Big Idea/ Topic

Life Cycles

Standards Alignment

S2L1. Obtain, evaluate, and communicate information about the life cycles of different living organisms.
   a. Ask questions to determine the sequence of the life cycle of common animals in your area: a mammal such as a cat, dog or classroom pet, a bird such as a chicken, an amphibian such as a frog, and an insect such as a butterfly.
   d. Develop models to illustrate the unique and diverse life cycles of organisms other than humans.

Crosscutting Concept: Patterns, Change

Other Content Areas:

ELAGSE2RI4 Determine the meanings of words and phrases in a text relevant to a grade 2 topic or subject area.

ELAGSE2W2 Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.

ELAGSE2W3 Write narratives in which they recount a well-elaborated event or short sequence of events, include details to describe actions, thoughts, and feelings, use temporal words to signal event order, and provide a sense of closure.

ELAGSE2W5 With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.

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). ELAGSE2W8 Recall information from experiences or gather information from provided sources to answer a question.

ELAGSE2SL1 Participate in collaborative conversations with diverse partners about grade 2 topics.

ELAGSE2L1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
**ELAGSE2L2** Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

**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.

**ELAGSE2L5** Demonstrate understanding of word relationships and nuances in word meanings.

**ELAGSE2L6** Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe

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**Instructional Design**

**Teacher notes:** By the end of second grade, students should understand that animals have predictable characteristics at different stages of development. Determining the sequence of the life cycle of common animals in your area will help them notice these patterns. Animals grow and change. Adult animals can have young.

**DISCLAIMER**

The books used as examples for the Georgia Home Classroom’s Digital Learning Plans were selected by Georgia teachers to reinforce skills and knowledge found within the Georgia Standards of Excellence. The Georgia Department of Education (GaDOE) cannot and does not endorse or promote any commercial products, including books. Therefore, the books that were selected serve as examples and are not endorsed or recommended by the GaDOE. Please remember that when selecting books to support instruction, Georgia’s public school teachers and leaders should consult their local school district’s policy for determining age and content appropriateness for their students.

**Engage**

**Phenomenon:** Adult butterflies do not look like their young.

Show students a [picture](#) of a butterfly egg and ask them what they think it is. Then show them a [picture](#) of an adult butterfly. Have the share what they see. Using both pictures, explain to students that the first picture is a butterfly egg. Ask students how they think the butterfly changes over time. How does it go from the egg to the adult? Have students develop questions to investigate how butterflies change over their life cycle.

**Explore**

Have students observe and record changes in the butterfly by watching a [time lapse video](#) (2:02).

Read aloud or have students read, [The Lifecycle of the Monarch Butterfly](#).

Have students obtain more information about the life cycle of a butterfly using [My Monarch Butterfly Coloring Book](#), free from the Georgia Department of Natural Resources. Provide printed copies of the coloring book for unplugged students.
Discuss some of the new words they may have encountered. You can select the words you wish to use as a class to describe the stages: the egg, larva (caterpillar), pupa (chrysalis), and adult butterfly. You can explain to students that there are different, acceptable terms. Noticing the cycle and the changes is your focus.

**Explain**

Students should **develop a model** (diagram) to describe the changes during the life cycle of butterflies. Students may draw their own pictures, or you may provide the pictures from the phenomenon activity in addition to **pictures** of the caterpillar and chrysalis. Have students place the photos or drawings in the correct order. To focus on sequence and sequence words, explicitly discuss with them “first, next, then, and finally.” This will help them when they later write. Have them share verbally in an online class session, uploaded in a shared site, via email or with someone in their home if unplugged.

**Questions to initiate discussion:**

* What do we mean when we describe a life cycle?
* What organisms do you know that have a life cycle?
* What patterns are similar for all life cycles?

Have students reflect about how they have grown and changed since they were born. Have them spend time with their families looking at any baby pictures they may have (or pictures of them when they were younger). Have them discuss how they have grown and changed over time. How will they continue to grow and change as they become adults?

**Elaborate**

Have students study another animal as a class, from a list provide by the teacher, or of their own choosing. Students who have pets are often eager to share stories about their animals.

Readworks.org is a free site for reading material. Do a search for “life cycle” to find various reading pass about the life cycle of frogs, butterflies and more. You will need to provide print material for unplugged students.

Some other possible time lapse videos may be helpful to provide observation opportunities for students:

- **Frogs** (1:53)
- **Chicken** (4:46)
- **Bees** (1:08)

**Evaluate**

Informative writing: Students develop a model for the life cycle of another organism showing the stages and identifying patterns in the life cycle of their organism and the butterfly. Have students, in
writing, compare and contrast the life cycles of the two. Using interest (the organisms they select), you may be able to group student into writing circles. Brainstorm words and ideas. Allow them to work with peer editors online or with their families if unplugged. Remind them of the sequence words (first, next, ...) they may want to include.

![Image of student work]

**Literacy Connection**

There are many great informational books about life cycles. Check with your school and local library for great sources. For a classic, consider Eric Carle’s *The Very Hungry Caterpillar*. Plugged students can access [Eric Carle reading his book](#), but for unplugged students this book is common in most school and public libraries. Discuss with students if they think a caterpillar would eat all those foods? In this text the term cocoon is used (yet another word to introduce them to!).

Creative Writing: Have students write about what they would want to eat if they were a hungry caterpillar. Follow the pattern of one thing on Monday, two things on Tuesday, etc.

<table>
<thead>
<tr>
<th>Evidence of Student Success</th>
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<tbody>
<tr>
<td>Completion of the life cycle diagram chart</td>
</tr>
<tr>
<td>Student explanations and discourse</td>
</tr>
<tr>
<td>Informative writing comparing and contrasting the life cycles of two organisms</td>
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</tbody>
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Georgia Department of Education

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Student Learning Supports

The goal for science education in the state of Georgia is as follows: All Students, over multiple years of school, actively engage in science and engineering practices and apply crosscutting concepts to deepen their understanding of the core ideas in these fields. The learning experiences provided for students should engage them with fundamental questions about the world and with how scientists have investigated and found answers to those questions. This lesson includes the disciplinary core ideas, science and engineering practices and crosscutting concepts to actively engage students in exploring science concepts with real world topics. As part of the vision, we must support the inclusion of all students in science learning.

Some general strategies to include all students in the learning process of science are as follows:

- Provide consistent and positive feedback.
- Keep directions brief and clear.
- Make sure parents and students know schedules, due dates, requirements, expectations, and how assignments/tests are going to be collected.
- Share evaluation results in a timely manner to students and parents.
- Package assignments in a way that students know the sequence, what is required, when it is required, what is available as choice and what is for fun.
- Provide/encourage organizational strategies such as where to work, store work, when and where to turn in assignments, graphic organizers, etc.
- Provide reminders of important dates and requirements.
- Go over notebook and journal ideas and share your entries with students so they can see what you expect.
- Allow dictation and/or text to speech software programs and tools.
- Check in with students by phone or online to answer questions, give reminders, and check progress.
- Provide parents with updates on progress and upcoming assignments. Communicate often.
- Provide resources that students can access offline.
- Allow students to give information orally or in drawings.
- Model expectations and demonstrations in video/online/phone.
- The teacher should have students match letter prior to reading or writing to remind them of the alphabet.
- The teacher can have students identify words that they know in any text that they are reading.
- The teacher can provide students with sentence frames to assist students frames to help students get started writing.
- Provide students with the opportunity to interact with numbers.
- The teacher should provide multiple ways for students to gain and show their knowledge.

Some strategies specific to this lesson are as follows:

- Ask students to share observations about how things change. This could be life or other changes as a way for students to think about changes happening in life.
- The teacher should consider giving students one question at a time as a way to guide discussion.
• The teacher should have clear and consistent guidelines for discussion and sharing. This should make students feel more comfortable and be more likely to share.
• One way to assist in student engagement is to ask students if they have questions and write those questions down. Then record answers if you find them as you work through the lesson.
• The teacher should consider discussing with students the difference in an observation and an inference.
• The teacher may need to show the time lapse video more than once to allow students to make observations.
• The teacher may need to remind students to record their observations in a way that works for them. This could mean that they write something or draw something or both.
• The teacher should consider read aloud for students anytime they are reading.
• The teacher may need to consider having a printed copy of the coloring book.
• The teacher should allow students to make models in different formats. These formats could include drawn, made using common items, using printed pictures with added information by the student or verbally explaining.
• The teacher should consider a card sort to help students put the life cycles in order.
• The teacher should consider modeling to students using first, next, then, and finally as part of telling a story or cycle.
• The teacher should make every effort to allow all students to have an opportunity to share.
• Be sensitive to families that may not have pictures of students as babies or when they were younger for various reasons. We do not want them to feel that they are unable to participate. Consider having some generic baby, toddler, and child pictures to show as needed to be inclusive. Or consider sharing your own.
• The teacher should offer students some choice of animal to study the life cycle of next.
• The teacher should use age-appropriate articles, video, and images to give students information in a variety of ways.
• The teacher should consider providing students with a graphic organizer to organize their ideas before writing.
• The teacher should have a clear and consistent writing process for students to use as they work to write. Also, consider that some students may struggle with writing and benefit from showing their knowledge in a different way in place of or prior to writing.

Engaging Families

• Element c of this standard deals with animals’ roles in pollination. While we do not address that in this sample, you may move on from there to that topic. You may want to encourage families to become citizen scientists. Each August, Georgia has a great pollinator count. For more information of ways to get involved and for activities to do any time of the year, visit https://ggapc.org/
• Check local libraries for books on life cycles.
• Encourage nature walks to look for various animals and discuss their life cycles.
• Sharing pictures of family members at various stages of their life is a fun way to engage in conversation around how we humans grow and change over time.
Phenomenon Photos

"Monarch butterfly egg on a milkweed leaf" by Lorie Shaul is licensed under CC BY-SA 2.0

"Monarch Butterfly" by Creativity+ Timothy K Hamilton is licensed under CC-BY-NC-ND 2.0
Life Cycle of Monarch

"Monarch Chrysalis" by SidPix is licensed under CC BY 2.0

"Monarch caterpillar (Danaus plexippus)" by sankax is licensed under CC BY-NC 2.0
Butterfly Life Cycle Diagram

First

Next

Then

Finally