

ESS3: Earth and Human Activity

ESS3.A: Natural Resources



Kindergarten	4th Grade	8th Grade	Earth & Space Science	Environmental Science
<p>Living things need water, air, and resources from the land, and they live in places that have the things they need.</p> <p>Humans use natural resources for everything they do.</p>	<p>Energy and fuels that humans use are derived from natural sources, and their use affects the environment in multiple ways.</p> <p>Some resources are renewable over time, and others are not.</p>	<p>Humans depend on Earth's land, ocean, atmosphere, and biosphere for many different resources.</p> <p>Minerals, fresh water, and biosphere resources are limited, and many are not renewable or replaceable over human lifetimes.</p> <p>These resources are distributed unevenly around the planet as a result of past geologic processes.</p>	<p>Resource availability has guided the development of human society.</p> <p>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> <p>Most elements exist in Earth's crust at concentrations too low to be extracted, but in some locations where geological processes have concentrated them, extraction is economically viable.</p>	<p>Resource availability has guided the development of human society.</p> <p>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>

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ESS3.B: Natural Hazards



Kindergarten	3rd Grade	4th Grade	8th Grade	Earth & Space Science & Environmental Science
<p>Some kinds of severe weather are more likely than others in a given region.</p> <p>Weather scientists forecast severe weather so that the communities can prepare for and respond to these events.</p>	<p>A variety of natural hazards result from natural processes.</p> <p>Humans cannot eliminate natural hazards but can take steps to reduce their impacts. (Note: This Disciplinary Core Idea is also addressed by 4-ESS3-2.)</p>	<p>A variety of hazards result from natural processes (e.g., earthquakes, tsunamis, volcanic eruptions).</p> <p>Humans cannot eliminate the hazards but can take steps to reduce their impacts.</p>	<p>Mapping the history of natural hazards in a region, combined with an understanding of related geologic forces can help forecast the locations and likelihoods of future events.</p>	<p>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>

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ESS3.C: Human Impacts on Earth Systems



K	1st Grade	5th Grade	6th Grade	8th Grade	Environmental Science
<p>Things that people do to live comfortably can affect the world around them.</p>	<p>Things that people do to live comfortably can affect the world around them. But, they can make choices that reduce their impacts on the land, water, air, and other living things.</p>	<p>Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space. But individuals and communities are doing things to help protect Earth's resources and environments.</p>	<p>Human activities have significantly altered the biosphere, sometimes damaging or destroying natural habitats and causing the extinction of other species. But changes to Earth's environments can have different impacts (negative and positive) for different living things.</p> <p>Typically as human populations and per-capita consumption of natural resources increase, so do the negative impacts on Earth unless the activities and technologies involved are engineered otherwise.</p>	<p>Typically as human populations and percapita consumption of natural resources increase, so do the negative impacts on Earth unless the activities and technologies involved are engineered otherwise.</p>	<p>The sustainability of human societies and the biodiversity that supports them requires responsible management of natural resources.</p> <p>Scientists and engineers can make major contributions by developing technologies that produce less pollution and waste and that preclude ecosystem degradation.</p>