

SAU 39 Competency Statements

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Science

For more information on each competency including the standards aligned within each, please visit: <https://nqss.nsta.org/CrosscuttingConceptsFull.aspx>

Cause & Effect: Students will investigate, explain, and evaluate potential causal relationships, using evidence to support claims and predictions about the mechanisms that drive those relationships.

Energy & Matter: Students will analyze evidence (e.g., investigations, models, theories, scenarios) to predict and track changes in the cycling of matter and flow of energy within and between systems in order to identify their possibilities and limitations.

Patterns: Students will observe, predict, and analyze patterns in order to support evidence-based claims about relationships (e.g., cause and effect, structure and function, macroscopic and microscopic).

Scale, Proportion, & Quantity: Students will apply reasoning and modeling to determine the proportional relationships in observable and non-observable phenomena in terms of relative scale and quantity.

Stability & Change: Students will analyze and evaluate the stability of natural and human designed systems in order to develop evidence-based explanations and predictions of changes over time.

Structure & Function: Students will analyze the relationship among structure and function of natural or human designed objects, using evidence to redesign or support claims about survival and/or improved performance.

System & System Models: Students will investigate and analyze a natural or human designed system in order to develop and justify a model that accurately represents the system or aspects of the system (e.g., boundaries, inputs, outputs, interactions, and behaviors).

Mathematics

Expressions and Equations 6-8: Students will solve expressions, equations and inequalities, represent and analyze quantitative relationships between dependent and independent variables, work with radical and integer exponents, analyze and solve linear equations, and understand the connections between proportional relationships, lines and linear equations.

Functions 8-HS: Students will define, evaluate and compare functions and then use functions to model relationships between quantities.

Geometry K-12: Students will solve problems involving spatial reasoning using properties of 2- and 3-dimensional figures to analyze, represent, and model geometric relationships in pure/theoretical and authentic, applied contexts.

Math Practices K-12: Students will be to apply the practices of mathematics in order to demonstrate their understanding of skills and concepts pertinent to their grade level expectations.

Measurement and Data K-5: Students will strategically use tools and apply proportional reasoning and precision to solve measurement problems in pure/theoretical and authentic applied contexts.

Numbers and Operation in Base Ten K-5: Students will reason abstractly and quantitatively, recognizing and making appropriate use of mathematical symbols and expressions for a variety of purposes, including variables.

Numbers and Operations in Fractions 3-5: Students will apply additive, multiplicative, and fractional reasoning using multiple strategies (algorithms, models, manipulatives) to solve authentic applied problems.

Operations and Algebraic Thinking K- 5: Students will demonstrate an understanding of number systems, thinking flexibly and attending to precision and reasonableness when solving problems using whole numbers, fractions, and decimals.

Ratios and Proportional Relationships 6-7: Students will use ratio reasoning and analyze proportional relationships to solve real-world mathematical problems.

Statistics and Probability 6-HS: Students will develop an understanding of statistical variability, summarize and describe distributions, develop, use, and evaluate probability models and investigate patterns of association.

The Number System 6-8: Students will add, subtract, multiply and divide rational numbers.

English Language Arts

Reading Literature: Students will demonstrate the ability to comprehend, analyze, and critique a variety of increasingly complex print and non-print literary texts.

Reading Informational: Students will demonstrate the ability to comprehend, analyze, and critique a variety of increasingly complex print and non-print informational texts – including texts for science, social studies, and technical subjects.

Writing: Students will demonstrate the ability to effectively apply narrative strategies, write informative texts to examine and convey complex ideas, and analyze and critique texts or topics and support claims and reasoning with sufficient evidence all for a variety of purposes and audiences.

Speaking and Listening: Students will demonstrate the ability to listen and view critically for variety of purposes, and the ability to speak purposefully and effectively - strategically making decisions about content, language use, and discourse style.

Reading Foundational: (Word Recognition K-5, Fluency K-5, Phonological Awareness K-1, Print Concepts K-1): Students will read to make meaning while flexibly using a variety of strategies, to apply and extend literacy skills with fluency and independence at grade level complexity.

Social Studies

Civics: Students will understand the important institutions of their society and the principles that these institutions are intended to reflect. They will learn the processes and rules by which groups of people make decisions, govern themselves, and address public problems.

Economics: Students will understand the ways in which individuals, , governments, and societies make decisions to allocate resources, influencing the well-being of individuals and society.

Geography: Students will develop geographical reasoning through a deep knowledge of Earth’s physical and human features, including the locations of places and regions, the distribution of landforms and water bodies, and historic changes in political boundaries, economic activities, and cultures.

History: Students will examine various historical time periods or events to understand and evaluate change and continuity over time and making appropriate use of historical evidence to develop credible explanations of historical events and arguments about the past.

Thinking Critically and Communicating: Students will gather information from a variety of sources evaluating the relevance of that information. Claims and counterclaims will be developed through purposeful selection of evidence to support arguments. Students will communicate their conclusions in a variety of forms (writing, speaking and listening) and to a range of audiences.

Core Arts

Creating – Students will conceive and develop new artistic ideas and work.

Performing, Presenting, Producing

- Performing (*dance, music, theatre*): Students will realize artistic ideas and work through interpretation and presentation.
- Presenting (*visual arts*): Students will interpret and share artistic work.
- Producing (*media arts*): Students will realize and present artistic ideas and work.

Responding – Students will understand and evaluate how the arts convey meaning.

Connecting - Students will relate artistic ideas and work with personal meaning and external context.

Work Study Practices

Collaboration – Students will be able to work with other people in a process that requires interdependence to solve a problem, achieve a goal, or complete a task.

Communication – Students will be able to leverage venue, mode, and audience to effectively convey meaning, discern and interpret messages, and signify understanding.

Creativity – Students will be able to personally interpret experiences, imagine and play with new possibilities, and create approaches that are novel, useful, and valued by the world around the

Self-Direction – Students will be able to self-regulate, find value in structured and self-initiated tasks, and capitalize on failure; evaluating and collaboratively steering learning towards long-term goals and aspirations.

References

The following resources were referenced in developing SAU 39's competency statements:

- [C3 Framework for Social Studies](#)
- [Essential Skills and Dispositions Framework](#)
- [Next Generation Science Standards](#)
- [Common Core State Standards](#)
- [NHDOE State Model Competencies](#)
- [National Core Arts Standards](#)