

EcoSchools U.S. Action Cards

We are sharing here the Action Cards from the current EcoSchools program (2024) while it is offline for maintenance over the summer. Each Action Card includes a description of the action, resources, and certification questions.

Actions are solutions to local issues that impact members of the community. Consider the issue(s) you are trying to solve and who the issues impact most in the community. What waste disposal services are available in the community, specifically to schools? How can you work toward behavior change, especially toward zero waste? Additionally, discuss how the team can work with folks in the community working on waste issues.

Let students lead the way in researching, planning, communicating, implementing, tracking, and celebrating Actions you choose as an action team, classroom, or school.

Materials for the Action Cards are included in the online versions and have been removed here for space considerations.

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Getting Started

EcoSchools Framework Connection! Start your year by building a strong action team, reflecting on student interests and community needs, and making an action plan for success!

Before launching your EcoSchools program for the year, you will need to set a foundation from which to work and grow. This includes establishing an Action Team, setting regular Action Team meetings, reviewing your school's environmental practices, learning about your school building, campus, and operations, developing connections with your local community, and finally, making an action plan for the year ahead.

Reflecting on your environmental goals and how to take meaningful action for the year will take your program deeper. Consider how you can run a program that connects to curriculum across various grades and subject areas and how to infuse the EcoSchools program into school culture through various communication strategies.

This action is designed to be one of the first things your Action Team does in the year. Each school will undertake community-building and action planning differently. The important thing is that you do it!

ACTION GUIDE

BEFORE YOU BEGIN

- Consult with school administrators to understand what kind of support and considerations must be taken into account when running the EcoSchools program at your school. This may include funding opportunities, administrative directives, board/district policies, and permission/approval processes.

MATERIALS TO COMPLETE THIS ACTION

- [Certification Guide](#)
- [Get Inspired: Build a Strong Action Team](#)
- [Annual Calendar](#) (pg.10 ES Certification Guide)
- [Certification Rubric](#)
- [How to manage users](#) (adding members to your application)
- [How to manage your EcoSchools plan](#) (adding and removing actions)

GETTING STARTED

- Recruit an action team for the school year. This may include students from a range of grades, school staff, or other volunteers such as family members and local organizations. The action team should be student-led and be the driving force behind your EcoSchools program.
- Convene an initial meeting of your action team to discuss your EcoSchools program and to set up regular meetings throughout the year to plan activities and initiatives.
- If you are new to the EcoSchools program, create an account on the online EcoSchools Certification Application (ECA) <https://app.ecoschools.us/login> for any student leaders, staff,

and/or volunteers who will contribute to updating your online application. For help navigating the ECA, see the [Certification FAQ](#)

- Review the **Getting Started Certification Questions** below to help ensure you make the most of your planning process.
- Consider your school community's social and ecological context to guide action planning. This may include learning about the community in which your school is situated and the culture and history of the land on which your campus is situated. It may also include forming partnerships with other school or community groups to identify shared goals.
- Review previous EcoSchools applications (if applicable) and actions in the *Action Library* to make a plan for the school year. Consider using a planning tool to help guide your action planning, like the [Annual Calendar](#) located on page 10 in the EcoSchools US Certification Guide or the [Certification Rubric](#).

TIPS

- At the core of a strong EcoSchool is an active group of students and adults. A range of grades makes for a well-rounded team, and involving principals, teachers, parents, and facilities staff gives students the support they need to succeed. Review the [Get Inspired: Build a Strong Action Team](#) document for tips and inspiration on establishing a strong action team.
- When planning activities and initiatives for the year, focus on actions that are important to students, link to classroom curriculum, and/or connect to local issues or regional priorities.

Create an EcoCode

EcoSchools Framework Connection! What is the school's EcoCode or purpose for this work? Connect with the school community to create a representation of the diverse sustainability efforts in progress at your school through a written statement or associated artwork.

Prominently displayed, the school's statement of purpose creatively and artistically reflects the school community's commitment to actions that benefit all wildlife and people. Statements can be a song, poem, written word, collaborative art, etc. This exercise and statement are personal, and by design, there are no wrong ways to portray the school's commitment to sustainability.

ACTION GUIDE

BEFORE YOU BEGIN

- Talk to your administrator, parent/guardians, and/or school board/district to let them know that you are working on an EcoCode or statement of purpose for the school and would like their feedback along the way.
- Meet with various individuals/groups to understand what actions are happening at the school to promote sustainability.
- Aim to have a whole picture view to ensure no projects are left out of the EcoCode.

GETTING STARTED

- Let students' ideas lead the way for the written content and artistic form of your EcoCode.
- Create a list of current sustainability projects you are aware of on campus, as well as the school mascot and any existing campus phrases in use. These can be used for inspiration and to guide student's voices.
- Think through how the EcoCode will be chosen and plan for how this will be carried out. Consider who will be involved and make sure to speak with them to confirm their willingness to participate. Examples:
- Will the action team or a class(es) create and choose the EcoCode and announce it to the school?
- Will a contest be run, and if so, how do students participate, and how is the winning EcoCode selected?
- Will the principal choose from finalists or recognize the winner if there is a contest?
- To encourage greater participation in your event, consider reaching participants through posters, bulletin boards, school announcements, and social media.
- Don't forget to track the number of student and adult participants.

TIPS

- Gather support and actively engage parents and other community partners, such as artists, graphic designers, and marketing professionals, in the early stages of planning for your action. They may be able to provide advice, guidance, and best practices for your EcoCode, and may also be keen to share resources and help with any events.

- Consider involving the school community (students, parents, teachers, etc.) to learn what verbiage/images they'd like to see incorporated into the EcoCode. Consider allowing them feedback or a vote on the final design as well.
- Consider incorporating relevant cultural connections to your EcoCode. Include or discuss with members of that culture to ensure they are being represented in a respectful and appropriate way. Ideally, your action team represents the members of the community.

Impact Storytelling

EcoSchools Framework Connection! Use a public outlet to share an impact story about one or more of your EcoSchools' actions, campaigns, or projects.

Sharing a story about your experience helps to create a deeper connection with the actions the team has taken during their EcoSchools journey. It provides an opportunity to showcase the team's hard work, connect with like-minded individuals, showcase the impact within the school community, and create a lasting product that can be featured at your school.

ACTION GUIDE

BEFORE YOU BEGIN

- Talk to your administrator, parent/guardians, and/or school board/district to let them know that you are working on highlighting a story from the school and would like their feedback along the way.
- This action focuses on creating a story around one of the other EcoSchools action cards your school has been working on.
- Consider forming a communications committee as part of your action team, which will be responsible for choosing a focus, capturing photos, and gathering quotes and ideas for this story.

GETTING STARTED

- Let students lead the way in planning, communicating, implementing, tracking, and celebrating your story.
- Raise awareness of your event well in advance through posters, school announcements, invitations to local news press, and school social media.
- To increase your impact and reach, think about involving diverse student groups and subject areas in an effort to gather various viewpoints and personal experiences.
- Designate roles of team members: photographer, interviewer, writer, presenter, advertiser, etc
- Practice communicating/requesting feedback on your story before its debut.
- Practice presenting with peers and request feedback on style, voice, and tone.
- Consider doing a rehearsal, run-through, read-through, etc., for your principal and other campus leaders.
- Don't forget to track the number of student and adult participants.

TIPS

- Gather support and actively engage parents and other community partners, such as journalists, local news/radio stations, theater companies, etc., in the early stages of planning for your action. They may be able to provide advice, guidance, and best practices for your story and may also be keen to share resources and help out with any events.
- Consider timing your story release to coincide with related cultural events in your area (e.g.. Monarch story with Dia de los Muertos). Include or discuss with members of that culture to ensure they are being represented in a respectful and appropriate way.
- Check your state's learning standards for curriculum alignment.

Create a Rain Garden

A rain garden is a beautiful plantscape that filters polluted stormwater runoff and reduces flooding. Students will work with the school community to choose plant species and plant a rain garden.

A rain garden acts like a miniature wetland by collecting, absorbing, and filtering stormwater runoff from rooftops, driveways, patios, and other areas that don't allow water to soak in. This helps to reduce flooding events from extreme weather. Creating a rain garden involves researching native plants that will collect and filter stormwater and planting a garden in the places that usually collect excess stormwater. These plants can serve multiple purposes by also feeding pollinators, sequestering carbon dioxide, reduce flooding, providing habitat for native wildlife, and serving as an outdoor classroom.

ACTION GUIDE

BEFORE YOU BEGIN

- Utilize an in classroom model to explore how [rain gardens fight pollution and flooding](#)
- Survey the grounds to identify possible rain garden sites, including areas with downspouts, gutters, soil erosion, or locations where water ponds and puddles form during/after storms.
- Check your soil. Plants require specific nutrients to thrive. Make sure you know your soil composition at the garden site so that you can plan your plant species accordingly.
- Get approval from school administration and/or community leaders

GETTING STARTED

- Research effective designs for a rain garden (see resources below).
- Survey your site and determine the surface area of your garden
- Research native plant species that would work best for your site based on soil, sun, and water requirements.
- Design the rain garden on paper first.
- Use the garden designs to divide the workload amongst students, families, and community volunteers.

TIPS

- Work with families and other community members like local landscape architects or students at a local university in landscape architecture or sustainable city planning.
- Often, you will be able to get plants donated to your school at no cost.

Restoring Biodiversity Balance in the Schoolyard

Let's focus on designing a plan for your school to remove invasive plant species and restore the habitat of your school grounds by planting native plants.

Native plants have evolved over time to thrive in specific ecosystems and have established intricate relationships with local wildlife. They provide food, shelter, and habitat for native insects, birds, mammals, and other organisms. Invasive plants often outcompete native plants for resources such as sunlight, water, nutrients, and space. By replacing invasive plants with natives, we restore the ecological balance and support the survival of native species in our community.

ACTION GUIDE

BEFORE YOU BEGIN

- Actions are solutions to local issues that impact members of the community. Consider the issue(s) you are trying to solve and who the issues impact most in the community. Additionally, discuss how the team can work with in the community who is already working on these issues.

GETTING STARTED

- **Identify the Invasive Plants:** Understand the specific invasive plant species present on the school grounds. Identify them accurately to determine the most effective removal methods.
- **Develop a Removal Plan:** Create a comprehensive plan outlining the removal strategy, timeline, and resources required.
- **Obtain Necessary Permissions:** Ensure you have the necessary permissions from the school administration, property owners, or relevant
- **Prioritize Safety:** Ensure that students, staff, and volunteers have appropriate personal protective equipment (PPE), such as gloves and safety goggles.
- **Manual Removal Techniques:** Whenever possible, opt for manual removal techniques like hand-pulling, cutting, or digging out invasive plants.
- **Eliminate Chemical Use:** Limit the use of organic herbicides to situations where manual methods are not feasible or for high-risk invasive plants
- **Prevent Spread and Contain Debris:** Take precautions to prevent the spread of seeds or plant fragments during removal.
- **Disposal of Plant Material:** Dispose of invasive plant material properly to prevent re-infestation.

TIPS

- **Educate and Involve the School Community:** Raise awareness among students, teachers, and staff about the importance of removing invasive plants.
- **Research:** It's essential to research the specific invasive plant species you're dealing with and follow appropriate removal methods recommended by local authorities or conservation organizations.
- **Restoration Plan:** Develop a comprehensive restoration plan that outlines the steps for replacing invasive species with native or beneficial plants.

Active and Sustainable Transport

Run a campaign to encourage low-carbon transportation options such as walking, cycling, busing, and carpooling to school.

Active and Sustainable School Travel emphasizes the importance of low-carbon transportation options such as walking, cycling, busing, and carpooling to school. There are also equity issues associated with kids getting to school. Often low-income communities have fewer sidewalks, bike lanes or the ability to afford mass transportation. Supporting Active and Sustainable School Travel helps to improve physical and mental health, reduce GHG's and address the climate crisis and overall support a more equitable and healthier environment. To increase the number of students and adults choosing active and/or sustainable travel options, you may lead a one-day event (i.e., a Winter Walk Day), a campaign (i.e., Bike to School Week) or an established practice such as (i.e., Walking school buses).

ACTION GUIDE

BEFORE YOU BEGIN

- Actions are solutions to local issues that impact members of the community. Consider the issue(s) you are trying to solve and who the issues impact most in the community. Is transportation to school equitable in your community?
- If you are planning an active transportation campaign (i.e., walk or bike to school event), the student population should live within walking distance from school (within 2 miles). If this is not the case for your school, try focusing on sustainable transportation options (i.e., carpooling or public transit).
- Talk to your administrator and/or school board/district to establish a safety protocol for your **Active and Sustainable School Travel** action and clearly communicate these.
- This action focuses on running events to support active and sustainable school travel, such as walking, cycling, and busing to school..

GETTING STARTED!

- If you are planning an active transportation campaign, create maps of safe walking, biking, and wheeling routes to your school. If you are planning a sustainable transportation, provide students with information about safety and how the transit system works. Explore the electrification of your school buses.
- Raise awareness of your event well in advance through posters, school announcements, and school social media.
- Designate action team leaders to document the event through photos, videos, or other means to use for celebrations of your action!
- Don't forget to track the number of student and adult participants.

TIPS

- Gather support and actively engage parents and other community partners such as police officers, municipal representatives, school board/district contacts, transportation authorities, and/or local environmental groups in the early stages of the planning for your action.

- Consider timing your event to mark the seasonal changes by participating in events such as International Walk to School Day in October, Winter Walk Day in February, or Bike to School Week in May.
- Host a workshop to promote safety protocol, like a bike rodeo, bike maintenance workshop, or an info session on transit safety or safe routes to school.

Divert Textile Waste

Reduce, reuse, repurpose, repair, and recycle old textiles such as clothes, shoes, and bedding, helping to divert waste from the landfill and methane to the air. Did you know that the clothing industry pumps [1.22 - 2.93 billion metric tons of carbon dioxide](#) into the atmosphere yearly, accounting for 6.7% of all global greenhouse gas emissions?

Did you know? 62% of new clothes in our wardrobes are made from man-made synthetic fabrics. Over **1.3 billion barrels of oil** are used to make these clothes every year. With over **80 billion** new clothing items produced annually, that means **50 billion items of clothing are made with oil every single year.**

[The US generates just over 17 million tons](#) of textile MSW (Municipal Solid Waste) per year, according to the most recent EPA data. According to the latest census statistics, that is around 112 pounds per person. In the US, 66% of all unwanted clothes and textiles are landfilled. Less than 15% are recycled.

ACTION GUIDE

BEFORE YOU BEGIN

- Get approval! Before running a clothing swap or drive, consult with your administrator and ensure you follow board/district guidelines for collecting, storing, and donating textiles, and make sure to work with an approved collector.
- Select a textile recycling collection partner or charity that prioritizes safety and ethics around collection, recycling, and distribution procedures
- Should you store textiles on-site at your school, ensure that you have adequate space and follow any board/district guidelines around sanitation and safety.

GETTING STARTED!

- Decide how you want to divert textile waste for this action. Consider running one or more campaigns such as a textile/clothing drive, swap, second-hand store at school, repair clinic, or repurpose campaign to turn your old textiles into something new.
- Determine campaign timelines, required resources, and how you will engage your school community in learning and action around the topic of textile waste and diversion.
- If you are running a textile or clothing drive, have students research and connect with an external partner that can reuse or recycle textiles, like a charity or private textile collection company. Determine the type of textiles they accept, any important processes required for textile collection, and a date for your school collection.
- Develop a plan for promoting your campaign and collecting textiles from your school community, if necessary.
- If you are running a textile drive, organize pick-up with your external partner after the collection and calculate the total weight of all collected textiles (the external partner will often be able to share this information with you).
- Share campaign successes with your whole school and community.

TIPS

- Raise awareness and encourage participation in your Textile Recycling campaign. Consider hosting a campaign kick-off assembly, creating posters, or posting facts on the school website and social media.

Species Diversity

Observe and identify local wildlife in outdoor spaces at home or at school. Identifying local wildlife and counting species richness will help to determine the biodiversity of your area, which can be an indicator of the health of the ecosystem. Higher biodiversity can be a sign of a healthier ecosystem.

ACTION GUIDE

BEFORE YOU BEGIN

- If you are planning to leave your school grounds for this activity, ensure you follow school and board/district policies by consulting with your school administration.
- If you are visiting a public park, acknowledge and respect the park's regulations. Some parks require permits or authorizations to conduct group activities.
- Do a risk assessment of the area and clearly communicate any boundaries for the activity and rules. It is always recommended to bring a first aid kit on outdoor excursions.
- Collect required materials.
- Ensure these species identification apps are approved and available by your district: SEEK (best for elementary-age students) and iNaturalist (best for middle and high school-age students), and Merlin (all ages).
- Locate, measure, and mark an area to complete the biodiversity study.

GETTING STARTED

- Divide the students into smaller groups and assign each group an area and a taxonomic category (i.e., fungi, plants, animals, birds, reptiles, etc.)
- Have students observe and identify as many species as possible within their taxonomic group and count the number of individuals of those species. You may want to give the groups a specific time limit to make their observations.
- Make multiple observations within the same area [this can be on different days or at different times of the day] and record any new species.
- High School Students: Calculate Simpson's Diversity Index. This is a way to measure the diversity of species in a community. Follow the steps outlined in Statology.com to calculate Simpson's Diversity Index.
- Develop a plan for increasing the species diversity in your area or celebrate your diversity success!

TIPS

- Spring or Fall is probably the best time of year to conduct a species survey. Or comparing data throughout the year is also an option.
- Ensure your district approves suggested apps.
- When using the Merlin app to identify birds, you will need to download the identification pack specific to your area. This takes up a lot of data space, so ensure you have enough free memory to accommodate.
- Seek is a bit less accurate than iNaturalist, but you can link the two apps together if you have an account on both. Seek also gives you a good place to start looking if you have no idea what you're looking at.
- Help students organize their data into a notebook or digitally. Have them create a table with species names in one column and a count of individuals in the next column.

Energy Vampires

Students will explore the connection between the generation of energy and CO₂ emissions, energy conservation and how it would affect climate change. They will learn to identify “energy vampires” and identify opportunities to reduce power use ultimately reducing greenhouse gas emissions.

Energy Vampires, also called phantom energy or standby power, is the electricity that some devices use when turned off but still plugged into a power outlet. The most common culprits are electronics and other smart devices with a built-in clock or digital display, but other appliances can be energy vampires, too. Estimates vary, but the [National Resources Defense Council \(NRDC\)](#) puts the price of vampire power at \$165 per household or \$19 billion nationwide every year. In fact, [1% of global carbon emissions](#) can be attributed to standby energy — or [44 million metric tons](#) of carbon dioxide in the United States alone. This Action is a fun way to teach students about where electricity comes from, how that relates to carbon dioxide emissions and climate change, and what actions they can take around energy conservation. Engaging in this Action, students will be able to explain the connection between energy generation, electricity, and carbon dioxide emissions, identify electronic devices that are energy vampires, and identify ways to decrease the use of energy from these devices.

ACTION GUIDE

BEFORE YOU BEGIN

- Evaluating energy consumption is the first step to reducing energy consumption. This step is part of the "understand the problem" and "gather information" steps in problem-solving.
- Make sure your students understand where energy/electricity comes from. This great video supports this learning: [Energy 101: Electricity Generation](#).
- Work with facilities staff to learn more about where your school's energy comes from.

GETTING STARTED!

- Assess student understanding of energy vampires and other interconnected terms like greenhouse gases, climate change, and carbon dioxide.
- Identify devices in the classroom/around the school that are considered energy vampires.
- Distribute the ***Energy Vampire Investigation*** student worksheet and complete it as an in-class activity.
- Use the discussion questions on the student worksheet to lead a group discussion, have small groups discuss, or have students individually reflect on their answers in class or as homework.
- Complete the ***Energy Vampire Savings*** student worksheet.

TIPS

- We use electricity in our lives every day. Electrical appliances require varying amounts of power to operate. Power (watts) is a measure of the instantaneous energy usage. Measuring the power use of an appliance and the time it is used can be used to calculate the total electrical energy consumed $\text{Energy (kWh)} = \text{Power (watts)} \times \text{time (hours)}$ ($\text{kWh} = \text{watts}/1000 \times \text{hours}$) Have students learn how to utilize a Kill-a-Watt meter to explore just how much energy specific appliances utilize.
- Perform an energy audit of your classroom/school.
- Perform an ***Energy Vampire Investigation*** in other classrooms or at home.

- Give presentations to other classrooms on how they can save energy.
- Create energy-saving campaigns at your school.

Water Quality Testing

Learn about the quality of water in a local community waterway or at your school and how it affects the surrounding ecosystem.

Water is one of our most precious resources. The Earth is about 71% water, but not all of it is readily available and safe for us to drink or animals to make their homes.. Testing water quality is a great way to engage students in collecting data and contributing to science at a local and global level. In this Action your students will look at testing water temperature, nitrates, phosphate, pH, turbidity, dissolved oxygen, and salinity to determine the health of their tested waterway for the ecosystem. Testing water quality can help students understand how our actions on land affect our water and the plants and animals that rely on waterways for survival. Not all water tests are required to complete this action.

ACTION GUIDE

BEFORE YOU BEGIN

- Consider the issue(s) you are trying to solve and who the issues impact most in the community. When understanding the water quality of a water body, be sure to trace where the water originates and consider what/who is impacting it. Determine who relies on the waterway besides the life in the water. Make connections between human's and wildlife's need for clean water. Additionally, discuss how the team can work with folks in the community who are already working on water quality issues.
- Find a waterway that is safe for students to access and get approval from your administrator(s).
- Complete parent permission forms as needed for off-property trips to a waterway.
- Review water quality concepts with students.
- Review safety precautions for working with chemicals in water quality test kits and conducting field studies in nature.

GETTING STARTED

- Gather materials and divide students into groups for water quality sampling. Depending on class time, you may want groups to test different nutrients in water or have each group test all of them.
- Move to the waterway and collect water samples
- Follow the instructions for testing each nutrient in the water
- Record the results
- Debrief with students to discuss what they found. Is the water good for supporting life? Why or why not? Would the water be good to drink? Why or why not? What else would we need to test for to know if this water was safe to drink?

TIPS

- Have field lab packets set up for each student group with pre-labeled test tubes, especially for younger students.
- Assign students roles to help manage the field activity.

Fish Stewards

Get hooked on fish! Learn about fish life cycles, habitat, cultural connections, and stewardship actions needed to improve watershed health.

Kids become fish stewards, or caretakers, by diving deep into fish biology and habitat, cultural relevance, and the connections between human actions, water quality, and fish health. From fostering fish in classroom aquariums to riparian restoration events (native tree planting, litter clean-ups, invasive species removal, etc.) or recycling Christmas trees for fish habitat — students will engage in meaningful watershed experiences and learn the benefits fish provide in a biologically diverse ecosystem.

ACTION GUIDE

BEFORE YOU BEGIN

- Consider the issue(s) you are trying to solve and who the issues impact most in the community. Research and acknowledge Indigenous Peoples, the original stewards, whose ancestral lands your project or field trip is taking place on. What role do salmon (trout or other species) play in the community, culturally and spiritually? How does the food chain change as their numbers decline? Additionally, discuss how the team can work with people in the community who are already doing work on this topic.
- For fish stewardship actions AND/OR fostering fish, please consider the following:
 - Get approval from administrators, groundskeepers, and janitors before beginning any fish stewardship action or project.
 - Fundraise or seek donations from your school community in advance of the project timeline (months before your start date).
 - Identify if you will need to travel offsite and determine associated field trip costs (i.e., buses) and equipment/supplies needed.
 - Contact local partners and resource experts (Soil and Water Conservation Districts, Watershed Councils, etc.) for ideas, locations, and support for stewardship projects on or off school grounds.
- If interested in fostering fish in a classroom aquarium, contact your state wildlife agency to see if opportunities exist and to gain more information, including species permitting and release instructions (returning to wild). Do not foster or release invasive species or order species or kits online.
- Reach out to fish hatcheries, dam facilities, water providers, wastewater treatment plants, etc., for tours and presentations.
- Review water safety protocols with students anytime activities take place near waterways.

GETTING STARTED

- Gather and/or purchase all equipment and supplies needed.
- Research and acknowledge Indigenous Peoples, the original stewards, whose ancestral lands your project or field trip is taking place on
- Determine what your fish steward action(s) or project will entail. Examples include:
 - Fostering fish (i.e., salmon or trout) in a classroom aquarium, then releasing them into the wild
 - Native tree and/or shrub planting along waterways or on school grounds – creating habitat, filtering pollution, holding soil, and reducing water usage
 - Invasive weed removal – helping native plants thrive
 - Litter clean-up along waterways or on school grounds – reducing plastics and debris

- Christmas tree recycling event – for placing in fish habitats (waterways)
- Water conservation campaign – keeping water in rivers for fish
- Electricity conservation campaign – less electricity needed for dams = more fish!
- Host, exhibit, or volunteer at a salmon-related event – teaching your neighbors and community
- Write a letter to your local municipality campaigning for healthy watersheds or support legislation that protects fish, wetlands, streams, oceans, native habitat, or restoration by contacting your local representative in congress
- Sustainable school travel campaign – reducing water pollution from runoff and tire toxins due to vehicles
- Determine how you will track metrics for your actions selected above.

TIPS

- Incorporate learning about sustainable fisheries, nitrogen cycling, adaptations of fish, the role of hatcheries (fish farms) and aquaculture, the purpose of hydropower (dams) and fish ladders, fishing rules/regulations and environmental protections, and fish migration.
- View fish parts under a microscope (i.e., eggs, scales, etc.).
- Conduct a fish survey simulation.
- If fostering fish (i.e., rearing trout or salmon), it is essential to test your water source (faucet water or filtered drinking water) for pH and ammonia before filling an aquarium with it. Perform frequent student-led water quality tests and calculate accumulated temperature units to ensure better survival rates. Predict egg hatch and button-up (release) dates.
- Consider contacting a local biologist to perform a fish dissection and give a lesson on internal and external anatomy.

Grow a Schoolyard Forest

Inspired by the Miyawaki Method of creating a forest in small places within a short period of time, we invite students to install and maintain a tiny forest on school grounds.

All around the world, people are getting together to install tiny dense forests to counteract the effects of climate change like increased heat waves, flooding and soil erosion, increasing biodiversity in urban areas, and re-connecting people with nature. The Miyawaki Method, named after Japanese botanist Dr. Akira Miyawaki, is a specific approach to creating dense and biodiverse forests in a short period. It focuses on using native plant species to restore degraded or urban areas.

ACTION GUIDE

BEFORE YOU BEGIN

- Actions are solutions to local issues that impact members of the community. Consider the issue(s) you are trying to solve and who the issues impact most in the community. What services do trees provide to living and non-living things in and around their environment? Additionally, discuss how the team can work with folks and organizations in the community already working on this topic.
- **Planning and Research:** Research native trees and plant species that are suitable for your region's climate and soil conditions. Identify an appropriate location on the school grounds that has enough space and access to sunlight for the tiny forest.
- **Recruit volunteers:** Consider involving the entire school community (parents, teachers, administration, local organizations, universities, and houses of worship) in the planning process.
- **Obtain Permission:** Seek permission from the school administration or relevant authorities to create the tiny forest. Discuss the project's benefits, educational value, and potential impact on the school environment.

GETTING STARTED

Creating a tiny forest is a long-term commitment. Encourage ongoing engagement and involvement from students, teachers, and the school community to ensure the success and sustainability of the project.

- **Site Preparation:**
 - Clear the chosen area of any debris, weeds, or invasive plant species.
 - Prepare the soil by loosening it with a garden fork or shovel, removing rocks or large roots, and improving soil quality with compost or organic matter if needed.
- **Plant and Tree Selection and Arrangement:**
 - Select a variety of native plant and tree species that support local biodiversity and provide habitat for insects, birds, and other wildlife.
 - Aim for a mix of trees, shrubs, and groundcover plants to create a diverse and layered forest ecosystem.
 - Placement design and arrange the plants in a way that mimics natural forest patterns, with taller species towards the back and shorter ones in the front.

- **Planting:**
 - Follow proper planting techniques for each species, considering the specific requirements of each plant. (Refer to NWF's tree planting guide in the resource section for more information on tree planting specifics)
 - Dig appropriately sized holes for each plant, ensuring they are deep enough to accommodate the root ball.
 - Gently place the plants in the holes, backfill with soil, and firm the soil around the plants to eliminate air pockets.
- **Mulching and Watering:**
 - Spread a layer of mulch around the base of the plants to retain moisture, suppress weeds, and protect the soil.
 - Water the newly planted forest thoroughly and establish a regular watering schedule until the plants are well-established.
- **Maintenance and Care:**
 - Develop a maintenance plan to care for the tiny forest, including watering, weeding, and monitoring plant health.
 - Involve students, teachers, and volunteers in regular maintenance activities, creating a sense of ownership and responsibility.
 - Educate students about the importance of maintaining the forest and its role in supporting local biodiversity.
- **Monitoring and Observations:**
 - Encourage students to observe and record changes in the tiny forest over time.
 - Conduct periodic assessments of plant growth, biodiversity, and the presence of wildlife.
 - Use the tiny forest as a living laboratory for lessons on ecology, environmental science, and other related topics.
- **Celebrate and Share:**
 - Organize a celebration or event to mark the completion of the tiny forest project.
 - Showcase the project to the school community through presentations, displays, or guided tours.
 - Share the experience and outcomes of the project with other schools, parents, or the local community to inspire similar initiatives.

TIPS

- Create a tiny Schoolyard Forest school committee composed of parents, teachers, school administrators, community members & local businesses, local environmental organizations, master gardeners, municipality officials, university students, and anyone interested in increasing tree canopy and biodiversity in your community.
- Research small to medium grant opportunities to fund your project. Visit www.kidsgardening.com it has a large garden and outdoor education grant database.
- Don't forget to incorporate a maintenance plan! Without it, the Schoolyard Forest might not be able to establish itself and thrive to be enjoyed by future generations.

Paper and Cardboard School Recycling Program

A step-by-step guide on how to start a paper and cardboard recycling program at your school! The facts:

- The average secondary school produces 22kg of waste per student each academic year. The figure for primary schools is even higher at 45kg per student.
- At least 40 percent of a typical school waste stream is paper.

When a school has an effective recycling program, it trickles down to families, sets a standard for the school community, and helps students and staff to be more eco-conscious. An effective program focuses on reducing waste, reusing useful materials, and recycling as much as possible. Ineffective school programs tend to generate a lot of waste, require regular maintenance, and result in expensive waste disposal. Starting with paper and cardboard is a good first step!

ACTION GUIDE

BEFORE YOU BEGIN

Consider the issue(s) you are trying to solve and who the issues impact most in the community. What waste disposal services are available in the community, specifically to schools? How can you work toward behavior change, especially toward zero waste? Additionally, discuss how the team can work with folks in the community working on waste issues.

Talk to your administrator to find out if your district has a pick-up service for recycled materials like cardboard and paper. Many districts have this service available, but if not, the first thing your team needs to establish is who and how often will the material be picked up from the school.

Ideas:

- Call your local recycling pick-up companies to find out if they offer their services free of cost.
- Present your recycling program plan to the school board to petition that your school district hire a recycling pick-up service for the entire school district.
- Meet with the school custodians and talk to them about your team's goal of establishing a paper & cardboard recycling program at your school. They are an essential component for the success of your program since they will be the ones responsible for taking the collected material to the recycling container in the parking lot of the school.

GETTING STARTED

- The recycling team can conduct research about the relation/connection between paper & cardboard recycling, saving trees, and carbon dioxide emission capturing. They can make a presentation in a school assembly to motivate the school community to participate in the program.
- Raise awareness of your program well in advance through posters, school announcements, and school social media.
- To encourage greater participation in the program, distribute a Recycling Pledge to all classrooms, school administration offices, media center, cafeteria, and custodian personnel.
- Designate action team leaders to document the event through photos, videos, or other means to use for celebrations of your action!
- Make a recycling box art competition to kick-start your program. (refer to photo bullet #11) Offer some prizes to the best three classrooms.

TIPS

- Talk to the school's custodians! They can make or break the efforts to have a successful recycling program. Let the recycling team explain to them why this action makes a difference. Keep them informed and in the loop.
- Raise funds through bake sales, recycled art fairs, or writing grants to purchase the materials needed to run the program.
- Write a proposal to local hardware stores to donate the 50-gallon recycling bins.
- Write a letter to the parents to donate a weight scale and a cart.
- Contact your county's waste management community outreach personnel to visit the school and give a presentation about recycling paper and cardboard.
- Recruit the help of the art teacher at your school to help with the *Recycling Box Art* competition and to make recycled paper projects.

Vermicomposting and School-Based Composting

Get your hands dirty and turn your food scraps into nutrient-rich soil.

Composting is the process of recycling organic waste materials such as food scraps (like banana peels and apple cores), paper products, and yard waste into nutrient-rich soil. Composting not only helps to reduce the amount of waste headed for the landfill but also creates a fertilizer that helps plants grow big and strong. Compost also contributes to climate change mitigation by improving the soils ability to stabilize carbon, increasing plant growth thereby pulling more carbon dioxide out of the atmosphere.

Two common ways to compost at school include outdoor composting and vermicomposting. Outdoor composting systems usually live near a school garden and help to compost garden waste and other school-generated food scraps. Vermicomposters are maintained indoors and use worms to help break down shredded paper and food scraps. There are also options for indoor composting including jars and electric composters. Each of these student-led composting activities can provide great educational opportunities.

Please note: this action is for student-run vermicomposting, indoor or outdoor composting systems, not school-wide municipal organics collection.

ACTION GUIDE

BEFORE YOU BEGIN

- Consider the issue(s) you are trying to solve and who the issues impact most in the community. Is food waste an issue in the community? Does the municipality/school district provide education/resources and allow composting? Additionally, discuss how the team can work with folks on the ground who are already doing this work.
- Get approval! Speak with your administrator and check with your school board/district before getting started. Ensure your project aligns with board/district policies and follows the proper approval process.
- Engage your facilities staff/custodians. They may be able to provide insight into best practices for compost collection, maintenance, and care.
- A composting program requires a commitment to maintain properly. Some composting systems may begin to smell or attract pests if not cared for properly.
- **Please note:** this action is for student-run composting systems, not school-wide municipal organics collection.

GETTING STARTED

- Research and establish your preferred composting/vermicomposting system and create a clear schedule for maintenance and care.
- Determine how you will collect waste for your composting/vermicomposting system and what items you can accept into your system (i.e., banana peels, apple cores, paper towels, etc.).
- Monitor and maintain the compost/vermicompost system regularly (i.e., rotate, aerate, feed, harvest, etc.).
- Have a plan for your finished compost.

TIPS

- Vermicomposting often begins as a classroom project, and outdoor composting programs usually become an established practice throughout the school.
- Make clear signs about the composting system to inform others about your project. Ensure you clearly indicate what waste items can and cannot be accepted. Have students monitor lunch waste to help support school learning.
- Compost, especially vermicompost, is a living system! Plan ahead for the care of your compost system over summer or breaks longer than 3 weeks. Worms used in vermicomposting are generally non-native species that will not survive if released into your garden beds.

Indoor Gardening and Greenhouses

Bring gardening inside for hands-on, year-round learning about plants, food systems, nutrition, health, and well-being. Foster deeper relationships with plants and the natural world, and connect to other learning opportunities like food systems, food security, and the impacts of climate change on those systems.

Note that some schools do many different indoor gardening projects that may include any of the following: seed starting, houseplant care, and propagation, hydroponics, grow towers, green walls, aquaponics, and/or greenhouses. Please claim ALL indoor growing projects through this action or complete an additional **Create Your Own Action** if you think it is sufficiently distinct.

ACTION GUIDE

BEFORE YOU BEGIN

- Consider the issue(s) you are trying to solve and who the issues impact most in the community. What are the benefits of this type of gardening? How does it fit into how our food is grown as part of the food system? How can this type of gardening support food security? Does your municipality or local organizations provide access to materials and resources? Additionally, discuss how the team can work with folks in the community who already work in these spaces.
- Get approval! Speak with your administrator and custodial staff before getting started. Ensure the project aligns with board/district policies and follows the proper approval process.
- If your school established an indoor garden and/or greenhouse in previous years, only complete this action if you are actively maintaining or expanding the project this school year.

GETTING STARTED

- Choose how you want to grow plants indoors (i.e., vertical hydroponic system, greenhouse, aquaponic system, living wall, etc.). Indoor gardening can come in many shapes and sizes. Small initiatives can have a big impact; consider starting with a smaller initiative (i.e., growing plants on a windowsill or sprouting).
- Research and select appropriate plant varieties, identify the best growing location, and create a plan.
- Gather and/or purchase all necessary materials (i.e., plants, tools, soil, etc.). Invite donations from your school community or seek out funding opportunities.
- Organize a planting day. Follow proper safety protocol when using the equipment.
- Create a maintenance schedule to ensure your indoor garden receives proper care throughout the year.
- Share your indoor garden with your whole school and encourage other students, teachers, clubs, and classes to use the garden for learning and help with maintenance.

TIPS

- Work with local partners! Local organizations, nurseries, and neighborhood experts can advise on the best varieties of plants for your particular project, and best practices for planting and garden care.
- Growing food in your indoor garden or greenhouse? Consider sharing the bounty with a culinary class, cafeteria, or local food bank. Consider having a grand opening event to celebrate and show off your achievement!

LEAF Learning About Forests

Learning about forests involves gaining knowledge, understanding, and hands-on field experiences of various aspects related to forests, including their ecology, biodiversity, importance, functions, services to ecosystems and humans, and conservation.

Learning about forests provides opportunities for understanding the importance of forests as vital ecosystems and the need for sustainable management and conservation for our communities to become resilient in the face of changes in climate patterns. It also fosters a sense of environmental responsibility, respect for nature, and an appreciation for the beauty and value of forests in our spiritual lives.

Here are some key points and benefits of this action. And there are many more!

- Environmental Awareness
- Stewardship and Responsibility
- Climate Change Mitigation
- Health and Well-being
- Ecosystem Services
- Future Planning and Decision-making
- Connection to Nature

ACTION GUIDE

BEFORE YOU BEGIN

Actions are solutions to local issues that impact members of the community. Consider the issue(s) you are trying to solve and who the issues impact most in the community. What is the value of a tree? What are its benefits to people, wildlife, and structures? How is climate change impacted trees? Additionally, discuss how the team can work with people in the community who are already working on this topic.

To conduct a tree audit or forest survey at school, you may need the following materials:

Measuring Tools

- Measuring Tape: Use a measuring tape to measure tree height and trunk diameter.
- Calipers: Calipers provide more precise measurements of tree diameter.

Field Guides and Tree Identification Resources

- Tree Field Guides: Use field guides specific to your region to help identify tree species based on their leaves, bark, and other characteristics.
- Tree Identification Books: Books that focus on tree identification can provide detailed information about different tree species.

Data Collection Materials

- Clipboards: Use clipboards to hold survey forms or worksheets while collecting data in the field.
- Survey Forms or Worksheets: Create or print survey forms or worksheets to record tree information, including species, measurements, and observations. **In our resource section, you can find LEAF audit worksheets and other helpful survey forms.*
- Pencils/Pens: Have writing utensils to fill out survey forms or worksheets.
- Cameras or Smartphones: Cameras or Smartphones: Use cameras or smartphones to take photos of trees for future reference or to aid in identification.

Plant Sample Bags

- Plant Sample Bags: If you want to collect samples such as leaves, seeds, or bark for further identification or analysis, have plant sample bags or small envelopes available.

Identification Tags or Markers

- Identification Tags or Markers: Use identification tags or markers to label or tag trees during the survey. This helps in tracking and referencing specific trees.

Safety Equipment

- Gloves: Provide gloves for students or volunteers to handle branches, leaves, or other tree parts safely.
- First Aid Kit: Keep a basic first aid kit on hand for any minor injuries that may occur during the survey.

Digital Devices for Mapping

- Digital Devices: Use clipboards or digital devices like tablets or smartphones to record the location of trees on a map or grid.

Optional: Reference Materials and Resources

- Tree Biology and Ecology Books: Books or educational resources about tree biology, ecology, and the benefits of trees can enhance the learning experience and provide background information for students.
- Tree Anatomy Diagrams: Visual aids or diagrams showing the parts of a tree, including roots, trunk, branches, and leaves, can be useful for educational purposes.

GETTING STARTED

The LEAF action card not only helps students understand the value and services provided by trees but also fosters a sense of environmental stewardship and encourages them to take an active role in caring for the trees on their school grounds. This is a suggested list to help guide you through the LEAF action card:

Introduction

- Begin by introducing the concept of the value and services provided by trees. Explain that trees offer benefits beyond their aesthetic appeal and provide important ecosystem services. (See our list of external and internal resources)

Tree Identification

- Take the students on a tree identification walk around the school grounds. Teach them how to identify different tree species by observing leaves, bark, and overall tree structure. Provide field guides or leaf identification charts to assist in the process.

Tree Measurements

- Select a few representative trees for measurement. Explain that the size of a tree influences its value and services.
- Measure the diameter of each tree at 4.5 feet above the ground using a measuring tape or calipers. Record the measurements.

Research Tree Values

- Conduct research or consult local tree valuation resources to find the approximate value of trees based on their species and size. Look for resources that provide information on the monetary and environmental value of trees.

Calculate Tree Values

- Using the measured tree diameters and the researched tree values, guide the students in calculating the value of each tree. Multiply the diameter by the value factor specific to the tree species to determine the approximate value of each tree.

Identify Tree Services

- Discuss the various services provided by trees, such as carbon sequestration, oxygen production, shade, erosion control, and wildlife habitat. Explain how trees contribute to the

well-being of the school environment and the surrounding community. Choose from the data worksheets provided in the resource section of this action card.

- Available worksheets:
- How to conduct a tree survey at your school
- How to calculate tree value
- How to calculate the amount of carbon dioxide (CO₂) absorbed by a tree
- How to calculate the amount of oxygen produced by a tree

Create Service Cards

- Divide the students into small groups and assign each group a specific tree. Instruct them to create service cards for their assigned tree, highlighting the services it provides. Encourage creativity and include illustrations or diagrams on the cards.

Presentation and Discussion

- Allow each group to present their service cards to the class. Discuss the services mentioned and their importance. Facilitate a class discussion on how trees benefit the school and community.

Reflect and Brainstorm

- Engage students in a reflection activity. Ask them to think about additional ways trees could benefit the school or ideas for tree-related projects or initiatives.

Action Plan:

- Encourage students to develop an action plan based on their tree survey findings. This could include initiatives like planting more trees on the school grounds, organizing tree care events, a day of service at a local park to remove invasive species, or raising awareness about the value of trees in their community.

TIPS

Reach out to community members and local experts to be part of your school's LEAF team:

- **Local Arborists and Tree Experts:** Contact local arborists, tree care professionals, or forestry experts who can provide guidance, expertise, and assistance in conducting the tree audit.
- **School and Community Resources:** School Groundskeepers or Facilities Department: Reach out to school staff responsible for maintaining the grounds. They may have information about existing trees on the property. Parent Volunteers: Reach out to parents or community members with expertise in tree care or environmental science who may be willing to assist with the tree audit.
- **Local Tree and Garden Clubs:** Connect with local tree or garden clubs that may have resources, volunteers, or expertise to assist with the tree audit.
- **Municipal or County Forestry Departments:** Contact local forestry departments or tree conservation programs that can provide guidance and resources for tree surveys or audits.
- **Funding:** Research grant opportunities to acquire measuring tools and data collection materials and/or trees for tree planting events, etc.
- **Mobile Apps:** Consider using data collection apps or mapping tools, such as Google Maps, ArcGIS Collector, or Fulcrum, to collect and record tree data digitally.
- **University or College Partnerships:** Collaborate with local universities or colleges that offer environmental science programs. Their students or faculty may be interested in participating in the tree audit as part of their coursework or research.

Create Wildlife Homes

Support wildlife populations by creating safe spaces they can nest, feed, and play.

Help support local species by creating homes for wildlife!

An increasing number of wildlife are becoming displaced as humans continue to develop land that was once their habitat, including meadows, forests, plains, and wetlands. The best way to support wildlife is by creating native habitat on your school grounds or in your community. You can supplement this native habitat by creating wildlife homes and support structures such as bat boxes, toad homes, bird baths, and log-pile habitats for insects. This action is specific to designing and creating support structures for wildlife, helping to create safe places for animals to nest, feed, and play. Use these spaces to support student learning and observation.

ACTION GUIDE

BEFORE YOU BEGIN

- Consider the issue(s) you are trying to solve and who the issues impact most in the community. What are the benefits of a diversity of wildlife in the community? What do healthy wildlife populations signal and vice versa? Discuss people-made structures versus natural structures. Additionally, discuss how the team can work with folks in the community who are already doing this work.
- Seek approval from your administrator and engage custodial staff to support installation.
- Ensure safety before, during, and after you install wildlife homes (i.e., use appropriate equipment and safety measures when constructing wildlife homes to ensure pests or predators are not using the homes once installed).

GETTING STARTED

- Let students lead the way in researching, planning, communicating, implementing, tracking, and celebrating your Wildlife Homes.
- Determine the type of wildlife home or support structure you want to construct and install. This can be as simple as providing nesting materials for birds or as involved as constructing a bee box.
- Research designs and proper maintenance for the homes. Consider factors including cost, durability, and access to tools.
- Gather your materials and start constructing! Once complete, safely install the homes in an appropriate location.
- Use the homes to support student learning through observation, tracking, and monitoring.
- Share your observations with your whole school and encourage other students, teachers, clubs, and classes to observe the homes during class or recess.

TIPS

- This action often starts as a classroom project but can be expanded to engage the whole school and broader community.
- Get creative with the design of homes but remember that species prefer blending in with nature rather than being in a bright, colorful home. Only use decorating tools that are safe for wildlife, such as water-based paint or etching tools.

- Have a dedicated location to report animal sightings (either a weather-resistant material outside or inside your classroom).
- Keep a collection of organic materials found on school grounds, like branches, leaves, etc., in a designated spot to support wildlife in building their own nests or homes, too!

Let's Talk Air

Explore the properties of air and why good indoor air quality is important for human health.

Air is an invisible, odorless, and tasteless mixture of gases that exist within Earth's atmosphere. All people need air to breathe and rely on clean air to thrive. While air is primarily composed of two gases—oxygen and nitrogen, it also consists of other trace gases and contains many tiny particles and molecules called aerosols. Aerosols, such as dust, pollen, mold, and carbon monoxide, can contribute to poor air quality. No matter who you are, where you live, or how healthy you are, the quality of the air you breathe can have an impact on your health. On average, Americans spend 90% of their time indoors, where the [concentrations of some pollutants are often 2 to 5 times higher](#) than typical outdoor concentrations - - which means it is important to strive for clean and healthy air within any enclosed space, such as houses, schools, offices, and indoor stadiums. The most effective way to improve your indoor air is to identify activities that can contribute to poor indoor air quality and remove or reduce the sources of indoor air pollutants. In this action, you will explore the components and properties of air, why air is important for life on Earth, and ways to promote good indoor air quality.

Let's Talk Air focuses specifically on indoor air quality.

ACTION GUIDE

BEFORE YOU BEGIN

- Consider the issue(s) you are trying to solve and who the issues impact most in the community. How does indoor air quality impact student and staff health? Are school buildings equitably monitored and mitigated across the school district? Additionally, discuss how the team can work with folks in the community who are already working on these issues.
- Check with your Administration and Facilities staff to learn more about what your school is already doing about Indoor Air Quality. Review [EPA's Indoor Air Quality Backgrounder](#): The Basics to learn more about IAQ.
- [Let's Talk Air Resource Guide](#)

GETTING STARTED

- Review the [Let's Talk Air Resource Guide](#) for a selection of activities focused on air and indoor air quality.
- You may select one or all four activities outlined in the guide, including:
 - Activity 1: What do I know, wonder, and want to learn about air?
 - Activity 2: What is air composed of?
 - Activity 3: Why is clean air important to human health?
 - Activity 4: How can we improve indoor air quality?
- Research the importance of air and indoor air quality on human health and well-being. Consider focusing on the topics of carbon monoxide, mold, and/or ventilation.
- Have students raise awareness on the topic of indoor air quality with the school community through posters, pledges, and communication campaigns.

Become A Citizen Scientist

We are all scientists! Use the interests of the action team and school community to actively participate in and contribute to climate, community, and wildlife-focused scientific research.

The concept of citizen science recognizes that many scientific research tasks can benefit from the collective power of a large number of volunteers, each contributing a small part of the overall effort. It leverages the enthusiasm, curiosity, and skills of individuals from diverse backgrounds, enabling them to contribute meaningfully to scientific knowledge and understanding.

Citizen science projects can cover a wide range of scientific disciplines, such as ecology, astronomy, biology, climate science, archaeology, tracking invasive species, and more. Participants may engage in various activities, including data collection through observations, surveys, experiments, and data analysis using provided tools or software.

ACTION GUIDE

BEFORE YOU BEGIN

Consider the issue(s) you are trying to solve and who the issues impact most in the community. Investigate issues in the community and find projects that support work that community members and organizations are already doing. Additionally, discuss how the team can work with them to take action.

Before embarking on a citizen science project for your school, there are several considerations to keep in mind. Here are some key points to consider:

- **Alignment with Curriculum:** Ensure the citizen science project aligns with your school's curriculum goals and learning objectives.
 - Identify the specific subject areas and topics that the project can enhance and support.
 - Consider how the project can integrate with existing lessons and standards.
- **Project Relevance:** Choose a citizen science project that is relevant and meaningful to your students and community.
 - Consider local environmental issues, scientific research priorities, or community interests that can make the project more engaging and impactful for your students.
- **Project Scope and Resources:** Evaluate the scope and scale of the citizen science project.
 - Consider the time, equipment, and resources required for successful implementation.
 - Determine if the project can be completed within the available time frame and if you have access to the necessary materials or technology.
- **Data Quality and Scientific Validity:** Assess the credibility and scientific validity of the citizen science project.
 - Look for projects that have established protocols, data quality assurance measures, and involvement from reputable research organizations or institutions.
 - Ensure that the data collected will contribute to valid scientific research or monitoring efforts.

- **Participant Safety and Ethical Considerations:** Prioritize participant safety and ethical considerations.
 - Assess potential risks associated with the project, especially if it involves fieldwork or data collection in specific environments.
 - Develop safety protocols, obtain necessary permissions or permits, and ensure compliance with relevant ethical guidelines or regulations.
- **Collaboration Opportunities:** Explore opportunities for collaboration with local organizations, researchers, or other schools.
 - Consider partnerships that can provide expertise, mentorship, or additional resources to support the project.
 - Collaborations can enhance the project's educational value and provide students with authentic scientific experiences.
- **Data Management and Privacy:** Consider data management and privacy aspects of the project.
 - Determine how data will be collected, stored, and shared.
 - Ensure that appropriate measures are in place to protect the privacy of participants, especially if personal information is involved.
 - Familiarize yourself with data-sharing policies and ensure compliance with data protection regulations.

GETTING STARTED

- **Student Engagement and Reflection:**
 - Plan for student engagement throughout the project.
 - Consider how students will actively participate, reflect on their experiences, and make connections to their learning.
 - Design opportunities for students to discuss and analyze data, share their findings, and reflect on the broader implications of their contributions.
- **Accessibility and Inclusion:**
 - Ensure that the citizen science project is accessible and inclusive to all students.
 - Consider accommodations for students with diverse learning needs or physical abilities.
 - Provide multiple entry points for participation, allowing students to engage in different aspects of the project based on their abilities and interests.
 - Make sure all students have access to the required technology and instruments needed to participate in the project.

TIPS

- **Evaluation and Assessment:**
 - Develop strategies for evaluating and assessing student learning and project outcomes.
 - Consider formative and summative assessment methods that align with your curriculum objectives.
 - Determine how you will measure the impact of the project on student learning, scientific understanding, and civic engagement.
- **Resources:**
- Use the list provided on our resource guide page to research and register for different citizen science projects around the country and the world!

Track School Transportation Emissions

Track how staff and students travel to and from school to better understand transportation-related GHG emissions and the transportation options you have. How we get to and from school has a big impact on traffic congestion, air quality, greenhouse gas (GHG) emissions and community health. The most recent [National Household Travel Survey](#) from 2017 found that on a typical school day, 54.2 percent of students were driven in a private vehicle, 33.2 percent took a school bus, and 10.4 percent walked.

This action focuses on tracking how staff and students travel to and from school to better understand transportation-related greenhouse gas emissions and prompt students, staff, and families to consider the environmental impact and equity of their regular modes of transportation. This action can be led by an Action Team or conducted as a classroom-based project and is an excellent yearly action to provide insight into your school's transportation-related GHG emissions.

ACTION GUIDE

BEFORE YOU BEGIN

- Consider the issue(s) you are trying to solve and who the issues impact most in the community. What are the impacts of emissions on community members? On air quality? Who's most at risk? Additionally, discuss how the team can work with folks in the community who are already working on this issue.
- This action provides schools with the opportunity to track how students and staff are currently getting to and from school through the completion of a school-wide survey and prompts discussion about sustainable transportation options and anti-idling campaigns. If you are running active and sustainable transportation events at your school (i.e., a bike-to-school campaign or walking school bus), please complete the **Active and Sustainable School Travel** action.
- [Track School Transportation Emissions Survey Kit](#)

GETTING STARTED! Let students lead the way in researching, planning, communicating, implementing, tracking, and celebrating your action.

- Find out how students and staff are currently traveling to and from school by conducting a school-wide survey using the [Track School Transportation Emissions Survey Kit](#).
- Use your school transportation survey as an annual practice so you can see change over time.
- When your survey is complete, analyze the results and consider how the majority of staff and students get to school. Are there ways to increase how many people take more energy-efficient and active transportation? Consider running an event by taking on the **Active and Sustainable School Travel** action next!

TIPS

- Surveying your entire school can be a challenge! Use the [Track School Transportation Emissions Survey Kit](#) for guidance but do what works at your school. For example, consider creating an online survey and then performing the final calculations using page 7 of the Survey Kit.

Endangered Species Awareness Community Event

Engage the community, educate participants, and inspire action toward the conservation and preservation of one or multiple endangered species and their habitats in your region.

Worldwide, since 2006, Endangered Species Day events happen on the third Friday of the month of May. Planning and organizing a community event focused on endangered species provides a valuable opportunity to engage, educate, and inspire the community, fostering a sense of environmental stewardship and collective action. It contributes to conservation efforts and helps create a more informed and sustainable community. The event can serve as a platform for discussing conservation policies, regulations, and initiatives with community members, policymakers, and government officials. It can raise awareness of the need for stronger protections, advocate for the enforcement of existing laws, and encourage policymakers to prioritize endangered species conservation in your area.

ACTION GUIDE

BEFORE YOU BEGIN

Consider the issue(s) you are trying to solve and who the issues impact most in the community. Who is helping to plan this event? Consider how culture plays a role in a community event. Consider making it a waste-free event.

Planning a community event focused on raising awareness about an endangered species in your region requires careful preparation and organization. Here's a step-by-step guide to help you plan such an event:

- **Research the Endangered Species:** Identify the endangered species native to your region. Gather information about their habitat, behavior, threats, and conservation efforts. Understand the legal and ethical considerations related to organizing events involving endangered species.
- **Define the Event Goals and Objectives:** Determine the purpose of the event (raising awareness, education, fundraising, etc.). Set specific goals and objectives that align with the purpose.
- **Assemble an Organizing Committee:** Recruit a team of dedicated individuals passionate about conservation and event planning. Assign roles and responsibilities to committee members based on their skills and interests.
- **Secure Permits and Permissions** (*if the event will take place at the school, this step might not be applicable*): Contact the relevant authorities to obtain any necessary permits or permissions required for hosting the event, especially if it involves the endangered species directly.
- **Develop a Budget:** Create a detailed budget that includes all potential expenses, such as venue rental (if done outside the school), permits, marketing materials, guest speakers, equipment, refreshments, and any other costs. Explore potential funding sources, including sponsorships, grants, or community partnerships.
- **If done outside the school, choose a suitable venue:** Select a venue that can accommodate the event size and activities.

GETTING STARTED

- **Plan Event Activities**
 - Design engaging activities that educate and create awareness about endangered species.
 - Consider organizing presentations, workshops, exhibits, interactive displays, guided tours, or even hands-on experiences (if feasible and appropriate). Invite local experts, conservationists, or researchers to share their knowledge and insights.
- **Collaborate with Conservation Organizations**
 - Contact local conservation organizations or wildlife agencies working with endangered species.
 - Seek their input, guidance, and potential collaboration in organizing and promoting the event.
 - Explore opportunities for partnerships or joint initiatives.
- **Create a Marketing and Promotion Strategy**
 - Develop a comprehensive marketing plan to reach your target audience.
 - Utilize various channels, such as social media, local newspapers, community newsletters, posters, and word-of-mouth.
 - Highlight the significance of the endangered species, the event's objectives, and the activities that will take place.
- **Coordinate Logistics**
 - Arrange necessary logistics, including event scheduling, equipment rentals, transportation, signage, and seating arrangements.
 - Ensure appropriate safety measures are in place for attendees and the endangered species (if involved).
- **Recruit Volunteers**
 - Seek volunteers who can assist with event setup, registration, guiding attendees, and other tasks.
 - Provide clear instructions and training to volunteers regarding their roles and responsibilities.
- **Implement the Event**
 - Set up the venue according to the planned layout.
 - Manage registration and ensure attendees receive event materials or identification badges (if applicable).
 - Coordinate the sequence of activities and ensure smooth transitions.
 - Oversee the event proceedings, addressing any issues or challenges that may arise.
- **Evaluate and Follow Up**
 - Conduct a post-event evaluation to assess the success of the event.
 - Gather feedback from attendees, volunteers, and stakeholders.
 - Follow up with any necessary actions, such as sending thank-you notes, sharing event highlights, or continuing engagement efforts.

TIPS

International Endangered Species Day is celebrated worldwide on the third Friday of May. Plan your event for this date!

- **Educational Exhibits and Displays:** The event may include exhibits, displays, or interactive stations featuring information about endangered species, their habitats, threats they face, and conservation efforts. These exhibits can provide educational materials, visuals, and hands-on activities to engage participants of all ages.

- **Guest Speakers and Presentations:** Experts, conservationists, scientists, or wildlife advocates may be invited to give presentations or speeches to share their knowledge and insights about endangered species. They can discuss the importance of conservation, ongoing research, success stories, and challenges in preserving these species.
- **Workshops and Educational Sessions:** The event may offer workshops or educational sessions focused on specific topics related to endangered species. These sessions can provide in-depth knowledge about conservation strategies, habitat restoration, species monitoring, or citizen science initiatives, allowing participants to gain practical skills and understanding.
- **Guided Tours and Field Trips:** If the event takes place in a natural or protected area where endangered species reside, guided tours or field trips can be organized. These excursions allow participants to observe the species in their natural habitat, learn about their behavior, and understand the ecosystems they depend upon.
- **Children's Activities:** Engaging children in the event is crucial for fostering a sense of environmental stewardship. Kid-friendly activities, such as face painting, art projects, games, or storytelling sessions, can be organized to teach them about endangered species in an interactive and enjoyable way.
- **Conservation Initiatives and Volunteer Opportunities:** The event may provide information about ongoing conservation initiatives and invite participants to get involved as volunteers. This can include habitat restoration projects, species monitoring programs, citizen science initiatives, or fundraising campaigns.
- **Local Community Engagement:** The event may include elements that involve and celebrate the local community. This can be done through cultural performances, local art exhibitions, food vendors offering sustainable and locally sourced products, or partnering with local organizations and businesses to promote conservation.
- **Networking and Collaboration Opportunities:** The event can serve as a platform for individuals, organizations, and stakeholders interested in conservation to connect, collaborate, and share resources. It can facilitate partnerships and alliances that strengthen collective efforts to protect endangered species.
- **Advocacy and Call to Action:** The event can raise awareness about policy issues, advocacy campaigns, or conservation challenges affecting endangered species. Participants can be encouraged to sign petitions, support legislative measures, or engage in citizen advocacy to promote stronger protections and conservation initiatives.
- **Media and Public Outreach:** Promoting the event through various media channels, such as social media, local newspapers, radio, or television, helps raise broader public awareness about endangered species and the event itself. It can attract a larger audience, increase community engagement, and amplify the conservation message.
- **Conservation Funding:** Community events often offer opportunities for fundraising and generating financial support for conservation efforts. Donations, sponsorships, or ticket sales can contribute to funding conservation projects, research initiatives, habitat restoration, or educational programs related to endangered species.

Macroinvertebrate Surveying

Learn about the hidden life in a local community waterway or at your school and how it indicates ecosystem health.

A macroinvertebrate is an invertebrate, or animal that does not have bones in its body, that is macro, or large enough to see with the naked eye. Since they have limited mobility and cannot escape pollution, often the abundance and species of macroinvertebrates found in waterways give an indication of the health of the ecosystem. Students will survey a local waterway for macroinvertebrates and learn to identify them. After doing so, decide on the health of this waterway and what you can do to improve the water quality. Consider also checking out the Water Quality Action Card to further student learning.

ACTION GUIDE

BEFORE YOU BEGIN

- Consider the issue(s) you are trying to solve and who the issues impact most in the community. If water quality is poor, why is it poor? Where is the pollution coming from? Why is clean water important? How can the team be part of the solution? Additionally, discuss how the team can work with those folks in the community who are already doing this work.
- Find a waterway that is safe for students to access.
- Complete parent permission forms as needed for off-property trips to a waterway.
- Review invertebrates with students.
- Review safety precautions for working with chemicals and outdoors.

GETTING STARTED

- Gather materials and divide students into groups for macroinvertebrate sampling.
- Review water and lab safety practices.
- Dip the large container into the waterway to collect enough water to cover about an inch of water at the bottom of the bin.
- Take your dip net and place it in the water. Move it back and forth, ideally through vegetation or near hiding places like rocks. Dunk the net into the large bin's water to help remove any macroinvertebrates you caught. Repeat this several times at a few different locations within the same waterway.
- Transfer the macroinvertebrates you caught from the large bin into the smaller containers for closer inspection. Try to identify what you found.
- Record the number of individuals and species the group finds.

TIPS

- White bins and containers make it easier to see the macroinvertebrates, especially white ice trays.
- Turn over logs and rocks slowly and carefully to see if you can find anything under them.
- If you don't have nets, kitchen strainers work well.

Climate Escape Room

Do you have what it takes to “escape” climate change? Increase your awareness of the global climate crisis while engaging in a fun and immersive online learning experience!

[Climate change](#) refers to long-term shifts in temperatures and weather patterns. The [US Environmental Protection Agency](#) has concluded that while climate change can be caused by natural variations, the current changes we are seeing can only be explained by human activity.

Climate Hero is an online escape room game that allows players to learn about climate change in an interactive setting. This knowledge is then put to the test as teams of students use their critical-thinking and collaboration skills as they race the clock to solve challenges.

You begin the game 40 years in the future. Earth’s climate is more fragile than ever. Extreme temperatures and precipitation bring intense floods and worrisome droughts, threatening food supplies and the livelihood of local communities. You will enter this world and be given the opportunity to go back in time (to today!) and make decisions that impact the climate.

This Action Card is aimed for grades 5 and up.

ACTION GUIDE

BEFORE YOU BEGIN

- Actions are solutions to local issues that impact members of the community. Consider the issue(s) you are trying to solve and who the issues impact most in the community. Is transportation to school equitable in your community? Additionally, discuss how the team can work with folks in the community who are already working on this issue.
- This virtual Climate Hero Escape Room is targeted at students grades 5 and up.
- Though students collaborate in a virtual space, the Climate Escape Room works best if each participant can access their computer or tablet. Students can share a computer or tablet if devices are limited.
- The game can be played by any number of participants, from an individual to an entire class of students, divided into smaller groups (maximum 8 students per group).
- The Climate Hero Escape Room varies in length depending on the number of challenges played and the grade level selected (ranging from 20 - 120 minutes). Estimated times for each challenge can be seen on the set-up portal and will be automatically adjusted based on the grade level. Adding an extra 15 minutes to the predicted time for explanations and digital set-up is recommended.

GETTING STARTED! Let students lead the way in exploring and reflecting on the Climate Hero Escape Room.

- Visit the virtual [Climate Escape Room](#) to get started and play a round of the game. If you are playing as a class, a class leaderboard will track each group's progress and showcase which team escapes first!
- Have each student complete a Climate Hero Pledge Poster within the game as the final step in the Climate Hero Escape Room.
- Challenge other groups and classes at your school to get involved and play the game!
- After your group has completed the game, reflect on the learning, challenges, and opportunities each student took away from the Climate Hero Escape Room.

TIPS

- An individual can play the Climate Hero Escape Room; however, it is best experienced in a group.
- If you are playing as a group (e.g., a class or action team), consider arranging desks or workspaces into pods of up to 8 students, where students are able to face each other to facilitate collaboration.
- Printing and displaying your Climate Hero Pledge Posters is a great way to engage your school in this action. If you choose not to print your pledges, consider other ways your team or class could display them. This may look like writing your pledge on GOOS (Good On One Side) paper, screenshotting your pledge and creating a virtual display space via your school's website and/or social media, or listing student pledges in a school newspaper or bulletin.

Waterway Clean-Up

Help to protect wildlife and the community by cleaning up your local waterway.

Students can organize and conduct a waterway cleanup for a local waterway with the community in studying one's watershed. Rivers, streams, marshes, bogs, oceans, estuaries, ponds, and lakes are all examples of waterways. It's important to keep waterways clean for the health of the environment and the health of the people who rely on the waterways. Completing this action will help the school community learn about pro-wildlife and habitat behaviors that benefit the local community while allowing them to take a leadership role in event planning and implementation.

ACTION GUIDE

BEFORE YOU BEGIN

- Consider the issue(s) you are trying to solve and who the issues impact most in the community. Why are clean waterways important to the community, its members, and wildlife? Why are some waterways cleaner than others? What are the root causes of the pollution? Trace the path of the water, where does this water originate and where does it go next? Additionally, discuss how the team can work with folks in the community who are already doing work on this issue.
- Find a waterway that is safe for students to access.
- Complete parent permission forms as needed for off-property trips to a waterway.
- Complement this card with the *Water Quality Study* or *Macroinvertebrate Survey* action cards.

GETTING STARTED

- If you have completed the *Macroinvertebrate Survey* or *Water Quality Study*, discuss what can be done to improve the quality and health of the waterway. If you have not completed these action cards, provide a prompt or visual to get students thinking about why to improve and how to improve water quality and the health of local waterways.
- Have students organize a waterway cleanup with the local community.
- Arrange a date, time, and location
- Gather materials needed or ask for people to bring their own
- Market the event to the local community
- Construct messaging that encourages people to participate
- On the cleanup day:
 - Record the number of people participating
 - When collecting trash, ensure that no natural substances are removed (i.e., sand, soil, rocks, wildlife, seeds, etc.)
 - Record the total weight of the trash collected and decide if it will be counted by material
 - You may want to have a “thank you” gift for participants.

TIPS

- Start planning early so you have plenty of time to develop promotional materials and get people excited to attend.
- Host the cleanup on a weekend or work holiday so that community members are more likely to attend.
- You may need a permit for the cleanup. Look into your city or township's regulations.

Bird-Friendly Schools

Learn to identify local bird species and take action to make your school safe for birds.

There are an estimated **50 billion** birds on Earth and about **11,000 species**. Birds are an essential part of the ecosystem because they spread seeds, control insects, pollinate plants, link the food web, cycle nutrients, and prevent the spread of disease. Creating a bird-friendly school is essential to ecosystem and human health. Complete this action card by learning about and identifying local bird species. Then, make the school more bird-friendly by completing two bird-friendly actions such as preventing bird strikes on windows, keeping cats indoors, planting a garden, reducing plastic use, or starting a youth birding team.

ACTION GUIDE

BEFORE YOU BEGIN

- Actions are solutions to local issues that impact members of the community. Consider the issue(s) you are trying to solve and who the issues impact most in the community. Why are birds important to the ecosystem? What is the current state of birds in the U.S./in your state? Why is action needed? Additionally, discuss how the team can work with folks in the community already doing work on this issue.
- Review the resources to find a fun way to introduce students, teachers, and administrators to birds and their importance in the ecosystem. Contact your local Audubon Society or nature center to gather information on local bird species.

GETTING STARTED

- Take several trips outdoors to observe the birds that come to school and/or students' homes. Students will use identification guides to learn about the bird species that are native and migratory to their communities. Have students try to identify their local species on these birding adventures.
- Do a bit of research to find out the status of these bird species in your area. Also, find out what species should be common and uncommon to your community.
- Explore threats facing birds in your neighborhood. Have you observed any of these threats in your neighborhood?
- Decide on an action plan for protecting birds at school. Complete two bird-friendly actions such as:
 - Prevent bird strikes on windows: Many birds hit windows because they cannot comprehend that glass is a solid object. Placing blinds or curtains, stickers, artwork, or paintings on the windows will help birds see the glass and avoid it. Decide which method will work best for your school and discuss with school administrators before taking action.
 - Keep cats indoors: Domestic cats kill tens of thousands of birds a year. Keeping cats indoors is a great way to protect birds and other native wildlife, as well as protect the cats from disease and injury. Learn about effective messaging and start a campaign to keep pet cats indoors. Have students commit to protecting birds and cats by keeping their pet cats indoors.
 - Plant a garden: native plants help to feed and shelter birds as well as provide them with a place to raise their chicks. Research bird-friendly native plants for your area and then

work with teachers and administrators to plant a bird-friendly garden at school. This can include birdhouses, feeders, and baths. Students can make or buy these items.

- Reduce plastic use: Many aquatic and shore birds will mistakenly eat plastic or will eat prey, like fish, that mistakenly eat plastic that is found in the water. By reducing our use of single-use plastics, we are helping to protect birds that rely on the ocean for their food. Research the best way to reduce the use of plastic at school. Do students often have plastic water bottles? Use plastic straws? Have plastic wrapping on food? Learn where you can work to prevent the use of single-use plastics, and then start a campaign at school.
- Start a youth birding club: Being able to identify species of birds is great, and it also helps to protect those birds, as birders observe changes in migration patterns and species ranges. Start a youth birding afterschool club by finding a teacher advisor. There may be a local organization in your area that will support your team as well (for example, in New Jersey, it is New Jersey Audubon).
- Create your own action based on your local observations.

TIPS

- Research what migration looks like in your area to find out when birds are most visible in your community.
- There are many grants available for supplies for creating a school garden. Don't forget to see what is available to you in your community.

Single-Use Plastics

How are single-use plastics contributing to the climate problem? Audit single-use plastic use at your school and develop a campaign to move toward zero waste.

The plastic pollution crisis is an ever-growing problem that affects wildlife, humans, and the physical environments around us on a multitude of levels. Each year, more plastic is produced, and even less is recycled. Over the last few decades, plastic pollution has entered our lives through single-use plastics used for drinks, food, and packaging. Most of this plastic goes straight into landfills, ultimately ending up in our natural environments. Observe and document the number of single-use plastics in and around your school building. Develop a plan that relies on research to encourage shifts away from single-use plastics.

ACTION GUIDE

BEFORE YOU BEGIN

- Actions are solutions to local issues that impact members of the community. Consider the issue(s) you are trying to solve and who the issues impact most in the community. Who is impacted by plastic pollution? What solutions currently exist and how can the school community do better for the environment? Learn more about a circular economy and zero-waste practices--what it would look like to be a zero-waste school?
- Discuss how the team can work with folks within the school district and community who may already be working on solutions to this issue.

GETTING STARTED

- Determine a timeline for implementation.
- Let students plan the best way to document the single-use plastics in and around the school (i.e., notepad, video, photo, etc.)
- Be sure students include the ways they will inform the school community about plastic's impact on the environment and on the campaign's progress (i.e., posters, announcements, social media, etc.).
- Ensure the action team documents before, during, and after the process.

TIPS

- Host an exercise on how students can safely pick up plastic waste for proper disposal.
- Encourage the team to examine how single-use plastic ends at school. Is it provided and bought at school? Are folks bringing it from home?

Clean Earth Challenge

Join the movement and take the Clean Earth Challenge! It's as simple as picking up trash on a walk, at school, or local park. This action card supports the Clean Earth Challenge Campaign.

Join the movement and take the [Clean Earth Challenge](#)! It's as simple as picking up trash on your morning walk at your favorite beach or local park. Or you can join with friends, family, neighbors, classmates, and co-workers in a community effort to help make our planet healthier and happier.

Participants have collected over 2 million pieces of trash and debris that litter our beautiful land, oceans, and waterways! This pollution has a devastating effect on the health of our ecosystems, wildlife, and the planet. And now, we're working towards 3 million!

Help the planet and join millions of others by taking the Clean Earth Challenge. Every piece you collect counts! *This action is required as a part of the Clean Earth Challenge Campaign.*

ACTION GUIDE

BEFORE YOU BEGIN

- Actions are solutions to local issues that impact members of the community. Consider the issue(s) you are trying to solve and who the issues impact most in the community.
- Discuss how the team can add value to the work folks in the community are already doing to tackle this issue.
- Get any permission that may be required to participate in the Challenge, especially if it is off-campus.
- Gather materials below.

GETTING STARTED

- Let students lead the way in planning, communicating, implementing, tracking, and celebrating the action.
- Determine the goal for the Clean Earth Challenge campaign.
- Determine how long the campaign will last--will it be a one-time event, or maybe the team will host multiple challenges throughout the year to help reach the set goal?

TIPS

- Safety is the number one priority when going off-campus, especially when collecting trash.
- For the Challenge, have students/community work in groups--there should be litter collectors, data collectors, a photographer/videographer, and a person responsible for holding on to and disposing of the contents appropriately.

Students Rebuild

Take three simple but powerful steps to help students deepen their connection to the environment and our world's ecosystems.

JOIN THE EXTRAORDINARY EARTH PROJECT!

We know that young people are doers: they are fueled by doing good and want to make their mark on this world. This year that means creating sustainable, reusable art that connects students with our beautiful planet.

The Earth is extraordinary, but climate change affects us all. Environmental changes and degradation threaten our planet and well-being. Its impacts? Intense droughts, storms, heatwaves, melting glaciers, rising sea levels, and warming oceans wreak havoc on our natural resources and communities. But we can take action!

This year, we're inviting students from across the U.S. to join us in learning about our environment and what we can do to protect our earth. Our goal is to encourage schools to be thoughtful about how our actions and the actions of businesses affect ecosystems at school, at home, and across the planet.

Share your artwork with us. For each piece of art received, the Bezos Family Foundation will make a \$5 donation to organizations tackling environmental issues and the global climate crisis.

This action is required as a part of the Students Rebuild Campaign.

ACTION GUIDE

BEFORE YOU BEGIN

- Read the Extraordinary Earth Project Leader's Guide and follow the pathway under "How Do I Get Started?".
- Page 5 of the [Art-Making Guide](#) (see resources below) tells you specifically what the art projects are for grades K-7 (2 project choices), 8+ (2 project choices), and then a digital project (one project with 5 prompt choices) for all grades.
- [Register for this year's project.](#)

GETTING STARTED

- Register for this year's project.
- Create a timeline for implementation that includes a kick-off, campaign period, submitting art, and sharing project.

TIPS

- Consider hosting this event as a part of a family night.
- Be prepared to submit student art by mail or digitally.
- Post the artwork on the school's social media channels and tag @studentsrebuild (Instagram, X, and Facebook) and @NWFEducation on Instagram | @EcoSchools US

Days of Service

Throughout the school year, build in opportunities to bring the community together in the spirit of service -- service to the school, to the community, and wildlife. This card supports the Days of Service Campaign.

Schools are an important part of the community! And students are one of its most valuable resources, well-positioned to use their time and talents to give back. Students will one day be the adults in the community working in its businesses and industry, innovating tomorrow's solutions, voting on important issues, and leading the way for a stronger, healthier community for all. Volunteerism benefits individuals and the community by providing opportunities to develop social, emotional, and 21st-century skills and opportunities to improve environmental conditions for people and wildlife. Ensure the service opportunities are authentic opportunities to build relationships and collaborate with those who work on social and environmental issues day to day.

Days of service can be tied to social and environmental days of remembrance and recognition, special events in the community, or for any reason. Make your *Days of Service* plans now and engage the school community in multiple service experiences to benefit the environment and its community members.

ACTION GUIDE

BEFORE YOU BEGIN

- Determine the days of service that will be shared across the school community for students, staff, and families to participate.
- Get permission from your school administrators, most notably if your service is off campus.
- Youth safety is a priority and should be a priority topic of discussion before hosting or participating in a day of service.
-

GETTING STARTED

- Discuss what a day of service is. What are examples of and how has the team participated in them in the past? What will be the team's definition of a day of service?
- Use the definition when determining the goal(s) and the impact the team wants to have for the Days of Service campaign.
- Let students lead the way in planning, communicating, implementing, tracking, and celebrating the action.

TIPS

- Give a lot of lead time so students, staff, and families can plan to participate.
- Share the impact of the *Days of Service campaign* by completing the *Impact Storytelling action card*.
- Build in time to reflect on the service opportunity from a hosting lens, what worked well, what the challenges were, and what improvements need to be addressed before the next one. From a personal lens, how did this day of service make me feel, how did my participation impact others, and did I build bridges or learn something new I had not known or understood before?

Using Art to Represent Climate Change Data

Through an artistic investigation, learn more about our changing climate using climate data.

Global climate has fluctuated throughout history, but as companies and societies burn fossil fuels, like coal, petroleum, and natural gas, carbon dioxide is released into the atmosphere in large amounts. The atmosphere acts like a heat-trapping blanket around the Earth. The more fossil fuels burned, the more carbon dioxide is released, thickening this blanket and warming our planet. Using artwork to investigate and represent climate data is one way to better understand, visualize, and reflect on the actions and factors impacting the planet, specifically habitats, wildlife, and people. Read and interpret climate change data, through an artistic investigation, and raise awareness by sharing their art and artist statement with others.

ACTION GUIDE

BEFORE YOU BEGIN

Actions are solutions to local issues that impact members of the community. Consider the issue(s) you are trying to solve and who the issues impact most in the community. How can raising awareness through art support community resilience? Additionally, discuss how the team can work with folks in the community who are already utilizing this medium to raise awareness and funds.

- Be aware that climate anxiety exists in the minds and bodies of many youth today. Be intentional and mindful when teaching/discussing climate. Model social-emotional skill sets and make space for students to practice them.
- Use the resources listed here or find your own that display climate change data for your community, state, or region.
- Discuss with the art teacher or local non-profit arts organization different developmentally appropriate techniques for representing data.

GETTING STARTED

Explore and discuss how climate change is impacting the planet and your local community. The following *Enduring Understandings* (EU) and *Essential Questions* (EQ) can be used to guide the discussion.

- Discuss approaches artists have taken to raise awareness about climate change. If possible, partner with a visual art, music, dance, media arts, or theatre teacher to deepen the discussion.
 - EU: Responding to artistic works develops the capacity for positive communication and constructive conflict resolution.
 - EQ: How do artists communicate intent through artistic works to engage an audience and provoke conversations?
- Discuss climate change effects in your local community. What have students observed recently?
- Use resources listed on this card (including background and FAQ sections) or other sources to find and interpret local climate change data.
- Have students discuss the data; and what it means mathematically, socially, and economically.

- Discuss methods for making meaning and interpreting data through art. Investigate the examples of artwork that convey data (directly or through metaphor) in the resources listed on this card.
 - EU: How artists synthesize their knowledge (personal, societal, cultural, ethical, historical) has social impact.
 - EQ: How do perceptions, interpretations, and application of criteria affect one's view of artistic works?
- Have students create their own artwork that will convey the message in the data sets. Students can work together or individually on the same artistic medium or select a different one. This project should demonstrate creativity, artistic technique, and a clear message.
 - EU: Artists rely upon problem-solving, critical thinking, and personal perspective when making creative choices.
 - EQ: In what ways does an artist consider personal, ethical, safety, and civic impact when making decisions as part of the creative process?
- Display or present students' artwork and artist statements publicly at school, in a community center, or in another venue/digital format, or plan a gallery walk with a local arts and culture partner.

TIPS

- Interpreting data can include models and projections.
- Don't forget solutions and actions also have data.
- The artistic displays don't need to focus on the negative impacts of climate change, they can also center hope for the future, and show future predictions, or past impacts.
- Creating space for dialogue about students' artistic work and their artistic intent can be a proactive step in raising awareness about climate change. Consider building in ways for various viewpoints and perspectives to be shared throughout this process. If possible, partner with a visual art, music, dance, media arts, theatre teacher, or local arts partner.

Sit Spot

Cultivate awareness and well-being by regularly visiting one specific spot in nature where you can sit, slow down, awaken your senses, and learn more about yourself and the local environment.

A Sit Spot is a routine practice that cultivates awareness, observation skills, well-being, and nature-connection by visiting one specific place in nature on a regular basis. The natural environments surrounding your school offer a variety of opportunities for learning, discovery, and meaningful interaction within nature. This activity can take anywhere from 5-60 minutes per sitting, and is best when repeated over a period of time (i.e., daily, weekly, monthly, or seasonally). Turned into a routine, a Sit Spot can also help improve self-expression, creativity through nature journaling, as well as uplifting your mental, emotional, and physical health. Deepen your relationship with nature and reflect upon your role in reconciliation through this simple, yet profound, place-based learning activity.

ACTION GUIDE

BEFORE YOU BEGIN

- Actions are solutions to local issues that impact members of the community. Consider the issue(s) you are trying to solve and who the issues impact most in the community. How is mental health managed at school? Is it provided to staff and students? Additionally, discuss how the team can work with folks in the community who are already doing this type of work.
- If you are planning to leave your school grounds for this activity, ensure you follow school and board/district policies by consulting with your school administration.
- If you are visiting a public park, acknowledge and respect the park's regulations. Some parks require permits or authorizations to conduct group activities.
- Do a risk assessment of the area and clearly communicate any boundaries for the activity and rules. It is always recommended to bring a first aid kit on outdoor excursions.
- Review the local weather forecast and ensure students are prepared with appropriate gear (e.g., sunscreen, sun hat, rain boots, snowsuit, etc.).

GETTING STARTED! Let students lead the way in researching, planning, communicating, implementing, tracking, and celebrating your Sit Spot.

- Refer to the [Sit Spot Reflection & Field Journal](#) for a comprehensive guide on how to engage in this activity and for further lessons, ideas, and considerations.
- Identify a suitable spot in, or adjacent to, a natural or semi-natural setting where you can find a space to sit and focus on different sensory experiences (e.g., a school garden or local park).
- Consider focusing on one or more themes that may be connected to curriculum expectations or participant interest (i.e., stress management, developing observation skills, etc.).
- Sit comfortably, anywhere from 5-60 minutes, and consider remaining silent.
- Record your experience before, during, and after participating in the Sit Spot activity. Use the [Sit Spot Reflection & Field Journal](#) as a guide.
- Repeat! Return to the same Sit Spot and repeat the activity regularly to observe the evolution of the local environment and your relationship to it. Journal the similarities and differences from your observations, perceptions, and feelings over time.

TIPS

- It is helpful for educators to actively model curiosity by participating in sit spots themselves.
- Clearly identify and communicate the aspects of a good sit spot (e.g., safety, distance required from others, etc.).
- Each participant should be encouraged to choose the space they want to sit in.
- Create a call and response signal to communicate when to come back together.
- This action provides a great platform to integrate various curricula into outdoor environments where lessons become experiential, observable, and more tangible. Use different activities such as Bird Bingo (see resources) to support observation skills.
- Consider repeating the activity at home.

Create an Endangered Species Coloring Book

Engage students in the research, development, and design of a coloring book about an endangered species in your region.

Creating a coloring book about endangered species not only offers an enjoyable hands-on activity for children but also serves as an effective educational tool to inspire their interest, empathy, and involvement in species conservation. Once your coloring book is complete, it can be distributed at school community events, conservation fairs, or wildlife festivals, serving as a tool for outreach and advocacy. They can help spread the conservation message to a wider audience, including the student's families, increasing awareness about endangered species and inspiring action within the local community.

ACTION GUIDE

BEFORE YOU BEGIN

- Actions are solutions to local issues that impact members of the community. Consider the issue(s) you are trying to solve and who the issues impact most in the community. Why should we care about endangered species? What happened that resulted in the species being listed? How can different types of art impact endangered species outcomes? Additionally, discuss how the team can work with folks in the community who are working on these issues already.

GETTING STARTED

- **Choose an Endangered Species:** Select an endangered species native to your region as the focus of your coloring book. Consider animals, birds, plants, or insects that are well-known and visually appealing.
- **Research the Species:** Gather information about the selected species, including its physical appearance, habitat, behavior, and any unique characteristics. Look for high-quality images or illustrations of the species that can serve as references for your coloring book. Note: When using reference images or illustrations from other sources, ensure that you have the necessary permissions or licenses to use them in your coloring book.
- **Determine the Content and Layout:** Decide on the number of pages you want your coloring book to have. Aim for a suitable length that allows for a variety of images without overwhelming the project. Plan the layout for each page, including space for the species name, brief facts or descriptions, and a large image for coloring.
- **Sketch the Outline:** Use pencil and paper to sketch the outlines of the coloring book pages. Start with rough drafts, focusing on capturing the essential features of the endangered species accurately. Pay attention to proportion, details, and overall composition. Keep the illustrations simple and clear to make them easier for children to color.
- **Refine the Drawings:** Once you're satisfied with the initial sketches, go over them with a pen or marker to refine the lines and make them more defined. Add any necessary details and make adjustments to ensure the illustrations are visually appealing and accurate representations of the species.
- **Digitalize the Drawings (Optional):** If you have access to digital drawing tools or a scanner, you can transfer the finalized drawings to a digital format for easier editing and reproduction. This step is optional but can be helpful if you plan to print multiple copies or share the coloring book online.

- **Add Text and Labels:** Include the name of the endangered species on each page, as well as a brief description or interesting facts about the species. Keep the text simple and easy to understand, using language appropriate for the target age group.
- **Color the Cover:** Design a vibrant and eye-catching cover for your coloring book. Use bright colors and include the name of the species, along with any other appealing elements or illustrations related to the species.
- **Test the Coloring Book:** Print a few copies of your coloring book to test the illustrations and make sure they're suitable for coloring. Distribute these copies to children or volunteers to obtain feedback and identify any necessary adjustments or improvements.
- **Finalize and Distribute:** Based on the feedback you received, make any necessary modifications to your coloring book. Once you're satisfied with the final version, print multiple copies of the coloring book. Consider using recycled paper or eco-friendly printing options. Distribute the coloring books to schools, local libraries, nature centers, or other relevant venues where children can learn about endangered species and engage in creative activities.

TIPS

- This is the perfect hands-on project to partner up with your school's art teacher!
- Create a parent coloring book committee to support you throughout the entire process of this great family-friendly project.
- Invite local artists to collaborate to help students illustrate the coloring book images.
- Use the examples provided on our resource page to help you and your students decide on the overall design of the coloring book.
- Once the coloring book is completed, organize a school community sale to raise funds to support a local conservation organization focused on the protection of your chosen endangered species.

Create School Field Guides

Do you want to unlock the secrets and hidden treasures in your own schoolyard? Then, embark on this great project-based learning experience of creating your school-based nature field guides!

A field guide of your school is a comprehensive exploration of the rich biodiversity and natural wonders within our school grounds. A field guide can open the window to the vibrant ecosystem that surrounds your school, inviting students on a journey of discovery and appreciation for the diverse species and features that call their schoolyard home. From the towering trees and delicate flowers to the playful wildlife and hidden treasures, a field guide provides a glimpse into the captivating world just beyond the classroom walls.

ACTION GUIDE

BEFORE YOU BEGIN

Consider the issue(s) you are trying to solve and who the issues impact most in the community. How can raising awareness through information documents support healthy wildlife populations? What purpose and audiences do they serve? Additionally, discuss how the team can work with folks in the community who are already utilizing these tools.

Creating a field guide for your schoolyard can be a fun and educational project. It allows your students to document and learn about the various plants, animals, and natural elements in your school's outdoor space. Here's a step-by-step guide to help you get started:

- **Identify the scope:** Determine the extent of the field guide. Decide whether the Action Team (AT) wants to focus on specific categories, such as plants, animals, and insects, or include a broader range of features.
- **Conduct preliminary research:** Start by researching the common species and features found in your schoolyard. Consult books, websites, and local field guides to identify the plants, animals, and other elements you're likely to encounter. Take notes and compile a list of potential entries for your guide.
- **Plan your guide's structure:** Decide on the structure and organization of your field guide. You could organize it by categories (e.g., plants, animals, insects) or by different areas within the schoolyard (e.g., playground, garden, wooded area). Create sections and subsections as needed.

GETTING STARTED

- **Explore and document:** Take regular trips to your schoolyard and explore different areas to observe and document the species and features you want to include in your guide. Make detailed observations, take photographs, or create sketches of each entry. Note down important information such as habitat, behaviors, distinguishing features, and any interesting facts.
- **Record observations:** Use your notebook or sketchbook to record your observations. Include sketches, notes, measurements, and any other relevant information about each entry. Ensure that your entries are clear and detailed, making them easy to understand for others.

- **Compile your guide:** Once you have gathered enough information and documentation, it's time to compile your field guide. You can organize it in a physical notebook, create a digital document or presentation, or even design a website or blog.
- **Add descriptions and information:** Write detailed descriptions for each entry in your field guide. Include relevant information about the species or feature, such as its scientific name, common name, physical characteristics, habitat, behavior, and any interesting facts or stories associated with it. Note: You can use the template provided in this Action Card with an outline and basic structure to organize the information for each species.
- **Include visuals:** Enhance your field guide with visuals such as photographs, sketches, or diagrams. Make sure the visuals accurately represent the species or feature you are describing.
- **Review and refine:** Take the time to review your field guide for accuracy and completeness. Check for any errors or missing information and make necessary revisions. You could also seek input from teachers, classmates, or local experts to improve the quality of your guide.
- **Share your field guide:** Once you are satisfied with your field guide, share it with others. You can distribute printed copies to your classmates, teachers, and school staff or share them digitally through email, a school website, or a social media platform.

TIPS

- Recruit the help of community experts like biologists, master gardeners, environmental educators, etc.
- Plan your outdoor visits to collect information for your guide to coincide with the visits of the community experts.
- Remember, creating a field guide is an ongoing process. You can continue to update and expand it as you discover new species or features in your schoolyard. Enjoy the journey of exploration and learning!

Repurposing and Innovative Recycling

Recycle, repurpose, or repair items that are not recyclable through the regular recycling stream and help to divert waste from the landfill.

Repurposing, upcycling, and recycling items that would otherwise go into the garbage, helps to reduce the amount of waste that is put into landfills, while also reducing the amount of raw materials that are used to make new items. In this action, collect items and get creative by making something new, creating art, or work with an external partner to recycle items that cannot be recycled through your municipal recycle program, such as markers, batteries, and ink cartridges.

ACTION GUIDE

BEFORE YOU BEGIN

- Actions are solutions to local issues that impact members of the community. Consider the issue(s) you are trying to solve and who the issues impact most in the community. How does waste impact the community, a school, a family? Are there examples of repurposing and innovation in recycling at school or in the community? What are the benefits of this type of project? Additionally, discuss how the team can work with folks in the community who are a part of this movement.
- Follow board/district guidelines for collecting, storing, and recycling items and make sure to work with an approved collector. This is especially important for items that may be considered hazardous waste (such as batteries) or items that your board already has a policy or process for recycling.
- If you are working with a partner to collect and recycle items (such as markers) select a partner that prioritizes safety and ethics around collection, recycling, and distribution procedures. See [EcoSchools criteria for actions](#) for further guidance.
- If you are repurposing or upcycling items, use materials that cannot otherwise be recycled. Combining recyclable materials together with glue may make them unrecyclable.
- If your school chooses to focus on diverting textile waste, please log information in the **Divert Textile Waste** action instead.
- Note that battery recycling should be logged on this action.

GETTING STARTED

Let students lead the way in researching, planning, communicating, implementing, tracking, and celebrating your Repurposing and Innovative Recycling action.

- Determine what items you want to collect and if you will be repurposing/upcycling the item or sending it to be recycled through an external partner.
- Be creative and utilize materials for art work or Eco Fashion Shows.
- Develop a plan for promoting your campaign and collecting the items. Consider setting a collection goal based on number or weight of material!
- Once all items have been collected, send them off to your external partner, or create an upcycled project with them.
- Share campaign successes with your whole school. Reflect on your impact and brainstorm ways to improve next year.

TIPS

- This action can be initiated by a class and connected to a unit of study or run as a whole-school campaign.
- Promote your upcycling project/campaign with posters, assemblies, announcements, and make sure to label bins and provide clear instructions!