

Cycles • Parts of a Whole



Unit Essential Question

How would you compare and contrast the life cycles of different organisms?

UNIT DESCRIPTION

Students will integrate visual arts, music, movement and theatre to demonstrate their understanding of the life cycles of living things. The engaging projects include creating a visual arts cyclorama, publishing a digital book, performing in a dramatic interpretation, and creating terrariums. This unit is hands-on and full of opportunities to build higher-level thinking skills in second grade students!

PROJECTS

- Living Through the Life Cycles
- Cycling Cyclorama
- “The Giving Tree” Life Cycle
- Terrarium Time!

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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.

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UNIT ESSENTIAL QUESTION

How would you compare and contrast the life cycles of different organisms?

CROSS-CUTTING INTERDISCIPLINARY CONCEPT

Cycles
Parts of a Whole

REAL WORLD CONTEXT

In this unit, students learn that life cycles give us information about the evolution of biological organisms, as well as differences and similarities of species. This unit explores environmental factors that impact the life cycles of plants and animals.

STANDARDS

Curriculum Standards	Arts Standards
<p>S2L1 Students will investigate the life cycles of different living organisms.</p> <p>a. Determine the sequence of the life cycle of common animals in your area: a mammal such as a cat or dog or classroom pet, a bird such as a chicken, an amphibian such as a frog, and an insect such as a butterfly.</p> <p>ELAGSE2W7 Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).</p> <p>ELAGSE2W8 Recall information from experiences or gather information from provided sources to answer a question.</p> <p>ELAGSE2RI1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.</p>	<p>TAES2.3 Acting by developing, communicating, and sustaining roles within a variety of situations and environments.</p> <p>TAES2.10 Critiquing various aspects of theatre and other media using appropriate supporting evidence: b. Reflects on theatre experiences using a variety of written, graphic, non-verbal and oral responses.</p> <p>TAES2.11 Engaging actively and appropriately as an audience member in theatre or other media experiences.</p> <p>D2FD.1 Identifies and demonstrates movement elements, skills, and terminology in dance. a. Recognizes and applies terminology of creative movement elements and sub-elements to describe and create movements.</p> <p>M2GM.4 Improvising melodies, variations and accompaniments.</p>

<p>ELAGSE2L4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 2 reading and content, choosing flexibly from an array of strategies:</p> <p>e. Use glossaries and beginning dictionaries, both print and digital, to determine or clarify the meaning of words and phrases.</p> <p>ELAGSE2L2 Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing.</p> <p>b. Use commas in greetings and closings of letters.</p> <p>ELAGSE2W6 With guidance and support from adults, use a variety of tools to produce and publish writing, including digital tools and collaboration with peers.</p> <p>MGSE2.G.3 Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.</p> <p>ELAGSE2W1 Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a concluding statement or section.</p>	<p>VA2PR.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>a. Creates drawings with a variety of media (e.g., pencils, crayons, pastels).</p> <p>TAES2.3 Acting by developing, communicating, and sustaining roles within a variety of situations and environments</p> <p>a. Communicates a character's actions, motives, emotions and traits, through voice, speech, and language.</p> <p>VA2PR.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>b. Creates sculpture using a variety of materials and methods (e.g., papier-mâché, paper sculpture, assemblage, found objects).</p>
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ASSESSMENTS

Summative Assessments

- Living through the Life Cycles with Drama Rubric
- Project 2 Rubric
- Project 3 Rubric
- Project 4 Rubric
- 4-Part Story Book Sheet
- Pre/Post-Test

CHARACTER EDUCATION COMPONENTS

Respect:

- Teamwork
- Collaboration
- Ensemble

CHARACTER ATTRIBUTES

Respect for:

- The environment
- Animals
- Plants

APPENDIX

- Pre/Post-Test

ADDITIONAL RESOURCES

Books:

- *A Butterfly is Patient* by Dianna Hutts Aston
- *Brilliant Bees* by Linda Glaser
- *About Crustaceans: A Guide for Children* by Cathryn Sill
- *Little Penguins: the Emperor of Antarctica* by Jonathan London
- *I Am a Shark: The Life of a Hammerhead Shark* by Darlene R. Stille
- *Ten Little Caterpillars* by Bill Martin Jr.
- *What to Expect When You're Expecting Joeys: A Guide for Marsupial Parents (and Curious Kids)* by Bridget Heos
- *Wiggle Worms at Work* by Wendy Pfeffer
- *999 Tadpoles* by Ken Kimura

Websites:

<https://www.scholastic.com/teachers/blog-posts/genia-connell/10-ready-go-resources-teaching-life-cycles/>

Virtual Fieldtrips:

<http://www.discoveryeducation.com/Events/virtual-field-trips/explore/by-theme/plants-and-animals.cfm>

Cycling through the Life Cycles Pre/Post Assessment

Name: _____

PART 1: *Teacher reads aloud the questions as the students circle, fill in the blank, or write the correct response.*

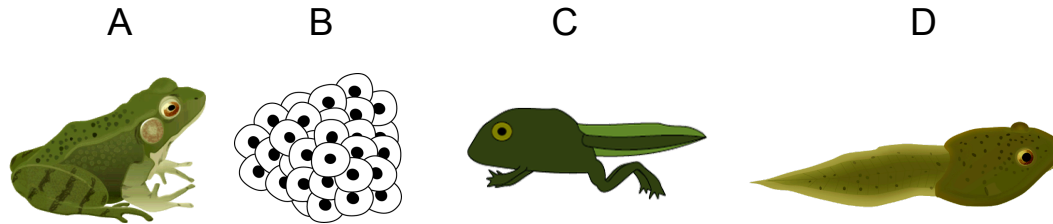
1. What does a life cycle show?
 - A) Shows an animal or plant life from birth to adult
 - B) Shows what one can eat to get stronger
 - C) Shows plant and animal needs
 - D) Shows and describes food chains

2. Flowering plants begin their life cycle as _____.
 - A) Plants
 - B) Fruits
 - C) Animals
 - D) Seeds

3. How are frogs and butterflies alike?
 - A) They both like flowers
 - B) They both eat fish
 - C) They both start out as an egg
 - D) They both like to swim

4. A caterpillar will eat and store food for the next stage of its life.
What stage comes after the caterpillar in a butterfly's life cycle?
 - A) Chrysalis
 - B) Adult butterfly
 - C) Eggs
 - D) Caterpillars

PART 2: Use the below photos to answer the following questions. Teacher reads aloud the questions.



5. Which picture is of an adult frog? _____

6. What stage of life occurs first? _____

7. Which stage occurs after the eggs hatch? _____

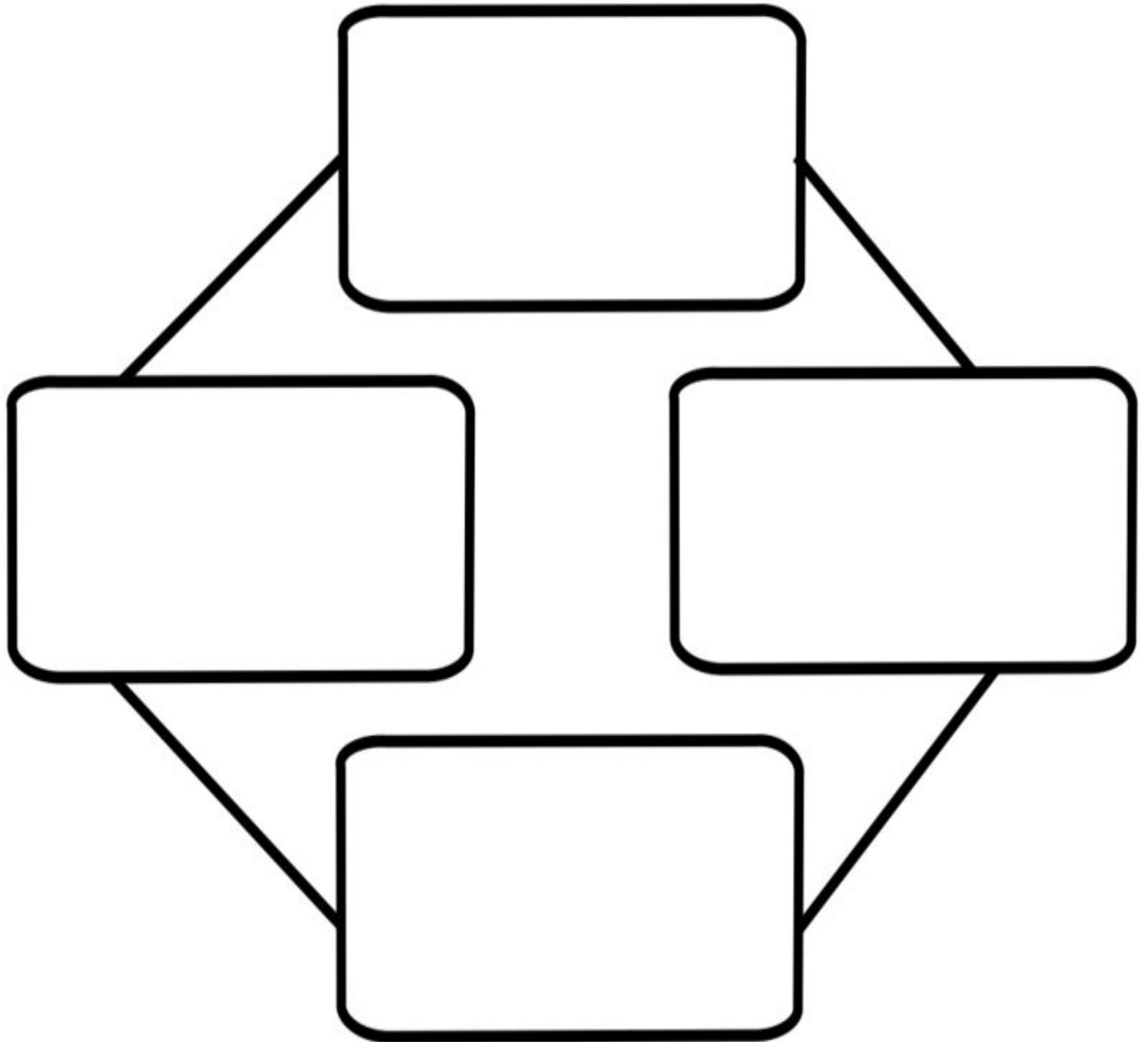
8. Which stage occurs right before the adult frog? _____

PART 3:

Constructed Response: *Read the prompts aloud and give ample time for students to draw and write their response.*

Draw a picture of a healthy adult plant. Write about all of the things that are needed in nature in order for a plant go through the different stages of its life cycle.

Illustrate and label the below diagram with an animal of your choice. Use detail to illustrate the 4 different life stages.





Project Essential Questions

- How does an animal evolve through the various stages in a life cycle?
- How can drama, movement and sound be used to dramatize an animal life cycle?

PROJECT DESCRIPTION

In this project, students will be introduced to local animals with sets of life cycle sequencing cards. Students will be asked to sort the cards in sequential order of their life cycle stages and then explain why they sorted them the way they did. Next, students will choose a local animal and use various books and technology to research the sequence of the life cycles. Next, they will choose a locomotor movement to represent transitions through the animal's life cycle. Then, each student in the group will pick a non-locomotor movement as well as a sound to represent a particular stage of the animal's life cycle. Audience members will use observation of rhythm and movement clues to predict which life cycle of the animal the students are performing. Students will explain their reasoning using evidence from the drama along with a writing prompt provided by teacher.

LEARNING TARGETS

"I Can..."

- Use grade level appropriate literature and technology to research the life cycle of a particular animal
- Demonstrate the sequence of a life cycle of an animal through movement, sound, and gestures
- Analyze various life cycles through audience observations and discussions about my peers' dramatizations

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DURATION: 2-3 days

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KEY VOCABULARY**Content Vocabulary**

- Cycle
- Life Cycle
- Sequence
- Stage
- Transition
- Observe
- Predict

Arts Vocabulary

- Locomotor: refers to a movement that travels through space
- Non-locomotor: refers to a movement that does not travel through space
- Pathway: design traced on the floor as a dancer travels across space
- Timbre: refers to the distinctive quality of sounds; the tone, color or special sound that makes one instrument or voice sound different from another
- Gesture: expressive movement of the body or limbs
- Dress rehearsal: the final few rehearsals prior to opening night
- Concentration: the ability of the actor or actress to be “in character” that is, to be like the character he or she is portraying - in dialogue, attitude, carriage, gate, etc.
- Collaboration: two or more people working together in a joint intellectual effort
- Rhythm: long and short sounds

TECHNOLOGY INTEGRATION

- www.Pepplego.com
- www.tumblebooklibrary.com/
- http://www.tgfl.org.uk/tgfl/custom/resourcesftp/netmedia_II/ks1/science/hamshall/life_cycles/index.htm
- Suggested activator: grog and butterfly virtual sort

ASSESSMENTS

Formative	Summative
<ul style="list-style-type: none"> • Teacher will check for understanding through observation of student sequencing animal manipulatives. • Teacher will check for understanding through graphic organizer completion. • Teacher will check for understanding through observation of student's 	<ul style="list-style-type: none"> • Living through the Life Cycles with Drama Rubric (see Downloads) • Small Group Performance

interpretation of life cycles through the rehearsal and performance.	
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MATERIALS

- *The Life Cycle* series by Lisa Trumbauer
- Ipad/iPods
- Desktop Computer
- Animal Life Cycle Sequencing Kit: 2 sets per class (available from Lakeshore Learning)

Activating Strategy (5-10 min)

- Teacher will model sorting one set of animal life cycle manipulatives to demonstrate the life cycle of that animal.
- Teacher will then ask students to sort the animal life cycle manipulatives in small groups.
- Each group will get a set of manipulatives to explain why they put the cards in the order that they did.

Main Activity

PROCESS: Students will be provided with the *The Life Cycle* books by Lisa Trumbauer. The students will research a particular animal's life cycle and then work in small groups to create a script and dramatization of their animal and its various life cycle stages.

PART 1:

- Place students in small groups of 3-5 students and assign a different animal life cycle to each small group. (If you prefer to give student choice, direct groups to select and sign up for an animal of the 6 pre-determined local animals to choose from to research.)
- Direct students to independently research their animal's particular life cycle.
- Provide students with *The Life Cycle* books by Lisa Trumbauer. Students gather information by using texts and internet resources.
- Teacher will provide copies of the **Blank Life Cycle Graphic Organizer** (see Downloads) for gathering life cycle information.
- When students finish their independent research, place them in their small groups to discuss their research findings and discoveries.

PART 2:

- Give students time to review the information they gathered from the previous day.
- Pass out rubric to students and discuss expectations for life cycle stage performance: 1) Use your research (and graphic organizer) to create your dramatization 2) Collaborate effectively with your group 3) Use movement, body levels and sound to clearly dramatize each life stage 4) Create a script for the performance that integrates our science vocabulary and any key supporting details about your animal.
- Give students time to collaborate with each other about their dramatization.
- Students together will create a script that can accompany their performance, every group member should have at least one line they speak.
- Teacher should monitor groups and clarify questions.

Part 3:

- Teacher will explain audience expectations as well as writing task expected to be completed during performance (additional time may be needed after each performance).
- Students will perform their animal life cycle dramatizations.

REFLECTION

Reflection Questions

- *After performances, teacher will facilitate a class discussion on their predictions, talk about what the animals actually were and the similarities and differences between each group's life cycle.*
- *What did the student actors do to dramatize each particular life cycle stage?*
- *Which life cycle stage was the most important? Was this clear through the performance, why or why not?*

DIFFERENTIATION

Accelerated:

- Advanced students could write a compare and contrast paragraph about either the different stages of their own life cycle – or a different animal's life cycle.
- Advanced students could write journal entries from the point of view of the animal at each stage of the life cycle.
- The journal dates should reflect the time differences between stages (for example – if the animal is born on Day 1, and takes 10 days to progress to the next stage, the second journal entry should be labelled Day 11).
- Advanced students could compose a theme song to accompany their movements through the life cycle.

Remedial/EL Students:

- Small group if needed
- Printing the online research out so students can highlight on physical paper when researching
- Using the computer for researching

ADDITIONAL RESOURCES

- Life Cycle Graphic Organizer
- Lisa Trumbauer: *The Life Cycle of* (Class sets)
- Animal Life Cycle Sequencing Kit: 2 sets per class (available from Lakeshore Learning)
http://www.lakeshorelearning.com/product/productDet.jsp?productItemID=1%2C689%2C949%2C371%2C923%2C174&ASSORTMENT%3C%3East_id=1408474395181113&bmUID=1464967144549
- Website to find list of local animals <http://www.enature.com/zipguides/>




APPENDIX (see Downloads)

- **Living through the Life Cycles with Drama Rubric**
- **Blank Life Cycle Graphic Organizer**

CREDITS

U.S. Department of Education
 Arts in Education--Model Development and Dissemination Grants Program
 Cherokee County (GA) School District, Clayton County (GA) School District and ArtsNow, Inc.
 Ideas contributed and edited by:
 Taylor Almonte, Heather Gerick, Rachel McQueen, Jessica Espinoza

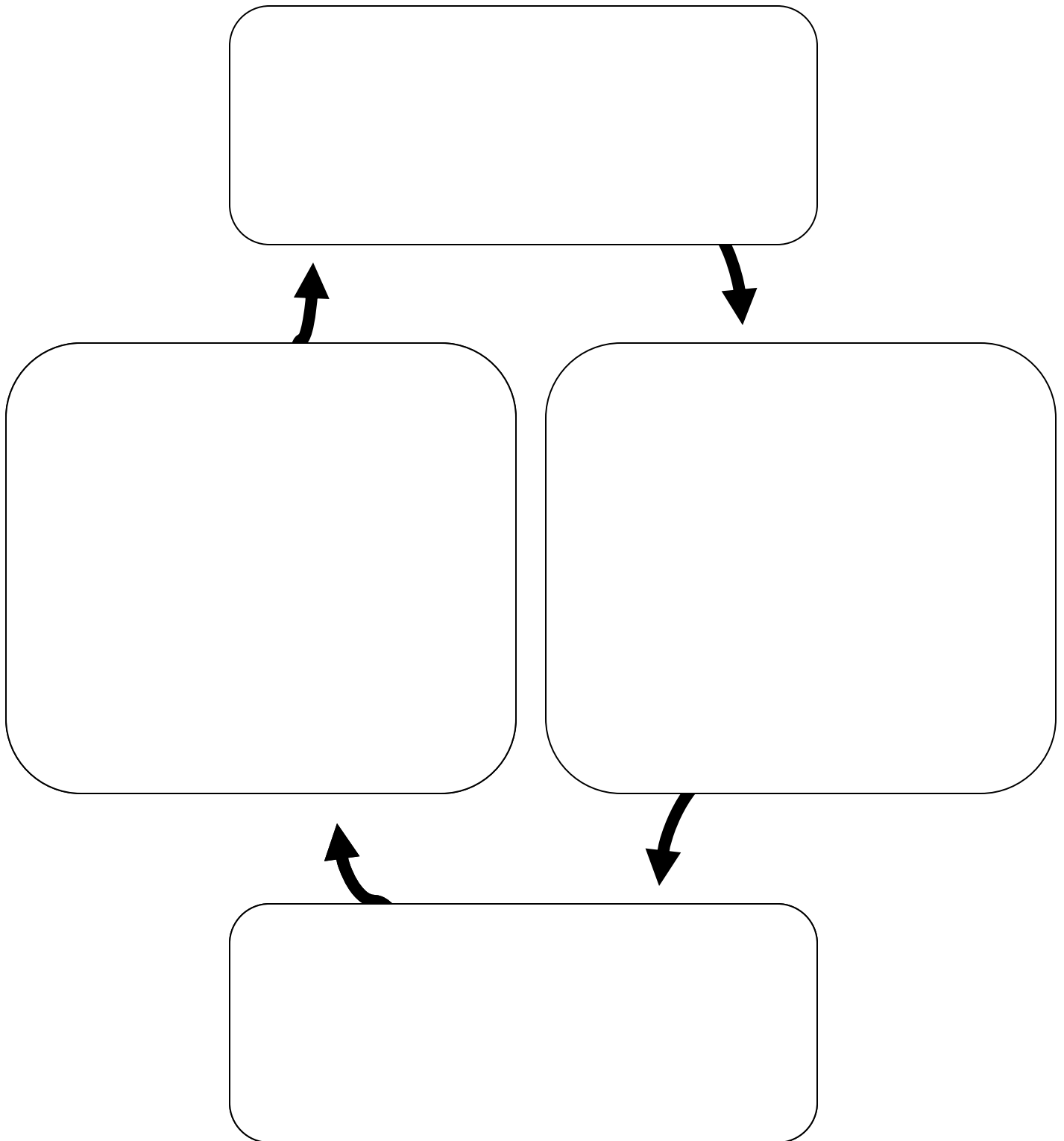
Living Through The Life Cycles With Drama Rubric

CHECKLIST			
I used texts and/or internet resources to correctly complete my Animal Life Cycle graphic organizer.	All information was in correct sequence order.	Most information was in correct sequence order.	Little or no information was correct.
I collaborated well with my peers in my group to plan, rehearse and perform the life cycle stages of my organism.	I contributed significantly to the ideas of my group and was a superb listener, remaining attentive to my peers' ideas.	I contributed some to the ideas of my group and somewhat listened to my peers' ideas.	I contributed little to the ideas of my group and had difficulty listening to my peers' ideas.
I made movement choices, sounds and used body levels that helped dramatize the story of the various stages of my animal in his/her life cycle.	All of my stages were fully developed with clear movement choices and body levels.	At least half of the stages were fully developed with clear movement choices and body levels.	Little or no movement choices were made to depict the various stages of the life cycle.
My script-writing piece explained each life cycle stage using science vocabulary and supporting details.	My writing piece included 3-4 science vocabulary words and significant supporting details.	My writing piece included 1-2 science vocabulary words and adequate supporting details.	My writing piece included little to no science vocabulary and had insufficient supporting details.

Name _____

Date _____

Life Cycles



Cycling Cyclorama



Project Essential Questions

- How can I design a 3-D model that reveals the various life cycles of an animal?
- How can I compose an opinion writing piece that expresses my favorite stage of the life cycle and give reasons and examples to support my claim?

PROJECT DESCRIPTION

In this project, students will enjoy being immersed in the visual arts through the design process. Students will create a three dimensional cyclorama using a variety of visual art materials to make a realistic model of the life cycle of a particular animal. Each distinct stage in the life cycle will be conveyed through the different physical parts in the cyclorama. This will support students' understanding of the broader concept of parts of a whole which is used across the elementary curriculum and beyond.

LEARNING TARGETS

"I Can..."

- Create a visual representation (cyclorama) of the different stages of an animal life cycle using a variety of found objects and supplied art material
- Partition a circle the various life stages of the animal being studied
- Select a favorite quadrant and write an opinion piece giving reasons and examples to support why I like this particular life stage best

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ESSENTIAL QUESTIONS

- How can I design a 3-D model that reveals the various life cycles of an animal?
- How can I compose an opinion writing piece that expresses my favorite stage of the life cycle and give reasons and examples to support my claim?

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KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
•	•

KEY VOCABULARY

Content Vocabulary
<ul style="list-style-type: none"> • Partition • Quadrant • Opinion • Fact • Life Cycle • Stage • Combining
Arts Vocabulary
<ul style="list-style-type: none"> • Assemblage: artistic process in which 3-dimensional artistic composition is made from putting together found objects • Background: the area of the artwork that appears furthest away and smallest • Foreground: the area of the artwork that appears closest to the viewer and largest • Media: refers to the tools and materials an artist uses • Sculpture in the round: a three-dimensional art piece that is freestanding and meant to be viewed from all sides

TECHNOLOGY INTEGRATION

Smithsonian Article: http://www.smithsonianmag.com/science-nature/ten-species-are-evolving-due-changing-climate-180953133/

ASSESSMENTS

Formative	Summative
<ul style="list-style-type: none"> • Teacher will check for understanding by how the student organizes the sequence of their cyclorama. • Teacher will check opinion writing piece for evidence that supports why the chosen quadrant is their favorite. 	<ul style="list-style-type: none"> • Finished Group Cyclorama • Cycling Cyclorama Rubric (See Downloads)

MATERIALS

<ul style="list-style-type: none"> • Pipe Cleaners • Straws • Construction paper • Cardboard dividers • Rotating visual • Cotton balls • Materials found in nature

- Tissue paper
- Coffee filters
- Glue dots
- Scissors
- Glue

Activating Strategy (5-10 min)

- Smithsonian article:
<http://www.smithsonianmag.com/science-nature/ten-species-are-evolving-due-changing-climate-180953133/>
 - This is a real word connection to show students how a species changes. Discuss how this can impact the life cycle of an animal.

Main Activity

PROCESS: In this project, students will create a 4-part visual model of the animal life cycle. After creating the visual they will then select their favorite quadrant and write an opinion writing piece using reasons and examples to support why it is their favorite quadrant.

PART 1: Brainstorming

- Teacher will show students an online article as an activating activity. See Smithsonian article.
- Teacher will show students a rotating visual and explain that they will be creating a visual representation of an animal life cycle.
- Assign animals and groups.
- Direct students to conduct shared research on their particular animal and to consider the animal's habitat.
- Teacher will direct students to take some time outside in nature, at home, etc. to gather elements in nature and materials that could be used to create the habitat of the animal in its various four life stages.
- Modeling clay can be used to create the animal in its environment.

PART 2: Creating

- Students will work in small groups to create their assemblage of their animal life cycle.
- Teacher can facilitate group work as needed, as well as formatively assess learning while they are working and creating.

PART 3: Reflecting

- Remind students of expectations by reviewing writing portion of rubric.
- Students will begin writing an opinion piece from the point of view of their animal. They will state their favorite life stage in their cycle. They will provide reasons and examples as to why this particular life stage is their favorite.

REFLECTION**Reflection Questions**

- *What skills were required with your group to collaborate and create your model?*
- *How did you determine your favorite life stage?*
- *If you were to do this project again, what would you do differently?*

DIFFERENTIATION**Accelerated:**

- Advanced students could write and illustrate a children's book that shows the progression of their animal through the stages of the life cycle.
- This should be told in a narrative style from the point of view of the animal.

Remedial/EL Students:

- Smaller group if needed
- Writing Modifications:
 - Small group
 - Guided writing
 - Sentence starters
 - Graphic organizers
 - Word bank based on vocabulary
 - Paragraph frame
 - Modify length/writing assignment based on needs

ADDITIONAL RESOURCES

- <http://www.smithsonianmag.com/science-nature/ten-species-are-evolving-due-changing-climate-180953133/>

APPENDIX (see Downloads

- **Cycling Cyclorama Rubric**

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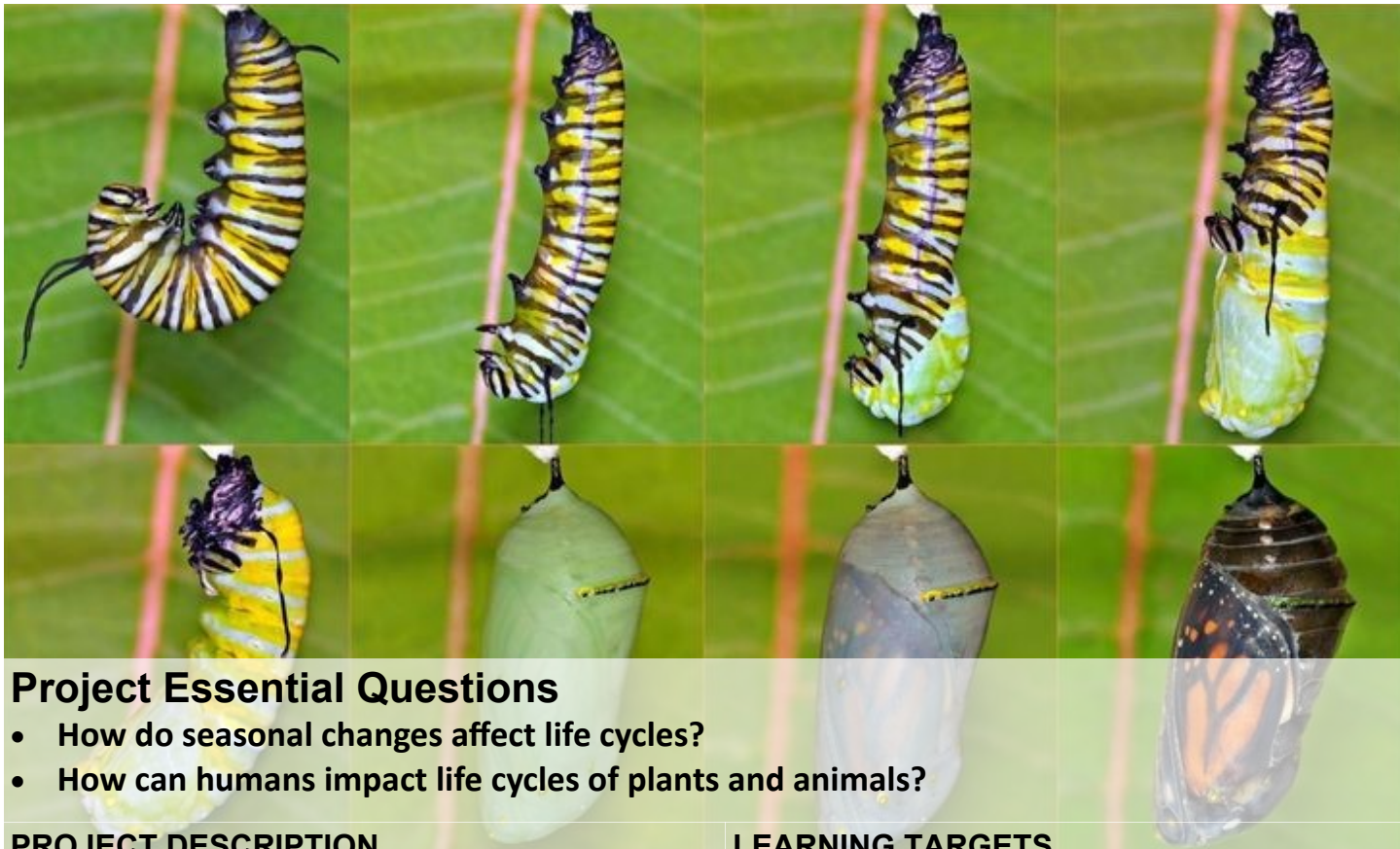
Ideas contributed and edited by:

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Cycling Cyclorama Rubric

CHECKLIST			
My three-dimensional assemblage clearly represents the four main stages of my animal's life cycle.	All four stages are adequately and visually represented.	Some stages are adequately or visually represented.	Little or no stages are represented.
I collaborated with my group and effectively worked as a team to execute our task.	I actively participated and fulfilled the given responsibility with no redirection needed.	I mostly actively participated and fulfilled the given responsibility with little redirection.	I required significant redirection in order to complete task, or task was not completed.
My opinion writing was written from the point of view of my animal.	I consistently wrote from the point of view of my animal including key details about his/her favorite life stage.	I mostly wrote from the point of view of my animal including some key details about his/her favorite life stage.	I did not write from the point of view of my animal and had difficulty including any key details.
My opinion writing piece showed evidence of supporting my opinion.	My writing piece cited 3-4 different types of evidence to support my opinion.	My writing piece cited 1-2 types of evidence to support my opinion.	My writing piece did not support my opinion.

“The Giving Tree” Life Cycle



Project Essential Questions

- How do seasonal changes affect life cycles?
- How can humans impact life cycles of plants and animals?

PROJECT DESCRIPTION

In this arts integrated project, students will explore the story “The Giving Tree” and engage in some theatrical role-playing and creative writing exercises that analyze the life cycle of the main characters in the story. Students will then create their own life cycle story in the illustration style of Shel Silverstein. Their stories will explore the life cycle of a tree and how other life cycles depend upon the tree as it progresses through the four seasons. Digital media will be integrated into the storytelling of the students’ writing.

LEARNING TARGETS

“I Can...”

- Write a letter from the point of view of a character in “The Giving Tree” story.
- Create an original life cycle story that expresses how the life cycles depend upon one another.
- Use technology to digitally story-tell my life cycle story.

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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.

DURATION: 2 weeks

Project Description	Learning Targets
In this arts integrated project, students will explore the story “The Giving Tree” and engage in some theatrical role-playing and creative writing exercises that analyze the life cycle of the main characters in the story. Students will then create their own life cycle story in the illustration style of Shel Silverstein. Their stories will explore the life cycle of a tree and how other life cycles depend upon the tree as it progresses through the four seasons. Digital media will be integrated into the storytelling of the students’ writing.	<p>“I Can...”</p> <ul style="list-style-type: none"> • Write a letter from the point of view of a character in “The Giving Tree” story. • Create an original life cycle story that expresses how the life cycles depend upon one another. • Use technology to digitally story-tell my life cycle story.

ESSENTIAL QUESTIONS

- How do seasonal changes affect life cycles?
- How can humans impact life cycles of plants and animals?

STANDARDS

Curriculum Standards	Arts Standards
<p>ELAGSE2L2 Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing.</p> <p>b. Use commas in greetings and closings of letters.</p> <p>ELAGSE2W6 With guidance and support from adults, use a variety of tools to produce and publish writing, including digital tools and collaboration with peers.</p> <p>S2L1 Students will investigate the life cycles of different living organisms.</p> <p>b. Relate seasonal changes to observations of how a tree changes throughout a school year.</p>	<p>VA2PR.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>a. Creates drawings with a variety of media (e.g., pencils, crayons, pastels).</p> <p>TAES2.3 Acting by developing, communicating, and sustaining roles within a variety of situations and environments.</p> <p>a. Communicates a character’s actions, motives, emotions and traits, through voice, speech, and language.</p>

KEY VOCABULARY

Content Vocabulary
<ul style="list-style-type: none"> • Seasonal changes - temperature, weather, climate, etc. • Life cycle • Plant life cycle • Human life cycle • Relationship
Arts Vocabulary
<ul style="list-style-type: none"> • Character: an actor or actress in a specified role • Concentration: the ability of the actor/ actress to be “in” character- that is, to be like the character s/he is portraying - in dialog, attitude, carriage, gait, etc. • Monologue: a long speech by a single character

- Media: refers to the tools and materials an artist uses
- Subject Matter: refers to the things that are represented in a work of art such as people, buildings and trees

TECHNOLOGY INTEGRATION

- Use of Little Bird Tales digital storytelling app: <https://littlebirdtales.com/>
- Video of "The Giving Tree" read aloud: <https://www.youtube.com/watch?v=xODAQbu6bJ0>

ASSESSMENTS

Formative	Summative
<ul style="list-style-type: none"> • Teacher will observe the students as they write their letters, ensuring they use correct grammar and punctuation. • Teacher will observe students during the pre-writing process. • Teacher will observe students as they create their digital storybook. 	<ul style="list-style-type: none"> • The teacher will use the provided rubric to assess students on science content, writing process, and final product.

MATERIALS

- "The Giving Tree" storybook
- Heavyweight paper
- Pencils
- Fine tip markers (black)-class set
- Little Bird Tales App: <https://littlebirdtales.com/>

Activating Strategy (5-10 min)

- Activate prior knowledge by referring back to article "Ten Species that are Evolving Due to the Changing Climate" and discuss how animals, as well as plants are living things and have life cycles that affect one another.
- Read "The Giving Tree" by Shel Silverstein.
- Discuss story and follow with question prompts:
 - *What Life cycles are shown in the story?*
 - *Where do the seasonal changes occur in the story?*
 - *What are some choices the boy made that had an unhealthy effect on the tree's life cycle? (write ideas on anchor chart)*

Main Activity

PROCESS: After reading "The Giving Tree" students will write letters documenting better choices the boy could have made for the tree. Students will then create a digital storybook that represents the four seasons and relationships with living things.

PART 1: Respond to Literature

- The students will write a letter, assuming the role of the boy from story. The letter will be written to the tree in a monologue format with an "apology" or "request to forgive" theme.
- Suggested letter prompt: "Write a letter to the Tree, explaining what you could have done differently in your life cycle from a boy to a man that would have been healthier for the tree."
- Students will share letters to class in monologue form.

PART 2: Brainstorm

- Brainstorm how a tree changes from season to season and list on anchor chart. See suggested questions:
 - *Can you explain how the tree change from season to season?*
 - *How are humans/plants/other animals (living things) affected by the tree during each season?*
 - *Can you compare and contrast how a human versus a plant changes throughout the seasons?*

PART 3: Create

- Teacher will explain directions and give expectations for creating 4 page storybook.
- Students will use their **4-Part Story Book Sheet** (See Downloads) to begin creating their 4-page storybook. *Each page is for each life stage, therefore print 4 copies of this document.
- Teacher will facilitate as needed as students create their book, as well as formatively assess students during the process.

PART 4: Perform (Digital Recording):

- After students complete the storybook, they will assist the teacher in taking pictures from their book and adding them to their own digital story app (Little Bird Tales).
- Students will edit and revise information and pages on the app with the teacher's assistance.
- Students will record their voices to "tell the story" on the app.
- Students can share their stories with their peers or other classes.

REFLECTION**Reflection Questions**

- Students will discuss changes they can make to help other living animals and plants complete their full life cycles:
 - *How do seasonal changes affect life cycles?*
 - *How can humans impact life cycles of plants and animals? Where in the book did this happen?*

DIFFERENTIATION**Accelerated:**

- Advanced students could make a list of ways the "child" could have gotten the things he needed from another source other than the tree.
- Advanced students could keep a double column diary for each event in the Giving Tree. At each stage, on one side the students should record thoughts from the tree's point of view, and in the other column, thoughts from the "child's" point of view.

Remedial/EL Students:

- Guided Writing with below grade level/ELs
- Writing template for the guided writing
- Other Writing modifications:
 - Small group
 - Guided writing
 - Sentence starters
 - Graphic organizers
 - Word bank based on vocabulary
 - Paragraph frame
 - Modify length/writing assignment based on needs

ADDITIONAL RESOURCES

- “The Giving Tree” by Shel Silverstein
- Heavy weight drawing paper (11 X 8.5)
- Black fine tip waterproof markers
- iPads




APPENDIX

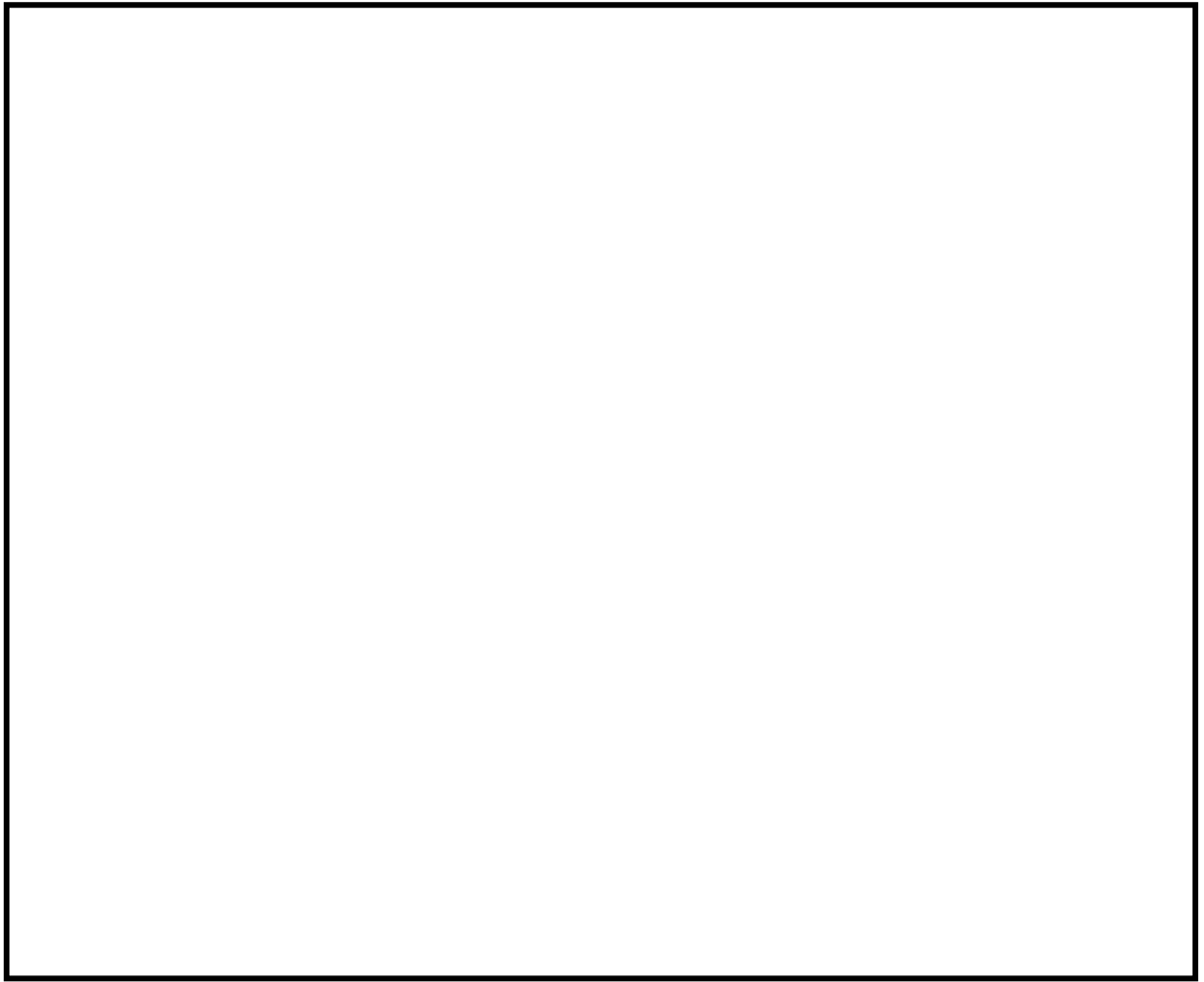
- “The Giving Tree” Life Cycle Rubric
- 4 Part Story sheet

CREDITS

U.S. Department of Education
Arts in Education--Model Development and Dissemination Grants Program
Cherokee County (GA) School District, Clayton County (GA) School District and ArtsNow, Inc.
Ideas contributed and edited by:
Taylor Almonte, Heather Gerick, Rachel McQueen, Jessica Espinoza

“The Giving Tree” Life Cycle Rubric

CHECKLIST			
I wrote a letter from the point of view of the boy from “The Giving Tree” to the Tree with sound ideas the boy could have made.	My letter included 3 ideas on better choices the boy could have made.	My letter included 2 ideas on better choices the boy could have made.	My letter included 0-1 ideas on better choices the boy could have made.
I wrote using complete sentences and transition word (<i>first, next, then, finally</i>) in my book.	I had all complete sentences in my book and strong transitions that indicated clear understanding of the 4 stages.	I had some complete sentences but the transitions were not clear and therefore the stages were somewhat unclear.	I had difficulty with complete sentences or ideas that demonstrated understanding of the 4 stages.
I wrote and illustrated my 4-page book with details.	I wrote and illustrated all 4 pages of my book and included lots of detail.	I wrote and illustrated 2-3 pages of my book and included some detail.	I wrote and illustrated 0-1 pages of my book with little detail.
I completed my digital story on Little Bird Tales.	I completed my digital story with no redirection.	I completed my digital story with little redirection.	I did not complete my digital story.



Four sets of primary writing lines. Each set consists of a solid top line, a dashed middle line, and a solid bottom line, providing a guide for letter height and placement.



Project Essential Questions

- How can I use an observation log and sketching to record the life cycle of a plant?
- How can I create and care for an environment that supports healthy plant growth?
- Can I compare and contrast the different plant environments? (successful vs. not successful)

PROJECT DESCRIPTION

In this hands-on project, students will choose whether they want to grow grass, beans, or sunflowers. Each group will have two terrariums. One terrarium will be cared for appropriately, while the other terrarium will be neglected and polluted in some way. Students will also be sketching their observations in a log provided by the teacher to record the changes in their terrariums over time. This project, although focused upon plant life cycles, also has a strong connection to preserving and caring for our environment.

LEARNING TARGETS

“I Can...”

- Create two terrariums; one that receives proper care for plant growth and the other that is neglected and polluted in some way
- Complete an observation log of my terrarium changes using sketches and writing
- Summarize, at project completion, my scientific findings of the differences between the two terrariums

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Project Description	Learning Targets
In this hands-on project, students will choose whether they want to grow grass, beans, or sunflowers. Each group will have two terrariums. One terrarium will be cared for appropriately, while the other terrarium will be neglected and polluted in some way. Students will also be sketching their observations in a log provided by the teacher to record the changes in their terrariums over time. This project, although focused upon plant life cycles, also has a strong connection to preserving and caring for our environment.	<p>"I Can..."</p> <ul style="list-style-type: none"> • Create two terrariums; one that receives proper care for plant growth and the other that is neglected and polluted in some way • Complete an observation log of my terrarium changes using sketches and writing • Summarize, at project completion, my scientific findings of the differences between the two terrariums

ESSENTIAL QUESTIONS

- How can I use an observation log and sketching to record the life cycle of a plant?
- How can I create and care for an environment that supports healthy plant growth?
- Can I compare and contrast the different plant environments? (successful vs. not successful)

STANDARDS

Curriculum Standards	Arts Standards
<p>S2L1 Students will investigate the life cycles of different living organisms.</p> <p>c. Investigate the life cycle of plant by growing a plant from a seed and by recording changes over a period of time.</p> <p>ELAGSE2W7 Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).</p> <p>S2CS4 Students will use the ideas of system, model, change, and scale in exploring scientific and technological matters.</p> <p>c. Describe changes in the size, weight, color, or movement of things, and note which of their other qualities remain the same during a specific change.</p> <p>S2CS5 Students will communicate scientific ideas and activities clearly.</p> <p>a. Describe and compare things in terms of number, shape, texture, size, weight, color, and motion.</p> <p>b. Draw pictures (grade level appropriate) that correctly portray features of the thing being described.</p>	<p>VA2PR.1 Creates artworks based on personal experience and selected themes.</p> <p>a. Creates artworks to express individual ideas, thoughts, and feelings from memory, imagination, and observation.</p>

KEY VOCABULARY**Content Vocabulary**

- Terrarium
- Life Cycle
- Fungus/fungi
- Observation log
- Prediction
- Pollution/pollutant
- Environment
- Successful/Non Successful
- Seeds
- Investigate
- Recording

Arts Vocabulary

- Subject Matter: refers to the things that are represented in a work of art such as people, buildings and trees
- Proportion: refers to the relationships of the size of objects in a body of work. Proportion gives a sense of size seen as a relationship of objects, such as smallness or largeness
- Space: refers to the distance or area between, around, above or within things. It can be a description for both 2 and 3 dimensional
- Texture: refers to the surface quality or “feel” of an object, such as roughness, smoothness, or softness. Actual texture can be felt while simulated textures are implied by the way the artist renders areas of the picture

TECHNOLOGY INTEGRATION

- Brain Pop video “Going Through Plant Life Cycle”: <https://jr.brainpop.com/science/plants/>
- YouTube video: “DIY Terrarium for Kids”: <https://www.youtube.com/watch?v=PB93Mj7lhdE>

ASSESSMENTS

Formative	Summative
<ul style="list-style-type: none"> • Teacher will check for understanding by reviewing student observation logs to make sure they have recorded daily changes in their terrarium. • Teacher will also use observation log to see if the students can distinguish differences in the polluted and healthy environments. 	<ul style="list-style-type: none"> • Terrarium Time Rubric (see Downloads) • Terrariums and logs that accompany them

MATERIALS

- Observation log
- 6 Terrariums per class
- Sunflower seeds
- Grass seeds
- Bean seeds
- Colored pencils
- Soil
- Water

- Light source (natural light)
- Teacher chosen terrarium pollutant for unsuccessful environment (see examples in Part 2)
- 9x12 sketching paper

Activating Strategy (5-10 min)

- Brain Pop: <https://jr.brainpop.com/science/plants/>

Main Activity

PROCESS: In this project, students can choose whether they want to grow grass, beans, or sunflowers. Each group will have two terrariums, one will be cared for appropriately while the other will be neglected and polluted in some way. Students will also be sketching their observations in a log provided by the teacher to record the changes in their terrariums over time. If one of the polluted terrariums produces some sort of fungi, the teacher will help students to identify that as fungus.

PART 1

- Teacher will use <https://www.youtube.com/watch?v=PB93Mj7lhdE> to explore how to create a DIY Terrarium for Kids.
- Students take notes on the video so that afterwards they can assemble their own terrariums.
- Students will choose, or teacher will assign to groups, grass, beans or sunflower seeds. (Groups will be formed based on their decision.)
- Students will plant chosen seeds in both terrariums.
- Students will sketch beginning stage of the plant life cycle log in their observation log.

PART 2 (based on plant growth)

- As time progresses, students will track plant growth in both terrariums.
- Students will chose one terrarium to introduce teacher chosen pollutant to that terrarium (do this after the plant has begun to sprout or show signs of growth).
 - Examples of pollutants: styrofoam, plastic, spritz of bug repellent (pesticide), engine oil,
- Label the polluted terrarium "polluted" so students can use that information in their observation log.
- Over the next few weeks, students will record changes they observe, while comparing and contrasting the two terrariums in their observation logs.
- After an extended period of time, teacher will use their own judgement to decide when it's time for students to complete their overall project summary and final sketches.
- Teacher will provide each group with 9X12 drawing paper for the students to complete final sketches of plant life cycle.

REFLECTION

Reflection Questions

- Students will write a summary comparing and contrasting the impact of the environment throughout the life cycle of the plants in the two terrariums.
- *What can we do to help prevent pollutants from interacting with plants?*
- *Why is it important that we help prevent pollutants from impacting plant growth?*

DIFFERENTIATION**Accelerated:**

- Advanced students could use black and white colors to sketch their observations of the polluted terrariums and colored utensils to sketch their observations of the non-polluted terrariums.
- Advanced students could compose a song to accompany the different stages of growth, for example high sounds as plants get taller, and low sounds for low growth or no growth.
- Advanced students could design a Candyland type game, where cards should reflect advancing on the board if the card has items that help plant growth. (Your plant got sunshine – advance 2 spaces) or regressing if the drawn card has items that would be a detriment to growth (Go back 3 spaces because your plant didn't get water).

Remedial/EL Students:

- Guided Writing with below grade level/ELs
- Writing template for the guided writing
- Other Writing modifications:
 - Small group
 - Guided writing
 - Sentence starters
 - Graphic organizers
 - Word bank based on vocabulary
 - Paragraph frame
 - Modify length/writing assignment based on needs

ADDITIONAL RESOURCES

- Brainpop JR: <https://jr.brainpop.com/science/plants/>
- DIY Terrariums for Kids: <https://www.youtube.com/watch?v=PB93Mj7IhdE>




APPENDIX (see Downloads)

- Terrarium Time Rubric

CREDITS

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Terrarium Time Rubric

CHECKLIST			
Teacher observed appropriate care of successful plant terrarium and polluted terrarium.	I appropriately provided all the essential elements to create a successful plant environment.	I provided some of the essential elements that a plant needs to survive.	I provided no elements for a successful plant environment.
My group appropriately divided responsibilities of caring for the terrariums.	My group worked together to appropriately take care of our plant terrariums.	My group needed some redirection in order to appropriately work together in caring for the terrariums.	My group needed constant redirection in order to work together.
My observation log is completed daily with sketches and a summary of observations which document changes in my terrarium.	My log has all entries and sketches complete.	My log had some entries and sketches complete.	My log shows minimal observations and completed sketches.
My final sketch of the project summary shows understanding of a successful plant life cycle environment vs. a non-successful plant life cycle environment	My sketch is complete.	My sketch has some elements it needs to be complete.	My sketch has no elements it needs to be complete.