



## Colorado GROW Youth Institute

### Global Challenge Curriculum Alignment with the Colorado Academic High School Standards

#### Science

##### Science and Engineering Practices:

- Define a design problem that involves the development of a process or system with interacting components and criteria and constraints that may include social, technical and/or environmental considerations.
- Make a quantitative and/or qualitative claim regarding the relationship between dependent and independent variables.
- Construct and revise an explanation based on valid and reliable evidence obtained from a variety of sources (including students' own investigations, models, theories, simulations, peer review) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.
- Design, evaluate, and/or refine a solution to a complex real-world problem, based on scientific knowledge, student-generated sources of evidence, prioritized criteria, and tradeoff considerations.
- Make and defend a claim based on evidence about the natural world or the effectiveness of a design solution that reflects scientific knowledge, and student-generated evidence.
- Evaluate competing design solutions to a real-world problem based on scientific ideas and principles, empirical evidence, and/or logical arguments regarding relevant factors (e.g. economic, societal, environmental, ethical considerations).
- Critically read scientific literature adapted for classroom use to determine the central ideas or conclusions and/or to obtain scientific and/or technical information to summarize complex evidence, concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
- Gather, read, and evaluate scientific and/or technical information from multiple authoritative sources, assessing the evidence and usefulness of each source.
- Communicate scientific and/or technical information or ideas (e.g. about phenomena and/or the process of development and the design and performance of a proposed process or system) in multiple formats (including orally, graphically, textually, and mathematically).

### Cross-Cutting Concepts:

- Cause and Effect: Mechanism and Prediction – Events have causes, sometimes simple, sometimes multifaceted. Deciphering causal relationships, and the mechanisms by which they are mediated, is a major activity of science and engineering.
- Systems and System Models – A system is an organized group of related objects or components; models can be used for understanding and predicting the behavior of systems.
- Stability and Change – For both designed and natural systems, conditions that affect stability and factors that control rates of change are critical elements to consider and understand.

### **Reading, Writing, and Communicating**

#### Standard 1: Oral Expression and Listening

- Collaborate effectively as group members or leaders who listen actively and respectfully, pose thoughtful questions, acknowledge the ideas of others; contribute ideas to further the group's attainment of an objective
- Deliver effective oral presentations for varied audiences and varied purposes

#### Standard 2: Reading for All Purposes

- Read a wide range of informational texts to build knowledge and to better understand human experience
- Understand how language functions in different contexts, command a variety of word-learning strategies to assist comprehension, and make effective choices for meaning or style when writing and speaking

#### Standard 3: Writing and Composition

- Craft arguments using techniques specific to the genre.
- Craft narratives using techniques specific to the genre.
- Demonstrate mastery of their own writing process with clear, coherent, and error-free polished products.

#### Standard 4: Research Inquiry and Design

- Gather information from a variety of sources; analyze and evaluate its quality and relevance; and use it ethically to answer complex questions.

## Social Studies

### Standard 1: History

- Analyze and evaluate key concepts of continuity and change, cause and effect, complexity, unity and diversity, and significant ideas throughout the world from the Renaissance to the present.

### Standard 2: Geography

- Use geographic tools and resources to analyze Earth's human systems and physical features to investigate and address geographic issues.
- Make connections among geographic variables that influence the interactions of people, places, and environments.
- Investigate patterns of the interconnected nature of the world, its people, and places.

### Standard 3: Economics

- Analyze how the scarcity of productive resources (land, labor, capital) forces choices to be made about how individuals, households, businesses, and governments allocate these resources.

## World Languages

### Standard 2: Cultures – Intercultural Communication

- Interact with cultural competence and understanding
- Use the language to investigate, explain and reflect on the relationship between the practices and perspectives of the cultures studied.

### Standard 3: Connections

- Build, reinforce, and expand knowledge of other disciplines while using the language to develop critical thinking and to solve problems creatively
- Access and evaluate information and diverse perspectives that are available through the language and its culture(s).

### Standard 4: Comparisons

- Develop insight into the nature of language and culture in order to interact with cultural competence
- Use the language to investigate, explain and reflect on the concept of culture through comparisons of the culture(s) and the student's own culture.