# Idaho Core Teacher Network Unit Plan

## First Grade Life Cycles

<table>
<thead>
<tr>
<th><strong>Unit Title:</strong> First Grade Life Cycles</th>
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<tr>
<td><strong>Created By:</strong> Lindsay Durkin</td>
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<tr>
<td><strong>Subject:</strong> Science</td>
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<tr>
<td><strong>Grade:</strong> 1st</td>
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<tr>
<td><strong>Estimated Length (days or weeks):</strong> 6 weeks</td>
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## Unit Overview (including context):

This unit is a first grade favorite! Life cycles are an ongoing process that students are able to witness in nature and in their daily lives. For this six week unit, my first graders will become researchers and will take on a research project focusing on a plant or animal life cycle of their choosing. Throughout this unit, students will have opportunities to observe a variety of plant and animal life cycles in our community by going on a field trip to the MK Nature Center, growing sunflowers and dissecting lima beans in the classroom, and going on a nature walk on the Greenbelt bike path. This unit was created for a first grade class at an international public charter school in Boise, Idaho.

## Unit Rationale (including Key Shift(s)):

- **Central idea:** Living things change through natural cycles.
- **Lines of Inquiry:**
  - Cycles in nature
  - The effects of seasonal cycles on plants and animals
  - How our world changes through natural cycles

**Shift Four:** Students will collaborate effectively for a variety of purposes while also building independent literacy skills.

## Targeted Standards (Module 2):

<table>
<thead>
<tr>
<th>Essential Question(s)/Enduring Understandings (Module 4):</th>
<th>Measurable Outcomes (Modules 6 and 8):</th>
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<tr>
<th>Idaho Core Grade-Level Standards:</th>
<th>Learning Goals ( Desired Results):</th>
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<tbody>
<tr>
<td><strong>Science:</strong></td>
<td>• Students will research a plant or animal life cycle.</td>
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<tr>
<td>1.S.3.1.2 Describe the life cycle of an animal (birth, development, reproduction, death). (547.01.a)</td>
<td>• Students will understand the life cycle of their plant or animal.</td>
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<td>1.S.3.2.1 State that living things need food to survive. (548.01.a)</td>
<td>• Students will show their knowledge of their plant or animal.</td>
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<td><strong>Language Arts:</strong></td>
<td><strong>Success Criteria ( Evidence):</strong></td>
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<tr>
<td>1.LA.2.1.2 Participate in connecting the information and events in texts to self and to the world.</td>
<td>• Students will create a visual representation of a plant or animal life cycle.</td>
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<td>1.LA.2.1.3 Participate in drawing conclusions based on information gathered from pictures and print.</td>
<td>• Students will draw, label, and sequence a plant or animal life cycle.</td>
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<td>1.LA.2.2.3 Identify facts and sequence important information from expository text into correct order using pictures clues.</td>
<td>• Students will write, in sequential order, the life cycle of a plant or animal using the transition words: first, next, then, last.</td>
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<td>1.LA.6.1.4 Listen to acquire information from a variety of sources.</td>
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<td><strong>Writing:</strong></td>
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<td>W.1.2. Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.</td>
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<td>W.1.5. With guidance and support from adults, focus on a topic, respond to questions and</td>
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<td><em>What is a cycle?</em></td>
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<tr>
<td><em>What changes can be seen in nature?</em></td>
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<tr>
<td><em>How does our world change through natural cycles?</em></td>
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suggestions from peers, and add details to strengthen writing as needed.

W.1.7. Participate in shared research and writing projects (e.g., explore a number of “how-to” books on a given topic and use them to write a sequence of instructions).

W.1.8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

**Summative Assessment (Module 6):**

- **Summative Assessment Description:**
  - Life cycle sequencing activity – students will write about their plant or animal's life cycle using the transition words: first, next, then, last.
  - Students will create a visual representation (poster, PowerPoint, diagram, etc) of a plant or animal life cycle of their choosing and will draw and label the life cycle.
  - Pre and Post-assessment: students will be asked to draw and label a plant or animal life cycle.
  - Rubric for summative assessment

**Central Text:** *A Butterfly is Patient* by Dianna Hutts Aston

**Text Complexity Analysis (Module 3):**

- **Quantitative:**
  - **Lexile measure:** Lexile AD1040L
  - **Range:** 800-1050
Text Structure (story structure or form of piece):
The meaning of the text is complex because of the vocabulary and depth of knowledge required to make sense of the information. Students will learn about various elements of the life of a butterfly through the informational complex structure of this text. The pictures will help students to make sense of the information, as well as the projects we complete simultaneously in class.

Language Clarity and Conventions (including vocabulary load):
The language features are complex because this text combines familiar information and vocabulary with new, unfamiliar language. Students will need multiple opportunities to process the information and make connections.

Levels of Meaning/Purpose:
The levels of meaning and purpose are complex because it is literal information about the life cycle of butterflies. Although there are various kinds of butterflies, they all go through the same process. This text uses some simple conventions and text structure while also incorporating complex vocabulary. However, the events are in chronological order and the graphics are simple, which helps students understand the purpose and meaning of each page of the text.

Knowledge Demands (life, content, cultural/literary):
Knowledge demands are somewhat complex because students may have experience with life cycles. However, through in class projects and experiments, students will have hands-on experience with the process as we read it and experience it simultaneously. This will build on their prior knowledge as well as new knowledge. Students who many not have background knowledge on life cycles will be able to slowly process this new knowledge and physically apply it.

● Reader-Task:
This text should be read aloud to 1st graders but could be used for guided/independent reading material for readers in 2nd through 6th grade. Life cycles are an important part of the curriculum up through high school and this text could be useful in any/all grade levels.
A Butterfly is Patient by Dianna Hutts Aston is a beautifully illustrated, informational text that describes not only the life cycle of butterflies, but also the many characteristics of butterflies. Students will learn the life cycle of a butterfly, why they are helpful to the environment, how they protect themselves from predators, what they eat and drink, and various other things not typically known about these interesting creatures. Students will also be exposed to vocabulary words such as: molt, chrysalis, pollination, camouflage, proboscis.

Other materials/resources (including images and videos):

- The Life Cycle of a Butterfly by Robin Merritt
- The Life Cycle of a Butterfly by Colleen Sexton
- A Butterfly’s Life by Ellen Lawrence
- Looking at Life Cycles: Butterfly by Victoria Huseby
- The Tiny Seed by Eric Carle
- Scholastic Teacher Resources webpage that includes free plant and animal life cycle resources for kids. Resources include: printable booklets, word wall resources, diagrams, crafts, and videos. [http://www.scholastic.com/teachers/2014/04/10-ready-go-resources-teaching-life-cycles](http://www.scholastic.com/teachers/2014/04/10-ready-go-resources-teaching-life-cycles)
- Variety of books on various plant and animal life cycles from the public library

Differentiation/Supports for Students:

- Think-alouds and discussions
- Small group work
- Additional vocabulary instruction
- Visual aids and supports
- Additional books for both low and high readers

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<tr>
<th>Vocabulary Instruction (Module 9)</th>
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<tbody>
<tr>
<td><strong>Targeted Academic Vocabulary</strong> &amp; Unit days that they are taught, revisited, and assessed</td>
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<tr>
<td><strong>Targeted Content Area Vocabulary</strong></td>
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<tr>
<td>Vocabulary is taught at a different time of day.</td>
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Vocabulary is taught at a different time of day.
- Illustrate
- Vocabulary
- Environment
- Investigate
- Observation
- Experiment
- Life cycle
- Plant
- Shelter
- Caterpillar
- Insect
- Migrate
- Pollination
- Camouflage

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<thead>
<tr>
<th>Activity/Strategy</th>
<th>Texts and Resources</th>
<th>Instructional Notes</th>
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<td>Frontloading</td>
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<td>Pre-assessment for the unit: students will be asked to draw and label a life cycle. This can be any plant or animal life cycle they know of and/or have seen in person. Begin KWL chart—just the K and W sections. Teacher will ask students what they already know about life cycles (plant and animal) and record prior knowledge under the “K” column. Teacher will then ask students what they want to know about plant and animal life cycles. Teacher will record these wonderings under the “W” column of the chart. Teacher should explain that the “L” column will be used at the end of the unit to record what students learned about plant and animal life cycles throughout the unit. Prep: Order caterpillars! <a href="http://www.insectlore.com/live-butterfly-gardens/butterfly-pavilion-school-kit-with-live-caterpillars">http://www.insectlore.com/live-butterfly-gardens/butterfly-pavilion-school-kit-with-live-caterpillars</a></td>
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<td>Day(s) <em>1</em>____:</td>
<td>Pre-assessment paper, Anchor chart paper for KWL chart.</td>
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<td>Activities/Strategies: Pre-assessment and KWL chart</td>
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<td>Day(s) <em>2</em>____:</td>
<td>Variety of plant and animal life cycle books and pictures.</td>
<td>Students will explore a variety of books and pictures on plant and animal life cycles and will record which ones they are interested in researching on their own later in the unit.</td>
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<td>Activities/Strategies: Unit provocation</td>
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<td>Day(s) <strong><strong>3</strong></strong>:</td>
<td>Activities/Strategies: Field trip to the Greenbelt</td>
<td>Students will go on a nature walk along the Boise Greenbelt bike/walk path to observe life cycles in nature. Students will use a graphic organizer to write words and draw pictures to describe any plant and/or animal life cycles they witness while out on their nature walk. For example, a student might draw a picture of a squirrel they encounter or write the words “baby tree” to describe a new sapling they noticed.</td>
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| Day(s) ____4____: | Activities/Strategies: Plant sunflowers | Today students will get to plant two sunflower seeds! Prior to beginning the experiment, pass out the second page of the seed observation journal. Have students make a prediction about what they think they're going to plant. Give students a minute or two to share with the people at their table or with their neighbor what their prediction is. While they are making predictions, write each student's name on a clear, medium-sized cup with a sharpie. After everyone has made their prediction, give students clues as to what it is: for example, it's yellow, it makes people happy, it loves the sun, you can't eat it, it's big, it's a flower, etc. You can even show them the seed to see who is already familiar with this kind of seed.

Once they have guessed what it is and/or you've revealed it to them, pass out the cover page of the seed observation journal. Give students time to decorate the cover page and the prediction page. Inform students that they are going to begin an observation journal to track the progression of their sunflower’s growth. Every day or two they will write the date of their observation, write a sentence to describe what is happening or has happened to their seed, and draw a picture of the current phase of the life cycle.

Time to plant! While you are helping students get their seeds planted, play The Magic School Bus: Gets Planted. Instruct two students at a time to dip their cup into the bag of potting soil and fill it to the bottom line on the cup. Then, put two sunflower seeds on the soil. Last, using their hands, sprinkle more soil over the seeds, covering them. Have a place in the classroom near a window ready for students to place their cups and water them as needed. |
| Day(s) ____5____: | Activities/Strategies: Observations | Students will complete their first sunflower observation today! Have students collect their cup and take it to their seat to observe. They should write today's date on the top of the page, followed by a brief description of what they observe. At this point, nothing has most likely happened but students should record the beginning of the life cycle and draw a picture of the cup with soil in it. During these first few days of observations, have students keep a close eye on the bottom of their cup. They might not see much happening above the surface of the soil; however, roots may be visible at the bottom of the cup!

*Prep for tomorrow: soak enough Lima beans for your entire class in a bowl of water overnight for tomorrow's activity. Write the names of each of your students on a quart-size Ziploc bag.* | Seed Observation Journals | |
| Day(s) ___6____: | Activities/Strategies: Read aloud Lima bean dissection | Read aloud: *The Tiny Seed* by Eric Carle  
Lima beans *Inside a Seed worksheet*  
Today students will begin looking at the parts of a seed. Begin by reading aloud *The Tiny Seed* by Eric Carle. Following read aloud, pass out the Inside a Seed worksheet and a dry Lima bean to each student. Go through the first two questions ONLY.  
Then, pass out a wet Lima bean that you soaked overnight to each student and continue with the rest of the questions. Turn the page over and discuss the plant parts with students. Collect dry Lima beans and save them for tomorrow's experiment and throw wet Lima beans away. |
| Day(s) ___7____: | Activities/Strategies: Begin lima bean experiment  
Dry Lima beans  
Wet paper towels  
Ziploc bags with student names on them. | Pass out dry Lima beans and ask students: if all a Lima bean needs to live is water and sunlight, if they think it can grow. You can take a vote of who thinks it will grow and who doesn't and graph your results.  
Once each student has a dry Lima bean, have them take a wet paper towel, fold it in half twice, and place it in their Ziploc bag. Once the towel is in the bag, have students lay their Lima bean against the towel. You should be able to see the Lima bean resting against the paper towel in the bag. Close the bags and tape them on a window or wall in the classroom. |
| Day(s) ___8____: | Activities/Strategies: Observations of sunflowers and Lima beans  
Seed observation journals  
*A Plant Begins daily log of observations* | Begin today by having students complete the next observation page in their seed observation journal.  
By now, some roots should be showing and/or a seed may be beginning to sprout.  
Following the sunflower seed observation, pass out the *A Plant Begins daily log of observations* book for students to use for their Lima bean experiment.  
Students will use this daily log to observe their lima beans and record any progress/changes. |
| Day(s) ___9____: | Activities/Strategies: Field trip!  
*MK Nature Center field trip.*  
Parent volunteers needed. | Field trip to the MK Nature Center! Students will walk around the center in small groups and observe plant and animal life cycles in nature. Students will also record their observations on a recording sheet.  
*Prep for tomorrow: Butterflies should have arrived. Transfer caterpillars into individual cups with students’ names on the cups.* |
| Day(s) ___10____: | Activities/Strategies: Whole class KWL  
Caterpillar meet and greet  
Anchor chart paper  
Markers  
Caterpillars! | Today you will begin modeling the summative research project by researching the life cycle of a butterfly as a class. Begin by displaying two anchor charts, one for the K and one for the W portion of a KWL chart. Ask students to turn and talk to their neighbor and/or discuss in table groups about what they already know about the butterfly life cycle. Ask groups to share out and record their responses on the K paper. Then have students turn and talk again but this time have them discuss what they would like to know about the butterfly life cycle. Record student responses as they share out on the W paper. |
Following the KW activity, it’s time to show students their new desk friends! Show them one of the caterpillars that’s in a cup and tell them that they will be raising butterflies for the next two weeks! In order to best complete research on the butterfly life cycle, we have an amazing opportunity to watch it happen before our very eyes! Prior to handing out individual caterpillars to each student, create another anchor chart called Butterfly Essential Agreements. Discuss with students what some of the class expectations should be for interacting with the caterpillars and behavior expectations for keeping the caterpillars at their desks or on their tables. Once students have agreed to the essential agreements, pass out the caterpillars and allow students to have some bonding time with their new friend! I encourage students to name their caterpillar and find a safe space at their seat for it to live. Avoid the end of tables and desks or sitting on top of something else.

| Day(s) ___11____: | Seed observation journal  
A Plant Begins log 
Butterfly Observation Journal | Today students will observe their caterpillars and record their observations in their Butterfly Observation Journals. Allow students time to decorate the cover page and to complete their first observation of their caterpillar. Students should draw a picture of what their caterpillar looks like using lots of details. Students should also write a sentence or two describing what their caterpillar looks like, its location in the cup, what its name is, etc. Once they finish their caterpillar observation, students should move on to completing the next observation page in both their seed observation journal and their lima bean log. |
| --- | --- | --- |
| Day(s) ___12____: | A Butterfly is Patient books for students | Whole group close read of A Butterfly is Patient. Directions for this activity are on page 12 of the unit. 

*Prep for tomorrow: put one of each of the following into a small Ziploc bag: shell, rotini, and bowtie pasta, as well as a navy bean for the egg.* |
| Day(s) ___13____: | Pasta: Shells, rotini, and bowtie. 
Navy beans 
Pasta plates 
Markers 
Liquid glue 
Observation journals for caterpillars, sunflower seeds, and lima beans. | To reinforce the concepts from yesterday, today students will create the butterfly life cycle using various kinds of pasta! Put the following words on the board: egg, caterpillar, chrysalis, and butterfly. Pass out the paper plates and have students put their name on the back of the plate prior to starting the craft. Then show them how to partition their plate with a marker into four, equal pieces. Have them follow along as you write the words: egg, caterpillar, chrysalis, and butterfly in each of the boxes, using arrows to connect each stage. Then it’s their turn! Tell students that it’s their job to match the pasta pieces, and the navy bean to the correct box on their plate. If they need help getting started, ask students to find one of the stages; for example, “looking at your supplies, which object looks like a caterpillar?” Students should find the rotini pasta. Once students are able to match their pasta pieces to the correct box on their plate, instruct them to glue it down. |
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<tr>
<th>Day(s)</th>
<th>14</th>
<th>Activities/Strategies: Choose life cycle for independent research; complete individual KW portion of the chart</th>
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<td>Student notes from unit provocation: <strong>KWL charts for students</strong></td>
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<td>Begin today by having students locate their notes from the unit provocation and choose one plant or animal that they’d like to research on their own. Record what each student chooses so you can inform parents and families as to what they’re doing. Once they’ve chosen a plant or animal, pass out the individual KWL charts. Students should be familiar with the format at this point and should begin filling out the K and W portions. They probably won’t have much, if anything, to put in the K section and that’s good! However, for the W section, students should come up with at least three questions they have about their plant or animal. Following the K &amp; W sections, discuss the final project with students. Their final task will be to research their plant or animal, create a visual representation of that plant or animal’s life cycle, and finally, write the life cycle using the transition words: first, next, then, last. Begin by creating an anchor chart with a project to-do list. The first thing students need to do is find out what the life cycle of their plant or animal is and create a rough draft sketch of it. (They will be responsible for drawing a more elaborate, detailed version later on so don’t have them spend too much time on their initial drawing). The next thing students will need to do is label the stages of the life cycle (for example, does it begin as a seed, an egg, or is it born alive?). As students explore their books and other resources, encourage them to record any other interesting facts they may find.</td>
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<td>Day(s)</td>
<td>15</td>
<td>Activities/Strategies: Research</td>
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<td>Blank white paper for life cycle rough drafts and lined paper for writing any additional information. Books and visuals for student research. Computers, iPad’s, community members, parent volunteers.</td>
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<td>Student research day! Today students should finish the K &amp; W sections of their KWL if they didn’t finish yesterday, then begin or continue their research. Again, they should focus on first figuring out what their organism’s life cycle is, put it in sequential order, and label it. If they have finished their rough draft sketch of the life cycle, students should collect additional information and facts that they find interesting; They will need this for the writing portion of the project. Today, students should also complete observations of their caterpillars, sunflower seeds, and lima beans and record observations in each journal.</td>
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<tr>
<td>Day(s)</td>
<td>Activities/Strategies: Work Day</td>
<td>Observation books for caterpillars, sunflower seeds, and lima beans.</td>
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<td>16</td>
<td>Books and pictures for research purposes. Manuscript paper for rough drafts.</td>
<td>Student work day continued. Introduce writing portion to the whole class so those who are ready may begin. Using manuscript paper, students will begin writing out each stage of their plant or animal’s life cycle using the transition words: first, next, then, last. Along with telling what each stage is, students will also be required to add an additional sentence with a fact about that stage. For example: First, it is an egg. A father seahorse can lay as many as 1,800 eggs! (See last page of unit plan for student exemplars)</td>
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<tr>
<td>17</td>
<td>Books and pictures for research purposes. Manuscript paper for rough drafts. Poster boards, markers, etc. for visual representations. Observation journals for caterpillars, sunflower seeds, and lima beans.</td>
<td>Student work day. Today students should be finished with their rough draft sketch of the life cycle, including labels. They should be working on the rough draft of their writing today and tomorrow. If students are done with the writing, they can begin working on the final draft of the visual representation portion of their project. For example, if a student has chosen to make a poster, they can begin drawing their plant or animal’s life cycle on poster board, making sure to label each stage and use color. Today students should also complete observations of their caterpillars (who may be in their chrysalis at this point), sunflower seeds, and lima beans and record observations in each journal.</td>
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<td>18</td>
<td>Manuscript paper for rough drafts and poster boards, markers, etc. for visual representations</td>
<td>Student work day. Students should finish their rough draft of both the life cycle drawing and the writing piece today! They will be editing tomorrow so they’ll need to have the rough draft of their writing done today. If students are done with the writing piece and are waiting to edit, have them continue to work on the visual representation piece, i.e. a poster, PowerPoint, diagram, etc., and/or assist other students.</td>
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<td>19</td>
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<tr>
<td>Activities/Strategies: Editing/revising</td>
<td>Editing checklist for feedback</td>
<td>Today students will edit their rough draft of their writing. The teacher should begin by modeling how to give and receive verbal feedback using a checklist; this could involve acting it out with a student volunteer and/or giving examples and nonexamples of positive feedback. Students will then peer edit the writing portion of their project and give verbal and written feedback using a peer editing checklist. My students met with a class of second graders and had them help edit their pieces. The second graders also used the checklist so they knew what to look for and what to help the first graders with. If you are able to meet with another grade level I highly recommend it. The same group of second graders was then able to come to the gallery walk at the end of our unit to see the first grader’s final products.Observe caterpillars/butterflies and record observations in Butterfly Observation Journal.</td>
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<td><strong>Day(s) <strong><strong>20</strong></strong>:</strong></td>
<td>Books and visuals Art supplies: Paper, markers, poster boards, etc. <em>The Magic School Bus: The Butterfly and the Bog</em></td>
<td>Now that students have finished editing with their peers, it’s time for them to edit with the teacher. As you call each student back one at a time to edit and revise their writing piece with you, play <em>The Magic School Bus: The Butterfly and the Bog</em>. You could also have students continue working on their visual representations during this time. <em>Contact parents, families, and staff members regarding the upcoming gallery walk! The more the merrier!</em></td>
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<tr>
<td>Activities/Strategies: Work Day</td>
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<td><strong>Day(s) <strong><strong>21</strong></strong>:</strong></td>
<td>Books and visuals Art supplies: Paper, markers, poster boards, etc.</td>
<td>Student work day. Students will continue working on their written final drafts and visual representations today. When they finish their writing, they should attach it to their visual. For example, if a student chose to make a poster, the student should have their life cycle image on one side and their written piece either off to the side or on the back.</td>
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<td><strong>Day(s) <strong><strong>22</strong></strong>:</strong></td>
<td>Any resources or materials students will need to complete their projects.</td>
<td>Final work day for projects! Students will finish their written piece and will put the final touches on their visual representations. Observe butterflies and record last observations in Butterfly Observation Journal.</td>
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<td>Activities/Strategies: Work Day</td>
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| **Day(s) ____23____:** | Mock-gallery walk/ student presentation practice | Students will share their presentations with each other in the classroom by setting them up on desks or any other available space around the room. Students will take turns walking around and observing their classmate’s projects. While students are observing they will practice giving and receiving verbal feedback from their peers. Students can use sentence starters such as, “I like _____”, “My favorite part
is ____”, “I like how you ____”, “It would help me understand better if you ______”, “That part is confusing to me because____”, etc.

Following the mock-gallery walk students will need time to make any last minute corrections/adjustments based on feedback they received.

| Day(s) ___24____: | Activities/Strategies: Gallery walk! Final presentations! Parents and any available classes, staff, members, etc. from the school community. | Gallery walk day! Students will share their presentations with family and friends in the classroom! Students will describe their plant or animal’s life cycle to people attending the gallery walk. They will also be available to answer questions from participants. Complete a rubric for each student before sending projects home. Release butterflies to celebrate! |
| Day(s) ___25____: | Activities/Strategies: Post-assessment | Today students will complete their final activity for this unit. Pass out the post-assessment paper and ask students to draw and label a life cycle. Just like the pre-assessment, they can draw any plant or animal life cycle that they know about, including the one they did their project on. |

**Close Reading Activity (Module 7)**

This activity will take place during week three of the unit.

The close reading activity will serve as part of the culminating task we complete as a class prior to students choosing their own animal and beginning their own research. The activity will prepare them to close read during their independent research.

*Pre-reading:*

- Review familiar vocabulary: antennae, caterpillar, insect
- Teach new vocabulary: chrysalis, migrate, pupa, molt, pollination, camouflage, and proboscis.

*During reading:*

1. Teacher reads the main selection text aloud with students following along.
2. Students and teacher re-read the text while stopping to respond to and discuss the questions and returning to the text. A variety of methods can be used to structure the reading and discussion (i.e.: whole class discussion, think-pair-share, independent written response, group work, etc.)

*For the culminating activity students will:*

- Re-Read, Think, Discuss, Write
- **Text Structure:** Authors tell things in sequence. What order of events does the author use to tell you about the lifecycle of a butterfly?
- Students will use a graphic organizer to list each event in order.

### Text Excerpt

1. Teacher reads the main selection text aloud with students following along.
2. Students and teacher re-read the text while stopping to respond to and discuss the questions and returning to the text. A variety of methods can be used to structure the reading and discussion (i.e.: whole class discussion, think-pair-share, independent written response, group work, etc.)

### Text-Dependent Questions

- **Pre-reading:**
  Based on the description, “an insect has six legs and antennae, or feelers, on its head”. What other insects do you know of that have the same attributes? Turn and tell your partner.
- How does the caterpillar get out of the egg? Use the text to show how you know.
- What does the caterpillar do to grow bigger?
- About how long does it take for the caterpillar to reach the pupa stage? Use the text and illustrations to show how you know.
- A pupa is the stage between larva and adult. Then a chrysalis forms. Find the sentence that tells why the chrysalis grows a shell around itself.
- What is happening inside of the chrysalis? Use the text to show how you know.
After the caterpillar hangs from a stem, it has to wait before it can split its skin. What clues tell you whether it waits for a short time or a long time?

How does the picture on page 14 help you understand what is happening to the caterpillar? Turn and tell your partner what you notice.

Why are the butterfly’s wings important?

What do you think will happen next? How will the cycle continue? Use the pictures and the text to support your answer.

How do butterflies help plants?

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**Scaffolds and Extensions (Module 5)**

**UDL Components:**
- **Representation:**
  - 1.1, 1.2, 1.3
  - 2.1 2.5
  - 3.1 3.2
- **Action and Expression:**
  - 4.2
  - 5.3
  - 6.1, 6.2, 6.3, 6.4

**Support for students who are ELL, have disabilities or read well below grade level text band:**

**ELL students:**
- Literacy opportunities for ELL students—multiple language resources.

**Extensions for advanced students:**
- If students already know what a life cycle is and need an extension following their independent research:
  - Compare/contrast life cycles
  - Further research unanswered “W” questions
<table>
<thead>
<tr>
<th>Engagement:</th>
<th>Opportunities for ELL students to communicate with other students about the content.</th>
<th>On-going assessment and feedback from teachers</th>
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<td>o 7.1, 7.2, 7.3</td>
<td>o 8.1, 8.3, 8.4</td>
<td>o 9.1, 9.2, 9.3</td>
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</tbody>
</table>

**Students with disabilities:**
- Appropriate resources
- Instructional accommodations as stated in the student’s IEP (i.e.-- Small group and/or individual instruction)
- Smaller and shorter pieces of work to complete.
- Assistive technology devices and services.

**Students who are below grade level:**
- Teachers can adjust the writing requirements and/or use a scaffolded writing paper.
- Students could watch a video and take notes instead of reading.
- Provide students with a KWL that has sentence starters.

**Students with disabilities:**
- Quick write about what else they know about living things –adaptations, endangered species, and food webs.
- Students could complete a narrative writing piece from the perspective of their animal. (The book *Diary of a Worm* is a great example of this.)
- Provide higher level reading material
- Assist struggling students.
- Teachers can write down what students say then have the student copy what the teacher wrote.

Other (important elements not captured in this template, explanation, reflection supplementary materials):

Student samples of final projects:
First, they steal another bird's nest.
Next, the mother lays eggs and they hatch one day early. Then, the eggs hatch. Last, the baby bird learns how to fly.
The Life Cycle of an Octopus

Adult → Cogs → Young

[Diagram showing life cycle stages with images of various stages of development]
First, egg. Adult octopus can lay as many as 10000 eggs. Next, they are a young octopus. Octopus are in a group called motherless. Last, they are an adult. He uses an arm to give the females special cells to fertilize eggs.