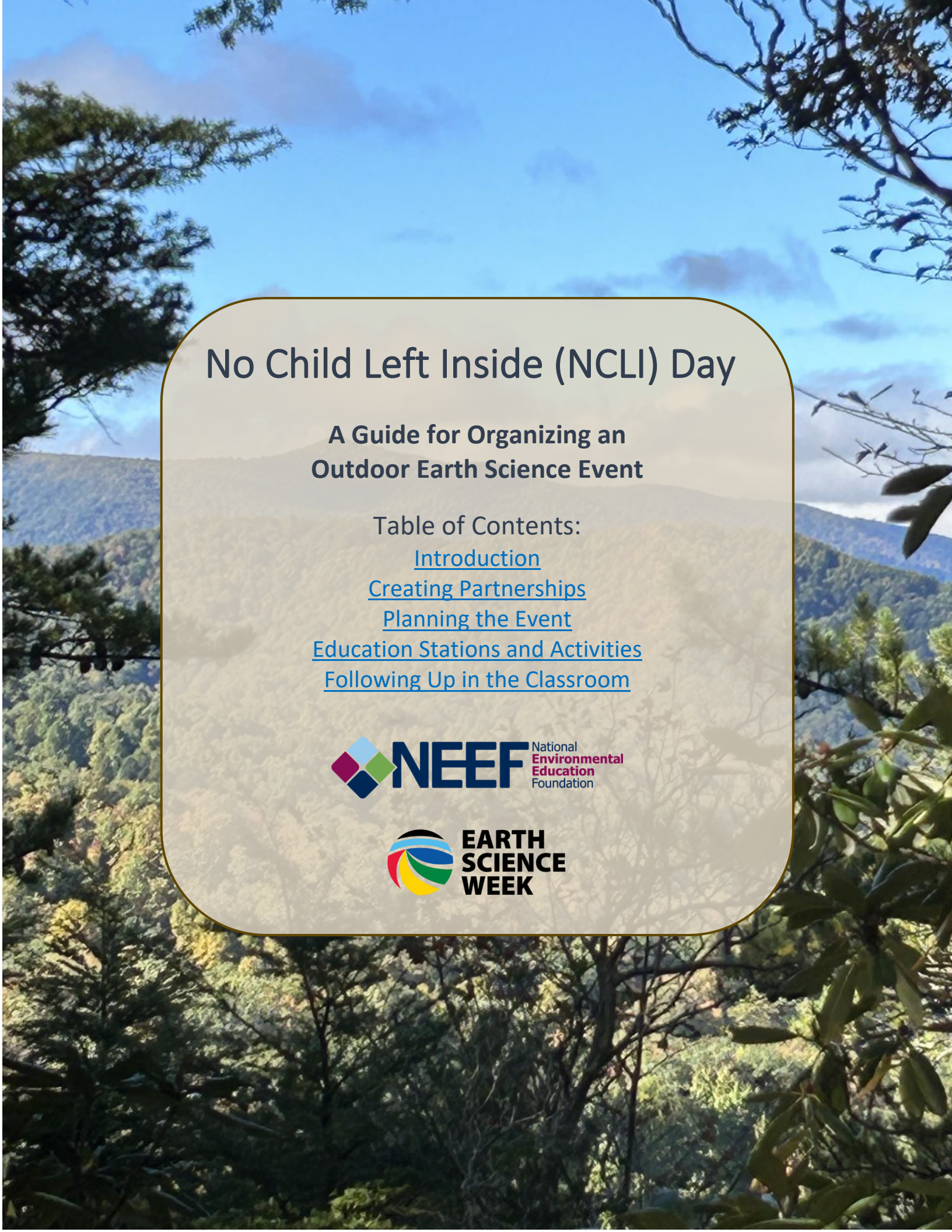

No Child Left Inside (NCLI) Day

A Guide for Organizing an Outdoor Earth Science Event

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NEEF National Environmental Education Foundation

EARTH SCIENCE WEEK

Introduction

"No Child Left Inside" Day — NCLI Day, for short — originated in 2008 to urge young people outdoors, where they could explore Earth Science firsthand. The first NCLI Day was held on Tuesday, Oct. 14, 2008, during Earth Science Week (ESW), an annual celebration of the geosciences organized by the American Geosciences Institute (AGI) since 1998. NCLI Day remains one of Earth Science Week's Focus Days and is celebrated annually on the Tuesday of ESW, though it can be celebrated at any time of the year!

By 2008, the NCLI slogan had become a popular rallying cry among youth organizations, fitness groups, and government agencies interested in promoting outdoor activities. Some wished to promote exercise, some appreciation of nature, and some awareness of recreational opportunities. Working in partnership with the U.S. Geological Survey (USGS), AGI structured the first NCLI Day to promote Earth Science education.

Teachers led hundreds of students on a short hike from Langston Hughes Middle School in Reston, Va., to a nearby stream and wooded area. At a series of learning stations there, AGI and USGS scientists offered demonstrations and conducted discussions on topics such as water chemistry and biological diversity. Students sampled water, observed plant and animal life, and studied the interactions of natural systems in this hands-on exploration of Earth science. Before the day was over, students expressed what they had learned about Earth Science in haikus and talked with NBC and NPR journalists who had arrived to cover this extraordinary educational event.

Since then, many organizations have supported NCLI Day by promoting and holding events, including the National Environmental Education Foundation (NEEF), who became the sponsor of this ESW Focus Day in 2025. NEEF's mission is to encourage lifelong environmental learning, and they have created a collection of educational resources that get students and adults outside to observe and interact with the environment. This guide builds on NEEF's excellent resources, helping you to connect Earth Science concepts to what you learn about the environment.

Young people everywhere enjoy experiences that make learning fresh. Your students will, too. This guide contains all the information you need to begin planning your own NCLI Day. With the help of your colleagues, you can create an event that gets young people excited, shows the community what great things are happening at your school, and genuinely promotes high-quality, hands-on Earth Science learning!

Next: Creating Partnerships

Creating Partnerships

It is vital for students and the public to know how the geosciences contribute to our understanding of the world. You may see headlines and social media posts about natural disasters, innovations in Earth monitoring, employment needs in geoscience-related fields, data on global climate, the need for sustainable energy sources, and access to natural resources (e.g., minerals and water). The work of geoscientists does not happen in isolation—it happens with the cooperation of many other fields, and it affects all people. Understanding geoscience can therefore benefit everyone. (See: The Importance of Teaching Earth Science, from the Geological Society of America.)

To make your NCLI Day celebration all it can be, enlist the help of colleagues and the wider community—including geoscientists! Help will be easy to find when others begin to understand the effort's importance and its potential benefits. More immediately, NCLI Day can bring unique benefits to your school community, such as exciting young people by upending their classroom routines and showing the community a new side of your school by highlighting nontraditional educational approaches you're undertaking to provide students with high-quality, hands-on experiences in Earth Science education.

Whom should you include on your team? Some recommendations:

- Approach your principal, lead science teacher, and/or district science curriculum supervisor. Talk with your fellow science teachers and teachers in other subjects about collaborative activities and cross-curricular projects.

- Invite geoscience professors from nearby colleges and/or informal education entities such as museums, science centers, local geological societies, public parks, geoscience-related employers, and your state geological survey.

- Welcome parents and guardians to volunteer at the event.

- Consider inviting a community leader, such as your district superintendent or your city mayor, to participate. Many leaders appreciate such opportunities to interact with constituents and community members.

- Finally, consider reaching out to local media sources, writing a press release, and/or making social media posts to share about your event. Media coverage lets the community see the high-quality learning experiences that your school is providing for students. It also gives your students a taste of high-profile recognition for the work they're doing.

Next: Planning the Event

Planning the Event

The trick to organizing a big event like NCLI Day is dividing it up into smaller, more manageable tasks. When you take those tasks one at a time, share the work with partners, and keep the lines of communication open, the job often becomes a lot easier to manage. Here are some step-by-step suggestions:

- Decide when you would like to hold your NCLI Day event. Is it best to have the event during the school day, or hold it on a weekend to make it open to the public? Is the official NCLI Day (the Tuesday of ESW in October) the best time to hold it, or should it be at another time of year?

- Build partnerships with fellow educators, administrators, and relevant community members, as discussed in Creating Partnerships. These conversations will help with details about the size and scope of your event, identify specific components you do or don't want to include, and secure "buy in" from people you'll rely on for key contributions.

- Choose a setting for your NCLI Day activities. The ideal location is on or near your school campus, where a variety of natural systems and processes can be observed, such as rock layers, a body of water, and wild plant and animal life. But you can find Earth Science anywhere, even in an urban setting. The top priority is leading young people outdoors to a location where they can safely observe and interact with Earth systems and processes.

- Plan your NCLI Day educational activities. Cover Earth Science topics that are relevant to the selected natural setting, so students see how science relates to their world. Make the most of NCLI Day by conducting investigations or experiments that couldn't or wouldn't ordinarily be done in the classroom and that enable young people to discover the Earth Science behind natural phenomena on their own, such as testing pond water or taking soil samples. (For recommended activities, see Education Stations and Activities below, as well as NEEF's collection of resources.)

- Finally, attend to the details. Will your NCLI Day planning partners share questions and updates via frequent meetings, email, or by other means? Will students conduct activities in the classroom to prepare them ahead of time? Will parents and guardians need to sign permission forms before the event? Will students travel from class to your NCLI Day location on foot, by bus, or some other way? Will your event feature a speech, presentation, introductory remarks by a public figure or geoscientist? Will students remain in one large group at your NCLI Day location, or will they split up into smaller groups to explore

"education stations" dealing with various topics? Will special equipment or materials be necessary to conduct activities? Will parent volunteers be needed to escort small groups of students from one education station to another? Will special provisions be necessary to ensure student safety (see sidebar)? Will students conduct classroom activities afterward to reinforce NCLI Day lessons? (See Following Up in the Classroom, below.) Assign roles and responsibilities to your partners and draw up a schedule to keep preparations on track.

Safety Suggestions

Make sure that these and any other necessary safety guidelines are provided to and followed by students:

- Wear sunscreen and bug spray, if needed.
- Always wear appropriate footwear and clothing — no flip-flops!
- Pay attention to "No Trespassing" or other warning signs.
- Stay in a safe place if making outdoor observations.
- Treat living things with care. Some may bite, sting, or be poisonous!
- Bring a water bottle.
- Be aware of the weather forecast.
- Have a cell phone and emergency numbers handy.
- Make sure you check yourself for ticks or other pests.
- For leaders: Take along a first aid kit.

Next: Education Stations and Activities

Education Stations and Activities

Maybe your students can take a short bus ride to a coastal outcrop, a sunbaked mesa, or a snowy forest. Maybe they can walk to a public park just a block off campus. Or maybe they can find a wealth of Earth Science right at the edge of the playground. Whatever the setting, the specific natural systems and processes available at your location for observation and interaction likely will determine which activities you choose to conduct. You may choose to set up multiple "education stations" at your location, where a teacher will lead a small group of students in an activity before sending them along to the next education station.

Below are details about several educational activities that you are invited to adopt or adapt, as appropriate, for your students. Click on an activity title that interests you to learn more about the activity, including background information, procedures, discussion and/or analysis questions, and connections to the Next Generation Science Standards (NGSS) components (Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts). Additionally, each activity is connected with one UN Sustainable Development Goal (SDG) that helps relate classroom content to global challenges and work that can be done toward them. Some activities are marked with an asterisk (*), which means they directly connect to NEEF activities. These can be especially useful for tying together Earth Science with environmental, life science, and sustainability topics.

Activity	K	1	2	3	4	5	6	7	8	9	10	11	12
Dig Into Soil*	✓	✓	✓	✓	✓								
Look Up! Observing Weather*	✓	✓	✓	✓	✓								
Your Own Greenhouse*				✓	✓	✓							
Sky and Cloud Windows*				✓	✓	✓	✓	✓	✓				
Earth Science Art*	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Make Your Own Compass							✓	✓	✓				
Plant an Ozone Monitoring Garden*							✓	✓	✓	✓			
How Can You Test Your Soil?*						✓	✓	✓	✓	✓			
Soil Properties*						✓	✓	✓	✓	✓	✓		
Building Geology: Rock and Mineral Hunt							✓	✓	✓	✓	✓	✓	✓
Earthquake on the Playground								✓	✓	✓	✓	✓	✓
Find Your Bearing: Mapping*								✓	✓	✓	✓	✓	✓
Streams and Water Quality*										✓	✓	✓	✓
Be a Paleontologist!				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
It's the "Rain," Man – Build a Rain Gauge*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
The Human Rock Cycle	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Writing Earth Science	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

*Activities indicated with an asterisk (*) have direct connections to one or more NEEF activities on their respective webpage.

- Dig Into Soil*
    - K-4 Earth and Life Science
    - Students dig a small soil pit to observe and sample different soil horizons. They record soil color, texture, and living organisms for the topsoil and subsoil, measure horizon depths, and note site characteristics such as location, vegetation, and topography. Finally, students compare properties of the soil layers and consider how soil characteristics might vary at other locations.

- Look Up! Observing Weather*
    - K-4 Earth Science
    - Students create a personal Sky Journal to record daily observations of the sky, including weather, clouds, and sensory experiences. They reflect on how the sky makes them feel, share observations through writing or discussion, and compare cloud types with a cloud chart to explore patterns and variations.

- Your Own Greenhouse*
    - 3-5 Earth Science
    - Students build a simple model greenhouse to explore how trapped air warms up and to simulate the greenhouse effect. They measure and compare temperatures in two bottles under sunlight, record how temperatures change over time, and discuss how sunlight and trapped gases influence warming in both the model and the Earth's atmosphere.

- Sky and Cloud Windows*
    - 3-8 Earth Science
    - Students create a "sky frame" to focus their observations of the sky and clouds. They record sky color, cloud type, wind, and precipitation in a notebook, take photos if possible, and track changes over time to analyze and present patterns in weather and sky phenomena.

- Earth Science Art*
    - K-8 Earth Science and Art
    - Students create artwork inspired by outdoor landscapes, integrating Earth Science observations with artistic expression. They notice geologic features, vegetation, and other natural details, then draw, paint, or sculpt them with enough accuracy that someone else could recognize the area using only their artwork.

- Make Your Own Compass
    - 6-8 Earth and Physical Science, Engineering, and Geography
    - Students make a simple floating compass to explore magnetism and navigation. By magnetizing a needle and balancing it on a cork in water, they observe how the needle aligns with Earth's magnetic field, investigate the effects of nearby magnets and metal objects, and consider challenges early sailors faced in using compasses at sea.

- Plant an Ozone Monitoring Garden*
    - 6-9 Earth and Life Science, Engineering
    - Students investigate ozone in the atmosphere by observing plants for ozone injury, such as spots on leaves from high levels of ozone in the lower atmosphere. Students can identify ozone-sensitive species in their neighborhoods, examine leaves for damage, and plant their own ozone garden to monitor local air quality over time. This hands-on activity connects plant biology, air pollution, and environmental science.

- How Can You Test Your Soil?*
    - 5-9 Earth and Life Science
    - Students explore what's in soil by collecting samples from their yard or school grounds and using a soil test kit to measure pH, nitrates, phosphates, and potassium. They record their results, compare differences between samples, and consider how human activities or soil treatments affect plant growth. This activity connects chemistry, ecology, and citizen science by helping students understand how soil chemistry influences which plants thrive.

- Soil Properties*
    - 5-10 Earth and Life Science
    - Students explore soil porosity (the amount of open space between soil particles) by observing different soil textures and measuring how much water soils can hold. In the classroom, students compare sand and gravel to see which has more pore space. Outside, they collect soil samples from different areas and record observations, compare survey areas, and discuss how porosity impacts the ability of soil to support life.

- Building Geology: Rock and Mineral Hunt
    - 6-12 Earth Science
    - Students collect rock and mineral samples from their school grounds and try to identify them. They then study a geologic map of their area to compare the rock types reported in the area with the ones they found. Finally, students consider the materials used on the outside of their school building and where they might have been sourced from.

- Earthquake on the Playground
    - 7-12 Earth Science
    - A kinesthetic activity in which students act as P and S waves to model their relative speeds, while their groupmates act as "seismic stations" to collect travel times. Students then plot the data to create travel time curves, which can help them estimate the location of the epicenter of the earthquake within the playground.

- Find Your Bearing: Mapping*
    - 7-12 Earth Science and Geography
    - Students use a compass to follow predetermined bearings and measure paces to map their school campus. By converting paces into real distances and recording the locations of buildings, trees, fields, and roads, students create an accurately scaled map. This activity teaches navigation, spatial reasoning, and how to include important map elements like a scale, legend, north arrow, and title.

- Streams and Water Quality*
    - 9-12 Earth and Life Science
    - Students investigate stream water quality by measuring velocity, discharge, and pH. Using a floating object, stopwatch, and simple calculations, they determine how fast water moves and how much flows past a point. They then test the water's acidity and consider how these factors affect the stream's ecosystem and its suitability as a drinking water source.

- Be a Paleontologist!
    - 3-12 Earth and Life Science
    - Students walk around their school campus or community and consider where they would look for fossils if they were a paleontologist. Students consider questions about what types of environments would best preserve fossils and what rock types to explore.

- It's the "Rain," Man*
    - K-12 Earth Science
    - Students build a simple rain gauge to measure precipitation and record rainfall at home or school. They compare their results with classmates and can contribute data to the CoCoRaHS citizen science network, helping monitor storms, water resources, and droughts.

- The Human Rock Cycle
    - K-12 Earth Science
    - Students work in groups to act out a step of the rock cycle. Students then present their depictions while other groups guess what rock type was being acted out. They then use guiding questions to analyze each presentation and the information they conveyed.

- Writing Earth Science
    - K-12 Earth Science and Language Arts
    - Students find a place to sit outdoors to observe the natural world using multiple senses. They are then asked to write a poem in any style that conveys sensory details about the environment. Students then consider what they have observed as it relates to what they have learned in class and can revise their poems to add more technical information.

To find more Earth Science activities, designed for both in and out of the classroom, visit Earth Science Week or order an Earth Science Week Toolkit. Also, visit AGI's Education & Outreach Department webpage to learn more about Earth Science curricula, professional development, and additional resources.

Next: Following Up in the Classroom

Following Up in the Classroom

Too often, a special experience comes and goes — and is soon forgotten. Follow-up activities can help reinforce what young people learn on NCLI Day:

- Have students provide feedback on their NCLI Day experiences. What did they learn? Which parts of the day did they most appreciate and enjoy? Where did the experience fall short of expectations or potential? How could your school team make next year's NCLI event even better?

- Celebrate your students' work at school and throughout the wider community. Connect your NCLI Day experiences with the broader worldwide celebration of Earth Science Week . Send information about your NCLI Day so it can be added to the map of Earth Science Week Events.

- Have students work individually or in groups to document their NCLI Day experiences and what they learned. Consider ways they can extend the day's lessons with additional research or activities. They might conclude by writing reports or giving presentations.

- Finally, take advantage of this opportunity to explore cross-curricular connections. Collaborate with teachers of other subjects to find ways that students can draw on their NCLI Day experiences to practice or deepen what they are learning in English/language arts, mathematics, social studies, or other classes.

For most educators, NCLI Day offers a special opportunity to teach Earth Science in a novel way. Take what worked best in your NCLI Day event and build on it. And have a great NCLI Day next year!