artsNOW
Integrated learning solutions

ECOSYSTEM PRINTMAKING
Grade Band: 4-5
Content Focus: Visual Arts & Science



LEARNING DESCRIPTION

Students will explore food chains/webs by researching different ecosystems and identifying the roles of producers, consumers, and decomposers. They will design and carve a styrofoam printing plate that represents an organism's role in the food chain/web (e.g., producer, consumer or decomposer). Students will create a collaborative class food chain/web, illustrating how energy moves through an ecosystem. This arts-integrated lesson blends science and the visual arts to deepen students' understanding of food chains/webs while allowing them to express their knowledge through creative printmaking!

LEARNING TARGETS

Essential Questions	"I Can" Statements
I can describe the roles of producers, consumers, and decomposers in an ecosystem. I can explain how energy moves through a food chain/web. I can create a print that represents an organism's role in a food chain/web. I can collaborate with my classmates to create a food chain/web using printmaking.	What are producers, consumers, and decomposers? How does energy flow through a food chain/web? How can printmaking be used to model the relationships between organisms? How do different organisms depend on one another for survival?

GEORGIA STANDARDS

Curriculum Standards	Arts Standards
Grade 4: S4L1. Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem. a. Develop a model to describe the roles of producers, consumers, and decomposers in a community. b. Develop simple models to illustrate the flow of energy through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers.	VA.CR.1 Engage in the creative process to generate and visualize ideas by using subject matter and symbols to communicate meaning. VA.CR.3 Understand and apply media, techniques, processes, and concepts of two-dimensional art.

SOUTH CAROLINA STANDARDS

Curriculum Standards	Arts Standards
Grade 5: 5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.	**Anchor Standard 1:** I can create scenes and write scripts using story elements and structure. **Anchor Standard 3:** I can act in improvised scenes and written scripts.

KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
• Ecosystem – A community of living and nonliving things that interact • Producer – An organism that makes its own food, like plants • Consumer – An organism that eats other organisms for energy • Decomposer – An organism that breaks down dead plants and animals • Food chain – A sequence showing how energy moves from one organism to another • Food web – A network of connected food chains	• Printmaking – The art or technique of making prints, especially as practiced in engraving, etching, dry point, woodcut or serigraphy • Styrofoam printing plate – A carved surface used to make repeated prints • Brayer – A small roller for inking type by hand, usually for making a proof • Composition – How an artist arranges the Elements of Art (line, shape, form, value, color, space, texture) to create an artwork

MATERIALS

- Science food chain reference materials
- Pencils
- Copy paper
- Styrofoam sheets
- Dull pencils or ball point pens
- Water based printing ink
- Brayers
- Newsprint or packing paper
- Paper for printing (mixed media paper works well)
- Colored pencils or art sticks
- Drying rack or space to lay prints
- Paper towels to wipe ink off of styrofoam plates
- Trays for ink

INSTRUCTIONAL DESIGN

Opening/Activating Strategy

Engage (Explore the Food Chain)

- Show a video or diagram of a food chain in different ecosystems, such as forest, ocean, grassland, etc.
- Have students brainstorm different organisms that would exist in these ecosystems and categorize them as producers, consumers, or decomposers.
- Discuss how energy moves from the sun to plants/producers, to animals/consumers, and then to decomposers.

Work Session

Explore (Sketch & Plan):

- Each student will choose an organism from a specific ecosystem.
- Students will sketch the organism and simplify it into bold shapes for printmaking.
- Ask students to think of examples of symbols and how symbols represent ideas. Then have them think about how to represent their organism symbolically (e.g., arrows or the sun to represent energy flow).

Create (Printmaking Process):

- **Introduce and demonstrate the printmaking process:**
  - Carving the styrofoam plate:
    - Draw lightly with a pencil before pressing into the styrofoam to avoid mistakes.
    - Use a dull pencil or ballpoint pen to carve designs—press firmly but avoid puncturing all the way through the styrofoam.
    - Keep lines simple and bold for clear prints; intricate details may not transfer well.
    - Vary line thickness for added depth—thicker lines hold more ink, while thinner lines create subtle details.
  - Inking the plate:
    - Roll out a thin, even layer of ink on a tray before applying to the printing plate with a brayer.
    - Then, using the brayer, roll a thin, even layer of ink over the styrofoam plate. Too much ink can make details disappear!
    - Students should take turns rolling ink on the plate while their partner watches for even coverage
  - Printing process:
    - Carefully place the inked plate face down on paper—one student can hold it while the other presses.
    - Use hands or a clean brayer to press firmly and evenly over the entire plate.
    - Lift the plate slowly to reveal the print!

    Students may need to repeat this process, experimenting with different amounts of ink and application of pressure when transferring the print.
  - Cleanup and reflection:
    - Lay prints flat to dry before handling.
    - Have students compare their prints and discuss what worked well.
    - If needed, allow students to re-ink and try again.
    - Once prints are dry, add color and details with art stix, crayons, or colored pencils

Classroom Tips:

- *Students can work in pairs to create prints.*
- *Encourage students to work carefully.*
- *Make sure there is a piece of newsprint under each printmaking station.*
- *This process works great as a center. Set up a station and allow student pairs to rotate through to create their prints.*

Closing/Reflection

Reflect (Gallery walk and discussion):

- As a whole group, arrange the prints in a large food web display.
- Discuss how each organism connects and how energy moves.

- Have students write a response to the following reflection question: What role does your organism play? How does it depend on others?

ASSESSMENTS

Formative
• Review student sketches. • Think-Pair-Share: Observe whether students can explain their organism's role in the food chain before printing.
Summative
• Final print and food web display – Does the print clearly represent an organism in the food web? • Written reflection–Students can describe how their organism interacts with others.

DIFFERENTIATION

Accelerated:

- Research and incorporate multiple organisms into one print, including producers, consumers, and decomposers.
- Add habitat details in the background of the print.
- Create an Interactive Food Web using Google Slides or Canva.

Remedial:

- Provide pre-drawn templates to trace onto styrofoam.
- Offer sentence starters for the written reflection (e.g., "My organism is a ____. It gets energy from ____.").

ADDITIONAL RESOURCES

- What Is Printmaking? The Met
- Printmaking - Tate Museum

This integrated lesson provides differentiated ideas and activities for educators that are aligned to a sampling of standards. Standards referenced at the time of publishing may differ based on each state's adoption of new standards.

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