HS.Science and Society

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PERFORMANCE EXPECTATIONS
Students who demonstrate understanding can:

HS-SS-2 NM. **Construct an argument using claims, scientific evidence, and reasoning that helps decision makers with a New Mexico challenge or opportunity as it relates to science.** [Clarification Statement: Examples may include, but are not limited to, the Waste Isolation Pilot Plant (WIPP), mining, oil and gas production, solar energy production, environmental remediation, urbanization, water scarcity, forest fires, or flash floods.]

The performance expectations above were developed using the following elements from the NRC document *A Framework for K-12 Science Education*:

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Engaging in Argument from Evidence Engaging in argument from evidence in 9–12 builds on K–8 experiences and progresses to using appropriate and sufficient evidence and scientific reasoning to defend and critique claims and explanations about the natural and designed world(s). Arguments may also come from current scientific or historical episodes in science. • Compare and evaluate competing arguments or design solutions in light of currently accepted explanations, new evidence, limitations (e.g., trade-offs), constraints, and ethical issues. • Evaluate the claims, evidence, and/or reasoning behind currently accepted explanations or solutions to determine the merits of arguments. • Construct, use, and/or present an oral and written argument or counter-arguments based on data and evidence	**ETS 1.A Defining and Delimiting Engineering Problems** ▪ Criteria and constraints also include satisfying any requirements set by society such as taking issues of risk mitigation into account, and they should be quantified to the extent possible and stated in such a way that one can tell if a given design meets them. ▪ Humanity faces major global challenges today, such as the need for supplies of clean water and food or for energy sources that minimize pollution, which can be addressed through engineering. These global challenges also may have manifestations in local communities. **ETS 1.B Developing Possible Solutions** ▪ When evaluating solutions, it is important to take into account a range of constraints, including cost, safety, reliability, and aesthetics, and to consider social, cultural, and environmental impacts.	**Cause and Effect** ▪ Empirical evidence is required to differentiate between cause and correlation and make claims about specific causes and effects. **Systems and System Models** ▪ Model can be used to predict the behavior of a systems, but these predictions have limited precision and reliability due to the assumptions and approximations inherent in models. ---------------------------------- Connections to Nature of Science **Scientific Knowledge is Open to Revision in Light of New Evidence** ▪ Most scientific knowledge is quite durable but is, in principle, subject to change based on new evidence and/or reinterpretation of existing evidence. ▪ Scientific argumentation is a mode of logical discourse used to clarify the strength of relationships between ideas and evidence that may result in revision of an explanation. **Science Addresses Questions about the Natural and Material World** ▪ Science and technology may raise ethical issues for which science, by itself, does not provide answers and solutions. ▪ Science knowledge indicates what can happen in natural systems—not what should happen. The latter involves ethics, values, and human decisions about the use of knowledge.

Connections to other DCIs in this grade-band: ETS 1.B Bullet 2
Articulation of DCIs across grade-bands: N/A

Common Core State Standards Connections:
ELA/Literacy –

RST 9-12.1	Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.
RST 9-12.8	Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.
RI 9-12.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.
W 9-12.1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
SL 9-12.4	Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.
SL 9-12.5	Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.

Mathematics -

MP2	Reason abstractly and quantitatively
MP3	Construct viable arguments and critique the reasoning of others
MP4	Model with mathematics
HSS.IC.B.6	Evaluate reports based on data

STEM Ready!