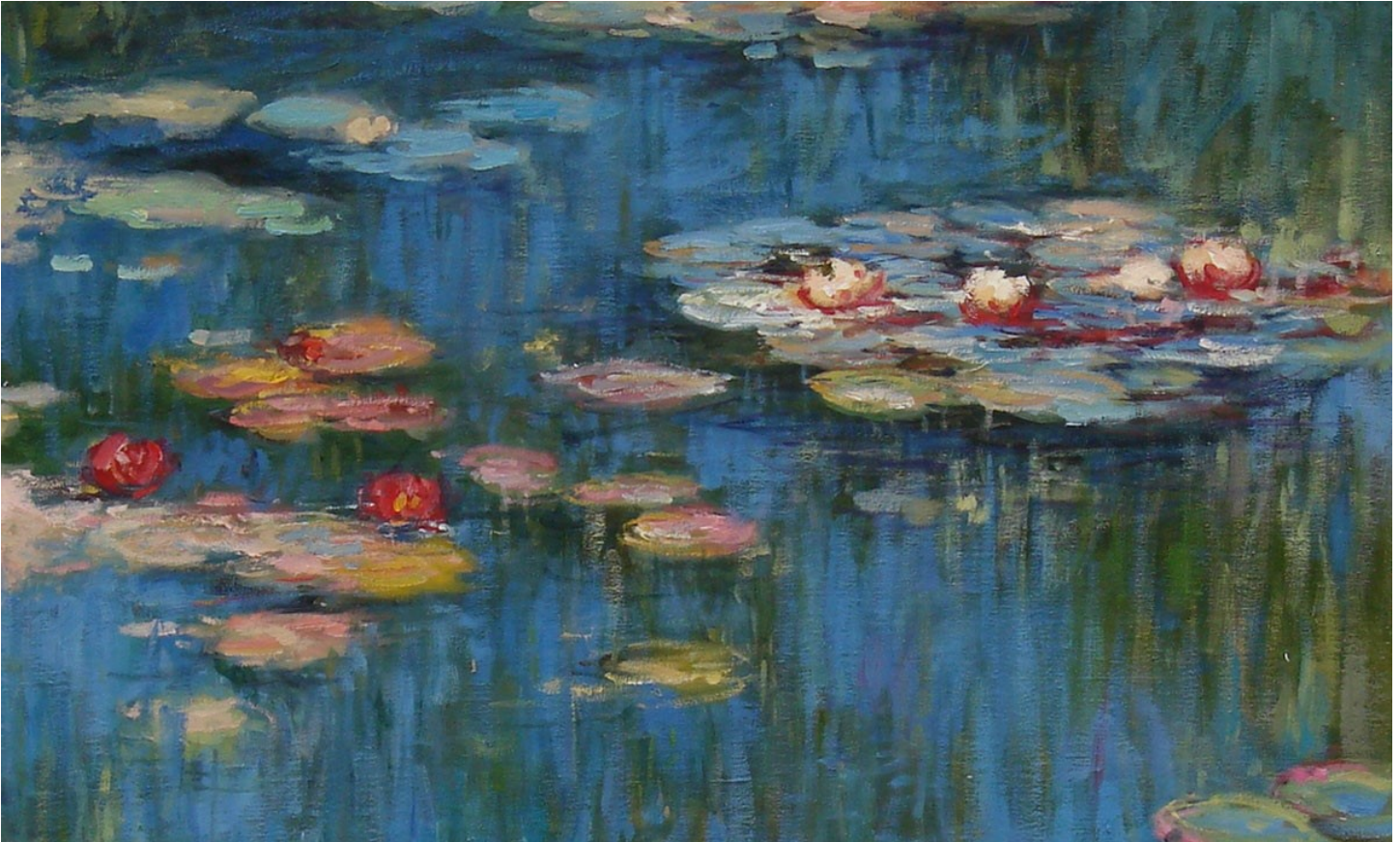


Ecosystems • Producers/Consumers/Decomposers • Energy Sources



Unit Essential Question

How can analyzing the similarities and differences between producers, consumers, and decomposers help us to better understand an ecosystem?

UNIT DESCRIPTION

Students will use theatre and the visual arts to explore ecosystems. The unit's projects will lead students to make discoveries about producers, consumers, and decomposers, as well as energy sources. Students will create an ecosystem diorama as well as a scripted puppet show. They will also be immersed in painting an Impressionistic Claude Monet piece as they learn about ecosystems.

PROJECTS

- (7 Days)
- Monet's Water Lily Ecosystem
 - Ecosystem Puppet Show

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Units provide differentiated ideas and activities aligned to a sampling of standards. The units do not necessarily imply mastery of standards, but are intended to inspire and equip educators.

Produced through the U.S. Department of Education: Arts in Education—Model Development and Dissemination Grants Program
Cherokee County (GA) School District and ArtsNow, Inc.

UNIT OVERVIEW

Unit Description	Table of Contents
<p>Students will use theatre and the visual arts to explore ecosystems. The unit's projects will lead students to make discoveries about producers, consumers, and decomposers, as well as energy sources. Students will create an ecosystem diorama as well as a scripted puppet show. They will also be immersed in painting an Impressionistic Claude Monet piece as they learn about ecosystems.</p>	<p>Project 1: Monet's Water Lily Ecosystem Project 2: Ecosystem Puppet Show</p>

UNIT ESSENTIAL QUESTION

How can analyzing the similarities and differences between producers, consumers, and decomposers help us to better understand an ecosystem?

CROSS-CUTTING INTERDISCIPLINARY CONCEPT

Relationships
Comparison (Compare and Contrast)
Parts of a Whole

REAL WORLD CONTEXT

We study and analyze ecosystems because that is where we can find producers, consumers, and decomposers. These three important parts of an ecosystem live and thrive from using various energy sources. Understanding the foundation of ecosystems helps us as humans to better understand, conserve, and save our precious environment.

STANDARDS

Curriculum Standards	Arts Standards
<p>S4L1. Students will describe the roles of organisms and the flow of energy within an ecosystem</p> <p>a. Identify the roles of producers, consumers, and decomposers in a community</p> <p>b. Predict effects on a population if some of the plants or animals in the community are scarce or if there are too many</p>	<p>VA4CU.2. Views and discusses selected artworks</p> <p>a. Identifies elements, principles, themes, and/or time period in a work of art</p> <p>VA4PR.1. Creates artworks based on personal experience and selected themes</p> <p>e. Creates representational artworks from direct observation (e.g., landscape, still life, portrait)</p> <p>VA4PR.2. Understands and applies media, techniques, and processes of two-dimensional art processes (drawing, painting, printmaking, mixed-media) using tools and materials in a safe and appropriate manner to develop skills</p> <p>e. Creates paintings with a variety of media (e.g., tempera, watercolor, acrylic)</p>

	<p>VA4PR.3 Understands and applies media, techniques, and processes of three-dimensional works of art (ceramics, sculpture, crafts, and mixed-media) using tools and materials in a safe and appropriate manner to develop skills.</p> <p>a. Creates 3-D artwork that demonstrates a design concept: open or closed form, proportion, balance, color scheme, and movement</p> <p>VA4MC.1 Engages in the creative process to generate and visualize ideas.</p> <p>a. Creates a series of thumbnail sketches to alter visual images (e.g., magnifying, reducing, repeating, or combining them in unusual ways) to change how they are perceived and interpreted.</p> <p>b. Formulates visual ideas by using a variety of resources (e.g., books, magazines, Internet)</p> <p>TAES4.2 Developing scripts through improvisation and other theatrical methods</p> <p>a. Uses the playwriting process: pre-write/pre-play; prepare to write/plan dramatization; write/dramatize; reflect and edit; re-write/play; publish/perform</p> <p>b. Analyzes the elements of a well-written script</p> <p>TAES4.3 Acting by developing, communicating, and sustaining roles within a variety of situations and environments</p> <p>a. Uses articulation, volume and vocal variety to communicate thoughts, emotions and actions of a character</p> <p>d. Collaborates with an ensemble to create theatre</p> <p>e. Dramatizes literature and original scripts through various dramatic forms such as story drama, pantomime, process drama, puppetry, improvisation, and readers' theatre</p>
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ASSESSMENTS

Summative Assessments

- **Monet Style Ecosystem Painting:** Students will create a Monet style ecosystem garden painting focusing on the consumers, producers, and decomposers. They will also focus on the energy source used in their garden ecosystem.
- **Monet Style Ecosystem Painting Rubric:** The student and teacher will use this rubric to critique their painting. (see Downloads)
- **Reflection Questions** (for both projects): Students will use these questions to reflect on the important parts of the lessons taught. (see Downloads)
- **Student-written Ecosystem Script:** Students will create an ecosystem script to go along with their puppet show.

- **Small Group Puppet Performance:** Students will perform their ecosystem puppet show using their written ecosystem script.
- **Diorama of Habitat** (including ecosystem characters): Students will use provided art supplies, along with a show box, to create a habitat for their ecosystem and their characters. This will be the backdrop for their puppet show.

PARTNERING WITH FINE ARTS TEACHERS

Visual Arts Teacher:

- Additional support in Project 1: Monet's Water Lily Ecosystem
 - Assist with visual arts project by sharing Monet's painting techniques as well as his overall style
 - Assist with providing ideas for different examples of paintings that incorporate gardens in their art work
- Additional support in Project 2: Ecosystem Puppet Show
 - Assist with possible art supply ideas for diorama

CHARACTER EDUCATION COMPONENTS

This unit provides a wonderful opportunity to review the important roles of people or animals in groups in their environment. When everyone does their part whether in a group setting or creating a project, the outcome will be a success! Comparing the relationships between producers, consumers, and decomposers in an environment blends in nicely when discussing the many roles that play out in a group setting.

CHARACTER ATTRIBUTES

Respect

- For one another
- For the environment

Parts of a Whole

- Cooperate/working in groups

APPENDIX (see Downloads)

- **Monet Style Ecosystem Painting Rubric**
- **Reflection Questions-Monet Ecosystem**
- **Ecosystem Puppet Show Rubric**
- **Reflection Questions-Ecosystem Puppet Show**
- **Examples of Dioramas**

ADDITIONAL RESOURCES

Books

- *The Magical Garden of Claude Monet* by Laurence Anholt
- *Who Was Claude Monet?* by Ann Waldron
- *Linnea in Monet's Garden* by Cristina Bjork
- *Monet Paints a Day* by Julie Danneberg

Websites

- <http://art.pppst.com/monet.html>
- <http://www.teachmag.com/archives/5618>

CREDITS

U.S. Department of Education
Arts in Education--Model Development and Dissemination Grants Program
Cherokee County (GA) School District and ArtsNow, Inc.
Ideas contributed and edited by: Carmen Sutton, Betty-Ann Walker-Baker, Judy Stewart, Jessica Espinoza, Richard Benjamin Ph.D., Michele McClelland

Project 1: Monet's Water Lily Ecosystem

Ecosystem • Consumers/Producers/
Decomposers



Project Essential Questions

- Why are producers/consumers/decomposers an important part of the ecosystem?
- What happens when you have an increase or decrease of producers/consumers/decomposers in an ecosystem?
- What are examples of energy sources in an ecosystem?
- What are biotic/abiotic factors in an environment?

PROJECT DESCRIPTION

In this project, students will depict their individual versions of an Impressionistic oil based painting after studying the Water Lily series by Claude Monet. The students will paint on stretched canvas, creating an ecosystem much like the one that Monet depicted in his Gardens in Giverny in France. Students will review what an ecosystem consists of, paying close attention to consumers, producers, and decomposers. They will concentrate on painting the various types of consumers, producers, and decomposers as well as their energy sources in their Garden ecosystem.

LEARNING TARGETS

“I Can...”

- Identify consumers, producers, and decomposers
- Explain energy sources
- Use Impressionistic techniques while painting an ecosystem

www.artsnowlearning.org

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Produced through the U.S. Department of Education: Arts in Education—Model Development and Dissemination Grants Program
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DURATION: 1-2 days

Project Description	Learning Targets
<p>In this project, students will depict their individual versions of an Impressionistic oil based painting after studying the Water Lily series by Claude Monet. The students will paint on stretched canvas, creating an ecosystem much like the one that Monet depicted in his Gardens in Giverny in France. Students will review what an ecosystem consists of, paying close attention to consumers, producers, and decomposers. They will concentrate on painting the various types of consumers, producers, and decomposers as well as their energy sources in their Garden ecosystem.</p>	<p>"I Can...":</p> <ul style="list-style-type: none"> ● Identify consumers, producers, and decomposers ● Explain energy sources ● Use Impressionistic techniques while painting an ecosystem

ESSENTIAL QUESTIONS

<ul style="list-style-type: none"> ● Why are producers an important part of the ecosystem? ● What happens when you have an increase or decrease of producers in an ecosystem? ● Why are consumers an important part of the ecosystem? ● What happens when you have an increase or decrease of consumers in an ecosystem? ● Why are decomposers an important part of the ecosystem? ● What happens when you have an increase or decrease of decomposers in an ecosystem? ● What are examples of energy sources in an ecosystem? ● What are abiotic factors in an environment? ● What are biotic factors in an environment?
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STANDARDS

Curriculum Standards	Arts Standards
<p>S4L1. Students will describe the roles of organisms and the flow of energy within an ecosystem</p> <p>a. Identify the roles of producers, consumers, and decomposers in a community</p> <p>d. Predict effects on a population if some of the plants or animals in the community are scarce or if there are too many</p>	<p>VA4CU.2. Views and discusses selected artworks</p> <p>a. Identifies elements, principles, themes, and/or time period in a work of art</p> <p>VA4PR.1. Creates artworks based on personal experience and selected themes</p> <p>e. Creates representational artworks from direct observation (e.g., landscape, still life, portrait)</p> <p>VA4PR.2. Understands and applies media, techniques, and processes of two-dimensional art processes (drawing, painting, printmaking, mixed-media) using tools and materials in a safe and appropriate manner to develop skills</p> <p>e. Creates paintings with a variety of media (e.g., tempera, watercolor, acrylic)</p>

KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
<ul style="list-style-type: none"> • Ecosystem • Biotic • Abiotic • Consumer • Producer • Decomposer • Energy source 	<ul style="list-style-type: none"> • Background • Color • Emphasis • Subject Matter • Texture • Impressionist

TECHNOLOGY INTEGRATION

<ul style="list-style-type: none"> • https://www.youtube.com/watch?v=Jdj84lVwv7w (This Youtube video takes you on a tour of many of Claude Monet's Water Lily paintings. 6 minutes/55 seconds) • https://www.youtube.com/watch?v=BJE4QUngaeg (This Youtube video is a real film of Claude Monet painting in his Garden in Giverny in France in 1915. 2 minutes/45 seconds) • https://www.youtube.com/watch?v=O2KGkK2wcbk (This Youtube video takes you on a tour of Monet's gardens in Giverny, France. 4 minutes 3 seconds)

ASSESSMENTS

Formative	Summative
<ul style="list-style-type: none"> • Teacher can make observations for class participation during all of the class discussions. 	<ul style="list-style-type: none"> • Monet Style Ecosystem Painting • Monet Style Ecosystem Painting Rubric (see Downloads) • Reflection Questions (see Downloads)

MATERIALS

Stretched canvas, one per student; oil based paints; various sizes of paint brushes

Activating Strategy

<ul style="list-style-type: none"> • The students will view 2 separate video clips of Claude Monet painting in his flower garden as well as a clip that allows the class to see many of Monet's various versions of his <i>Water Lily</i> series. • Share the following information with the class: <i>Water Lilies</i> is a series of approximately 250 oil paintings by French Impressionist Claude Monet. The paintings depict Monet's flower garden at Giverny and were the main focus of Monet's artistic production during the last thirty years of his life.

Main Activity

Part 1:

- As a whole group, view "Claude Monet's Garden" 4 minutes 3 seconds <https://www.youtube.com/watch?v=O2KGkK2wcbk>. In order to cut down on time, you could view the clip from the 1 minute 55 second mark till the 3 minute 6 second, as this part of the video focuses on the ponds and water lily plants.
- Pause the video clip every once in awhile to ask the class what types of ecosystems they see. Create a list of the producers, consumers, and decomposers that inhabit these gardens.
- Once the list is complete, ask the students where the producers, consumers, and decomposers received their energy. What is their energy source?

Part 2:

- Discuss with the class the artistic methods Monet used in his paintings. (Big brush strokes, heavy use of oil based paint, etc.) This would be a good opportunity to ask the visual arts teacher at your school for assistance.
- Each student will receive a stretched canvas, along with paint brushes and oil based paints.
- The students will paint their own version of Monet's water lilies. They will include a water source, plants, as well as animals that may live in this type of habitat. In essence they will be creating an ecosystem with consumers, producers, and decomposers. The students must also include the energy sources as well in their painting.
- Once the paintings have dried, host a "Gallery Walk" with the class. The students will take a tour of each painting. As they view the paintings they will discuss and identify the consumers, producers, and decomposers as well as the energy sources.

REFLECTION

Reflective Strategies

Students will answer the following **Reflection Questions** (see Downloads) using complete sentences:

1. How did painting a Monet style painting help you better understand and identify producers, consumers, and decomposers?
2. Why is the energy source for producers, consumers, and decomposers an important part of an ecosystem?

DIFFERENTIATION

Below Grade Level/EL Students:

- Students would benefit from a short lesson, before this lesson is taught. This group of students could to be shown several examples of consumers, producers, and decomposers in various ecosystems. Perhaps focus on pond habitats as that is what this lesson focuses on. These students would also benefit from being able to locate and explain different energy sources in ecosystems. Using old magazines and creating a collage may also be beneficial when identifying energy sources.

Above Grade Level:

- These students could take this project one step further by evaluating and analyzing what would change in their garden ecosystem if one of the consumers, producers, or decomposers were no longer in the environment. How would the ecosystem change?

ADDITIONAL RESOURCES

- <http://art.pppst.com/monet.html> (This link/site provides over 10 Powerpoint slideshows from Claude Monet and the Presence of Nature to Impressionism and Claude Monet.)
- *The Magical Garden of Claude Monet* by Laurence Anholt
- *Who Was Claude Monet?* by Ann Waldron
- *Linnea in Monet's Garden* by Cristina Bjork
- *Monet Paints a Day* by Julie Danneberg

APPENDIX

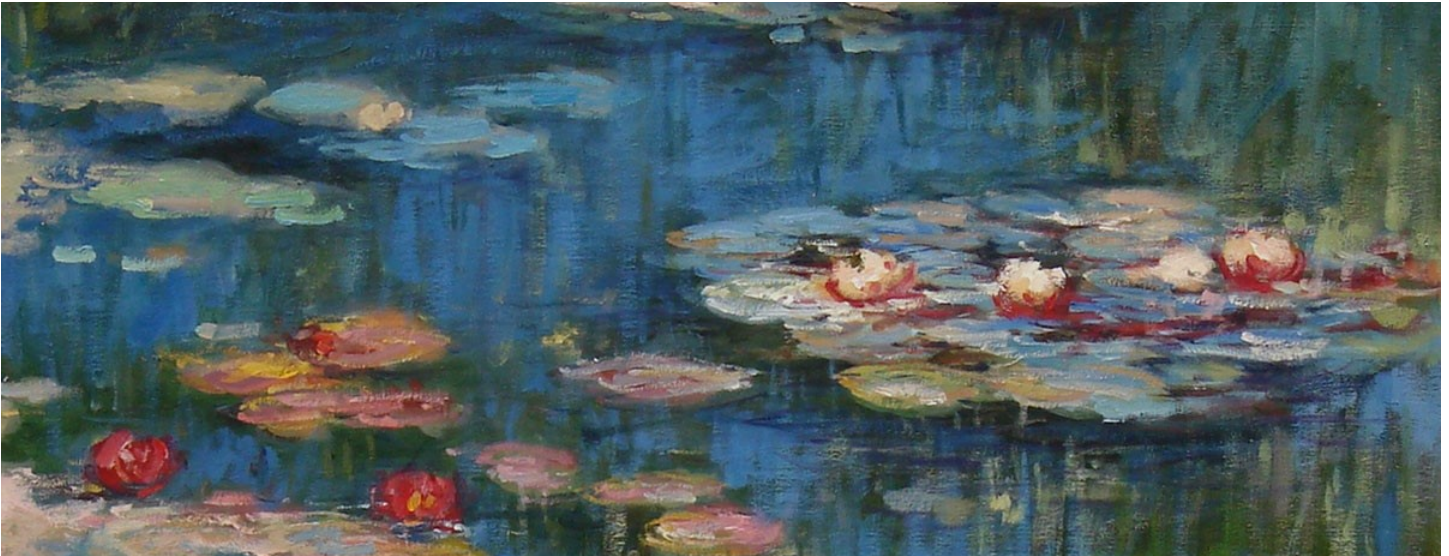
- **Monet Style Ecosystem Painting Rubric**
- **Written Reflection Sheet**

CREDITS

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Project 2: Ecosystem Puppet Show

Ecosystem • Habitat • Consumers/
Producers/Decomposers/Energy Source



Project Essential Questions

- Why are producers/consumers/decomposers an important part of the ecosystem?
- What happens when you have an increase or decrease of producers/consumers/decomposers in an ecosystem?
- What are examples of energy sources in an ecosystem?
- What are biotic/abiotic factors in an environment?

PROJECT DESCRIPTION

In this project, students will work in small groups to design and construct a habitat using shoe boxes and art materials. These shoe box dioramas will serve as the backdrop and stage for an ecosystem puppet show that students will write and perform. Within each ecosystem, students will create a cast of puppet characters: producers, consumers, decomposers, and an energy source. Then students will bring the puppets to life in a scripted performance! This is an engaging and creative way to bring these ecosystem concepts to life for students.

LEARNING TARGETS

“I Can...”

- Identify and explain the roles of consumers, producers, decomposers, and energy sources
- Create a habitat that includes all of the different ecosystem roles
- Develop a script that explains how all of the roles are related to one another

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Produced through the U.S. Department of Education: Arts in Education—Model Development and Dissemination Grants Program
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DURATION: 3-5 days

Project Description	Learning Targets
<p>In this project, students will work in small groups to design and construct a habitat using shoe boxes and art materials. These shoe box dioramas will serve as the backdrop and stage for an ecosystem puppet show that students will write and perform. Within each ecosystem, students will create a cast of puppet characters: producers, consumers, decomposers, and an energy source. Then students will bring the puppets to life in a scripted performance! This is an engaging and creative way to bring these ecosystem concepts to life for students.</p>	<p>“I Can...”:</p> <ul style="list-style-type: none"> ● Identify and explain the roles of consumers, producers, decomposers, and energy sources ● Create a habitat that includes all of the different ecosystem roles ● Develop a script that explains how all of the roles are related to one another

ESSENTIAL QUESTIONS

<ul style="list-style-type: none"> ● Why are producers an important part of the ecosystem? ● What happens when you have an increase or decrease of producers in an ecosystem? ● Why are consumers an important part of the ecosystem? ● What happens when you have an increase or decrease of consumers in an ecosystem? ● Why are decomposers an important part of the ecosystem? ● What happens when you have an increase or decrease of decomposers in an ecosystem? ● What are examples of energy sources in an ecosystem? ● What are abiotic factors in an environment? ● What are biotic factors in an environment?
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STANDARDS

Curriculum Standards	Arts Standards
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	<p>a. Uses the playwriting process: pre-write/pre-play; prepare to write/plan dramatization; write/dramatize; reflect and edit; re-write/play; publish/perform</p> <p>b. Analyzes the elements of a well-written script</p> <p>TAES4.3 Acting by developing, communicating, and sustaining roles within a variety of situations and environments</p> <p>a. Uses articulation, volume and vocal variety to communicate thoughts, emotions and actions of a character</p> <p>d. Collaborates with an ensemble to create theatre</p> <p>e. Dramatizes literature and original scripts through various dramatic forms such as story drama, pantomime, process drama, puppetry, improvisation, and readers' theatre</p>
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KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
<ul style="list-style-type: none"> ● Ecosystem ● Biotic ● Abiotic ● Consumer ● Producer ● Decomposer ● Energy source ● Habitat ● Vegetation ● Landforms 	<ul style="list-style-type: none"> ● Background/foreground ● Color/line ● Emphasis ● Texture ● Setting ● Diorama ● Stage ● Upstage/downstage ● Stage left/stage right ● Puppet ● Characters ● Cast ● Voice (pitch, volume, tempo) ● Playwriting ● Script

TECHNOLOGY INTEGRATION

<p>Suggested websites for shared research on Animal Habitats:</p> <ul style="list-style-type: none"> ● http://environment.nationalgeographic.com/environment/habitats/ ● http://kids.nationalgeographic.com/ ● https://www.pebblego.com/login/

ASSESSMENTS

Formative	Summative
<ul style="list-style-type: none"> Teacher can make observations for class participation during all of the class discussions. First draft of student-written ecosystem plays Student explanations of habitat design 	<ul style="list-style-type: none"> Student-written Ecosystem Script Small Group Puppet Performance Diorama of Habitat including ecosystem characters Reflection Questions (see Downloads)

MATERIALS

<ul style="list-style-type: none"> Shoe boxes (include a variety of different dimensions/sizes) Art materials: markers, crayons, paints, colored pencils, paint brushes, glue, scissors Construction paper, tissue paper Suggested additional materials for dioramas: cotton balls, pom-poms, sand, leaves, flowers, vines <p>Suggestions for puppets:</p> <ul style="list-style-type: none"> Stick puppets: popsicle sticks, markers, adhesive colored foam, googly eyes <p>http://www.parents.com/fun/arts-crafts/kid/make-with-craft-sticks/#page=2 http://www.easypeasyandfun.com/easter-craft-stick-puppets/ https://craftulate.com/2016/02/mini-craft-stick-animal-puppets.html?utm_content=buffer236de&utm_medium=social&utm_source=pinterest.com&utm_campaign=buffer</p> <ul style="list-style-type: none"> Finger puppet examples: <p>http://onelittleproject.com/pipe-cleaner-finger-puppets/ http://mollymooarts.com/rubber-glove-finger-puppets/ http://iheartcraftythings.com/polar-bear-kids-craft-finger-puppets.html http://iheartcraftythings.com/chick-finger-puppets.html</p>
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Activating Strategy
<p>Research/Brainstorm:</p> <ul style="list-style-type: none"> Place students in a small groups (of 3-5 students) for this project. Explain that in your groups, students will agree upon a habitat diorama to design and create using art materials and a shoe box. Make sure students know that within their habitat they design, they must envision potential inhabitants including consumers, producers, decomposers, and an energy source. Conduct some shared research (suggested websites listed above) before designing. You can show the class some Examples of Dioramas (see Downloads) before they begin brainstorming together.
Main Activity
<p>Part 1: <u>Research:</u> Students will design and construct their habitat by researching the following things:</p> <ol style="list-style-type: none"> 1) <i>What type of vegetation would be found in my habitat?</i> 2) <i>What sort of water source would be found in my habitat?</i> 3) <i>What type of landform would be evident?</i>

- 4) *Where is the energy source in relationship to the vegetation?*
- 5) *What animals might I include? What plants?*
- 6) *What biotic and abiotic factors do we need to include in this habitat?*
- 7) *What should we design in the background, in the distance versus the foreground close up? What do we want to emphasize?*

Part 2:

Create Habitat & Characters:

- As a small group, use construction paper to line a shoe box and begin layering the backdrop with different media and textures. Ask students to address all of their research questions as they are constructing their diorama together.
- Create puppets for each of the different types of roles represented in an ecosystem: producers, consumers, decomposers, and energy source. Make sure your cast includes at least one of each role.

Part 3:

Develop Ecosystem Puppet Show Script:

- As a small group, brainstorm a story that could occur in this particular habitat that would model and explain the ecosystem.
- Determine which group member is going to play which particular role(s).
- Create dialogue for your characters in the form of a script.
- Make sure that the story explains the different roles and how they relate to one another. (Ex: The sun (energy source) is needed to make a plant grow (producer). And the rabbit (consumer) needs the plant to eat and survive/thrive in the ecosystem.)

Part 4:

Rehearse & Perform:

- Students will determine an actor's voice for each puppet they are operating.
- Direct students to use pitch, volume and tempo to make vocal choices for their character.
- Students will rehearse their puppet stories in their small groups.
- Students will perform their stories to the class (or another visiting class) for peer feedback.
- Audience members should be directed to identify the various roles in the ecosystem and to clearly see how they work together to thrive in this particular habitat.

REFLECTION

Reflective Strategies

Students will answer the following **Reflection Questions** (see Downloads) using complete sentences:

1. Describe how your particular habitat depicted its ecosystem and the various roles present?
2. Is there a "most important" role in the ecosystem (producer, or consumer, or decomposer, or energy source)? Defend why you think there is or isn't a most important role.
3. What was most successful about this project? What would you change next time?

DIFFERENTIATION

Below Grade Level/EL Students:

- Students would benefit from a template for writing their script. This template can help prompt and guide them along in the playwriting process. Sentence frames may also be effective in the writing.

Above Grade Level:

- Consider asking your above level students to create a play that not only describes the roles of different organisms in a balanced ecosystem, but perhaps dramatizes a story where for some reason the ecosystem is NOT balanced. How does the imbalance affect the different characters? What dangers are faced by the ecosystem and what possible solutions or precautions should be advised.

ADDITIONAL RESOURCES

- <http://www.teachmag.com/archives/5618>

APPENDIX (see Downloads)

- **Ecosystem Puppet Show Rubric**
- **Written Reflection Sheet**
- **Examples of Dioramas**

CREDITS

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