

Relevant Standards for Coral Reefs of Palau: Nature's Amazing Underwater Cities Virtual Field Trip

National Geography Standards

- 4 [The physical and human characteristics of places](#)
- 8 [The characteristics and spatial distribution of ecosystems and biomes on Earth's surface](#)
- 11 [The patterns and networks of economic interdependence on Earth's surface.](#)
- 14 [How human actions modify the physical environment](#)
- 15 [How physical systems affect human systems](#)

Next Generation Science Standards

Grade	Topic	Disciplinary Core Idea	Performance Expectation
K	Life Science	LS1.C Organization for Matter and Energy Flow in Organisms - All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.	K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive.
K	Earth Systems	ESS2.E Biogeology - Plants and animals can change their environment.	K-ESS2-2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.
K	Earth Systems	ESS3.A Natural Resources - Living things need water, air, and resources from the land and they live in places that have the things they need. Humans use natural resources for everything they do.	K-ESS3-1 Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.

K	Earth Systems	ESS3.C Human Impacts on Earth Systems - 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.	K-ESS2-2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. K-ESS3-3 Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment. Also ETS1.B Developing Possible Solutions - designs can be conveyed through sketches, drawing, physical models. These representations are useful in communicating ideas for a problem's solution to other people.
2nd grade	Life Science	LS4.D Biodiversity and Humans - There are many different kinds of living things in any area, and they exist in different places on land and in water.	2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats.
3rd grade	Life Science	LS4.D Biodiversity and Humans - Populations live in a variety of habitats, and change in those habitats affects the organisms living there.	3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.
3rd grade	Life Science	LS4.C Adaptation - for any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all.	3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.
3rd grade	Life Science	LS2.C Ecosystem Dynamics, Functioning, and Resilience - when the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die.	3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

3rd grade	Earth Systems	ESS3.B Natural Hazards - A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts.	3-ESS3-1 Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard (flooding).
4th grade	Earth Systems	ESS3.B Natural Hazards - A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts.	4-ESS3-2 Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.
5th grade	Earth Systems	ESS2.A Earth Materials and Systems - Earth's major systems are the geosphere, the hydrosphere, the atmosphere, and the biosphere. These systems interact in multiple ways to affect Earth's surface materials and processes. The ocean supports a variety of ecosystems and organisms, shapes landforms, and influences climate. Winds and clouds in the atmosphere interact with landforms to determine patterns of weather.	5-ESS2-1 Develop a model using an example to describe the ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.
5th grade	Earth Systems	ESS3.C Human Impacts on Earth Systems - 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.	5-ESS3-1 Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.
Middle School	Life Science	LS2.A Interdependent Relationships in Ecosystems - Organisms, and populations of organisms, are dependent on their environmental interactions both with other living things and with nonliving factors. In any ecosystem, organisms and populations with similar requirements for food, water, oxygen, or other resources may compete with each other for limited resources, access to which consequently constrains their growth and reproduction.	MS-LS2-1 Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

Middle School	Life Science	LS2.B Cycle of Matter and Energy Transfer in Ecosystems - Food webs are models that demonstrate how matter and energy is transferred between producers, consumers, and decomposers as the three groups interact within an ecosystem. Transfers of matter into and out of the physical environment occur at every level. Decomposers recycle nutrients from dead plant or animal matter back to the soil in terrestrial environments or to the water in aquatic environments. The atoms that make up the organisms in an ecosystem are cycled repeatedly between the living and nonliving parts of the ecosystem.	MS-LS2-3 Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.
Middle School	Life Science	LS2.C Ecosystem Dynamics, Functioning, and Resilience - Ecosystems are dynamic in nature; their characteristics can vary over time. Disruptions to any physical or biological component of an ecosystem can lead to shifts in all its populations.	MS-LS2-4 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
Middle School	Life Science	LS2.C Ecosystem Dynamics, Functioning, and Resilience - Biodiversity describes the variety of species found in Earth's terrestrial and oceanic ecosystems. The completeness or integrity of an ecosystem's biodiversity is often used as a measure of its health.	MS-LS2-5 Evaluate competing design solutions for maintaining biodiversity and ecosystem services.
Middle School	Life Science	LS4.D Biodiversity and Humans - Changes in biodiversity can influence humans' resources such as food, energy, and medicines, as well as ecosystem services that humans rely on - for example, water purification and recycling.	MS-LS2-5 Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

Middle School	Earth Systems	ESS3.C Human Impacts on Earth Systems - 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.	MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
Middle School	Earth Systems	ESS3.C Human Impacts on Earth Systems - 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.	MS-ESS3-4 Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.