

Reforestation

Sustainability

Project Plan

Introduction

Forests around the world are important resources, due in large part to their ability to naturally absorb carbon dioxide and other greenhouse gases, thereby protecting our atmosphere. They filter water and prevent floods. They also provide habitats for millions of species of plants, insects, and animals. Reforestation—renewing forests by replanting trees—is essential for clean air and the overall health of Earth’s environment.

LEARNING OBJECTIVES

Students will:

- use curiosity and collaboration to guide their research about reforestation, the benefits of trees, and the effects of deforestation on people and the Earth
- use SEEK™ questions to analyze *artivism*, which describes how advocates combine art with activism to visually communicate and motivate
- create *artivism* posters as communication tools advocating for change
- read the art in classmates’ *artivism* posters, using the SEEK questions which focus on observation, evidence, explanation, and inquiry.

Vocabulary

deforestation
reforestation
climate
global warming

desertification
carbon sink
species diversity
activism

landslides
seedlings
advocacy
artivism

observation
evidence
explanation
inquiry

Essential Questions

- What does this statement mean: “Trees are the lungs of the earth”?
- What are carbon sinks and why are they important?
- Why is collaboration important for developing innovative reforestation programs?
- How can advocates who feel strongly about solving a problem use art to inspire others?

Guiding Questions

- What is deforestation and what causes it?
- What is reforestation and what are some innovative ideas for renewing forests?
- How are trees protected, both where you live and around the world?
- How can art help build observation, evidence-citing, explanation, and inquiry skills?

Applying the SEEK protocol to this project:

Ask children to look closely at the art on this page, or other environmental advocacy art, and discuss using SEEK.



SEEK™

- SEE** What do you see?
- EVIDENCE** Why do you say that? What is the evidence?
- EXPLAIN** What decisions did the artist make? Why?
- KNOW** What do you know? What else do you want to know?

- **SEE:** What do you see that pertains to forest health and the environment?
- **EVIDENCE:** What evidence of damage or protection is shown?
- **EXPLAIN:** How did the artist’s choice of color and composition engage you in this issue?
- **KNOW:** What do you know about the artist’s thoughts about protecting the environment? What do you want to know about the situation shown in this art, and what are some possible solutions to this environmental problem?

SUPPLIES

- sketch paper and poster boards
- colored construction paper
- crayons, markers, and colored pencils
- rulers, scissors, glue, and tape

PREPARE

Visual communication can be an especially effective tool for sustainability advocates who can use imagery to communicate a problem and suggest possible solutions. Protecting forests is an international issue that students can understand on a local as well as global level.

Reforestation and Crayola Colored Pencils

Trees are used to create many items that people use every day. Companies that are committed to sustainable practices replenish the forests where they use trees to make products.

Most Crayola® Colored Pencils are made from wood that is reforested in an 8,288 hectare pine farm in Brazil. One quarter of this forest area is dedicated to the preservation of the Brazilian Cerrado, an ecosystem that supports biodiversity in a natural habitat for more than 720 plant and animal species. Each year 300,000 seedlings are planted to restore the forest. Crayola makes sure the wood used in these colored pencils is from fast growing pine tree farms and that no tropical rain forest wood is used.





- Start by introducing the vocabulary, especially the concepts of deforestation and reforestation.
- Have students examine art that has a forest theme, such as the images on the previous page or other environmental advocacy art. Use the SEEK questions to focus on what they SEE, cite EVIDENCE, EXPLAIN the artist's decisions, and discuss what they KNOW and want to know. Encourage students to use the vocabulary when responding to the SEEK questions.
- Have students turn their curiosity into research on the benefits of forests and carbon sinks and the risks of deforestation. Encourage them to use both a local and global lens when they look for examples of protecting or replanting trees.
- As part of their research, ask them to focus on visual communications. What images communicate the benefits of forests and the risks to forest health across the globe?

Artivism = art + activism to inform people of important issues and engage them in finding solutions. This type of advocacy communicates societal or environmental needs and motivates people to act in ways that improve the situation.



- Have students work individually, in pairs, or in small groups to plan the *artivism* posters they'll create to communicate an environmental issue pertaining to trees.
- Discuss the meaning and purpose of *artivism*. Encourage students to describe examples of art that inspires them to learn more about the environment and protect trees.
- Have students identify what environmental message they want their art to convey. What powerful images and crisp phrases could be included in an *artivism* poster?
- Encourage them to seek feedback from classmates, whether they are working individually or collaboratively. Provide time for the artists to pause and share a first draft of their posters, hear others' feedback, and then use this to refine their work.



Why Trees Matter

Trees are the lungs of the earth. Forests are often called *carbon sinks* because they absorb more carbon than they release. Forests also cause rain to be dispersed as a stream of water rather than a deluge that can cause erosion and landslides. And forests provide habitats and food for millions of animal, insect, and plant species. An increasing human population has deforested large areas of trees, resulting in such threats to the environment as global warming, soil degradation, and desertification (a decline in the biological productivity of drylands). There is a global effort to reforest affected areas, tree by tree.

Sustainability



- Discuss when and where a display of the *artivism* will have the most impact. Students may want to plan an in-person presentation or create short video clips of themselves serving as docents. The art may be displayed at the school or in a community space, like a local library, bank, airport, or mall. Post the SEEK questions near the students' art to encourage observation, evidence citing, explanation and inference, as well as inquiry.
- If a community display is part of the plan, have students identify who can grant permission for the exhibit and what guidelines should be followed. Decide if there will be an opening event where they provide presentations or if video clips linked to QR codes could feature students as docents. Determine how the SEEK questions will be incorporated into the exhibit and how they will be part of live presentations or videos.
- When ready, set up the display and send out invitations for family, friends, and influential community members to attend.



- Help students connect the SEEK questions to the exhibit of *artivism* posters. How could the discussion about what viewers will see, use as *evidence* to explain the artist's intent, and what they *know/want to know* help them connect the intersections of science, art, and language arts?
- Visitors to the exhibit can leave written responses to the SEEK questions on sticky notes. Students can periodically respond to those notes, adding additional insights to the exhibit.



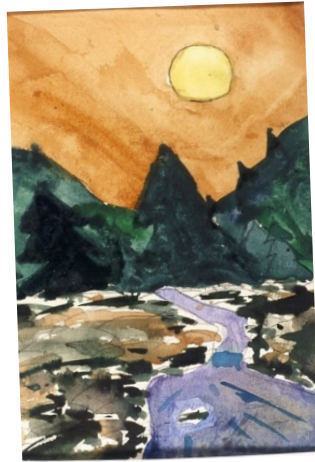
▶ For Younger Students

Plant seedlings on your school grounds or at an approved nearby location. You could turn this into a family-engagement event by inviting family members to help prepare the soil and plant the seedlings. In preparation for this event, children can research what types of trees will thrive in your geographic area and what they will need to grow. They can measure the space and determine how far apart to plant the seedlings based on the tree size projections. They can create a sign for the seedling area to let visitors know what trees have been planted and why. Periodically, have students measure and record the young trees' growth into sketch pads.

▶ For Older Students

Students could visit an organization or interview an expert directly involved with forestry or local land use issues. To prepare for that meeting have students conduct online research to get facts about reforestation around the world and learn how situations are similar and different depending on climate, natural vegetation/native species, and historical context for how the environment has been treated in that area. Students can prepare interview questions about reforestation efforts that are currently underway and proposed goals for the future.

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Student Reflections

- Why are forests important?
- Where can we find information about forests and trees, deforestation, and reforestation?
- How does art help communicate information about social or environmental problems and possible solutions?
- How can we become active in planting trees and advocating for reforestation?
- What are examples of innovative solutions for environmental problems?

Teacher Reflections

- What fascinated students about deforestation and reforestation? What misconceptions did students have at the beginning of this project that changed as they explored this environmental issue?
- What impact did this project have on students' desire to learn more about trees in the community and broader efforts to protect and increase the global tree canopy?
- How did this *artivism* project inspire students to explore additional environmental issues that need attention?
- How did students who have different points of view interact with each other respectfully, especially when talking about sensitive topics? What goals helped them engage in civil discussions, productive interactions, and collegial work?

Standards and Skill Development

Standards provide a guide to what students should know and be able to do. They help connect everyday learning experiences to the curriculum. This **sustainability** project addresses the following educational standards:

SCIENCE (NGSS)

- Identify situations that people want to change and problems that can be solved.
- Ask and answer questions in order to define problems, seek others' perspective, get information, or clarify something that is not understood.
- Communicate solutions that will reduce the negative impact of humans on the land, water, air, and/or other living things in the local environment.

LANGUAGE ARTS

- Draw upon information from multiple print or digital sources, demonstrating the ability to locate answers to questions and solve problems efficiently.
- Evaluate a speaker's, artist's or writer's point of view, reasoning, and use of evidence and rhetoric.

VISUAL ARTS

- Imagine and create art to convey meaning through the presentation of artistic work.
- Connect artistic ideas and works with societal, cultural, and historical context to deepen understanding.
- Analyze how art reflects changing times, traditions, resources, and cultural uses.

MATHEMATICS

- Describe and compare measurable attributes.
- Represent and interpret data.

SOCIAL AND EMOTIONAL COMPETENCIES

Help children understand how emotions, behaviors, and attitudes impact achievement in school, career, and life by building skills in:

- Self-awareness—developing interests and a sense of purpose.
- Relationships—communicating effectively and demonstrating positive interactions with others.
- Responsible Decision Making—identifying solutions for personal and social problems.
- Self-Management—showing the courage to take initiative.