



# Biodiversity Pathway

BEFORE, DURING AND AFTER THE AUDIT, GRADES 9-12

## BEFORE THE AUDIT

### BE PREPARED

- Read through this document, the baseline audit and the post-action audit.
- Invite community experts to participate.
- Gather science tools (if applicable) and print materials.
- Conduct mini-lessons (if needed) to strengthen concept foundation.

### ENDURING UNDERSTANDING

1. A greater variety of plants and animals is of greater benefit to an ecosystem opposed to only a couple.
2. Living things, including people, benefit from diverse ecosystems.
3. Growth and homeostasis of a biological system are impacted by changes in the systems environment.
4. Humans, as consumers impact biodiversity in either beneficial or harmful ways.

### COMMUNITY AND CULTURE

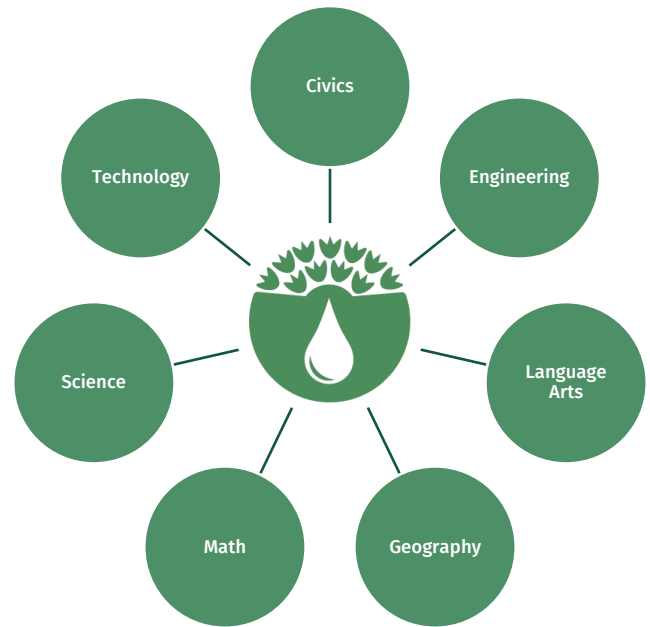
- The loss of cultural diversity (including languages) and traditional knowledge -- of farm communities and indigenous cultures -- is intricately linked to the loss of biological diversity. Indigenous peoples and farming communities are the creators, custodians and continuing innovators of biological knowledge and resources. [\[1\]](#)
- Almost 75% of the world's poor are affected by land degradation. [\[2\]](#)
- Cultural diversity is a source for learning sustainable practices.
- Intercultural dialogue should be a guiding principle in developing solutions, raising awareness and promoting action.
- Create an inclusive, safe place for Eco-Action team members and others within and outside of the school community to participate.





### INTERDISCIPLINARY CONNECTIONS

- **Language Arts** – Practice crafting communications based on audience and purpose. Students can hone skills to help them effectively communicate via blog, social media, letter writing, and journalism.
- **Math** – Calculate the biodiversity index of a given area. Use this data to make improvements to biodiversity at the school.
- **Geography** – Research regional or national cultures and biodiversity. What are the relationships connecting biodiversity to culture and how have the relationships changed over time.
- **Engineering** – How has biodiversity inspired engineers, past and present? With biodiversity in peril, how might natural inspiration impact engineering outcomes? Use a current species as a catalyst for an engineering project that has the potential to solve an environmental or community need.



## SUSTAINABLE DEVELOPMENT GOALS

In 2016, seventeen Global Goals for Sustainable Development were adopted by world leaders at a United Nations Summit. These goals universally apply to all countries, therefore Eco-Schools USA is committed to doing our part. Over the next fifteen years, efforts will be made by governments, institutions and citizens all across the globe to end all forms of poverty, fight inequalities and tackle climate change, while ensuring nobody is left behind.



Conserve and sustainable use the oceans, seas and marine resources for sustainable development.



Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and biodiversity loss.

Learn more at [globalgoals.org](https://globalgoals.org)



## CONDUCT THE AUDIT

### GATHER THE FOLLOWING MATERIALS

- Student worksheet(s)
- School map – outside
- 1/16 cotton twine rope
- Audit form
- Measuring tape (50M)
- Binoculars
- Clip boards
- Stakes and flags
- iNaturalist application (optional)

### PROCEDURE

1. Before the audit, contact local experts who are willing to assist. These individuals can provide more in depth understanding and can help direct the team when questions arise and/or concerns arise.
2. Read through the audit. As an Eco-Action Team determine, based on the area being investigated, how much time will be needed to complete the baseline or post-action audit.
3. Highlight the locations on a school map where teams will collect data.
4. Conduct the baseline audit and make plans to conduct the post-action audit.
5. Analyze the results and develop an action plan.
6. Frequently communicate results and plans with the school and community.





## AFTER THE AUDIT

### 1. NEXT STEP: DEVELOP AN ACTION PLAN

Move into Step 3 of the Seven Step Framework by using the audit results to develop an action plan.

Identify community leaders, experts, advocacy organizations who can assist students with solution implementation and advise the Eco-Action Team how to address issues of social justice.



### 2. UPDATE YOUR DASHBOARD

[Login to the school's dashboard](#) and complete the following tasks.

- Upload your audit results and your action plan.
- Add any related photos or videos.
- After completing the post-action audit and moving through the Seven Step Framework apply for an award.



### 3. BE A YOUNG REPORTER

Students can use the audit results, to develop a Young Reporters for the Environment (YRE) project. Students use investigative journalism to write, photograph or video local environmental and social justice issues.

- [Learn more about YRE.](#)
- [Join the competition.](#)
- [Access YRE resources.](#)

### 4. NEXT PATHWAY



#### Climate Change Pathway –

Climate change is any significant change in climate lasting for an extended period of time and includes major changes in temperature, precipitation, or wind patterns, among other effects that occur over several decades or longer. School communities can mitigate their carbon footprint and improve their buildings resilience.



#### Schoolyard Habitats® Pathway –

Water is a critical habitat element and plays an important role in the preparation, implementation and maintenance of gardens for wildlife.



### 5. CONNECT TO THE GLOBE PROGRAM

[The Global Learning and Observations to Benefit the Environment \(GLOBE\) Program](#) is an international science and education program that provides students and the public worldwide with the opportunity to participate in data collection, the scientific process, and contribute meaningfully to our understanding of the Earth system and global environment.

#### Atmosphere

aerosols | air temperature | precipitation | surface ozone | surface temperature | water vapor | wind

#### Biosphere

Arctic bird migration | biometry | carbon cycle | green up-green down | land cover classification | Ruby-Throated hummingbirds

#### Hydrosphere

conductivity | dissolved oxygen | freshwater macroinvertebrates | nitrates | pH | water temperature | pH

#### Pedosphere

soil fertility | soil moisture-SMAP/gravimetric/sensors | pH | soil temperature