

ARTS ENVIROCHALLENGER

EnviroStewards: Taking Action

Teaching Environmental Sustainability, Visual Arts, and Science

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Grade Level: Fourth



Enduring Understanding

Trash materials can be selected, altered, and reused in art. Shapes and symbols in an artistic composition can communicate about human impacts on ecosystems.

Students learn about reducing trash and showing respect and responsibility for the environment. The concept of human and natural systems and subsystems is introduced. Students examine negative and positive impacts that humans have on ecosystems and brainstorm symbols representing those impacts. Students analyze and interpret collage artworks, create their own collage using shapes and symbols to effectively communicate positive human impacts on an ecosystem then write an artist statement about their art.

Learning Targets and Assessment Criteria

Target: Understands the EnviroChallenger message.

Criteria: Shares examples of ways to reduce, recycle, and reuse trash and show respect and responsibility for our environment.

Target: Analyzes interaction of human systems and natural systems.

Criteria: Identifies and shares examples of negative and positive impacts that humans have on ecosystems.

Target: Communicates message of ecosystem stewardship.

Criteria: Actively listens, responds to others, and expresses ideas visually by showing positive human impacts on a specific ecosystem in collage.

Target: Uses craftsmanship in collage techniques.



Criteria: Cuts cleanly, layers, and securely glues shapes to background paper.

Target: Presents art.

Criteria: Titles collage and writes artist statement about ecosystem stewardship shown and creative process.

Vocabulary	Materials	Learning Standards
<p><u>Arts</u> Artist Statement Collage Composition Craftsmanship Message Overlapping Reflect Refine Repurpose Symbol</p> <p><u>Arts Infused</u> Color Paper Shape Texture</p> <p><u>Science</u> Ecosystem Part Stewardship Subsystem</p>	<p>Artworks: Collages by Romare Bearden</p> <p>Resources: 8-12 magazine articles/stories that describe stewardship of ecosystems and positive impact/solutions as a result (to be distributed to and discussed in groups). Ecosystem posters: <i>rainforest, arctic, ocean, reef, desert.</i></p> <p>Art Materials: Color pages from magazines, calendars, etc. (pre-sorted into color groups for each ecosystem): cool colors for <i>ocean</i>, cool & bright colors for <i>reef</i>, whites, cools & translucent papers for <i>arctic</i>, warm/neutrals color for <i>desert</i>, greens & brights for <i>rainforest</i>; Additional catalogs, maps, calendars, books, diagrams, photos; 9x12" cardboard, cardstock, or recycled file folders for background; Scissors; Glue sticks; Recycled magazines for use as glue mats; 2-gallon Ziploc Bags to store each student's art/materials.</p>	<p>State Visual Art Learning Standards</p> <p>1.1.1 Elements: Line 1.1.2 Elements: Shape/Form 1.2.1 Skills and Techniques: Drawing, Collage 2.1.1 Creative Process 2.3.1 Responding Process 4.2.1 Connection between Visual Arts, Science, and Writing</p> <p>Next Generation Science Standards http://www.nextgenscience.org/next-generation-science-standards</p> <p>Topic: Energy</p> <p>Disciplinary Core Ideas: ESS3.A: Natural Resources ESS3.C: Human Impacts on Earth Systems LS2.A: Interdependent Relationships in Ecosystems</p> <p>Performance Expectations: 4-ESS3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.</p> <p>Crosscutting Concepts: Patterns, Cause and Effect, Systems and System Models</p> <p>Science and Engineering Practices: 1. Asking Questions and Defining Problems 2. Developing and Using Models 8. Obtaining, evaluating, and communicating information http://www.p21.org/storage/documents/P21_arts_map_final.pdf</p> <p>Communication Outcome: Students will communicate in a variety of contexts through a variety of artistic media, including technologies, to convey their own ideas and to interpret the ideas of others.</p>

ICON KEY:

-  = Indicates note or reminder for teacher
-  = Indicates materials preparation suggestions
- = Embedded assessment points in the lesson

Pre-Teach

Class Reads: *The Great Kapok Tree: A Tale of the Amazon Rain Forest* by Lynne Cherry (*Earth Patrol: Preserve and Protect*: Houghton Mifflin Level B, *Invitations to Literacy*); *The Cactus Hotel* by Brenda Guiberson.

Residency Steps Outline

Day One

TALK ABOUT THE ENVIROCHALLENGER MESSAGE

1. Introduce the 5 R's through class discussion. Reduce, Recycle, Reuse, Respect, and Responsibility.
2. Discuss what trash is composed of and where it goes.
3. Analyze and discuss examples of actions and attitudes that reflect respect and responsibility in the relationship between humans and the environment.

Criteria-based teacher checklist: Shares examples of ways to reduce, recycle, and reuse trash and show respect and responsibility for our environment.

FOCUS ON SYSTEMS

4. Define and discuss examples of "systems" and "subsystems" in the natural and human world. List them on the board.

DISCUSS HUMAN IMPACTS ON ECOSYSTEMS

5. Guide student pairs or groups in identifying an example of negative impacts of human systems on ecosystems.
6. Distribute ecosystem resources. Emphasize effective communication. Student pairs or groups focus on the positive and negative impacts of humans on their assigned ecosystem. Guide student whole class brainstorm on the board about ecosystem and positive actions.

Criteria-based group reflection: Identifies and shares examples of negative and positive impacts that humans have on ecosystems. Actively listens, responds to others, and expresses ideas.

SKETCH ECOSYSTEM PARTS WITH FOCUS ON STEWARDSHIP

7. Preview art-making concepts and process. Introduce idea of thinking as an ecosystem steward. Guide sketching.

Day Two

DESCRIBE, ANALYZE AND INTERPRET ART

1. Analyze and interpret collage artwork examples. Discuss why artists reuse materials from diverse sources in art.

BRAINSTORM AND DRAW SYMBOLS

2. Guide students in identifying and sketching a common language of symbols representing positive human impacts on ecosystems (on the board). What can these symbols communicate?

CUT OUT SHAPES AND SYMBOLS

3. Demonstrate cutting out and combining simple shapes representing ecosystem and positive human impacts. Focus on what it means to communicate visually without words. Emphasize craftsmanship in collage techniques. Guide student creative process.

Criteria-based teacher checklist: Cuts cleanly, layers shapes. Expresses ideas visually by showing positive human impacts on a specific ecosystem in collage.

Day Three

COMBINE MESSAGE AND CRAFT IN COLLAGE

1. Demonstrate and guide arranging final composition with focus on communicating a message. Emphasize craftsmanship.

Criteria-based teacher checklist: Securely glues shapes to background paper.

REFLECT ON AND REFINE ART

2. Demonstrate and guide reflecting in pairs and refining collage.

Criteria-based teacher checklist: Expresses ideas visually by showing positive human impacts on a specific ecosystem in collage.

Day Four

TITLE AND WRITE ABOUT YOUR COLLAGE

1. Guide students in writing an artist statement about stewardship/positive human impact on a specific ecosystem.

Criteria-based teacher checklist: Titles collage and writes artist statement about ecosystem stewardship shown and creative process.

REFLECT ON STUDENT ART, SCIENCE AND ENVIROCHALLENGER MESSAGE

2. Reflect as a whole class on artistic process by having each student share collage and artist statement.

3. Close with affirmation of the EnviroChallenger message.

Group reflection: Describes actions to protect the environment.

LESSON STEPS

Day One

TALK ABOUT THE ENVIROCHALLENGER MESSAGE

1. Introduce the 5 R's through class discussion. Reduce, Recycle, Reuse, Respect, and Responsibility.

- *We are learning about art, science, and ways that we can help take care of our planet earth through our choices and actions. Who can name the 5 R's? Lets talk about each of them!*

Reduce means make smaller: "make less trash by using less." How can we make less trash?

Reuse means "use again." What can we reuse to make less trash?

Recycle means to us change the material through some sort of proces (heat, water, mechanical) then form into something usable again. What are some things we can recycle?

Respect means to value, admire and take care of our environment and living things. How can we show respect for our environment?

Responsibility means a sense of doing your part in daily actions, or a job that needs to be done to help take care of our environment. Who is responsible? YOU!

2. Discuss what trash is composed of and where it goes.

- *Where does trash go after we put it in the garbage can? Why would we want to reduce the amount of trash we create?*
 - *How is plastic, metal, or paper made? Does making these materials impact the environment? How does trash harm plants, animals, and other humans?*
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3. Analyze and discuss examples of actions and attitudes that reflect respect and responsibility in the relationship between humans and the environment.

- *What do the 5 R's look like in action in your life?*
- *What are examples of responsible actions on a larger global scale—businesses, cities, countries?*
- *What are ways we can protect natural resources like oil (which becomes gasoline), or water, or electricity?*

Criteria-based teacher checklist: Shares examples of ways to reduce, recycle, and reuse trash and show respect and responsibility for our environment.

FOCUS ON SYSTEMS

4. Define and discuss examples of “systems” and “subsystems” in the natural and human world. List them on the board.

- *Systems have parts that work together as a whole. If a part does not work or is missing, there is an impact. Systems contain subsystems.*
- *What is an example of a subsystem in nature? Animals? Plants?*
- *What is an example of a bigger system in nature? Ecosystems?*
- *What is an example of a mechanical subsystem? Cars? Boats? (brakes, steering, etc.)*
- *What is an example of a bigger system in the human world?*
- *What happens when a part is missing in a subsystem or system? Does it function correctly?*

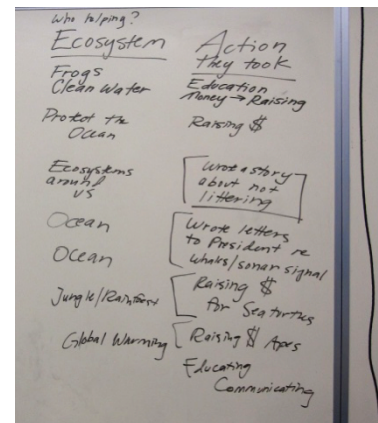
DISCUSS HUMAN IMPACTS ON ECOSYSTEMS

5. Guide student pairs or groups in identifying an example of negative impacts of human systems on ecosystems.

- *Think of an example of a human system that has a negative effect on the ecosystem.*
- *An example could be: An oil tanker is a subsystem that is part of a greater shipping/transportation system traveling on the ocean—which is an ecosystem. When it crashes on the rocks, its parts are damaged, it cannot function, and it sinks. The oil spills into the ocean, the ecosystem is damaged because the oil kills some of its parts: animals, plants.*
- *Is your example focused on endangered animals, loss of habitat, logging, development, or pollution?*

6. Distribute (rainforest, arctic, ocean, reef, desert) ecosystem resources. Emphasize effective communication. Student pairs or groups focus on the positive and negative impacts of humans on their assigned ecosystem. Guide student whole class brainstorm on the board about ecosystem and positive actions.

- *Listen to your peers carefully. Be sure that everyone shares ideas.*
- *With your group or partner, read your story, study the pictures/posters, and answer the following questions:*
- *What ecosystem are you focused on?*
- *What did a person(s) do to help that ecosystem?*



Criteria-based group reflection: Identifies and shares examples of negative and positive impacts that humans have on ecosystems. Actively listens, responds to others, and expresses ideas.

SKETCH ECOSYSTEM PARTS WITH FOCUS ON STEWARDSHIP

7. Preview art-making concepts and process. Introduce idea of thinking as an ecosystem steward. Guide sketching.

- *We are creating art about how we can protect ecosystems.*
- *What is a steward? Caretaker, ranger, warden, protector.... We are creating art about being a steward: taking care of an ecosystem by having a positive impact on it.*
- *Sketch 3-4 important parts of your group's ecosystem: animals, plants, parts of habitat....*
- *Think about how you might show a positive human action with simple shapes or symbols. Sketch your ideas!*

✂ Distribute 2-gallon Ziploc bags for each student to store their templates, sketches, cut out shapes, background paper and paper for future use.

Day Two

DESCRIBE, ANALYZE AND INTERPRET ART

1. Analyze and interpret collage artwork examples. Discuss why artists reuse materials from diverse sources in art.

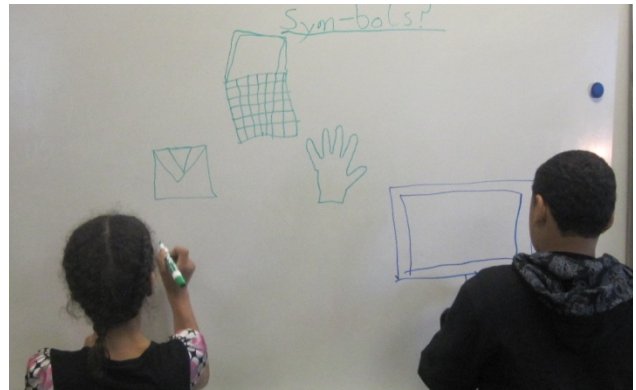
- *Collage means "to paste": artists often "re-purpose" materials by using them again in art because of their interesting images, colors, textures. We will be making collages out of repurposed materials also.*
 - *Observe and describe what you see in this collage.*
 - *Analyze what sorts of material, shapes, colors, and textures the artist chose.*
 - *Interpret: what do you think the artist is communicating about a person, place, and/or event?*
 - *What did you observe that supports your interpretation?*
 - *Do you see any shapes or symbols (shapes or pictures that stand for something else)?*
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BRAINSTORM AND DRAW SYMBOLS

2. Guide students in identifying and sketching a common language of symbols representing positive human impacts on ecosystems (on the board). What can these symbols communicate?

▣ Draw symbols on the board and encourage individual sketching of collective symbols

- *Define symbols: Name a symbol for something we all know...McDonald's arches, Nike, Liberty Bell, stop sign...*
- *We are all starting with one shared symbol: our hand. What could a hand stand for? What about a foot or footprint?*
- *Without using words in our pictures—just shapes and symbols, how can we show stewardship or protection of an ecosystem?*
- *Reflect on the stories we read and how people helped ecosystems. What did they do to help? Raise money, write letters to elected officials, create protected areas for ecosystems, rescue animals, clean up habitat areas?*
- *What shapes or symbols could represent these actions? (envelopes/letters, keyboards, phones, books for communicating a message, camera to document...fences or signs to protect...tools to reconstruct habitat...)*
- *How can you show the actions of a steward in your collage using images and symbols?*



CUT OUT SHAPES AND SYMBOLS

3. Demonstrate cutting out and combining simple shapes representing ecosystem and positive human impacts. Focus on what it means to communicate visually without words. Emphasize craftsmanship in collage techniques. Guide student creative process.

- *Collage allows us to move all of the parts around until we are happy with our composition. Craftsmanship is care in crafting something well, and also means making a sturdy finished product.*

✂ Distribute paper to each ecosystem group in a pre-selected color palette: cool colors for ocean; blues & bright colors for reef; whites, cools & translucent papers for arctic; warm/neutral colors for desert; greens & brights for rainforest. Stage additional paper available to all groups in a central area in the classroom. Students can visit and select papers later as needed.

- *Start by using your hand (our shared symbol of stewardship) as a template: You can trace around it and cut it from any type of paper or image that relates to your ecosystem, or trace parts of the hand. You can also fold and manipulate the hand image to hold something or balance something.*
- *When you cut, move the scissors, not the paper. You have more control this way.*
- *Cut out all of the parts that communicate information about plants, animals, and nonliving elements of your group's ecosystem.*
- *Be sure to use shapes or symbols to show a positive human impact on your ecosystem.*

✂ Have students cut every usable paper scrap into a square or rectangle so that paper is ready for the next artist. Sort paper (by predominant color) into 2-gallon Ziploc bags. Place Ziploc bags out with paper inside for student access (keeps paper more organized).



Criteria-based teacher checklist: Cuts cleanly, layers shapes. Expresses ideas visually by showing positive human impacts on a specific ecosystem in collage.



Day Three

COMBINE MESSAGE AND CRAFT IN COLLAGE

1. Demonstrate and guide arranging final composition with focus on communicating a message. Emphasize craftsmanship.

- *Arrange composition and share with teacher (who will provide a glue stick to glue or suggest more development).*
- *Turn cut out shapes upside down on your glue mat and run glue stick around the edges.*
- *Rub firmly down in place on background paper to glue securely.*



Criteria-based teacher checklist: Securely glues shapes to background paper.

REFLECT ON AND REFINE ART

2. Demonstrate and guide reflecting in pairs and refining collage.

- *Step back and reflect on your collage. Remember that you can always add details to improve your collage.*

✂ Providing additional interesting textural, patterned, metallic, or iridescent material cut into very thin strips (1/4" or less) at this point can provide inspiration for refining areas by adding interior details or outlines to shapes (especially helpful for those with low cutting skills).

- *Ask a neighbor to describe, analyze, and interpret your collage.*
- *Is their interpretation consistent with your intent or message?*
- *Can you add anything else to complete or improve your work?*
- *Check for good craftsmanship: no ragged edges and securely glued down paper.*



Criteria-based peer assessment: Expresses ideas visually by showing positive human impacts on a specific ecosystem in collage.

Day Four

TITLE AND WRITE ABOUT YOUR COLLAGE

1. Guide students in writing an artist statement about stewardship/positive human impact on a specific ecosystem.

- Give your collage a title that reflects ecosystem and impact. Your artist statement helps those who look at your art to understand your ideas and creative process.

MY ECOSYSTEM COLLAGE: ARTIST STATEMENT

Artist _____

Title _____

Ecosystem _____

Your Message: What is your art about? Describe the way that humans can help your ecosystem shown in your collage.

Your Artistic Choices: How do your shapes, colors, and symbols help communicate ideas in your collage?

Criteria-based teacher checklist: Titles collage and writes artist statement about ecosystem stewardship shown and creative process.

REFLECT ON STUDENT ART, SCIENCE AND ENVIROCHALLENGER MESSAGE

2. Reflect as a whole class on artistic process by having each student share collage and artist statement.

- Share your art and artist statement.
- Describe why you chose shapes and symbols for your collage and how they communicate a positive human impact on an ecosystem.
- Describe your creative process. Did your ideas change as you worked on your collage?
- Describe how you used good craftsmanship to make your collage.



3. Close with affirmation of the EnviroChallenger message.

- *Name one way you can protect our environment using the 5 R's.*
- *What did you discover about reusing materials in art?*
- *How can you use trash materials to make something else in the future?*
- *How can we take better care of ecosystems all around us?*
- *Describe actions you will take to be an EnviroSteward now and in the future.*

Group reflection: Describes actions to protect the environment.

ARTS ENVIROCHALLENGER

EnviroStewards: Taking Action

Assessment Checklist

Disciplines	ENVIRONMENTAL SUSTAINABILITY	SCIENCE/ART		ART	LITERACY	Total 5
Concept	Awareness/Action	Ecosystems/Effective Communication		Craftsmanship	Writing	
Criteria	Shares examples of ways to reduce, recycle, and reuse trash and show respect and responsibility for our environment.	Identifies and shares examples of negative and positive impacts that humans have on ecosystems.	Actively listens, responds to others, and expresses ideas visually by showing positive human impacts on a specific ecosystem in collage.	Cuts cleanly, layers, and securely glues shapes to background paper.	Titles collage and writes artist statement about ecosystem stewardship shown and creative process.	
Student						



ARTS

ENVIROCHALLENGER

EnviroStewards: Taking Action **Teaching Environmental Sustainability, Visual Arts, and Science**

- We worked with a **teaching artist** and learned about art, science, and ways that we can help take care of our planet earth through our choices and actions. We learned about the **5 R's** of the **EnviroChallenger message**:
 - **Reduce** means make smaller: "make less trash by using less".
 - **Reuse** means "use again" instead of throwing away.
 - **Recycle** means to us change the material through some sort of process (heat, water, mechanical) then form it into something usable again.
 - **Respect** means to value, admire, and take care of our environment and living things.
 - **Responsibility** means a sense of doing your part in daily actions, or a job that needs to be done to help take care of our environment. Who is responsible? YOU!
- We identified **human and natural systems** and how there are parts that work together to form systems. Systems also have **subsystems**. We talked about how systems cannot function effectively if parts are missing or subsystems are damaged or missing.
- We discussed examples of how humans can make **negative and positive impacts on ecosystems**. We read articles about people who are making positive impacts on the environment, and talked about ways that humans can be **stewards** (protectors/caretakers) of ecosystems.
- We looked at examples of **collage**—art made from **reused materials**. In **analyzing** and **interpreting** collage works, we focused on how **shapes** and **symbols** can communicate an **idea** or **message**.
- We actively listened, responded to others, and expressed ideas visually. We showed positive human impacts (or **stewardship**) on a specific ecosystem in our collage using using hands and other **symbols**.
- We focused on using good **craftsmanship** in **cutting** and **gluing** our collages as well as communicating a message.
- We titled our collage and also wrote an **artist statement** explaining our message and artistic choices.

Enduring Understanding

Trash materials can be selected, altered, and reused in art. Shapes and symbols in an artistic composition can communicate about human impacts on ecosystems.