

NGSS Alignment

<p>HS-ESS3-1.</p>	<p>Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.</p>	
<p>Constructing Explanations and Designing Solutions</p>	<p>ESS3.A: Natural Resources</p> <ul style="list-style-type: none"> Resource availability has guided the development of human society. <p>ESS3.B: Natural Hazards</p> <ul style="list-style-type: none"> Natural hazards and other geologic events have shaped the course of human history; [they] have significantly altered the sizes of human populations and have driven human migrations. 	<p>Cause and Effect</p> <p>Connections to Engineering, Technology, and Applications of Science</p> <p>Influence of Science, Engineering, and Technology on Society and the Natural World</p>
<p>HS-ESS3-2.</p>	<p>Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.</p>	
<p>Engaging in Argument from Evidence</p>	<p>ESS3.A: Natural Resources</p> <ul style="list-style-type: none"> All forms of energy production and other resource extraction have associated economic, social, environmental, and geopolitical costs and risks as well as benefits. New technologies and social regulations can change the balance of these factors. <p>ETS1.B: Developing Possible Solutions</p> <ul style="list-style-type: none"> 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. (secondary) 	<p>Connections to Engineering, Technology, and Applications of Science</p> <p>Influence of Science, Engineering, and Technology on Society and the Natural World</p> <p>Connections to Nature of Science</p> <p>Science Addresses Questions About the Natural and Material World</p>

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<p>HS-ESS3-3.</p>	<p>Create a computational simulation to illustrate the relationships among the management of natural resources, the sustainability of human populations, and biodiversity.</p>	
<p>Using Mathematics and Computational Thinking</p>	<p>ESS3.C: Human Impacts on Earth Systems</p> <ul style="list-style-type: none"> The sustainability of human societies and the biodiversity that supports them requires responsible management of natural resources. 	<p>Stability and Change</p> <p>Connections to Engineering, Technology, and Applications of Science</p> <p>Influence of Science, Engineering, and Technology on Society and the Natural World</p> <p>Connections to Nature of Science</p> <p>Science is a Human Endeavor</p>
<p>HS-ESS3-4.</p>	<p>Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.</p>	
<p>Constructing Explanations and Designing Solutions</p>	<p>ESS3.C: Human Impacts on Earth Systems</p> <ul style="list-style-type: none"> Scientists and engineers can make major contributions by developing technologies that produce less pollution and waste and that preclude ecosystem degradation. <p>ETS1.B: Developing Possible Solutions</p> <ul style="list-style-type: none"> 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. (secondary) 	<p>Stability and Change</p> <p>Connections to Engineering, Technology, and Applications of Science</p> <p>Influence of Science, Engineering, and Technology on Society and the Natural World</p>

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<p>HS-ESS3-5.</p>	<p>Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth's systems.</p>	
<p>Analyzing and Interpreting Data</p> <p>-----</p> <p>-----</p> <p>Connections to Nature of Science</p> <p>Scientific Investigations Use a Variety of Methods</p> <p>Scientific Knowledge is Based on Empirical Evidence</p>	<p>ESS3.D: Global Climate Change</p> <ul style="list-style-type: none"> Though the magnitudes of human impacts are greater than they have ever been, so too are human abilities to model, predict, and manage current and future impacts. 	<p>Stability and Change</p>
<p>HS-ESS3-6.</p>	<p>Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.</p>	
<p>Using Mathematics and Computational Thinking</p>	<p>ESS2.D: Weather and Climate</p> <ul style="list-style-type: none"> Current models predict that, although future regional climate changes will be complex and varied, average global temperatures will continue to rise. The outcomes predicted by global climate models strongly depend on the amounts of human-generated greenhouse gases added to the atmosphere each year and by the ways in which these gases are absorbed by the ocean and biosphere. (secondary) <p>ESS3.D: Global Climate Change</p> <ul style="list-style-type: none"> Through computer simulations and other studies, important discoveries are still being made about how the ocean, the atmosphere, and the biosphere interact and are modified in response to human activities. 	<p>Systems and System Models</p>