	3.2	1-016	Economics	PGC2	GLE2	SR
44	1.1	1-017	History	PGC1	GLE1	SR
45	3.1	1-007	Economics	PGC1	GLE1	SR
46	2.1	3-004	Geography	PGC1	GLE1	SR
47	2.2	2-004	Geography	PGC2	GLE2	SR
48	1.2	2-018	History	PGC2	GLE2	SR
49	2.1	1-003	Geography	PGC1	GLE1	SR
50	2.2	1-005	Geography	PGC2	GLE2	SR
51	2.1	3-002	Geography	PGC1	GLE1	SR

APPENDIX D: IRT CURVES


Grade 4 Social Studies TCC%
Percentage
100
90
80
70
60
50
40
30
20
10
0
-4
-3
-2
-1
0
1
2
3
4
Theta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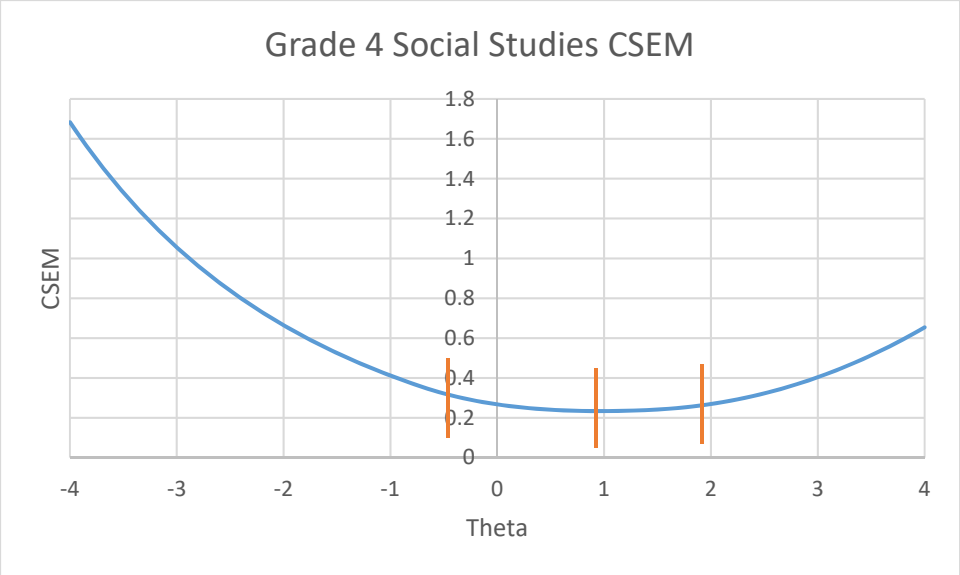
Information
20
18
16
14
12
10
8
6
4
2
0
-4
-3
-2
-1
0
1
2
3
4
Theta


Grade 4 Social Studies CSEM
CSEM
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
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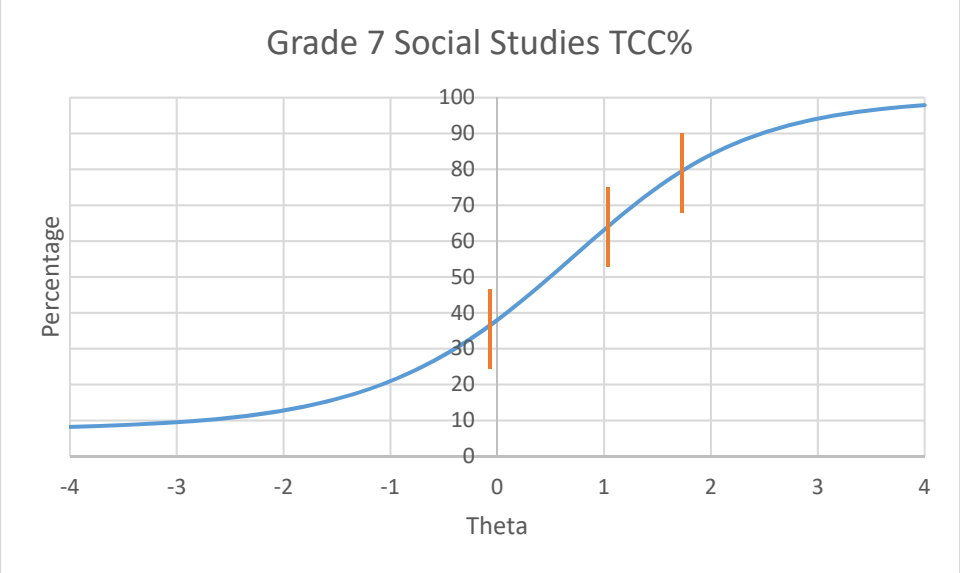
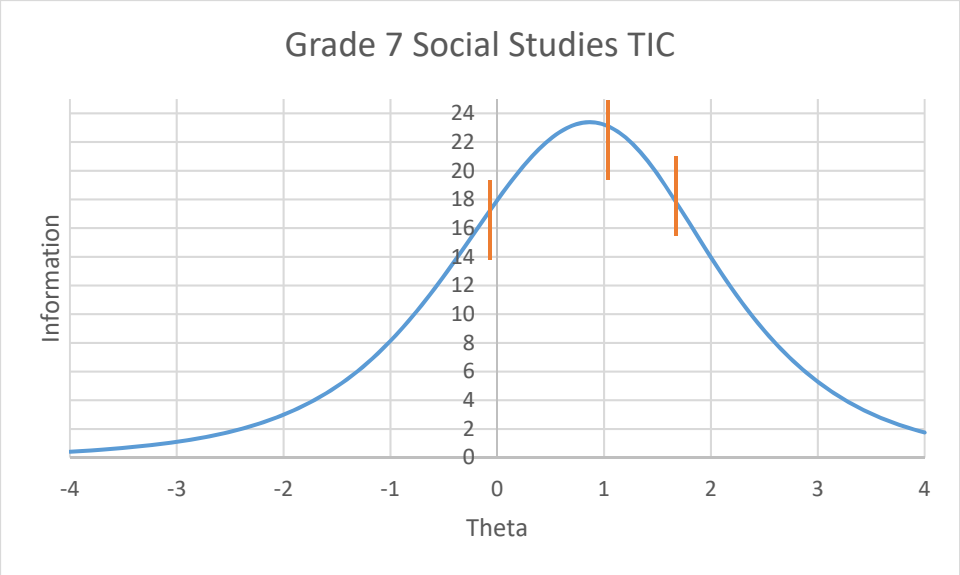
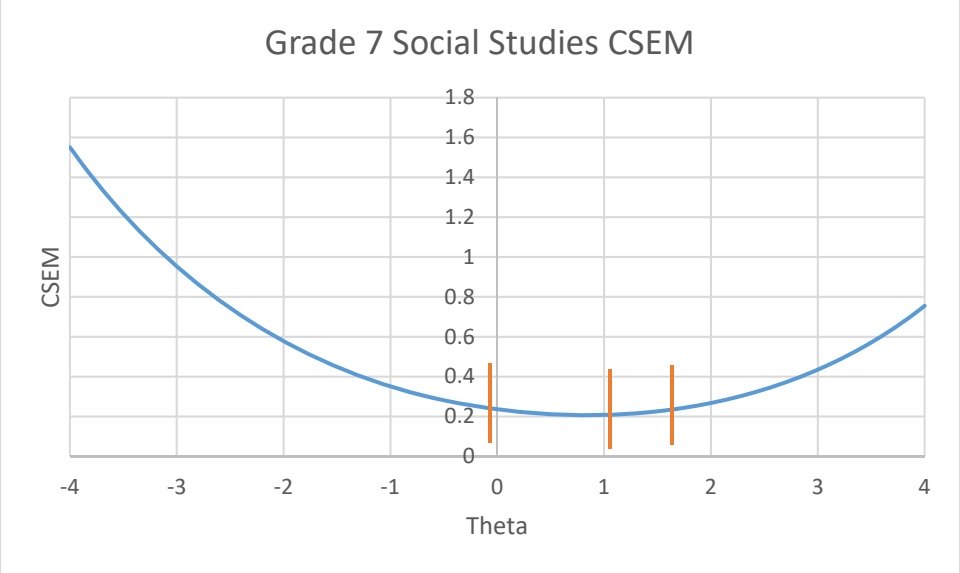
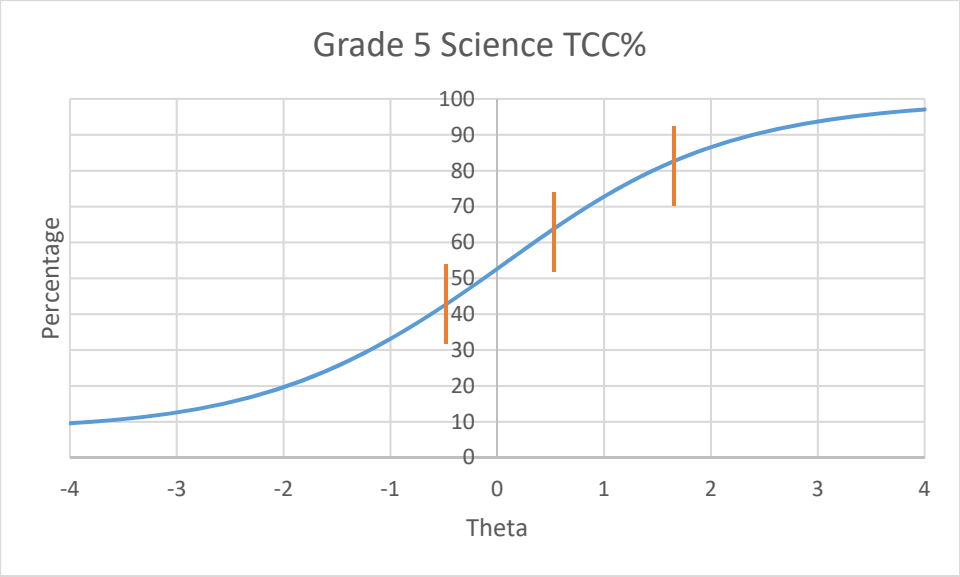
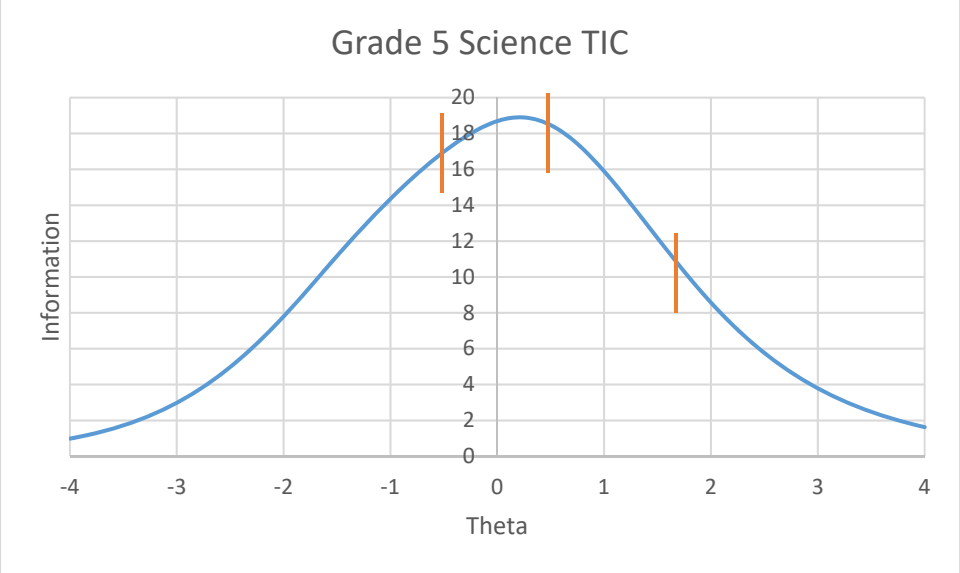
-3
-2
-1
0
1
2
3
4
Theta


Grade 7 Social Studies TCC%
Percentage
100
90
80
70
60
50
40
30
20
10
0
-4
-3
-2
-1
0
1
2
3
4
Theta


Grade 7 Social Studies TIC
Information
24
22
20
18
16
14
12
10
8
6
4
2
0
-4
-3
-2
-1
0
1
2
3
4
Theta


Grade 7 Social Studies CSEM
CSEM
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-4
-3
-2
-1
0
1
2
3
4
Theta


Grade 5 Science TCC%
Percentage
100
90
80
70
60
50
40
30
20
10
0
-4
-3
-2
-1
0
1
2
3
4
Theta


Grade 5 Science TIC
Information
20
18
16
14
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10
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6
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-4
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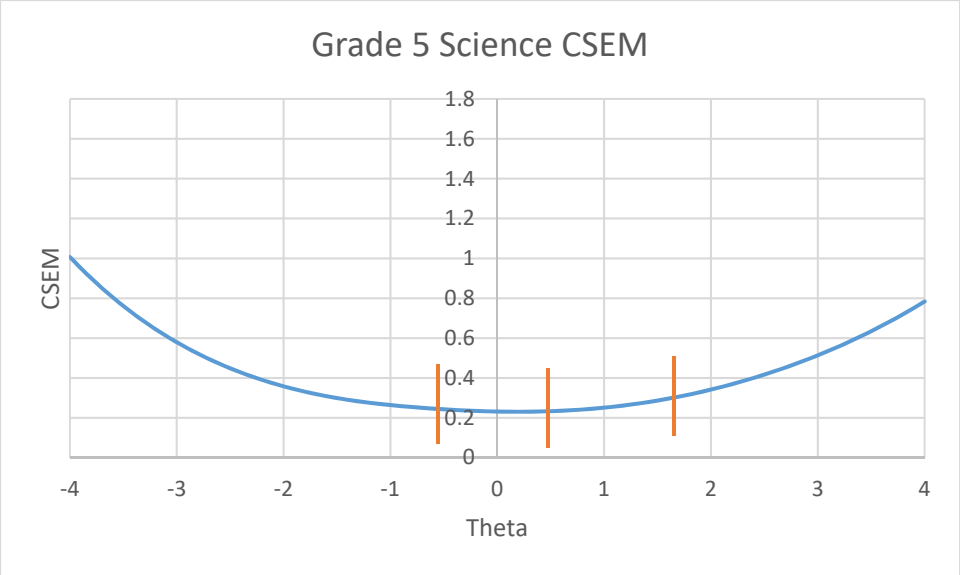
-2
-1
0
1
2
3
4
Theta


Grade 5 Science CSEM
CSEM
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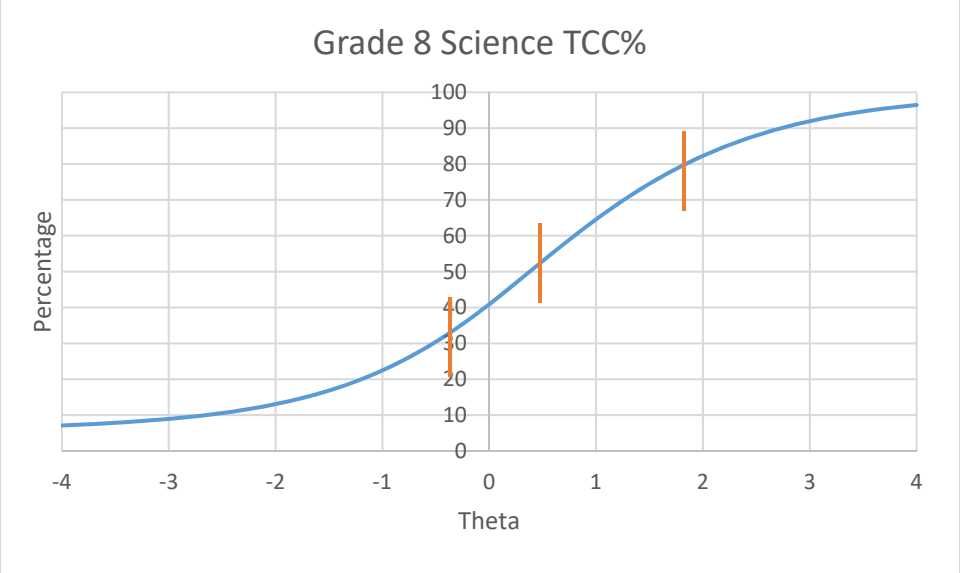
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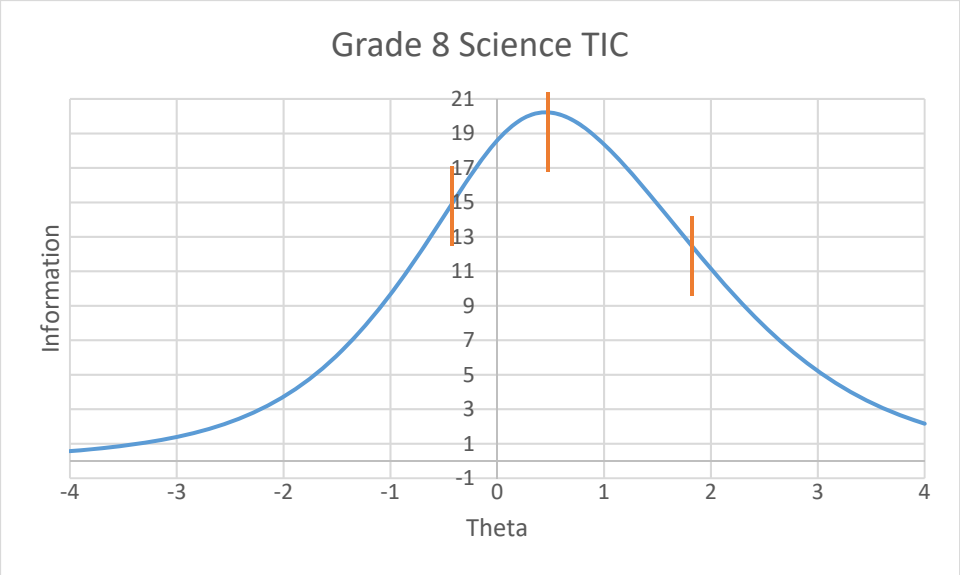
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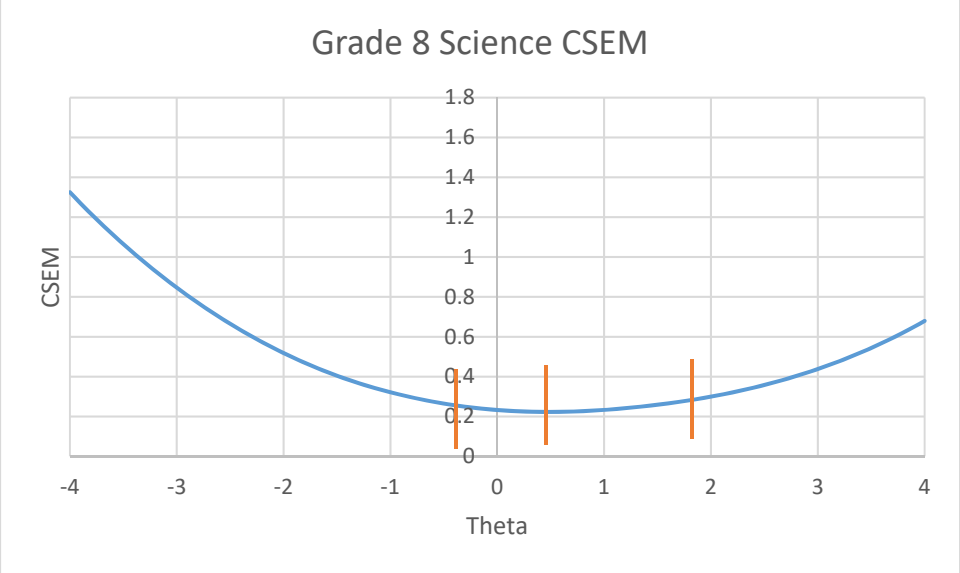
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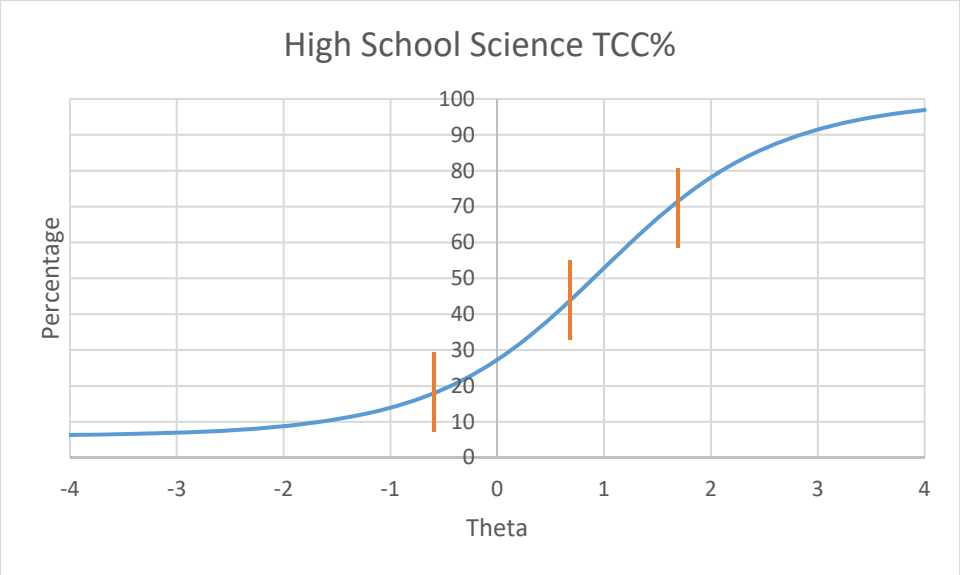
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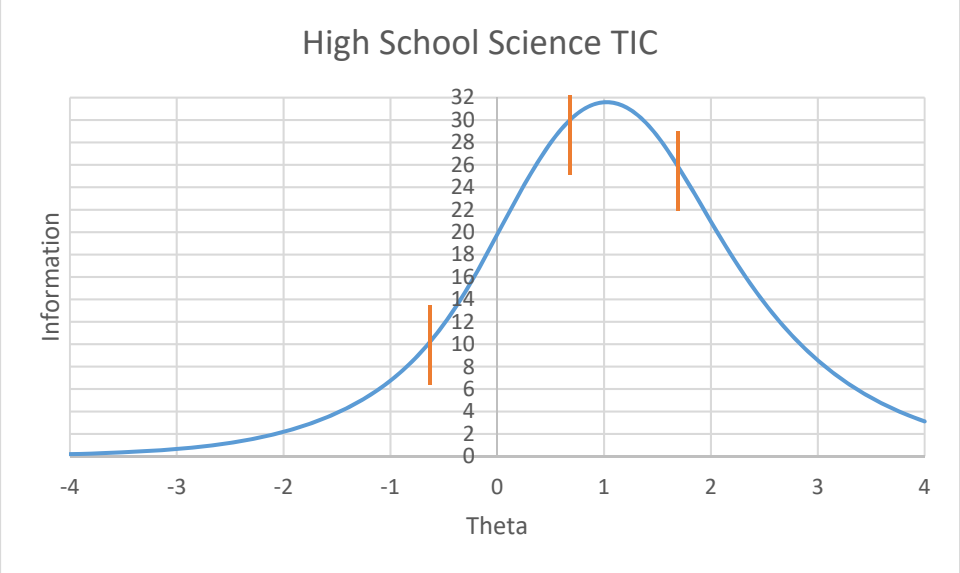
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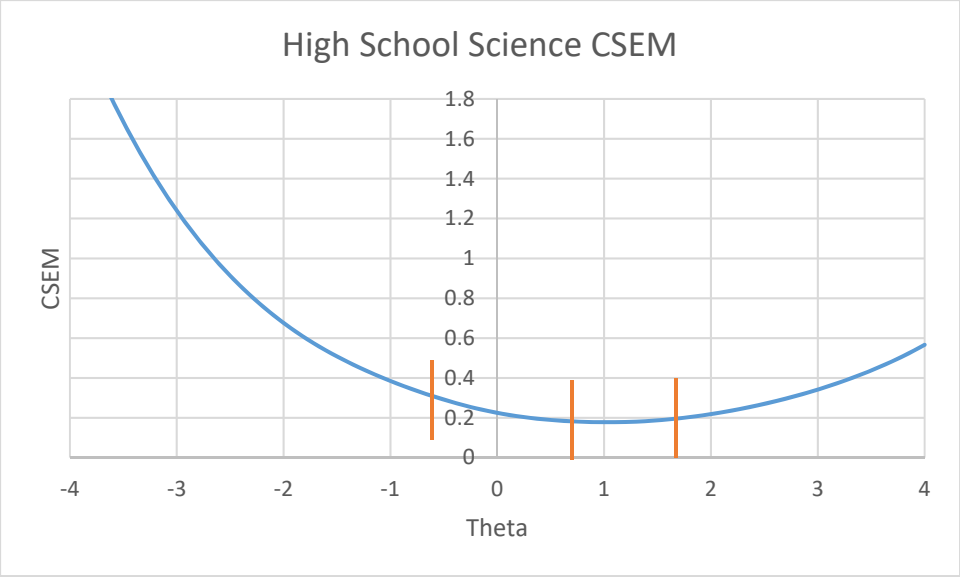
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APPENDIX E: REVISED HIGH SCHOOL SCIENCE ALIGNMENT RESULTS

HumRRO Summary of Range-of-Knowledge Results for the Science CMAS – High School

Standard	Prepared Graduate Competencies	Grade Level Expectations	Percent of GLEs per PGC Matched to at Least One Item
Physical Science	Observe, explain, and predict natural phenomena governed by Newton's laws of motion, acknowledging the limitations of their application to very small or very fast objects.	Newton's laws of motion and gravitation describe the relationships among forces acting on and between objects, their masses, and changes in their motion – but have limitations.	**100.00**
	Apply an understanding of atomic and molecular structure to explain the properties of matter, and predict outcomes of chemical and nuclear reactions.	Matter has definite structure that determines characteristic physical and chemical properties.	**100.00**
		Matter can change form through chemical or nuclear reactions abiding by the laws of	
		Atoms bond in different ways to form molecules and compounds that have definite properties.	
	Apply an understanding that energy exists in various forms, and its transformation and conservation occur in processes that are predictable and measurable.	Energy exists in many forms such as mechanical, chemical, electrical, radiant, thermal, and nuclear, that can be quantified and experimentally	**78.57**
		When energy changes form, it is neither created not destroyed; however, because some is necessarily lost as heat, the amount of energy available to	
Life Science	Explain and illustrate with examples how living systems interact with the biotic and abiotic environment.	Matter tends to be cycled within an ecosystem, while energy is transformed and	**92.86**
		The size and persistence of populations depend on their interactions with each other and on the abiotic factors in an	
	Analyze the relationship between structure and function in living systems at a variety of organizational levels, and recognize living systems' dependence on natural selection.	Cellular metabolic activities are carried out by	**100.00**
		The energy for life primarily derives from the interrelated processes of photosynthesis and cellular respiration. Photosynthesis transforms the sun's light energy into the chemical energy of molecular bonds. Cellular respiration allows cells to utilize	
		Cells use passive and active transport of substances across membranes to maintain relatively stable intracellular	
		Cells, tissues, organs, and organ systems maintain relatively stable internal environments, even in the face of changing external environments.	

	Prepared Graduate Competencies	Grade Level Expectations	Percent of GLEs per PGC Matched to at Least One Item
	Analyze how various organisms grow, develop, and differentiate during their lifetimes based on an interplay between genetics and their environment.	Physical and behavioral characteristics of an organism are influenced to varying degrees by heritable genes, many of which encode instructions for the	**64.29**
		Multicellularity makes possible a division of labor at the cellular level through the expression of select genes, but not the	
	Explain how biological evolution accounts for the unity and diversity of living organisms.	Evolution occurs as the heritable characteristics of populations change across generations and can lead populations to become better adapted	**100.00**
Earth Systems Science	Describe and interpret how Earth's geologic history and place in space are relevant to our understanding of the processes that have shaped our planet.	The history of the universe, solar system and Earth can be inferred from evidence	**78.57**
		As part of the solar system, Earth interacts with various extraterrestrial forces and energies such as gravity, solar phenomena, electromagnetic radiation, and impact events that influence the planet’s geosphere, atmosphere, and	
	Evaluate evidence that Earth’s geosphere, atmosphere, hydrosphere, and biosphere interact as a complex system.	The theory of plate tectonics helps explain geological, physical, and geographical	**100.00**
		Climate is the result of energy transfer among interactions of the atmosphere, hydrosphere,	
		The interaction of Earth's surface with water, air, gravity, and biological activity	
		Natural hazards have local, national and global impacts such as volcanoes,	
	Describe how humans are dependent on the diversity of resources provided by Earth and Sun.	There are costs, benefits, and consequences of exploration, development, and consumption of renewable and	**100.00**
	Number of PGCs Assessed Adequately		**10 of 10**