

Lesson 2 - Rewilding

Rewilding Lesson 1 - 30 minutes

Learning outcomes:

During this lesson, students should...

- Define rewilding
- Discover connections between biodiversity and climate
- Understand how biodiversity benefits an ecosystem and community
- Examine ways to positively impact local biodiversity

Materials: a shared screen to display images and videos, devices for students to explore online resources on their own, pen/pencil, worksheet

NGSS: [HS-LS2-6](#), [HS-LS2-2](#), [HS-LS4-5](#), [HS-ESS3-6](#)

Outline:

10 minutes - Introducing biodiversity and rewilding

- First, remind students of the last lesson and introduce today's lesson:
 - Last lesson we connected with our environment by observing it during a sit spot and asking critical questions. Today, we are going to learn how “rewilding” can act as one kind of environmental solution, and consider if rewilding is something we want to focus on for our project.
- Next, define biodiversity, introduce why it's important, and highlight current impacts to biodiversity:
 - **Biodiversity's definition:** Biodiversity is all the different kinds of life you'll find in one area - the variety of animals, plants, fungi, and even microorganisms like bacteria that make up our natural world.
 - **Biodiversity's role:** It keeps ecosystems stable and resilient, supporting food, water, clean air, medicine, and protection from natural disasters.
 - **Human pressures:** Habitat loss, climate change, pollution, and resource extraction are driving steep declines in wildlife and ecosystem health worldwide.
 - **Restoring balance:** Protecting habitats, easing resource pressure, and supporting Indigenous and local stewardship can rebuild the web of life that sustains people and nature.
 - Source: [World Wildlife Fund](#)
 - * for an optional video about biodiversity, see “Extensions” tab
- Next, introduce and define the concept of “Rewilding” by reading this definition:
 - Rewilding is the process of restoring and protecting natural ecosystems, and allowing them to develop and function without human intervention. Rewilding can take many different forms, big or small. This can include the reintroduction of native species, the removal of non-native species, and the protection of natural processes such as fire and flooding. The goal of rewilding is to create

self-sustaining ecosystems that can support a diverse array of plant and animal life.

- Source: [Rewilding Academy](#)
- After reading the definition, ask students if they can think of any examples of what rewilding might look like as a checkpoint of their understanding.
 - Some examples could include:
 - Removal of invasive weeds from a meadow
 - Planting of native vegetation in a window box
 - Reintroducing beavers to a watershed where they once lived but were extirpated (locally extinct)
 - Removal of abandoned human development to allow native species to take over
 - Creating a “pollinator garden”, a small outdoor garden with native species that pollinators need
- Then, facilitate a discussion by asking the following questions:
 - How does rewilding relate to biodiversity?
 - What are ways we can be involved in protecting biodiversity?
 - **for additional discussion questions, see the “Extensions” tab*
- Transition to the next section by reading the following statement:
 - One way that we can be a part of the effort to protect biodiversity is by participating in something called a “bioblitz”!
 - **Note: Systems thinking and interconnectedness are very relevant to biodiversity and rewilding. For an additional activity about systems thinking, see the “Extensions” tab.*

15 minutes - Biodiversity in our community

- Next, the students are going to participate in a “Bioblitz”
 - First, introduce to the activity to the students:
 - Let the students know that they are going to get into groups, go outside, and explore the biodiversity of our “region”, with the region being the surrounding area of the school. This could be the built environment around the school, the schoolyard, or a nearby park.
 - They are going to try and observe as many different species of life as they can - this includes animals, plants, and fungi (such as mushrooms). They will record the different species they find by writing them down on their worksheet. This activity is called a “BioBlitz”.
 - Students should write down the species they see as specifically as they can i.e. “raven”, or if they don’t know what kind of bird they should write down “bird 1”.
 - Emphasize that correctly identifying the type of species is not important for today.
 - Even if they don’t know what the species is, try to at least tally how many *different* species they find over the course of the BioBlitz.

- If they want, they can also make up names for the different species if they don't know the actual names. For example, if they're looking at what they believe to be three different species of moss, they could call them "rock moss", "troll moss", and "fuzzy moss".
- Provide students with context about why they are doing this activity:
 - By participating in a bioblitz, you are collecting data. Today the data happens to be about the biodiversity in this region, and that's actually something other scientists and naturalists are constantly collecting data about as well. This type of activity, in which anyone can collect data to share with the wider scientific community, is called "citizen science".
- Provide students with a broad perspective on citizen science:
 - Citizen science is a great way that everyone can participate in the scientific process of observing, collecting data, and entering/sharing that data. There are many different ways to participate in citizen science, and citizen science could even be a part of the project we implement.
- Take students outside to participate in the BioBlitz
 - *Note: if you have time, iNaturalist is a tool that can be used to effectively participate in a BioBlitz.*
 - *iNaturalist is a free application that can be downloaded on a smartphone or device.*
 - *If you have time and want students to use the app, on a projector or shared screen, pull up the website: <https://www.inaturalist.org/>*
 - *Go through the "How it works", "Contribute to science", and "Nature at your fingertips" sections on the homepage with the students.*
 - *Let students know that they can make an account if they want, and encourage them to freely explore the app, drawing attention to the "Explore" map, where they can look at other peoples' observations, the "Observe" button, where they enter their own observations and can use the "What did you see?" function where the app will make suggestions about the ID of a species observation, and the "Me" button, where all your individual observations are kept.*
 - **for additional discussion questions, see the "Extensions" tab.*

5 minutes - Final thoughts about biodiversity in our community

- Have the students come back inside and congratulate them on completing their first BioBlitz!
- To close out the lesson, check for student understanding by facilitating a brief discussion about biodiversity in their community. This can be done as a discussion, or you can have students individually respond to the following questions on the worksheet and turn the worksheet in:
 - How does participating in a BioBlitz help biodiversity in our community?

- What other ways could we positively impact biodiversity in our community?
 - *Note: we recommend documenting ideas students have about contributing to biodiversity in their community on an ongoing list of possible project ideas that can serve as a reference when the time comes to decide on a project.*

Worksheet

Lesson 2: Rewilding Worksheet

Bio Blitz:

Observe as many different species of life as you can - this includes animals, plants, and fungi.

As you observe different species, document them by writing them down.

Hint: write down specifically what the species is, i.e. "hummingbird", or "oak tree", but even if you don't know what the species is, try to tally how many different species you find over the course of the BioBlitz. You can also make up creative and descriptive names to differentiate species observations!

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Taking action brainstorm:

How does participating in a BioBlitz help biodiversity in our community?

What other ways could we positively impact biodiversity in our community?

Extensions

Optional extensions:

Introducing biodiversity and rewilding:

- Biodiversity video:  Why is biodiversity so important? - Kim Preshoff (4 minutes)
- Optional discussion questions about rewilding:
 - How does rewilding an area help to increase the number of different plants and animals that live there?
 - When could rewilding for biodiversity potentially conflict with other ways that humans use the land?
 - How can we measure whether rewilding efforts are working?
- Tying in systems thinking and interconnectedness:
 - Discuss the idea of systems thinking and interconnectedness, how it relates to biodiversity and rewilding, and the benefits of rewilding by reading or displaying the statement below:
 - Everything on earth is connected, and everything is part of the earth “system” in some way. In systems, if you change one particular variable, that has effects on other variables in the system as well.
 - Then, check out this video describing the interconnectedness of our world, and how things we do affect the system:
 - [Why Should Humans Care About Biodiversity?](#) (4 mins)
 - Following the video, have students respond to the following discussion questions:
 - How does the destruction of native biodiversity negatively impact the environment?
 - *Hint: think about what we talked about previously: ecosystem services, systems, and interconnectedness*
 - How does our current economic, social, and cultural system view our relationship to nature?
 - How could habitat restoration conflict with existing development or plans for future development?
 - Why might some people or businesses be hesitant about the idea of rewilding? What are some of their potential concerns?
 - To finish this discussion, read this N. Scott Momaday quote:
 - “When we dance the earth trembles. When our steps fall on the earth we feel the shudder of life beneath us, and the earth feels the beating of our hearts, and we become one with the earth. We shall not sever ourselves from the earth. We must chant our being, and we must dance in time with the rhythms of the earth. We must keep the earth.”
 - What does N. Scott Momaday mean by this?
 - How does hearing this quote make you feel?

Biodiversity in our community:

- Optional discussion questions after the BioBlitz:

- Was anyone surprised at how many different species you observed?
 - Was it higher or lower than you'd expect?
- Do you think it would have been higher or lower 200 years ago?
- What do you think could be done to make the number of species observed higher?
- Where else would you want to do a BioBlitz?
- What parts of the world do you think would have a lot of species if you did a bioblitz there? Why?
- What makes the results vary?
 - *Hint: think about the time of day or time of year*
- How can we use this data to track trends over time?
- How could we improve the accuracy of our surveys?
 - *Hint: Think about things like learning bird songs, learning how to ID grass, or asking for help from entomologists or botanists*

Additional Resources

-  Why is biodiversity important - with Sir David Attenborough | The Royal Society : The Royal Society: David Attenborough explains why biodiversity is so important to humans, how biodiversity loss is impacting our world and how there is still time to change direction
-  Rewilding – What are the benefits? : University of Sussex - Hear what benefits young people think rewilding delivers. It varies from helping to restore biodiversity to helping us have a better relationship with nature.
-  50 Years Ago, This Was a Wasteland. He Changed Everything | Short Film Showcase : National Geographic - Bamberger's model of land stewardship is now being replicated across the region and he is considered to be a visionary in land management and water conservation.
-  WWF's 2022 Living Planet Report : World Wildlife Fund - The 2022 Living Planet Report is a comprehensive study of trends in global biodiversity and the health of the planet.
-  What is a BioBlitz? #nhmla #Community #Science : National History Museum of LA - Watch as NHM's Community Science team kicked off the 2023 City Nature Challenge with a BioBlitz in Whittier, California.