MASONRY 1 – 4
COURSE CODES: 6250, 6251, 6252, 6253
Academic Standards and Indicators (Alignment Reference)

English and Language Arts

SC Standard A2. Reading: Informational Text (RI)
Reading-Informational Text: Principles of Reading (P)
Standard 1: Demonstrate understanding of the organization and basic features of print.
Standard 2: Demonstrate understanding of spoken words, syllables, and sounds.
Standard 3: Know and apply grade-level phonics and word analysis skills when decoding words.
Standard 4: Read with sufficient accuracy and fluency to support comprehension.
Reading-Informational Text: Meaning and Context (MC)
Standard 5: Determine meaning and develop logical interpretations by making predictions, inferring, drawing conclusions, analyzing, synthesizing, providing evidence, and investigating multiple interpretations.
Standard 6: Summarize key details and ideas to support analysis of central ideas.

Reading-Informational Language, Craft, and Structure (LCS)
Standard 9: Apply a range of strategies to determine and deepen the meaning of known, unknown, and multiple-meaning words, phrases, and jargon; acquire and use general academic and domain-specific vocabulary.
Standard 10: Analyze and provide evidence of how the author's choice of purpose and perspective shapes content, meaning, and style.
Standard 11: Analyze and critique how the author uses structures in print and multimedia texts to craft informational and argument writing.
Reading-Informational Text: Range and Complexity (RC)
Standard 12: Read independently and comprehend a variety of texts for the purposes of reading for enjoyment, acquiring new learning, and building stamina; reflect and respond to increasingly complex text over time.

SC Standard A3. Reading: Building Vocabulary
Reading-Informational Text: Principles of Reading (P)
Standard 2: Demonstrate understanding of spoken words, syllables, and sounds
Standard 3: Know and apply grade-level phonics and word analysis skills when decoding words.
Reading-Informational Text: Language, Craft, and Structure (LCS)
Standard 9: Interpret and analyze the author's use of words, phrases, and conventions, and how their relationships shape meaning and tone in print and multimedia texts.

SC Standard A4. Writing: Developing Written Communications (W)
Writing: Meaning, Context, and Craft (MCC)
Standard 1: Write arguments to support claims with clear reasons and relevant evidence.
Standard 2: Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

SC Standard A5. Writing: Producing Written Communications in a Variety of Forms
Writing: Meaning, Context, and Craft (MCC)
Standard 3: Write narratives to develop real or imagined experiences or events using effective techniques, well-chosen details, and well-structured event sequences.
Writing: Language (L)
Standard 4: Demonstrate command of the conventions of Standard English grammar and usage when writing and speaking.
Standard 5: Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing.
Writing: Range and Complexity (RC)
Standard 6: Write independently, legibly, and routinely for a variety of tasks, purposes, and audiences over short and extended time frames.

SC Standard A6. Researching: Applying the Skills of Inquiry and Oral Communication
Inquiry-Based Literacy Standards (I)
Standard 1: Formulate relevant, self-generated questions based on interests and/or needs that can be investigated.
Standard 2: Transact with texts to formulate questions, propose explanations, and consider alternative views and multiple perspectives.
Standard 3: Construct knowledge, applying disciplinary concepts and tools, to build deeper understanding of the world through exploration, collaboration, and analysis.
Standard 4: Synthesize information to share learning and/or take action.
Standard 5: Reflect throughout the inquiry process to assess metacognition, broaden understanding, and guide actions, individually and collaboratively.
Reading-Informational Text: Meaning and Context (MC)
Standard 7: Analyze the relationship among ideas, themes, or topics in multiple media and formats, and in visual, auditory, and kinesthetic modalities.
Communication: Meaning and Context (MC)
Standard 1: Interact with others to explore ideas and concepts, communicate meaning, and develop logical interpretations through collaborative conversations; build upon the ideas of others to clearly express one's own views while respecting diverse perspectives.
Standard 2: Articulate ideas, claims, and perspectives in a logical sequence using information, findings, and credible evidence from sources.
Standard 3: Communicate information through strategic use of multiple modalities and multimedia to enrich understanding when presenting ideas and information.
Language, Craft, and Structure (LCS)
Standard 4: Critique how a speaker addresses content and uses stylistic and structural craft techniques to inform, engage, and impact audiences.
Standard 5: Incorporate craft techniques to engage and impact audience and convey messages.

MATHEMATICS ACADEMIC STANDARDS

Elementary Algebra (Algebra 1, Foundations in Algebra, Intermediate algebra, Algebra 2)
SC Standard A7. The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation. **(SCEA-1)**
Arithmetic with Polynomials and Rational Expressions

AAPR.1* 1A.AAPRI* A2.AAPR.1* Add, subtract, and multiply polynomials and understand that polynomials are closed under these operations.

Creating Equations

A1ACE.1* FA.ACE.1* 1A.ACE.1* Create and solve equations and inequalities in one variable that model real-world problems involving linear, quadratic, simple rational, and exponential relationships. Interpret the solutions and determine whether they are reasonable.

Reasoning with Equations and Inequalities

A1.AREI.4* IAAREI.4* A2.AIEI.1* Solve mathematical and real-world problems involving quadratic equations in one variable.

Structure and Expressions

A1.ASE.1* FA.ASE.1* IA.ASE.1* A2.ASE.1* Interpret the meanings of coefficients, factors, terms, and expressions based on their real-world contexts. Interpret complicated expressions as being composed of simpler expressions.

Interpreting Data

A1SPID.7* FA.SPID.7* Create a linear function to graphically model data from a real-world problem and interpret the meaning of the slope and intercept(s) in the context of the given problem.

SC Standard A8. The student will demonstrate through the mathematical processes an understanding of relationships and functions. **(SCEA-3)**

Building Functions

FBF.1* Write a function that describes a relationship between two quantities.

b. Combine functions using the operations addition, subtraction, multiplication, and division to build new functions that describe the relationship between two quantities in mathematical and real-world situations.

Interpreting Functions

FIF.2* Evaluate functions and interpret the meaning of expressions involving function notation from a mathematical perspective and in terms of the context when the function describes a real-world situation.

GEOMETRY

SC Standard A9. The student will understand and utilize the mathematical processes of problem solving, reasoning, and proof, communication, connections, and representation. (**SCG-1)**

- Communicate knowledge of geometric relationship using mathematical terminology appropriately.
- Demonstrate and understanding of how geometry applies in real-world contexts (including architecture, construction, farming, and astronomy).

SC Standard A10. The student will demonstrate through the mathematical processes an understanding of the properties of basic geometric figures and the relationships between and among them. **(SCG.2)**

Circles

GCI.5* Derive the formulas for the length of an arc and the area of a sector in a circle and apply these formulas to solve mathematical and real-world problems.

Congruence

GCO.1* Define angle, perpendicular line, parallel line, line segment, ray, circle, and skew in terms of the undefined notions of point, line, and plane. Use geometric figures to represent and describe real world objects.
GCO.9* Prove, and apply in mathematical and real-world contexts, theorems about the relationships within and among triangles…
GCO.10* Prove, and apply in mathematical and real-world contexts, theorems about parallelograms…

Geometric Measurement and Dimension

GGMD.1* Explain the derivations of the formulas for the circumference of a circle, area of a circle, and volume of a cylinder, pyramid, and cone. Apply these formulas to solve mathematical and real world problems.

Expressing Geometric Properties with Equations

GGPE.5* Analyze slopes of lines to determine whether lines are parallel, perpendicular, or neither. Write the equation of a line passing through a given point that is parallel or perpendicular to a given line. Solve geometric and real-world problems involving lines and slope.

Modeling

GM.1* Use geometric shapes, their measures, and their properties to describe real-world objects.
GM.2 Use geometry concepts and methods to model real-world situations and solve problems using a model.

Similarity, Right Triangles, and Trigonometry

GSRT.4* Prove, and apply in mathematical and real-world contexts, theorems involving similarity about triangles…
GSRT.11 Use the Law of Sines and the Law of Cosines to solve for unknown measures of sides and angles of triangles that arise in mathematical and real-world problems.

Pre-Calculus

SC Standard A11. The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation. **(SC PC-1)**

Structure and Expressions

PC.ASE.1 Interpret the meanings of coefficients, factors, terms, and expressions based on their real-world contexts. Interpret complicated expressions as being composed of simpler expressions.

Building Functions

PC.FBF.1 Write a function that describes a relationship between two quantities.

b. Combine functions using the operations addition, subtraction, multiplication, and division to build new functions that describe the relationship between two quantities in mathematical and real-world situations.

Circles

PC.GCI.5 Derive the formulas for the length of an arc and the area of a sector in a circle, and apply the formulas to solve mathematical and real-world problems.

Limits and Continuity

LC.2 Understand the definition and geographical interpretation of continuity of a function.

c. Understand the Intermediate Value Theorem and apply the theorem to prove the existence of solutions of equations arising in mathematical and real-world problems.

SCIENCE ACADEMIC STANDARDS

Biology
SC Standard A16. The student will demonstrate an understanding of how scientific inquiry and technological design, including mathematical analysis, can be used appropriately to pose questions. **(SC B-1)**
Standard H.B.1: The student will use the science and engineering practices, including the processes and skills of scientific inquiry, to develop understandings of science content.

SC Standard A17. The student will demonstrate an understanding of the flow of energy within and between living systems. **(SC B-3)**
Standard H.B.3: The student will demonstrate the understanding that all essential processes within organisms require energy which in most ecosystems is ultimately derived from the Sun and transferred into chemical energy by the photosynthetic organisms of that ecosystem.

Chemistry
SC Standard A19. The student will demonstrate an understanding of how scientific inquiry and technological design, including mathematical analysis, can be used appropriately to pose questions, seek answers, and develop solutions. (**(SC C-1)**
H.C.1: The student will use the science and engineering practices, including the processes and skills of scientific inquiry, to develop understandings of science content.

SC Standard A20. The student will demonstrate an understanding of the types, the cause, and the effects of chemical reactions. (**SC C-4)**
Standard H.C.3: The student will demonstrate an understanding of the structures and classification of chemical compounds.
Standard H.C.5: The student will demonstrate an understanding of the nature and properties of various types of chemical solutions.
Standard H.C.6: The student will demonstrate an understanding of the types, causes, and the effects of chemical reactions.

SC Standard A21. The student will demonstrate an understanding of the structure and behavior of the different phases of matter. (**SC C-5)**
Standard H.C.4: The student will demonstrate an understanding of the structure and behavior of the different state of matter.
Standard H.C.7: The student will demonstrate an understanding of the conservation of energy and energy transfer.

Physics
SC Standard A22. The student will demonstrate an understanding of how scientific inquiry and technological design, including mathematical analysis, can be used appropriately to pose questions, seek answers, and develop solutions. (**SC P-1)**
Standard H.P.1: The student will use the science and engineering practices, including the processes and skills of scientific inquiry, to develop understandings of science content.

Standard H.P.2: The student will demonstrate an understanding of how the interactions among objects and their subsequent motion can be explained and predicted using the concept of forces.
Standard H.P.3: The student will demonstrate an understanding of how the interactions among objects can be explained and predicted using the concept of the conservation of energy.

Earth Science
SC Standard A23. The student will demonstrate an understanding of how scientific inquiry and technological design, including mathematical analysis, can be used appropriately to pose questions, seek answers, and develop solutions. (**SC ES-1)**
Standard H.E.1: The student will use the science and engineering practices, including the processes and skills of scientific inquiry, to develop understandings of science content.
Standard H.E.2: The student will demonstrate an understanding of the structure, properties, and history of the observable universe.

SC Standard A24. The student will demonstrate an understanding of Earth's freshwater and ocean systems. (**SC ES-5)**
Standard H.E.5: The student will demonstrate an understanding of the dynamics of Earth's atmosphere. Standard H.E.6: The student will demonstrate an understanding of Earth's freshwater and ocean systems.

SOCIAL STUDIES ACADEMIC STANDARDS

Economics
SC Standard A25. The student will demonstrate an understanding of how scarcity and choice impact the economic activity of families, businesses, communities, and nations. (**SC ECON-1)**
ECON-1.1 Explain that the practice of economic decision making is an evaluation process that measures additional benefits versus additional costs.
ECON-1.3 Apply the concept that people respond to positive and negative incentives to past and current economic decisions.

SC Standard A26. The student will demonstrate an understanding of how markets facilitate exchange and how market regulation costs both consumers and producers. (**SC ECON-2)**
ECON-2.1 Illustrate how markets are created when voluntary exchanges occur between buyers and sellers.
ECON-2.2 Explain how efficient markets allocate goods, services, and the factors of production in a market-based economy.
ECON-2.3 Illustrate how competition among sellers lowers costs and prices.
ECON-2.4 Illustrate how an economically efficient market allocates goods and services to the buyers who are willing to pay for them.
ECON-2.5 Explain how business cycles, market conditions, government policies, and inequalities affect the living standards of individuals and other economic entities.

SC Standards A27. The student will demonstrate an understanding of how personal financial decisions affect an individual's present and future economic status. (**SC ECON-5)**
ECON-5.1 Explain how individuals make personal economic decisions and how current spending and acquisition of debt can impact future income.

ECON-5.2 Explain that income for most people is determined by the market value of the productive resources they sell.
ECON-5.3 Explain how wage rates for most workers depend upon the market value of what the workers produce for the marketplace.

World Geography
SC Standard A28. The student will demonstrate an understanding of the physical and human characteristics of places, including the creation of regions and the ways that culture and experience influence the perception of place. (**WG-1)**
WG-1.1 Analyze physical characteristics of the environment that result in opportunities and obstacles for people (e.g., the role of climate in agriculture, site characteristics that limit development).
WG-1.2 Analyze human characteristics of places, including the ways places change with innovation and the diffusion of people and ideas (e.g., the spread of religion and democracy).
WG-1.3 Explain how physical environment and human characteristics can be used to organize a region and how regions change over time (e.g., from heavy manufacturing belts to "rust belts").
WG-1.4 Differentiate the ways in which people change their views of places and regions as a result of physical, cultural, economic and political conditions (e.g., views of the Middle East after September 11, 2001).
WG-1.5 Explain how individuals view places and regions on the basis of their particular stage of life, gender, social class, ethnicity, values, and access to technology (e.g., how retirees have changed the cultural landscape and available human services in Florida).

SC Standard A30. The student will demonstrate an understanding of the characteristics of culture, the patterns of culture, and cultural change. (**WG-4)**
WG-4.1 Identify the characteristics of culture and the impacts of cultural beliefs on gender roles and the perception of race and ethnicity as they vary from one region to another (e.g., legal rights for women in the Middle East and South Asia)
WG-4.3 Compare the roles that cultural factors such as religious, linguistic, and ethnic differences play in cooperation and conflict within and among societies.

SC Standard A31. The student will demonstrate an understanding of the role that geography plays in economic development. **(WG-5)**
WG-5.1 Summarize the changes in the spatial distribution and the patterns of production and consumption of selected goods and services as they vary from one region of the world to another (e.g., the manufacturing shift away from the United States).
WG-5.3 Explain the spatial relationships between various economic activities (e.g., the integrated relationship between farms and markets in agriculture).
WG-5.4 Summarize the factors that influence the location and spatial distribution of economic activities, including the factors of site and situation (e.g., Singapore's deep-water ports and their locations relative to markets).
WG-5.6 Explain the connection between the delivery of goods and services and the transportation and communications networks that are needed to provide them (e.g., the hub-and-spoke systems used by airfreight companies).

United State Government

SC Standards A35. The student will demonstrate an understanding of the basic organization and function of the United States government on national, state, and local levels and the role of federalism in addressing the distribution of power. (**SCG-3)**
USG-3.1 Evaluate the Constitution as the written framework of the United States government, including expression of the core principles of limited government, federalism, checks and balances, separation of powers, rule of law, popular sovereignty, republicanism, individual rights, freedom, equality, and self-government.
USG-3.4 Analyze the organization and responsibilities of local and state governments in the United States federal system, including the role of state constitutions, the limitations on state governments, the typical organization of state governments, the relationship between state and local governments, and the major responsibilities of state governments.

TECHNOLOGY STANDARDS

Empowered Learner
SC Standard A36. Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences. **(ISTE-1)**

- Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.
- Build networks and customize their learning environments in ways that support the learning process.
- Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.
- Understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.

Digital Citizen
SC Standard A37. Students recognize the rights, responsibilities, and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. **(ISTE-2)**

- Cultivate and manage their digital identify and reputation and are aware of the permanence of their actions in the digital world.
- Engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.
- Demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.
- Manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

Knowledge Constructor

SC Standard A38. Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others. **(ISTE-3)**

- Plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.
- Evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.
- Curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.
- Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

Innovative Designer

SC Standards A39. Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions. **(ISTE-4)**

- Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
- Select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.
- Develop, test, and refine prototypes as part of a cyclical design process.
- Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.

Computational Thinker

SC Standard A40. Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions. **(ISTE-5)**

- Formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.
- Collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.
- Break problems into component parts, extract key information, and develop descriptive models to understand complex systems to facilitate problem-solving.
- Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

Creative Communicator

SC Standard A41. Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats, and digital media appropriate to their goals. **(ISTE-6)**

- Choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.
- Create original works or responsibly repurpose or remix digital resources into new creations.

- Communicate complete ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models, or simulations.
- Publish or present content that customizes the message and medium for their intended audiences.

Global Collaborator
SC Standard A42. Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally. **(ISTE-7)**

- Use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.
- Use collaborative technologies to work with others, including peers, experts, or community members, to examine issues and problems from multiple viewpoints.
- Contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.
- Explore local and global issues and use collaborative technologies to work with others to investigate solutions.

NETS for Students: