



Youth Voices Curriculum Sourcebook

Developed by the East-West Center in partnership with the International Union for Conservation of Nature (IUCN)



EAST-WEST CENTER

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The Youth Voices Curriculum Sourcebook was developed by the East-West Center in partnership with the International Union for Conservation of Nature (IUCN) and in collaboration with the IUCN #NatureForAll initiative of the IUCN Commission on Education and Communication and IUCN World Commission on Protected Areas, along with the United Nations Environment Programme.



Published by: IUCN, Gland, Switzerland

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Connecting New Generations to Nature

Young people thrive in nature. Nature is a setting for fun and adventure, promotes health and wellbeing, acts as a laboratory for endless scientific exploration, and connects young and old generations to cultural roots. When young people forge personal connections to nature, the benefits to individual and societal health are lasting and they lay a foundation for lifelong support of nature conservation.

And yet, increasing urbanization (with most of the world's population now living in cities) and other lifestyle changes mean that people of all ages are more disconnected from the natural world. In fact, in many places around the world, nature has been eroded and polluted to such an extent that it is actually harming people who once enjoyed its benefits. The lack of intimate and daily opportunities to convene with nature is exacerbated by the expanding pervasiveness of technology. These forces have distanced people, especially young people, from taking joy in nature, understanding their place in it, and fathoming how the laws of nature govern the availability of resources that sustain economies and livelihoods.

Nature is essential and relevant to individuals and communities, as well as to countries and regions. No matter where people live, they depend on nature to survive and thrive. At the same time, nature increasingly relies on people to care for and sustain it.

This **Youth Voices Curriculum Sourcebook**, developed as part of the [IUCN World Conservation Congress Hawai'i 2016](#) to reach younger generations, aims to infuse nature into teaching and learning endeavors, to help (re)connect children and youth with nature, and to inspire their passion and action for its conservation now and into the future. We hope you will find this curriculum resource (and the companion [IUCN Youth Voices website](#)) practical and useful. We also invite you to [share](#) your experiences, insights, and innovations as you use these materials with learners in your locality and region.

Building on #NatureForAll for Inspiration and Best Practices

While much of the news about nature today is grave—a changing climate, dwindling resources, shrinking habitats, and precarious freshwater supplies—there is much to celebrate. **Youth Voices Curriculum Sourcebook** suggests ideas that enliven classroom experiences, launch excursions, and engage students in out-of-school activities that embody the best practices articulated by IUCN through its [#NatureForAll](#) initiative.

Launched with over 120 partners at the World Conservation Congress in Hawai'i, the initiative has, at its core, a simple idea: the more people experience, connect with, and share their love for nature, the more support there will be for its conservation. Building on this idea, we frame our curricular approach with these strategies drawn from [#NatureForAll](#):

1. Bring children into Nature at an early age.
2. Find and share the fun in Nature.
3. Use urban gateways (e.g., parks, museums, and zoos) to Nature.
4. Embrace technology as a bridge to Nature.
5. Share cultural roots and ancestry in Nature.
6. Seek out diverse partnerships.
7. Empower a new generation of leaders.
8. Provide children and youth with tools they need to heal Nature.

The [#NatureForAll Playbook](#) provides additional details about these strategies and examples of their applications in diverse settings. Additionally, the World Environment Day Lesson Plan, “Nature in Daily Life,” which has been adapted from this Sourcebook and the Playbook by the United Nations Environment Programme, can be found [here](#).

Notes for Teachers

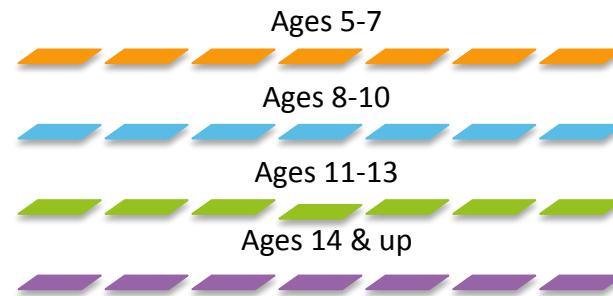
This Sourcebook is intended as a flexible tool to complement and enhance existing school curricula. The activities are versatile and intended to be useful to teachers around the globe, even considering the realities of varying access to resources like time, materials, and technology. Most activities are low-tech or no-tech. While some offer online resources or suggest multimedia presentations, these are optional. Likewise, “research” does not necessitate going to a library or logging on to the Internet. It may be that interviewing local elders, community leaders, or local experts is more appropriate. In fact, our hope is that teachers whose students enjoy easy access to books and digital resources will embrace the low- and no-tech approaches to give their students a new perspective on gathering, interpreting, and sharing knowledge.

The activities embrace the #NatureForAll principles and encourage direct engagement with nature. Just like the world’s environments, human habitats come in an infinite variety. Therefore, “going to a local natural area” will mean different things to teachers and students in different locales. Most children around the world now live in cities, so they might visit a local park or natural area within an urban environment. Wherever students venture out to explore, observe safety measures, including dressing for the weather, gaining parental/legal guardian permission, heeding water safety, and establishing protocols to ensure no one becomes injured or lost.

Likewise, many activities advocate community involvement. The reality in some communities around the world, however, is that environmental activism can be contentious and even dangerous. Therefore, we urge teachers to consider their local situation before engaging students in such projects.

Curriculum Sourcebook Organization

This Sourcebook has over 120 activities organized by learning levels, Themes, and Learning Pathways. There are four learning levels based on age groupings, as noted below. However, we recognize that some classrooms may have students who are over-age for their grade due to having entered school late or having had their schooling interrupted because of family circumstances. Therefore, we encourage teachers to adapt the activities to align with common abilities of their students and demands of the curricula.



Importantly, the Sourcebook is organized around several curriculum-relevant themes and issues that IUCN works across: **Nature Conservation, Climate Change, Water, Oceans, Forests, Gender, Species, and Protected Areas.** These reflect the elements, systems, processes, and phenomena that make up the natural world's interlinked web of life. Nature Conservation and Climate Change represent two **Crosscutting Themes**, complex systems and processes that connect with the six **Topical Themes** (Water, Oceans, Forests, Gender, Species, and Protected Areas) to shape the environment.

The Themes are linked by four **Learning Pathways** (Wonders of Nature, Nature in Daily Life, Nature Today, and Action for Nature), each of which emphasizes a way for young people to experience nature. A more detailed explanation of the Themes and the Learning Pathways are provided below.

Crosscutting Themes

1. Nature Conservation



Nature, in all its diversity, provides our food, secures our water supplies, protects us from hazards, and supports our health. It contributes directly to local livelihoods and global economic development. Moreover, nature provides recreation and inspiration. Yet, despite its fundamental importance for life on this planet, no other feature on Earth is so dramatically influenced by human activities. The relationship between people and nature has always been complex, but today it presents urgent challenges and crucial choices. Meeting the immediate needs and “wants” of growing human populations is threatening the equilibrium and viability of local and global ecosystems. Science indicates there is a closing window of opportunity to safeguard Earth's capacity to support future generations.

Nature is not just a force to be cleared, tamed, or admired from the distance, nor is it an obstacle to human aspirations. It is integral to all our endeavors—providing many of the building blocks that ensure stable and growing economies, as well as healthy populations. When people ignore their effect on nature, human wellbeing suffers. Conversely, when people understand natural systems, they can promote human wellbeing and prosperity while taking thoughtful actions to help nature thrive.

The first steps are learning about and valuing nature. The Sourcebook’s nature conservation activities will guide young people to thoughtful action, such as reducing consumption, exploring the relationship between nature and culture, weighing short-term consumption versus long-term preservation, and finding innovative ways to leverage nature’s systems to benefit people and nature. Check out these additional resources on [Nature Conservation](#) at IUCN Youth Voices.

2. Climate Change



Climate change is one of the most pressing challenges confronting humanity today, and 97 percent of [climate scientists agree](#) that the likely cause is human activity. Burning fossil fuels such as coal, oil, and gas for industry and personal consumption releases heat-trapping greenhouse gases into the atmosphere. Other contributors include livestock, which release methane, and deforestation. Already, climate change is triggering ocean acidification, causing sea levels to rise, and intensifying storms. It is disrupting seasonal weather patterns, altering freshwater supplies, and threatening the viability of productive ecosystems. In short, it is affecting local livelihoods, global economies, food security, and human health. Both the causes and effects of climate change are expected to be exacerbated by the soaring global population of more than seven billion people.

Nature, however, is our ally in the quest to minimize the effects of a warming planet. Healthy ecosystems such as forests, oceans, wetlands, and protected areas, for example, make vital contributions to climate change mitigation by absorbing and storing carbon. They also help vulnerable communities adapt and build resilience to withstand the adverse effects of climate change. Actively engaging in climate change efforts is critical for countries and communities, and young people play an important role.

Climate change activities in this Sourcebook investigate topics such as how organisms fare in a changing climate, how cultural traditions can help build resilience in local populations, how students can make changes in their routines to reduce emissions, and how nature can act as a buffer against the effects of climate change. Explore these additional resources on climate change [here](#).

Topical Themes

The six Topical Themes below allow learners to dive into specific aspects of nature or ecosystems that shape our world and link with humankind and the environment. The myriad intersections these Topical Themes share with human activities, societies, cultures, histories, and economies underscore the urgent imperative for government, public, and private action to preserve the equilibrium of ecosystems so that they can sustain future generations.

1. Water



Water is where all life begins. We rely on it for our existence: to avoid dehydration, grow food, produce goods, and generate energy. Every living thing depends on water, and all societies rely on it for economic growth. However, we have long overstretched this precious resource. Only 3 percent of Earth’s water is freshwater, and about two-thirds of this is frozen in glaciers and polar ice caps. The availability of clean water is diminishing because of pollution, degradation of ecosystems, agricultural runoffs, and more. While water supplies are shrinking, the global population swells.

Climate change, meanwhile, is heightening extreme cycles between drought and precipitation, further aggravating the challenges of sustainably managing water supplies. In this effort, however, nature plays an indispensable role. Natural infrastructure including healthy soil, wetlands, forests, and biodiverse ecosystems can help filter water, direct runoffs, and create buffers that minimize the effects of flooding. These “[ecosystem services](#)” are worth as much as USD \$29 trillion a year throughout the world (source: [@IUCN Water](#)).

The Sourcebook’s water-related activities, such as mapping water supplies and conducting stream studies, help students grasp and retain concepts relating to how water flows through our lives, our economies, and nature. Learn about more ways to protect and conserve [water](#) resources.

2. Oceans



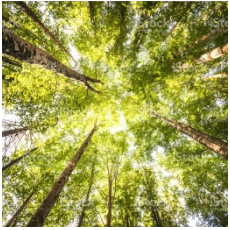
Oceans cover 70 percent of the Earth's surface and serve as the life support system for our planet. The ocean and its ecosystems sustain life on Earth by cycling oxygen and CO₂, regulating climate and temperature to make our planet inhabitable, and providing billions of people and communities across the globe with food and sources of income. However, these benefits and vital services are in jeopardy. Pollution, destructive fishing practices, plastic debris, habitat destruction, and unsustainable coastal development, not to mention offshore drilling, mining, and seabed extractions, are just some of the threats to marine environments and coastal ecosystems caused by human activities and impacts.

The oceans' sheer vastness makes them seem invincible, yet people's everyday actions, even far from the sea, have a profound effect on coastal and deep-water ecosystems. Climate change is increasing temperatures and acidification in the world's oceans, leading to coral bleaching and widespread loss of habitats and species, many of which protect coastal areas from rising sea levels and storm surges.

Most people are unaware of how their routines affect oceans, and how dependent the livelihoods of even non-coastal communities are on long-term marine resource management. The fact is that ocean ecosystems are vital to the wellbeing of individuals, communities, businesses, governments, and nations. Ensuring their health benefits everyone, locally and globally.

In this Theme's activities, students investigate how oceans improve their lives and what threats oceans face. Learn more about oceans at the Sourcebook's companion [Youth Voices website](#).

3. Forests



Forests hum with life. Home to 80 percent of the world's biodiversity on land, forests support plants, wildlife, and countless people who depend on them for water, fuel, and livelihoods. Forests supply other resources too, including traditional and modern medicines, which are derived from more than 70,000 species of plants. Forests are important to water flow as well. Mature forests shelter and release groundwater into streams, safeguarding water supplies when rain is scarce. During heavy rainfalls, they absorb water and stabilize slopes, thus protecting communities from floods. Forests also regulate the Earth's climate by acting as storehouses of carbon and producing essential oxygen.

For all their vibrancy and strength, forest ecosystems are under increasing strain as their abundant resources are harvested faster than they can be replenished. Entire forests are laid to waste for agriculture and development, and illegal logging is further upsetting the fragile equilibrium of forest ecosystems. These include tropical rainforests, which are home to more than half of Earth's plant species. Continued deforestation will result in the loss of biodiversity and its many benefits to our communities and planet. Additionally, when forests are cut down or cleared, they release millions of tons of carbon emissions into the atmosphere, adding to climate change and its devastating effects. The loss of forests is imperiling the communities and economies that depend upon them.

Everyone, therefore, has a stake in preserving forests, and individuals, communities, organizations, and nations can do their part to ensure that forests thrive for present and future generations. The Sourcebook's ideas and activities get students involved in the efforts. Learn more about forests here.

4. Gender



If, as the saying goes, women hold up half the sky, then shouldn't they also help sustain the environment? When gender equity is part of environmental efforts, everyone wins. Involving women and men, who often bring complementary perspectives, in environmental projects and ensuring their equal protection from environmental threats are central to the wellbeing of our planet. Women are not only affected by a changing climate, food insecurity, water scarcity, and natural disasters, but they also offer insights into how their communities can strengthen local and regional environments. They can bring creative business solutions to help address environmental and economic issues. Learn why gender equality and equity are not just matters of fundamental human rights and justice, but also a pre-condition for sustainable development.

This Theme also encompasses the idea that since everyone depends on nature's services, everyone should be involved in safeguarding them. Local ecosystems and cultures are intimately linked. By including indigenous groups, immigrants, and members of society with different cultural as well as social and economic frameworks in environmental initiatives, we promote justice and equality, and have more tools to successfully manage ecosystems and resources. Many traditional societies emphasize a sustainable ethos and implement sustainable practices that can be applied in different settings and cultures. By tapping these, local communities can increase access to food and other resources and become more resilient in the face of climate change.

In 2015, countries around the world pledged to uphold the United Nations' [Global Goals for Sustainable Development](#). These aim to end poverty, protect the planet, and ensure prosperity for all. One of the seventeen specific goals is to achieve gender equality, which will also advance other goals, such as ending poverty and hunger, improving education, and taking action on the climate.

5. Species



Humans have only begun to appreciate the abundance and variety of Earth’s species. There are between eight to fifteen million species in the world, yet fewer than two million have been identified. Extinction, however, is occurring at an alarming rate—up to a thousand times the historical rate. Not only does this diminish the richness of the natural world, but it also makes ecosystems less viable and undermines economic security. However, when it comes to protecting species, there is good news.

Endangered species can make remarkable comebacks when people care about saving them, and scientists are able to identify threats and risks. Today, climate change and rapid development are threatening plants, animals, insects, reptiles, amphibians, birds, and fish. What is the most effective way to help them? By protecting their habitats and stopping the poaching and illegal trade of wildlife.

Traditional conservation is generally based on a “species approach” (deploying efforts to rescue one or several species), or on a “protection approach” that focuses on preserving habitats. Both approaches have proven successful, especially when used in conjunction, and have pulled many of the world’s species and ecosystems from the brink of collapse. They also align with the United Nations’ [Global Goals for Sustainable Development](#), which are committed to protecting ecosystems and halting hunting and trafficking of endangered species.

By restoring and expanding habitats, engaging communities in conserving species, and making a push to reduce carbon emissions locally and globally, habitats and species can rebound and thrive in both natural as well as rebuilt or renewed systems. In exploring this Theme, young people can better understand why saving species—that is, the variety of living organisms present in any specific area—is good for people and nature.

6. Protected Areas



Protected areas can be found in every country on the globe. Whether national parks, wilderness areas, community conservation areas, nature reserves, or some other designation, they are places that are under special protection to preserve their natural resources and wonders. However, far from being cut off from human communities, protected areas help nourish and sustain them. Many are open and accessible so that people can experience and learn about nature.

Protected areas also provide vital ecosystem services: filtering and preserving water, while protecting oceans by trapping sediments and removing fertilizer residues and other toxic elements from water runoff before it reaches the ocean. They protect habitats, giving sanctuary to plant and animal species, cleaning the air, and mitigating the impacts of natural disasters. They form the bulwark against climate change and its effects, while also contributing to people's livelihoods, particularly at the local level. Managing protected areas is crucial to the overall goal of conserving the natural world.

Some of the world's most spectacular areas, like the Galapagos Islands, Great Barrier Reef, Yellowstone, and Kilimanjaro, have been identified as valuable not simply to local cultures or nations, but to humanity at large. The [UNESCO](#) (United Nations Educational, Scientific, and Cultural Organization) deems these and other places, including some marine environments, as [World Heritage Sites](#).

Governments, organizations, communities, indigenous peoples, and young and old alike can all work together to preserve special places and share in the resources they provide. In doing so, humanity recognizes our responsibility to apportion the benefits of nature equitably today and to bestow them to future generations.

Learning Pathways

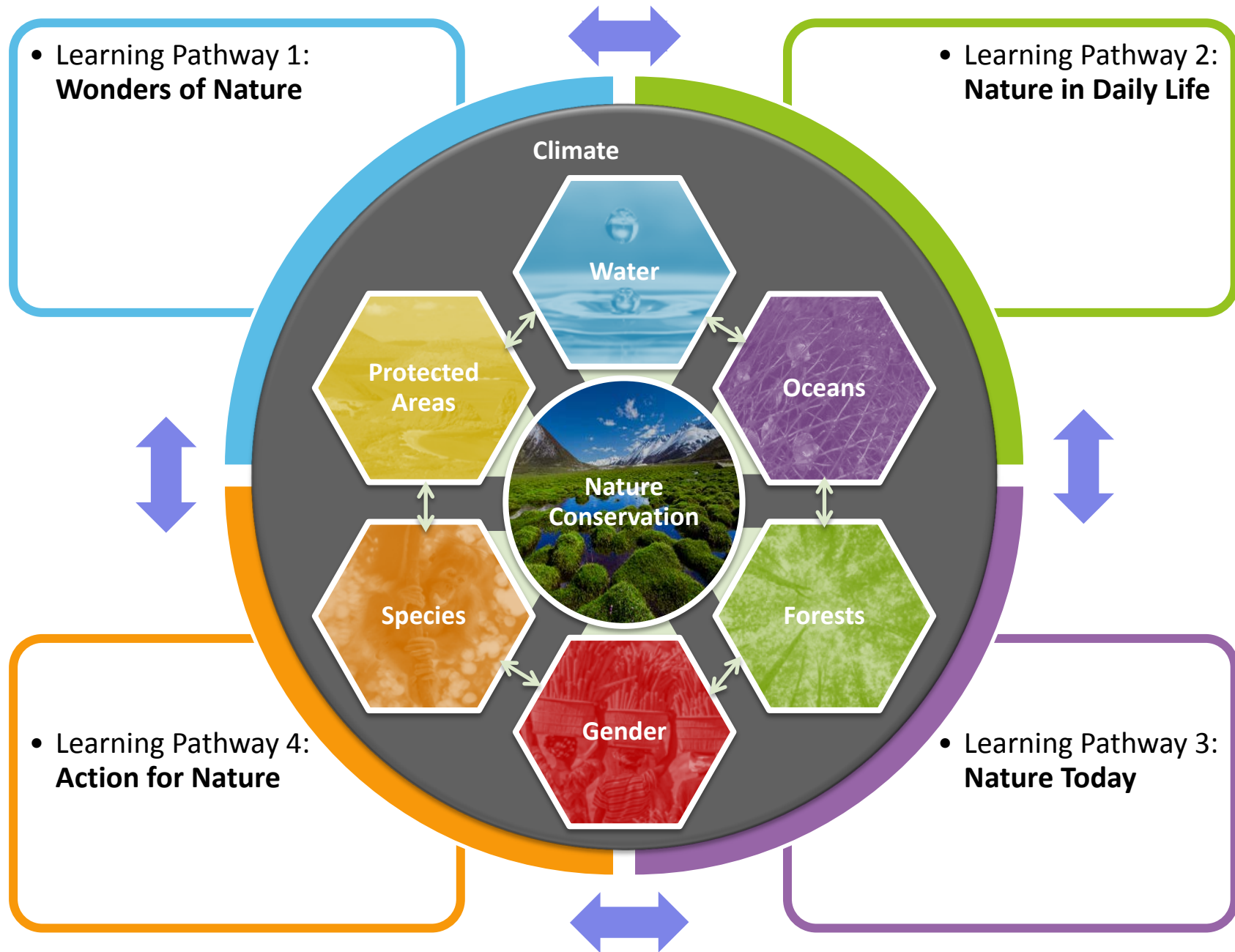
Learning Pathways embody ways to experience nature. They offer a multi-faceted exploration of the natural world and a chance to analyze complex issues, broaden students' perspectives, and plan or enact positive actions. The four Learning Pathways are:

1. **Wonders of Nature:** Infinite in its variety and elegant in its systems, nature is a setting for play, adventure, and never-ending discovery. Sounds, smells, colors, and textures stimulate the senses and restore the spirit as people discover the wonders of wetlands and rivers, the variety of the ocean, the magic of a forest by day and night, the dance between culture and nature, the ingenious adaptations to and contributions of species in an ecosystem, and the role of protected areas in preserving nature for future generations.
2. **Nature in Daily Life:** Nature is useful and relevant to individuals and communities, as well as to countries and regions. No matter where people live, they depend on nature to survive and thrive. In this Pathway, students learn about the role of water in communities, resources provided by oceans, economic benefits of forests, ways in which gender roles can determine people's engagement with environments, the species that share rural and urban ecosystems, and how protected areas supply crucial ecosystem services to communities. At the same time, this Pathway examines how nature's elements and systems all rely on people to care for and sustain them.

3. **Nature Today:** Nature plays a dynamic role in social, political, and economic issues. Investigating real-world case studies from around the globe illuminates how concerns are interconnected, and how people can balance competing goals or even leverage natural systems to solve social and economic problems. Students consider and analyze case studies in their localities to answer questions such as, what are current-day threats to our water supply? How can a nearby forest become a farm? What environmental challenges do girls and women face in our community? How can the community eradicate or reduce invasive species? What is the local process for granting an area protected status?
4. **Action for Nature:** By cultivating knowledge of ecosystems and biodiversity, applying scientific methods, and understanding the role of nature in culture and civic life, we can empower students to become environmental stakeholders who contribute locally and globally to improving their world. Students design and present plans to meet a water challenge in the community, devise and share ideas for protecting marine ecosystems, build a vertical farm (and spare forests from conversion to farmland), measure and promote gender equality in nature conservation projects, make attractive habitats for pollinators, and educate the community about why protected areas are a wise investment from an economic perspective.

The chart below illustrates the interconnectedness of the Themes and how the Learning Pathways interact with them. This Curriculum Sourcebook also offers creative ideas and experiential activities for learning about nature. The ideas are designed to support learning across subject areas and grade levels, and to promote the development of higher-order skills such as critical thinking, analysis, and reflection, as well as practice creativity, communication, and collaboration that are essential to cultivating a classroom of 21st-century learners.

Interactions between/among Learning Pathways and Themes



THEMES	NATURE CONSERVATION	CLIMATE CHANGE
Pathway 1: Wonders of Nature	<p>Ages 5-7 Join the world on June 5 to commemorate World Environmental Day. If children can have access to a safe place to explore nature, including the schoolyard, let them experience nature through their five senses—seeing birds fly, observing insects scurry about, gazing at the clouds; listening for birdsongs or the sound of water; smelling flowers, the ocean breeze, or even rotting wood; tasting fruits, nuts, or refreshing water; and touching trees or sand sifting through their fingers. Back in the classroom, students can reflect on their experience through drawings, stories about the things they did, dances that evoke the movements in nature, or sounds that mimic the ones in nature. Encourage students to share their nature experiences with people and/or animals special to them, or even fantasy friends.</p>	<p>Ages 5-7 Ask children to bring one item of packaging. It could be a plastic bag or bottle, a cardboard box, or any other item. Take all the items children have brought and bring them outside to make a pile. Have children discuss in pairs, and then as a whole group, how the pile changes the look of nature. Then, have them think on their own about what would be the most environmentally sound way to discard the items, and have them share their ideas to the class. The class, as a group, decides on the best methods and follows through with action.</p>
	<p>Ages 8-10 Invite elders (parents, grandparents, or others in the community) to talk to the class about what the local environment was like when they were young. What do they remember seeing, hearing, and feeling? What plants and animals were abundant? How has the environment changed and what remains? How did these changes affect how people played, went to school, and helped their families? In groups, discuss what you would do to restore the local environment and write a story, use images (by drawing, pasting pictures cut out from salvaged magazines, or making a short video) to describe or show how you would use or enjoy the restored area. Include how this would affect your senses (what you see, hear, taste, or feel).</p>	<p>Ages 8-10 Facilitate a discussion on how living beings have adapted to survive in different ecosystems. Then, choose a specific animal or plant and look at its physical and behavioral adaptations to its habitat. If Internet access is available, use thinklink.com to use factual writing to describe the adaptations. Ask students how climate change might affect the organism’s habitat in the present and in the future. How can people help lessen the effects of climate change and preserve the wonders of nature for future generations? Have each student reflect on what they can do and write down and collect their statements of commitment to revisit at a later time. Optional resource: Can Wildlife Adapt to Climate Change? (source: TED-Ed).</p>

THEMES	NATURE CONSERVATION	CLIMATE CHANGE
	<p>Ages 11-13 Organize a walking field trip in the area near your school, with the purpose of proposing a “nature adventure trail” linking the school with neighborhoods, houses, or farms via walking paths. Have the class work together on ideas for a trail, or have them work in small groups to develop ideas for interconnecting trails. Come up with name(s) for the trails(s) and prepare trail guide(s) that include(s) map(s), distances measured through number of steps, and notes about interesting natural and man-made features encountered on the trail(s). Also, have students include trail etiquette and what everyone can and should do to keep trail(s) enjoyable, safe, and accessible for all. For inspiration, check out these two projects, one in Portland, Maine, and the other in Portland, Oregon.</p>	<p>Ages 11-13 Have students think about how culture makes their locality special and the links between culture and the environment. What will the effect of climate change be on local ecosystems and consequently on culture? Have students reflect on how structures, historically significant landscapes, archaeological sites, material objects, archives, and oral history are part of places that they know. Discuss how indigenous and more modern histories endow places with meaning. Research (through interviews, books, and the Internet) their specific locality, examining how climate change might affect its cultural treasures. Devise plans for preserving them and share with other schools via post or Internet. Optional resource: Building Resilience in Times of Change (source: IUCN).</p>
	<p>Ages 14 & Up Work with younger students to organize a school-wide conference on what makes nature in your locality or larger region wonderful, and suggest specific ways that they can protect it through conservation. Consider questions like: Who should be involved in protecting these places? How should they be managed? What are the benefits and how should these be distributed? Why is the wonder of nature worth protecting in places both near and far? Invite parents and community members. Reach out to local, national, and international media to encourage schools in other countries to host their own conferences. Gather their stories and post online or in print media. Optional resource: How to Tell a Love Story (source: IUCN).</p>	<p>Ages 14 & Up Choose a nature area in your locality that may be impacted by climate change. Research how to minimize these impacts (using teacher-compiled materials, reliable web resources such as IUCN, and/or reaching out to local scientists/experts). Create a survey to gather opinions about how much community funding/resources should be allocated to preserve the area. If possible, visit the site and conduct interviews with people to see why they value these areas and how they would feel if the areas were lost. (If a site visit is not possible, interview family members, neighbors, and friends.) Using the prepared survey, poll people about their resource allocation choices, including volunteer time/efforts. Share the poll and interview results online and with local policymakers to promote positive actions.</p>

THEMES	NATURE CONSERVATION	CLIMATE CHANGE
Pathway 2: Nature in Daily Life	<p>Ages 5-7 Create a guide with ideas for a “no-waste lunch.” Ask families to submit creative ideas for wrapping or transporting food and for delicious, locally sourced lunch recipes. Consider costs, taste, nutrition, convenience, and how environmentally friendly it is to obtain, wrap or preserve, and transport the food. If circumstances allow and with help of parents, organize a no-waste lunch party for the students to enjoy together. Vote for your favorite items in different categories.</p>	<p>Ages 5-7 Help the climate by getting to and from school with fewer emissions. Walk to school with siblings, fellow students, and parents; find safe routes for bicycles and pedestrians; or take public transport. As a class, keep track of how many kilometers/miles of commuting per week are low- or no-emission. Reflect on what makes it more pleasant or convenient to walk or bike (season, weather, etc.) and on what steps might encourage people to use alternative transportation more often (cheaper and more frequent bus service).</p>
	<p>Ages 8-10 Draw up a menu for the week consisting of the children’s favorite foods. Identify which are “local” and “traditional.” Ask parents, grandparents, or community elders to teach the class how to prepare a traditional local dish to strengthen cross-generational bonds and increase understanding of what makes your local culture and region of the world special and worth preserving.</p>	<p>Ages 8-10 Refuse, Reduce, Reuse, and Recycle: Minding the “Four Rs” can help minimize the amount of resources you consume in daily life. Identify one single-use plastic item (e.g., a straw or bag) that you don’t need and refuse it next time it is offered. Find creative uses for worn or damaged items and recycle what you can.</p>
	<p>Ages 11-13 Gather data or document your classroom’s or household’s trash. Analyze what the amount and types of waste reveal about your consumption and use of resources. How might your class or family change some habits of consumption to preserve biodiversity and also support your local economy? Come up with a plan and implement it, tracking challenges and successes.</p>	<p>Ages 11-13 Interview people from different walks of life in the community (e.g., homemakers, business owners, farmers and ranchers, government officials, doctors) and ask how climate change affects their lives and work. Ask what people need to help mitigate the impact. Students then form small groups, each representing one walk of life or perspective, and create a mitigation plan. Consult local experts (e.g., scientists) to refine the plan. Then, using a design thinking process of Empathize/Define/Ideate/Prototype/Test, return to the interviewee to solicit feedback. Revise and share the process and results with local media or community leaders.</p>
	<p>Ages 14 & Up Conduct field research by going out into the community and learning about local small businesses that have sustainable practices or have adapted conservation techniques. Create a print or multimedia map or booklet showcasing businesses with sustainable practices, telling how their practices improve the community and encouraging local people to support them.</p>	<p>Ages 14 & Up Choose an issue related to climate change and trace how your understanding of the issue changes as you follow the news and social media forums. How does access to a wide range of perspectives alter the way you think about the causes, impact, and potential solutions? Write an article or produce a multimedia piece analyzing the issue and making a recommendation.</p> <p><i>*Adapted from ASEAN Curriculum Sourcebook, Ch. 5, p. 261.</i></p>

THEMES	NATURE CONSERVATION	CLIMATE CHANGE
Pathway 3: Nature Today	<p>Ages 5-7 Visit a historical society or invite elders into the classroom to talk about how nature’s resources were used sustainably in the past. What rules or customs governed the use of resources? Can any of these be useful today? Draw pictures or write stories about how traditional customs can help current-day conservation efforts.</p>	<p>Ages 5-7 How do you contribute to climate change? Brainstorm as a class ways that you use energy. Now, list, draw, or collect pictures showing things you can do to help slow climate change (planting trees, reusing items) or adopt low-carbon alternatives (wearing an extra layer of clothing instead of heating a room). As a class, keep track of how you contribute to and slow climate change and encourage your families to join you.</p>
	<p>Ages 8-10 Select a common product that students use and ask them to draw a picture of it. Using a worksheet, list the raw materials and original resources needed to make the product. Engage in a class discussion about the effect on the environment and on people from using these resources. Make an advertising campaign for sustainable alternatives and post around the school or community.</p>	<p>Ages 8-10 Explain how climate change is linked to extreme weather events. Ask parents, grandparents, or community elders to describe extreme weather events that have occurred over the past four decades. Chart these events and discuss how climate change may have contributed to their frequency and intensity. Create short-term plans for coping with events and long-term plans for making changes to build resilience or slow climate change. Decide the format in which to present your plans.</p>
	<p>Ages 11-13 Students gather daily items and research what resources are used to make them, where these resources come from, and whether they are limited. Students mark their resources on a world map and discuss ways to reduce their use and/or substitute renewable resources for scarce ones.</p>	<p>Ages 11-13 Conduct climate change surveys among select groups of people. What do they know about the topic? How do they contribute to climate change? How are they affected by it and preparing for it? How do they view justice and equity in the context of climate change? Use the data to create a campaign (in any format) to raise awareness, increase knowledge, or change behavior.</p>
	<p>Ages 14 & Up Open and operate a “Free Store.” Arrange for a storeroom (at school or a community center), and on a regular basis accept donations of school supplies, household items, clothing, tools, and so forth. Offer these items for free. This saves energy and resources and builds community ties. Use an environmental calculator to tally how much energy is saved by reusing different items. Optional resource: Individual Waste Reduction (iWARM) Tool (source: EPA).</p>	<p>Ages 14 & Up Survey the local landscape and create maps of “carbon storehouses” like bogs and forests. Are they threatened or protected adequately? Assess how likely they are to be preserved. Who decides? Who benefits, and who does not? Create an educational campaign to inform the community of the services they provide by storing carbon. Be mindful that in some countries preservation is contentious and advocacy is dangerous, so assess each situation carefully.</p>

THEMES	NATURE CONSERVATION	CLIMATE CHANGE
Pathway 4: Action for Nature	Ages 5-7 Measure how much waste ends up in the class bin on a regular basis (every day or week). Set a target for how much you would like to reduce waste. As a class, keep track of progress. When you reach your target, hold a no-waste party!	Ages 5-7 Measure how far you and your friends or parents walk or ride bikes in a day. Discuss the merits of walking or biking, including being pollution free. Organize contests among classes to see which does the most walking or biking to school. Devise a point system for a range of activities. If escalators and elevators are available, climbing stairs counts for double!
	Ages 8-10 Using a cultural atlas or similar resource, gather examples of traditional ways of life (farming, food preparation, clothing production, storytelling, or play) that help ecosystems and biodiversity. What activities can you and your friends adopt or use in your daily life? Find a way to promote these (presentations, booklets) in your school or community.	Ages 8-10 Take a tally of how many students in the class are wearing clothes that were passed down by someone else—give one point per item of clothing counted. Challenge students to increase the class point total every month by swapping clothes, shoes, and uniforms within the school. Keep a tally of scores and discuss how this saves resources and money.
	Ages 11-13 Host a sustainable design contest and fair with items made from discarded materials: dresses made from bubble wrap, handbags made from old seatbelts, decorative lamps made from bottles, for instance. Give out awards for different categories. Optional resources: <i>Creating Value From Waste</i> .	Ages 11-13 From flooding to drought to hurricanes and earthquakes, every area is threatened by natural disasters. Invite community leaders and emergency personnel to talk to the class about the natural disasters that threaten your community. Create response plans for your family and conduct a drill at home. Research how other communities plan for and respond to similar threats. <i>*Adapted from ASEAN Curriculum Sourcebook, Ch. 5, p. 256.</i>
	Ages 14 & Up Host a heritage festival and invite local cultural groups (including native and immigrant groups) to perform, share stories and local foods, and make crafts that highlight the connections between nature and culture.	Ages 14 & Up Poll students and adults about their climate-change concerns. Investigate how “nature-based solutions” can help. How can these solutions buffer communities from extreme weather? How would they benefit the local economy and what jobs would they bring? Decide on a format (a fair, articles, an exhibit, a book or song) to disseminate your conclusions. Optional resources: What the World Thinks About Climate Change in 7 Charts (PEW Research Center).

THEMES	PATHWAY 1: WONDERS OF NATURE		AGES 5-7
Water	As a class, brainstorm what people love about water, why they need water, and what they fear about water. Create pictures, choosing one item from “love/need” and another from “fear,” while focusing on “care for water and you.” Optional resource: "I Am Water" (source: IUCN).		
Oceans	Gather in small groups. By directly observing the ocean, relying on memory or stories, or looking at pictures, books, and Internet resources, brainstorm how the ocean can be explored through the five senses. Work in small groups and draw pictures or rewrite the lyrics of favorite songs to capture the variety and beauty of the ocean as sensed through sight, sound, smell, touch, and taste. (Adapted from EDSITEment!)		
Forests	Go to a wooded area and gather samples of natural objects that have fallen to the ground (leaves, bugs, rocks, or nuts). Categorize items in as many creative ways as you can think of and attach them to poster board. Display and discuss how these items make the local ecosystem special. Reflect on the conditions needed for the ecosystem to thrive—did you find evidence that the ecosystem is healthy or struggling?		
Gender	Ask students to imagine and draw an “environmental superhero.” Post drawings on the wall, then discuss how many superheroes are male, how many are female, and how many are gender-neutral. Ask students to draw more superheroes to try to achieve equity, then discuss what the benefits might be to environments and societies.		
Species	Place objects of different materials on a trail and have children try to find them (create a list so you can retrieve them all later). Talk about why some items were easy to see and others were not and explain how some species survive by using camouflage. Use interviews, books, magazines, or the Internet to learn about how different species use camouflage. Ask students to draw pictures or create short stories about plants, animals, and insects using camouflage. Optional resource and credit: The Camouflage Trail (National Park Service).		
Protected Areas	Over a weekend or school holiday, ask a parent or elder relative where and how they played in nature as a child and ask to do a similar activity with them. Return to class and share stories and ideas about where and how to enjoy nature.		

THEMES	PATHWAY 1: WONDERS OF NATURE	AGES 8-10
Water	Head outdoors to a playground, park, or natural area in different kinds of weather. Look for clues about which plants or creatures welcome cold or heat, and wet or dry weather. In class, discuss your findings and reflect on why some living things seem to prefer certain conditions. If you live in a village, town, or city, you can make the same observations around your school or home. Based on your observations, draw pictures of nature and people welcoming or avoiding the rain. Optional: Use the drawings as cards and exchange via mail or Internet with another class. As with any activity that takes children outdoors, be mindful of proper gear, temperatures, and the need to provide ways to dry off or change clothing.	
Oceans	Organize a family moon-gazing night and bring warm clothes, blankets, and snacks to a playground park or common area on a clear night. Watch the moon rise and discuss how it is bringing in or pulling out tides around the globe. In small groups, compose new lyrics to a well-known song so that it describes the moon, the tides, and how nature is connected. When families go home, remind them to leave the area cleaner than you found it.	
Forests	Forest in a Jar: Gather elements (water, soil, plants, worms, insects, etc.) needed for an ecosystem, then arrange and secure them in a glass jar with a lid. Put in a sunny place and record growth or deterioration in a scientific log.	
Gender	Ask parents, grandparents, or community leaders how women are helping to manage the environment and natural resources. Use these ideas to write a play or skit that shows how women can make a difference on a local or global environmental issue. Offer ideas for increasing the participation of girls and women in making decisions about the environment.	
Species	Small Wonders: In a nearby natural area, cordon off one square meter with string. Then observe, sketch, collect samples, and record clues about species that are in this small area. These may include insects, plants, footprints, shells, fallen leaves, and so forth. Make a decorative and annotated collage about this tiny ecosystem and compare with those of other students. Explain how they are different and analyze the conditions that might lead to differences in the same park or nature area.	
Protected Areas	Think about inspiring natural places in your country or the world—waterfalls, mountains, fjords—and where you might go to see them. Are they in national parks or other protected areas? How do these places inspire you to protect them? Decide on a format for encouraging a specific group (older people, families, university students, school classes, volunteer or social clubs) to visit a protected place to take part in a specific event or activity.	

THEMES	PATHWAY 1: WONDERS OF NATURE	AGES 11-13
Water	Water comes in wonderful forms. Create a poem, story, or art work about your favorite form of water. It could be something in your daily life (the sound of raindrops on stones, the first snow of the season, making tea with a parent, watering the garden) or a water activity you would like to learn with a grown-up (fish, canoe, snowshoe). As a class, use the creative pieces to form an exhibition either at school or online and share with other classes and schools. Write reflections on your reaction to another person's view of the wonderful forms of water.	
Oceans	Create an ocean scavenger hunt with your class. It can entail visiting an estuary, beach, or tide pool to document or collect shells or types of sand and rocks, seagrasses or kelp, bird feathers, footprints, or evidence of human activity. Or, if you do not live in a coastal area, the hunt may center on finding products (or pictures of these) that come from the ocean. Exchange hunts with another class locally or afar using post or Internet and reflect on what it reveals about the role of the ocean in the global ecosystem. Optional resource: Ocean Portal (National Geographic Kids).	
Forests	Forest Paths: In small groups, map out a path exploring a forest, park, or natural area and marking and describing points of interest. These might be where people can see types of plants or features such as anthills or bird nests, hear the sound of falling water, or smell flowering trees. Exchange maps with another group and follow their path through the woods. Afterwards, explain how you saw the forest differently through the map of another group.	
Gender	Delve into geological or ecological history through legends. Connect with indigenous groups and ask them to share their oral histories that tell the story of the land, how their people originated, and their relationship to nature. In the format of your choice, reflect on how these stories can continue to connect people to the places in your locality today. Share reflections with other classes via post or Internet. Optional resource and credit: Wahikapu o Pele "Sacred Place of Pele" (National Park Service).	
Species	Over a semester or school year, keep a class journal of students' observations of species, including insects, birds, animals, etc. At the end of the allotted time, organize the data and draw conclusions about what kinds of species are prevalent in your area and in what seasons. Use observations about growth, blooming, gathering food, migrating, pollinating, etc. to make an illustrated report about how the environment and seasons affect the activities and populations of local species.	
Protected Areas	Make a list or bring in pictures (your own photos or from magazines) of protected areas that you have heard about or visited. Where are they located? Why would you like to go there and what would you like to do? Taking turns, give a presentation to the class about why your chosen place is special, what it contributes to world nature and heritage, when to visit, what to bring, and what you can do or experience there. Optional resource: World Heritage Outlook (IUCN).	

THEMES	PATHWAY 1: WONDERS OF NATURE	AGES 14 & UP
Water	Visit a local wetland, river, or other natural feature that supplies water with someone who knows the area well, or invite the person to speak to the class. Discuss what surprised you about nature, what you learned (how to read the landscape or how systems are interconnected, for instance), or how the wetland or river protects and sustains the community and your daily life.	
Oceans	Ocean Memories: Make a class book with memories about the ocean, contributed by students based on their own experiences or conversations with elders and others, or even based on experiences of fictional or historical characters. If feasible, make a class trip to the ocean. Create a book or multimedia storybook for younger children that incorporates activities highlighting the sights, sounds, smells, touch, and taste of the ocean. Suggest ways people can protect or restore the ocean. Donate the project to a community or elementary school library or multimedia center.	
Forests	The world around us teems with busy macro-organisms such as snails that can be seen without a microscope, as well as even smaller micro-organisms that perform essential functions in an ecosystem. Snails are important for transferring calcium through the food chain and are vulnerable to disruptions in calcium sources found in plants. Micro-organisms break down organic materials but require micro-nutrients and are vulnerable to herbicides and insecticides. Create a media (print or digital) campaign on behalf of macro- or micro-workers, recognizing their contributions and encouraging people to protect them. Optional resources and credits: Snails (National Park Service) and Microbial Discovery Activity (American Society for Microbiology).	
Gender	In groups of all boys and all girls, develop a talk or play on the most important thing in nature. Next, mix the groups so there are boys and girls in the same group and develop another talk or play. What differences do you notice in how the groups worked and what was presented? Using art or writing, reflect on how the experiment affects your view of how girls, boys, women, and men might work effectively to protect nature.	
Species	Take sketchbooks and drawing materials to a nearby park or natural area. Sit quietly, observe, sketch, draw diagrams (of groupings of plants or movements of creatures), and write down questions (for instance, why do birds take off from the pond in the same direction?). Afterwards in class, compare what you observed and share how the exercise made you feel.	
Protected Areas	As a class, create a plan to connect young people in your community to a local protected area through a cultural activity. This can be a traditional game or sport, storytelling, or way to enjoy a season. In your plan, explain how participation will benefit young people (e.g., by finding a new place to have fun and try a new experience), the protected area (e.g., people protect places they love), and the community (e.g., preserves traditions). Optional resource: Riding Waves, Young People Tune in to Nature's Rhythms (IUCN Youth Voices).	

THEMES	PATHWAY 2: NATURE IN DAILY LIFE	AGES 5-7
Water	<p>Water Show and Tell: Bring objects to class that show how you use water at school or at home. Items might include a sponge for bathing, a toothbrush, a dish towel, watering can, pail for farm animals, and so forth. Organize these into an exhibition with labels explaining how the water is used. Display for the class or school to show how water runs through the course of their daily lives. Include a way for viewers of the exhibit to comment on how they use water and make suggestions for using it wisely.</p>	
Oceans	<p>How can you protect oceans every day? Properly dispose of plastic! Plastic debris finds its way into our oceans, where it harms marine life and ecosystems. Pick up a plastic bag or bottle, or even just a cap, and place it in a bin at school. Periodically measure how much you have collected and dispose of it properly. Near the end of the school year, tally how much plastic your class collected, and on a large piece of paper draw pictures and write notes to ocean creatures wishing them well. Exchange posters via post or online with another class/school. Optional resource: How We Can Keep Plastics Out of Our Oceans (National Geographic).</p>	
Forests	<p>Forest Quest: In your home or at school, find items that you, your family, and your peers and teachers use that come from the forest: timber, fibers, animal products, medicines, or personal products. Make a list of items and attach pictures, and discuss (first in small groups and then as a whole class) what these bring to your lives or how they help you learn.</p>	
Gender	<p>Draw pictures of girls and boys as well as women and men in daily life activities around your community. Discuss the pictures: Do students assume some activities are done by males and others by females? Why? Discuss what might happen if men and women participate more equally and draw pictures reflecting this.</p>	
Species	<p>Dedicate a class bulletin board to “Species in My Day.” If you see a species of animal, fish, insect, or plant, find out its name, write it on a note card, and post it on the bulletin board. At the end of a month, decide on categories and organize the species.</p>	
Protected Areas	<p>Visit a protected or natural area, or a park. Find natural or man-made features that give clues about the history of the place: boulders, towering trees and new shoots, buildings, trails, or bridges. Discuss what was here first and how the area might have changed over time. As a class, create a presentation, song, or skit about the place, why it is special, how it has changed over time, and how you would like to preserve it for the future. Share with another class nearby and ask them to share their experiences. Discuss whether they were different and think of ways you could enjoy and protect each other’s special area. Optional resource and credit: Timeline Scavenger Hunt (National Park Service).</p>	

THEMES	PATHWAY 2: NATURE IN DAILY LIFE	AGES 8-10
Water	<p>Where does the water go? When it rains, how is water absorbed or channeled in your community? Become rain detectives. Looking out the windows or going outside if feasible, observe and record how water reacts to different surfaces—accumulating on asphalt and concrete, disappearing down drains (or backing up onto the street), or falling lightly from a tree. Make “Rain Drain maps” of the neighborhood or school area and point out trouble spots. Brainstorm possible solutions for these areas. As with any activity that takes children outdoors, be mindful of proper gear, temperatures, and the need to provide ways to dry off.</p>	
Oceans	<p>Keep a log for a week of items you and your family use or consume that come from the ocean. Research (using interviews, print resources, or the Internet) where in the ocean these items come from and create a map showing their places of origin. Present the map at school. Using post or email, exchange maps with a class in another location and compare what is the same/different and how this affects your daily life. Discuss what factors determine the use of ocean products (geography, economic, or cultural factors).</p>	
Forests	<p>Visit a forest and look for elements, living and non-living, that make up the ecosystem. (If a visit is not possible, visit a small natural area, or look at pictures.) Back in class, make a card with a picture for each element and post on a wall or arrange on the floor, sorting the cards into different groups including “producers,” “consumers,” and “decomposers.” How do these functions maintain balance in the ecosystem? Use string to link cards to one another and show how they are connected and interdependent. What would happen if one element is removed from an ecosystem? How are people connected to this ecosystem and what are their roles? Reflect on how people might help or hinder the jobs of producers, consumers, and decomposers in an ecosystem. Optional resource and credit: Life in the Balance (National Park Service).</p>	
Gender	<p>Create a “then” and “now” poster comparing traditional gender roles in nature with modern-day ones. How have roles for men/boys and women/girls changed (or not) in the last five decades? What factors influenced (or impeded) change? Think about what changes you would like to see and why. Turn first to the person sitting nearest you to share your thoughts, and then form a small group to discuss your ideas. As a class, share group summaries and, individually, write a personal reflection on what you heard or learned and any ideas that made you think differently about the roles of girls/women and boys/men in nature.</p>	
Species	<p>Urban or Rural Safari: What species inhabit your street or schoolyard? If feasible, look for tracks in the sand, mud, or dirt, especially nocturnal species you may not see during the day. What kinds of species do you think they are? Are some considered pests or are they appreciated as part of the ecosystem? Create a short story telling why they make their homes near people, and how they co-exist or compete with humans. Optional resource: Who Passed This Way? (National Park Service).</p>	
Protected Areas	<p>Arrange a visit to a bureau that manages a local park or protected area (or invite a staff member to talk to your class, mail in a questionnaire, or connect via email or phone) and find out what goes into managing these places. As a class, draft a list of questions beforehand, and afterwards discuss how you would manage a natural area and address different challenges.</p>	

THEMES	PATHWAY 2: NATURE IN DAILY LIFE		AGES 11-13
Water	Find out where your water comes from. What type of source is it (a watershed that feeds a river system, underground source, or something else) and what is it called? Where does it originate and how is it stored and treated? What threats exist to the viability of your community’s supply (such as climate change or deforestation)? Make signs to inform the community and mobilize their support.		
Oceans	People around the world look to the sea for dinner, but overfishing is threatening fish populations. Visit local stores and restaurants where seafood is sold: Do they provide information on what is sustainably caught? If not, ask the fish seller. Were you satisfied with the answer? In class, students present their findings, compare experiences, and create a sustainable seafood menu or informational poster. Optional resource: It’s Not a Sushi Bar—It’s the Sea! (IUCN).		
Forests	An ecosystem service is a benefit delivered by nature to people. It can be clean air, freshwater, resources that can be made into products, or organisms or processes that regulate systems (like bees that pollinate food-bearing plants, carbon storage that helps regulate the Earth’s temperature, or mangroves that provide flood protection). Some services are immediate (turning trees into lumber products) but may diminish or threaten long-term services (like carbon storage or water filtration). Make lists and bring in pictures of ecosystem services that are provided by forests. Reflect on the value of forest ecosystem services: Which ones are vital, and which are superfluous? How can short- and long-term benefits and sacrifices be compared? Are benefits shared equally across a population or generations? If there are differences of opinion, work in small groups to come up with ways to share in forest resources now and in the future. Optional resource: Cities Are Landscapes Too (IUCN).		
Gender	As a class, discuss how you and others in your community use natural resources. Does this align with your ideas of gender roles? Working in groups, design a survey about how people use resources. For instance, who selects food, gathers fuel or firewood, or prepares for disasters? Record ages and gender of participants. Analyze your data: Are the roles for girls and boys or women and men different? Why? Would there be benefits to sharing or broadening roles?		
Species	Using direct observation, available data, or anecdotal evidence, learn about an individual species of fish, animal, plant, or insect that is indigenous to your area. What kind of habitat do they need to thrive? What factors have affected this more recently (change in predators, habitats, encroachment of humans, natural disasters)? Create a chart or presentation that documents the changes to the species’ biome and what factors contributed to those changes. <i>Adapted from ASEAN Curriculum Sourcebook, Ch. V, p. 262.</i>		
Protected Areas	Organize a family “night hike” at a park or natural area that is safe for such an activity. Walk quietly single file or in pairs, observing, then gather to discuss how the sights, sounds, and activities in the area are different than in the day. Back in class, record your observations and, in groups, question how the night-time environment supports different species or plays a role in the ecosystem. (Inspired by Your 50 Things).		

THEMES	PATHWAY 2: NATURE IN DAILY LIFE	AGES 14 & UP
Water	How do natural and man-made infrastructures affect the water cycle in your area? Conduct field research and interviews to find out about the role of wetlands, soil, and glaciers, as well as dams, viaducts, reservoirs, and irrigation. Create charts illustrating the role of each feature and assessing its effectiveness in managing the water cycle, as well as threats to future stability. Reflect on how public works or private actions could help strengthen the system, and create a format to present your findings with community leaders in the private or public sector. Optional resources: Biodiversity: Natural Solutions for Water Security (Convention on Biological Diversity and United Nations Environment Programme) and " Mark Smith on Water for Nature, Nature for Water " (IUCN).	
Oceans	Marine protected areas can buffer coastal communities from the effects of climate change, including rising sea levels, more severe storms, flooding, and erosion. Investigate a coastal community (firsthand or through books, magazines, or Internet resources) and the state of its natural defenses, such as marshes, reefs, mangroves, and sea grass. Suggest nature-based solutions. Present your findings to community leaders or write to elected officials. Track what happens and, if nothing, reflect on additional ways to promote action. Optional resource: " Mediterranean Marine Protected Areas as Nature-Based Solutions to Climate Change " (IUCN).	
Forests	How does biodiversity make a healthy forest? Make direct observations or conduct research through interviews, books, and Internet resources. Create a plan to measure biodiversity. What data would you need to gather? What tools would you use? How could you measure changes over time? How would you protect or restore biodiversity? Share your "plan for action" and write a commitment statement of one action you will take during the school year. These are collected by the teacher and revisited in the middle and at the end of the school year to check on progress or revise. Optional resource: Sustainability Action Process/Biodiversity (State of NSW Department of Education).	
Gender	Given that 50 percent of people who depend on the environment are female, when it comes to managing and protecting natural resources, women and girls have an equal stake and can play a pivotal role. However, they are often left out of restoration and conservation projects. Conduct field research, going into your community to ask girls and women about challenges they face in getting involved and work together with them and with an environmental or community group to increase involvement.	
Species	With greater development of towns, cities, and farmland, wildlife and people are brought into greater contact. Investigate a wildlife-people conflict in your area, talking to different people involved and gathering evidence (i.e., photos or descriptions of trampled crops, overturned garbage). Lay out the points of contention and work with the people affected to design creative solutions. Present your proposal to local community leaders or other stakeholders. Optional resources: " Fierce Yet Fragile: Coexistence in a Changing World " (IUCN), " Thinking Outside the Box on Human-Wildlife Conflict " (Deutsche Welle), and " Wolves on the West Coast " (Center for Biological Diversity).	
Protected Areas	Protected areas are not just beautiful places to visit; they can also provide important resources (like freshwater, timber, filtration of pollutants, or carbon storage) to communities. What are some ways that nature supports human health and wellbeing? If you can, go to a park or other nature-rich space yourself to explore these benefits. What are some innovative ways to encourage people to visit parks for health and wellbeing, while also ensuring these special places remain protected? Create a video or poster, perform a skit, or make a speech to "sell" your innovative idea to your school or community. Optional resource: Miracle of Trees (IUCN).	

THEMES	PATHWAY 3: NATURE TODAY	AGES 5-7
Water	<p>As a class, observe and track water around your school. On rainy days, measure and record rainfall in certain areas, and gauge soil moisture and stream flow (if appropriate and safe to your location). Determine how best to illustrate or present your data to show the change of water availability through the year. How does nature respond to these changes? What about people? Reflect on how nature and people depend on water and how we can protect and conserve this resource. Also, evaluate how you gathered data: Is it fully scientific or not? What are the benefits and limitations of these kinds of observations and the tools used to make them?</p>	
Oceans	<p>Learn how ocean organisms are part of an ecosystem. Name ocean organisms and list their characteristics on a board. Each student chooses an organism from the board, draws its picture, and writes its name on a placard to wear. Students link hands with others to whom they are connected in the food chain and ecosystem.</p> <p><i>Adapted from EPA Quest for Less, "Ecosystem Escapade," 13-14.</i></p>	
Forests	<p>The Story of the Forest: Every forest tells a story. Working with an environmental group, park service, cultural institution, or local elder, arrange a guided walk through a forest, natural area, park, or (with permission) even land that was once a forest and has been converted to farmland. Learn how each environment tells a story: What plants are young and which are very old? Are species native to the area or were they introduced? What previous uses did this land have? How does the ecosystem function now? Back in class, reflect on the experience and, in small groups, create picture books, a play, or song telling the story of the forest. Reflect on your role in the story—how do you use or preserve the forest for the future?</p>	
Gender	<p>As a class, read stories or myths (or ask elders to share oral histories) about cultural ties to nature. Discuss or draw pictures about how myths or fables about nature are relevant today.</p>	
Species	<p>Visit a local zoo or wildlife preserve, or look at photos of animals in habitats. What characteristics do the animals have? How do these help it survive in its habitat? Back in class, imagine and discuss how they might fare if they were put in different habitats or if their habitat changed. Optional resources: Survival of the Fittest (National Park Service) and Life in the Extreme (National Park Service).</p>	
Protected Areas	<p>Connect with a local museum or cultural group to learn about the cultural and historical significance of an area that is protected or that they hope to protect. As a class, choose a place around the school or in the community that has cultural or historical significance to you. Brainstorm reasons why it should be protected and create illustrated postcards to send to school or community leaders, environmental groups or eco-tourism board, or others, telling them why the place deserves a special status.</p>	

THEMES	PATHWAY 3: NATURE TODAY	AGES 8-10
Water	As a class, brainstorm and list “threats to water” and “benefits of water.” Go out into the community and gather more information (by interviewing people, making observations, or researching at the library or on the Internet) to add to your lists. As a class, evaluate what are the most pressing threats and essential benefits of water and make recommendations to balance these. Recommendations can take the form of posters, essays, or a radio or multimedia announcement. Optional resource: “Our Thirsty World” (National Geographic).	
Oceans	Today, sea levels are rising due to climate change. Working in small groups, research the links to “coastal areas,” “recreation,” or “plants, animals, and ecosystems.” Create posters illustrating the link between rising sea levels and one of these topics.	
Forests	Many of the world’s medicines come from forests. Arrange visits with elders in indigenous communities, biologists, doctors, pharmacists, or environmental groups to investigate how forests near and far help keep people in your community healthy. Create posters illustrating the connection between forests and medicine and donate them to clinics, hospitals, or pharmacies to raise awareness about the role of forests in human health. Optional resource: “Rain Forest Medicine” (SNA Kids).	
Gender	Make a “culture and the environment” time capsule with artifacts or mementos. Try to include items that are associated with both girls and boys (or women and men). Exchange your time capsule with another class (perhaps asking someone to transport it to another town, sending via post, or taking photos and sharing over the Internet). Each class looks at the other’s time capsule and tries to draw conclusions about the relationship between culture and the environment in their area. They present (or send) their report to the original class. What conclusions were correct? What was unexpected?	
Species	In small groups, select an endangered species and illustrate (using pictures, poster board, or preferred presentation apps) the web of other species (animals, insects, plants, etc.) that would benefit from its preservation. Hold a school election for the most species with the broadest impact and, as groups, campaign on behalf of each species. Students cast votes for the species that will have the most impact in different categories (ocean, forest, best bird, etc.). Optional resources: “How to Save Endangered Species” (PRI-Public Radio International), “The IUCN Red List” and the Red List website (IUCN). Optional adaptation: Make multimedia presentations and post online for viewers to vote on the species they think will have the most impact on other life forms.	
Protected Areas	Find a natural area or element that has significance for your locality (for instance, a park or natural area, a tree that has stood for centuries, a river system, etc.). Create a picture of it. If feasible, work as a class to link these together into a walking tour and organize one (or more) for your class, families, or community. Or, hold an art exhibit featuring the pictures and hand out local maps that mark their location. Ask people to think about how the community could protect these significant features.	

THEMES	PATHWAY 3: NATURE TODAY		AGES 11-13
Water	Make print or multimedia topographic maps of water sources and delivery systems in your area. Analyze how the natural topography helps or inhibits the water supply: Could infrastructure (natural or man-made) be more efficient? What could be done to ensure sufficient water and mitigate flooding? On the map, mark places where improvements can be made and where preservation efforts should be concentrated, consulting people with engineering or local knowledge if possible.		
Oceans	Investigate why the oceans are among the most threatened ecosystems on Earth. Make recommendations for how the international community can protect them and identify a change your community can make (even if your community is not close to any ocean) to improve the health of the oceans (cutting carbon emissions, for instance).		
Forests	Forests and farmland are often at odds, but some people are trying to make farms within forests. Visit a forest (or consult people, pictures, books, or Internet resources for information on them) and evaluate forest conditions for growing crops, including light, water, soil, and space. Make a “forest-farm plan,” including crops that might fare well in forest conditions and instructions for planting, cultivation, irrigation, and harvesting. You can present your plan as an illustrated booklet or on an electronic platform. If there is a suitable space available, you can try to put your plan into action and share your experiences. Optional resource: "Agroforestry" Agriculture That Cultivates Forest (FRUTA Channel) .		
Gender	What environmental challenges confront women and families in your community? Investigate local issues (food security, disaster preparedness, shortage of firewood) and interview women and girls about how changing environments are affecting their daily lives. Ask them what solutions they think might be effective or make your own proposals. Showcase your findings in either print profiles or a video documentary. Share with another school via post or online and reflect on and respond to one another’s work, suggesting ways communities might join forces. Optional resource: “Gender and Climate Change Short Film,” produced by the students of Central School in Port Vila, Vanuatu, to portray “the challenges faced by women and young families in Vanuatu to adapt to climate change” (Pacific Media Assistance Scheme).		
Species	Invasive species disrupt local ecosystems and economies. In small groups, talk to elders, community leaders, and others to find out what invasive species (plants, fish, animals, insects) are in your area. How were they introduced, why did they thrive, and how might they disrupt ecosystems and economies? Think of ways that you, your peers, and family can keep from inadvertently introducing or facilitating the spread of invasive species. How can you help reduce native species already in place? Devise a community campaign to raise awareness and educate the public.		
Protected Areas	Invite community members who belong to an indigenous or immigrant community to share cultural significance and medicinal uses of native species in protected areas. While it is important to leave these species in place and undisturbed, it is also valuable to reflect on how areas that are left wild still have cultural as well as biological significance. Optional resource and credit: Cultural Uses for Native Plants (National Park Service).		

THEMES	PATHWAY 3: NATURE TODAY	AGES 14 & UP
Water	<p>You can go back in time by “reading” the landscape around a river. Visit a river in your area, mapping and recording in different places: Is there evidence of changing flow in sediment deposits or the shape and height of riverbanks? What is the distribution of plant species along the riverbank versus further inland, and what might this tell you about changes to the river’s course over time? Is there man-made infrastructure, and how does this affect the river today versus a century ago? Create a tour telling the history of the river and share it with parents or younger students, or create an illustrated or multimedia presentation to exchange via post or online with another class.</p>	
Oceans	<p>Campaign for Coral: Coral reefs are repositories of biodiversity and store carbon, but they are threatened by ocean acidification. Whether you live in a coastal or inland community, you have a stake in the health of these world treasures. As a class, hold an event to raise awareness about coral reefs. Invite speakers or make presentations on coral reef threats, changes your community can make (such as reducing emissions), and why people around the world should care. Optional resources: Use chemistry and common ingredients to understand how the ocean is becoming more acidic. Refer to Corals and Chemistry (EPA climate change website) and Conserving Coral Reefs (TED-ed); Sample project made by high school students: Coral Bleaching (Sacred Hearts Academy).</p>	
Forests	<p>In many parts of the world, drylands are far more prevalent than forests. Investigate how drylands (possibly near you) still provide important ecosystem services to people and wildlife. Find out what threatens these fragile ecosystems and how other communities have managed them successfully. Talk to stakeholders and write an opinion piece for the local newspaper, or send a letter to community leaders proposing a new approach. Optional resources: World Day to Combat Desertification (United Nations) and Lands of Hope (IUCN).</p>	
Gender	<p>Conduct field research by gathering information on women in the labor force and their impact on the environment. Invite community leaders to class and ask them how they involve female citizens in decision-making about the environment and economy. What are their roles compared to those of men? Are any local businesses owned by women? Now compare the impact of these businesses to environmental degradation or threats in your area (food security, natural disasters) and write an essay, make a short film, or write a photo story to share your creative business solutions for the problems. Optional resource: "Gender Equality and Global Environment" (GEF Secretariat).</p>	
Species	<p>Host a roundtable with an environmental lawyer, an environmental activist, and other community leaders to discuss how your community can balance biodiversity, economic growth, and human wellbeing.</p>	
Protected Areas	<p>Using interviews or consulting books, maps, government records, or Internet resources, map protected areas in or around your community. Include when the sites were designated, how it is managed, and what its contribution is. Create a short tutorial (in print or digital format) on the process for gaining protected status and share with other schools via post or Internet. Compare processes and reflect on what makes systems effective. Optional resources and approach: Explore the World Database of Protected Areas and other resources at: www.protectedplanet.net. What regions of the world have the greatest and least amount of protected areas? Why do you think these differences exist? What might they mean for the species (including people) that live in or near protected areas? Choose a country or region and write an essay on the subject.</p>	

THEMES	PATHWAY 4: ACTION FOR NATURE	AGES 5-7
Water	Observe how water is used in the community. As a class, brainstorm ideas for how families and schools can conserve water. Make pictures illustrating these and share with the community (online or by making printed copies or displaying originals). Ask people to send or bring in a postcard telling how they changed their habits and display or share these.	
Oceans	Draw pictures of ocean creatures and habitats. Make these into a set of note cards to mail to friends, give in sets as gifts, or sell to raise money to protect ocean habitats or creatures.	
Forests	Forests are friends to communities around the world, providing freshwater and resources. Think of ways you and your class can be friends to the forest. Propose a school day where students help forest habitats or the creatures that are part of the forest ecosystem. Students may decide to invite available family members to come and help build bird houses, collect litter, maintain trails, or remove invasive plants. Optional resource: Indigenous Peoples and Forests (IUCN).	
Gender	Make a class book called “Yes We Can” with photos or drawings of women or men who did not confine themselves to traditional gender roles, but pursued their dreams to achieve financial success and/or improve their communities by setting up businesses that are making a positive environmental impact.	
Species	Make or find a compost bucket or pile, then observe and record how worms and other organisms break down organic waste into soil. What conditions do you think help make fertile compost? Make a compost bucket or pile at school and perfect your “recipe.” Use the compost to plant flowers or vegetables in pots or a garden. Make compost recipe cards for your family and friends that include the benefits of composting.	
Protected Areas	Interview and record (taking notes or using audio or video) elders at home or in your community, asking them about traditional or indigenous words surrounding nature: plants, animals, the names of rivers or mountains, and so forth. Create a picture dictionary (in print or digital format), or identifying cards to put on a map, or pictures of places to recognize and help preserve their traditional names (with translations or summaries in a language widely used in your community and, if possible, in English, a common language in many countries).	

THEMES	PATHWAY 4: ACTION FOR NATURE	AGES 8-10
Water	Make a plan to save water in and around your home and neighborhood and create a public service announcement (in the form of a presentation, flyer, pamphlet, audio, or video) educating people about the water services that nature provides, how it benefits people and economies, and how people can conserve this precious resource.	
Oceans	If you live in a coastal community, organize a beach cleanup. If not, organize a river or waterfront cleanup. Debrief afterwards to discuss what types of litter you found and identify what you can do, individually and collectively, to reduce litter and other pollution in oceans, rivers, and/or waterways.	
Forests	Forests are natural allies to urban areas. Conduct an urban survey identifying areas where “forest or tree pathways” could connect green spaces and help wildlife and ecosystems thrive. These can be large or small scale. Present your plan to your school, neighborhood, or even town/city officials.	
Gender	Make a class chart of environmental challenges in your community. Discuss how they affect boys and girls differently. Create a skit that explores and solves the dilemma. Form a club with interested parents and work with a local organization to host an event that involves girls in helping the environment. Be sure to document your event by asking participants to write about it or submit photos or videos, and share these via post or Internet with a similar club at a different school.	
Species	Pollinators increase biodiversity and are crucial for food security, yet some populations are collapsing. Learn about local pollinators (through observation, interviewing people, or consulting books or the Internet) and make homes and hospitable habitats for them. Draw up a plan for a bee and butterfly garden or a flower box filled with pollinator-friendly plants, and obtain approval from school (or parents or elder family members) to plant a garden at your school or home.	
Protected Areas	Visit a local protected area or learn about one in your country or region. Create a profile of the area (in the form of an eco-tourism brochure or multimedia format) explaining why the site is important to world heritage and why people far away should know about it and be invested in protecting it. Optional resources: World Heritage Outlook (IUCN) and Tsingy de Bemaraha Strict Nature Reserve (UNESCO/NHK).	

THEMES	PATHWAY 4: ACTION FOR NATURE		AGES 11-13
Water	Research community service opportunities with organizations that conserve and safeguard water (a river system, wetlands, even a forest). On a school holiday, devote your day to volunteering with your classmates.		
Oceans	Create a public service campaign about the effects of plastics in our oceans and organize a cleanup of discarded plastic bags (which find their way into storm drains and eventually to the ocean). Document your campaign through writings, photos, or video, and share with another school via post or Internet.		
Forests	A vertical farm is a way to plant a crop in an indoor space and preserve natural spaces that would otherwise be converted to farmland. Invite a carpenter or parent to help, or research how to design a place to grow vegetables or herbs in the classroom or an area inside or outside of the school. Keep irrigation and sunlight in mind. Document the process of designing and building by taking notes, photos, or video. Use these to create a how-to document or multimedia piece, including successes and lessons learned. Exchange with other schools via post or Internet and discuss what you learned from looking at their projects and identifying how some of their techniques might improve yours. Optional resource: “Farming the London Way” (Deutsche Welle).		
Gender	Create a specific plan to involve girls and women in one of your other Action for Nature activities. Keep track of participation and, after the activity, write down reflections about challenges and successes surrounding gender equity in sustainability. Exchange your findings with another class or school using post or Internet, and discuss how your approaches can be adapted in different settings. Optional resource: “Gender Equality: Now” (World Fish).		
Species	Find out if there are local groups interested in hiking, nature photography or sketching, bird watching, or hunting native plants. Invite them to speak in class or lead a class outing to share their expertise. As a class, create an illustrated guide to local birds or native plants in the area. Include characteristics, habitats, the seasons in which they are present or visible, how they function as part of local ecosystems, and what might be threatening their health or numbers. Also, include a place for people to note where and when they spot species, and encouraging them to share this information with your class. Distribute the book through the community by displaying it or donating copies to schools, libraries, and cultural bureaus, or by making it available in digital format. Optional resource: “Saving Endangered Native Hawaiian Plants One Seed at a Time” (University of Hawai‘i).		
Protected Areas	Select an ecosystem or distinct natural area in your community that you believe should be kept wild. List its ecological and cultural characteristics, the pressures it faces, the stakeholders involved, and how preserving it as a wilderness will increase biodiversity or provide ecosystem services. Create a presentation to give to community members or government officials urging them to take steps to protect the area. Optional resource: Protected Landscapes and Wild Biodiversity (IUCN).		

THEMES	PATHWAY 4: ACTION FOR NATURE	AGES 14 & UP
Water	Identify a water challenge in your community (flooding, drought, competing demands by agriculture and business) and design a plan to mitigate the problem. Identify how it could be done and what support would be needed. Based on this, write an op-ed piece for your school or local paper, or post it on a community board and invite comments. As a class, you could also present your plan to community leaders or environmental groups.	
Oceans	How can oceans and their wondrous treasures be a part of human heritage? Investigate (using print or Internet resources) marine ecosystems in your community, country, or region. Working in small groups, present a rationale and a plan for protecting a marine ecosystem chosen because of its significance to world heritage. Exchange ideas (via post or Internet) with students at other schools to learn about different marine ecosystems and ideas for protecting them. Optional resource: UNESCO's Marine World Heritage (UNESCO).	
Forests	Many dry areas of the world used to be forests. By interviewing people with land-use or historical knowledge, or by looking at records in historical institutions or government offices, find out whether forests once covered your locality. What happened to make them disappear, when, and why? Use maps to determine an advantageous setting for reforestation, solicit input from stakeholders, and outline steps and resources needed, as well as benefits. Present your plan in the community or exchange with another class or school online or via post. Optional resources: Trees for Water: China (IUCN) and "Forest Landscape Restoration in South Africa" and "Forests and Indigenous Peoples" (IUCN) and Miracle of Trees (IUCN).	
Gender	Women are valuable partners in preparing communities for withstanding the effects of climate change. Find out how climate change will affect your community and interview women who are leading the charge in making your community more resilient. Document and disseminate their contributions, as well as ideas for how others might model their efforts. You might create a book or website featuring the women, or hold a community awards ceremony and picnic to recognize them publicly.	
Species	Helping species starts with gathering data. What can you and your class find out about species in your locality? Decide what you want to measure (diversity of species, range, sustainability of habitat, population numbers, length of hibernation, or mating seasons) and how you want to record and keep track of data (a notebook or database). As you collect data, look for patterns: What can you conclude about how the species is faring? What new questions arise? Write a study about your findings and submit it to an environmental group or local government bureau. Optional resource: "The IUCN Red List" and the Red List website (IUCN).	
Protected Areas	Organize a community event centered on protected natural areas and their economic benefits. Invite staff who manage the areas and business representatives to discuss how protected areas and economies are natural allies. As part of the event, create games, activities, or contests for all ages. Document the big day by having participants contribute a written or illustrated reflection on a small square that will form a mural or mosaic, or have them write about what they learned in a guest book or through photos and videos. Optional resource: Protected Areas (IUCN) and Brazil Forests Forever (GEF).	



International Union for Conservation of Nature (IUCN)

Created in 1948 and headquartered in Switzerland, the [International Union for Conservation of Nature](https://www.iucn.org) (IUCN) has evolved into the world's largest and most diverse environmental network and the global authority on the status of the natural world and the measures needed to safeguard it. As a membership union uniquely composed of both governments and civil society organizations, IUCN harnesses the experience, resources, and reach of its 1,300 member organizations and the input of some 16,000 experts worldwide through commissions, such as the Commission on Education and Communication (CEC) and the World Commission on Protected Areas (WCPA). These commissions provide public, private, and non-governmental organizations (NGOs) with the knowledge and tools that enable human progress, economic development, and nature conservation to take place together. Moreover, as the only environmental organization with official United Nations (UN) Observer status, IUCN ensures that nature conservation has a voice at the highest level of international governance.

Notably, IUCN convenes its World Conservation Congress every four years, with the most recent congress held in [Honolulu, Hawai'i, in September 2016](https://www.iucn.org). These global gatherings provide a neutral forum in which governments, NGOs, scientists, businesses, local communities, indigenous peoples groups, faith-based organizations, and others can work together to forge and implement solutions to environmental challenges. By facilitating these solutions, IUCN provides governments and institutions at all levels with the impetus to achieve universal goals, including on biodiversity, climate change, and sustainable development, which IUCN was instrumental in defining. Combined, IUCN's knowledge base and diverse membership have made it an incubator and trusted repository of best practices, conservation tools, and international guidelines and standards as well as key international environmental agreements, including the Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species (CITES), the World Heritage Convention, and the Ramsar Convention on Wetlands.

www.iucn.org

East-West Center (EWC)

Established by the U.S. Congress in 1960, the [East-West Center](#) (EWC) has long played a key role in fostering American understanding of the Asia Pacific region and promoting U.S.-Asia Pacific exchange through cooperative study, research, and dialogue. An independent, public, nonprofit organization with a worldwide network of 62,000 alumni and more than 1,100 partner organizations, the Center serves as a resource for information and analysis on critical issues of common concern, bringing people together to exchange views, build expertise, and develop policy options. In the elementary and secondary school (K-12) arena, the Center's AsiaPacificEd Program works with schools across the United States and the Asia Pacific region to provide professional development programs for teachers, curriculum resource materials for schools, and global learning opportunities for students, including experiential learning through travel and virtual exchanges. These programs help improve teaching about Asia in U.S. schools, help schools prepare students for the world of tomorrow, and foster joint learning between American and Asian Teachers as well as between students.

The IUCN World Conservation Congress in Hawai'i has provided a unique opportunity for the EWC and IUCN to work together on the [IUCN Youth Voices](#) initiative (the Youth Voices website and this Curriculum Sourcebook), which provides K-12 schools, teachers, and students with timely and flexible resources for engaging youth in making our communities and planet more sustainable and healthy, while also producing a tangible legacy of youth participation in the 2016 World Conservation Congress.

Contact Us

East-West Center/AsiaPacificEd Program
1601 East-West Road
Honolulu, HI 96848
USA

Tel: +1-808-944-7378

Fax: +1-808-944-7070

Email: asiapacified@eastwestcenter.org

Website: www.asiapacified.org