

Day 4 Recording Information			
Reading Strategy: Reading for Specific Information on the Internet Mini-lesson Practice		Science Concept: Measuring Caterpillars	
Reading TEKS: 2.9F	Figure 19: Reading/Comprehension Skills A	ELPS: Speaking K-12, 19 TAC 74.4(c)(4) D & E	Science TEKS: 2.2(A, D); 2.4(A)
Materials for Reading Mini Lesson: chart paper, markers, butterfly inquiry chart, webpage about butterflies to model the strategy, computer and projector; list of suggested websites			
Materials for Inquiry Circle Groups: group inquiry charts, pencils, variety of nonfiction texts for each group, access to websites and online books			
Materials for Science Whole Group Lesson: See section for details.			
Content Vocabulary: Larva/larvae – Wingless, often worm-like form of a newly hatched insect (larva is singular, larvae is plural). Caterpillar – Larva of a butterfly. Butterfly – Group of insects that have four broad wings, narrow body and fly mainly in the daytime.			
Science and Literacy Connection: Scientists must determine a way to record the information they have gathered. During research, you may use an inquiry chart. During an experiment, you may record information in your science notebook.			

For an expanded version of the Standards listed above, see page 6.

Reading Mini-lesson — 15 minutes

OVERVIEW

Mini lesson practice should be used as a time to practice the reading strategies previously taught in this unit. Teachers are encouraged to use this time to best meet the needs of their students. Perhaps your class needs more time with the Mini-lesson from the day before, or you may choose to circle back to mini lessons from a week ago. The choice is yours; we just ask that you use this time to practice!

Teachers should determine if this mini lesson will be facilitated with the whole group or a small group (i.e., a particular inquiry circle group) who needs additional support. If you are working with a small group, we suggest your other learners spend additional time within the inquiry circles.

Explain the strategy:

- **Tell what the strategy is (declarative knowledge)**
 - Say something like, “Today we will continue to practice reading for specific information on the internet about the topic (butterflies). Remember, I read for specific information on the internet when my books do not have the information I need or when I need more current information.” Refer to the anchor chart previously made with the class.



- **Tell when and why to use the strategy (conditional knowledge)**
 - Say something like, “Yesterday, we talked about how I scan use keys words to scan the page and find information more quickly. I should be skeptical about what I find on the internet and only use websites that my teacher has approved.”
- **Tell how to employ the strategy (procedural knowledge)**
 - For this section in the Mini-lesson, the teacher may choose to model the strategy again for the class. Be sure to use a different text or page in the text than what you modeled yesterday.
 - Teachers are encouraged to share examples of students using this strategy from the day before. Say something like, “Mohamed’s group did a great job yesterday reading for specific information on the internet. I was so impressed when they_____.” Teachers are also encouraged to invite the groups to share with their peers. You may need to scaffold this and prepare the students for sharing beforehand.
 - If you choose to model this strategy, say something like, “If you choose to model this strategy, say something like, “The first thing I will do is think about what I need to research today!”
 - Say something like, “Now, I will look at my inquiry chart to determine what specific information I need to locate. Since we just started our research, I have to pick one thing to start with. In a few days, my chart will help me know what data is missing.”
 - Say something like, “Then I think about a few key words that I need to look for on my website.”
 - Say something like, “When I am on a website, the first thing I do is check to see if I can believe what is on the website. I will look for an author to be listed and I will be sure they are not trying to sell me something.”
 - Say something like, “I must remember to scan the entire page on the screen. Just like in a book, the text features are important and can lead me to valuable information.”
 - Say something like, “If I do not find the information I need, I should try another website.”
 - Say something like, “While scanning, I may see a hyperlink that I can click on for more information. If my mouse turns from an arrow to a hand, I know this is something I can click on. Sometimes the hyperlink will be words that are often colored or bold, and other times it may be a picture or icon. I may also see short videos to play.”
 - Say something like, “Sometimes websites have extra information that I should ignore. This could be advertisements, videos (not about my research topic), and even pop ups. I can ignore them.”
 - Say something like, “If I find myself on a website that is not useful, I can use the back button at the top of my browser to get back to the website where I started.” Alternatively, you could have websites bookmarked and have students return to the correct place using the bookmark.
 - Say something like, “Once I find the specific information I need, I must remember to record it on the inquiry chart. That includes the URL for the website I used.” You may need to model where to find the URL on the webpage and where to record it on the Inquiry chart.
 - Say something like, “This is a strategy I will use every time I read for specific information on the internet.” You may have some groups working online while others are working in traditional texts throughout the inquiry circle groups.

Inquiry Circle Groups — 30 minutes

OVERVIEW

Scientists work in teams when conducting research and experiments. Each day of this unit, students will work in inquiry circle groups while embodying the role of a scientist. They will do so by taking on roles of scientists in research by speaking like a scientist, reading like a scientist, and writing like a scientist.

PROCEDURE

Before Inquiry Circle Groups — 5 minutes

1. Say something like, “It is time to get into our inquiry circle groups. You will be with the same research team as yesterday.”
2. Say something like, “When we research organisms, we will practice our roles as scientists. We will do this because scientists have a special way in which they observe the world, read scientific texts, and write reports. There is no better way to learn about science than to become a scientist!”

During Inquiry Circle Groups — 20 minutes

1. Say something like, “We have anchor charts to help guide your thinking. Do not forget to use them while in groups.” Refer to the “Language of a Scientist” anchor chart and the daily anchor chart. Remind students that they can use all the reading strategies taught, not just the one for that day.
2. “My role is to help guide the inquiry circle groups, but I expect you to work as a scientific team to solve your problems together.
3. “Do not forget to answer your research questions and record it on the inquiry chart. It is important to record your sources on the inquiry chart as you complete it.” Be sure to explicitly explain how students should use the chart.
4. While groups are working together, walk around the room to facilitate as needed.

After Inquiry Circle Groups — 5 minutes

1. Say something like, “As we are concluding our inquiry circle groups for today, each group will have a chance to share what they accomplished and learned.”
2. “The Lab Director should lead the discussion with their inquiry circle group about today’s results. For example, what did you learn about your organism? Which reading strategies did you use? What problems did you encounter? How did you resolve those problems?”
3. “The Data Scientist will now share with the entire class either something the group learned about their organism, which reading strategy(ies) where used, or how the group solved a problem.”

Science Whole Group Lesson — 30 minutes

OVERVIEW

Students will make daily measurements of caterpillars (larvae) by comparing their lengths to small pieces of cut yarn.

GUIDING QUESTION

How do we know the butterfly larva are growing? How fast are they growing?

BACKGROUND INFORMATION

When the larva or caterpillars arrive from the supplier, they will be a few days old and approximately 10 millimeters or 1-centimeter long. Upon hatching, their first order of business will be to eat the

remainder of the egg cases they emerged from. The egg cases provide a valuable source of nutrients to the very tiny larva, giving them a quick growth spurt.

Your students will notice that the larva get longer and fatter each day from eating the pasty, light tan colored food. As they observe their larva, they will measure and record the larva growth rate.

How long and fat do they become when they finally climb to the top of their chambers and go into the chrysalis stage? Daily measurements of the larva enable students to answer this question.

SAFETY

Remind student teams to be gentle with the growth habitats as they measure larvae to prevent disturbing the animals.

It is always good to remind the students about the proper use of magnifying lenses (See safety warning in Act. 3)

SETUP

Teacher

- Before the activity, download and copy “Measuring Caterpillars with Yarn” (04-MeasureYarn.pdf), and “Team Graph: Caterpillar Growth Measurements” (04-TeamGraph.pdf) pages. Check the application print settings to ensure the files will print at the actual size of 100%. *Do not fit, shrink or scale the pages.*

MATERIALS

Per Student Team

- 1 copy of the “Team Graph: Caterpillar Growth Measurements” page
- Growth habitats with larva inside
- Hand lens
- Scissors
- White glue
- Yarn

Per Student

- 1 copy of “Measuring Caterpillars with Yarn” page

DAILY OBSERVATIONS

Once the larvae arrive, give students time to observe their organisms (whether they are in the larvae, pupa, or adult stage), take measurements of the larvae (if applicable), and record their observations in their science notebooks. Facilitate group discussions by asking questions like, “What did you notice? What has changed since the last time you observed your organisms?”

PROCEDURE

Engage

1. Begin a discussion with your students. Ask them “How do you know you are growing?” Accept all responses. Someone may say that a parent measures them. Explore this farther by asking “How do you know how MUCH you have grown?” (marks on a growth chart?) Ask them for ideas on how to best observe the growth of their larva. One or more students will likely suggest measuring them.

Explore

2. Tell the students that they will practice how to measure the larva (caterpillars). Provide each student with a copy of the “Measuring Caterpillars with Yarn” student page. Read over the instructions with them. If necessary, have the students follow your example as you complete the first part (cutting the yarn to match the sample given). When ready, have students complete the practice measurements, offering help when needed.
3. When measurements are complete, discuss any observations they want to share. (When was it the easiest to measure? When was it the hardest? Why?)
4. Discuss how students will record the measurements of their larva. Distribute the “Team Graph: Caterpillar Growth Measurements” page (1 per team). Read the instructions aloud as they follow along. Check for understanding.
5. Have student teams take the first measurements of their larva. Remind student teams to be gentle with the growth habitats as they measure larvae to prevent disturbing the animals. The growth habitats should have several larvae. Have each team member measure a different one.
6. When each team member has completed their measurements, have them compare the yarn lengths, pick the longest yarn piece and glue it to the team graph. Each day, students will repeat the measurements and select the longest yarn for gluing onto the team graph.

Note: When gluing yarn to the graphs, teams will have days in which no measurements are taken (blank days- likely on weekends).

Extend

7. After the measurement activity, ask the class “What other observations can you make and record about your larva? Accept their responses and have them consider:
 - Where the larvae are located in the chambers?
 - How much food is in the serving cup or cups?
 - How much frass (larva poop) is in the bottom of the chambers?
8. Discuss preliminary ideas about how to report their observations when the larvae go into the chrysalis stage!

Explain

9. Have students write about their measurements and observations in their Science notebooks. Give them clean “Team Graph” pages and have students draw lines to “replace” and match the length of yarn glued to the original graph page.

Evaluate

10. Check work and science notebooks for completion and understanding of the day’s activities. Did students use new science vocabulary?

Extended Standards

Reading TEKS: 2.9F Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student recognizes and analyzes genre-specific characteristics, structures, and purposes within and across increasingly complex traditional, contemporary, classical, and diverse texts. The student is expected to: (F) recognize characteristics of multimodal and digital texts.

Figure 19: Reading/Comprehension Skills. Students use a flexible range of metacognitive reading skills in both assigned and independent reading to understand an author's message. Students will continue to apply earlier standards with greater depth in increasingly more complex texts as they become self-directed, critical readers. The student is expected to: (A) establish purposes for reading selected texts based upon content to enhance comprehension

ELPS: Student Expectations for Speaking K-12, 19 TAC 74.4(c)(4) The student is expected to: (D) speak using grade-level content area vocabulary in context to internalize new English words and build academic language proficiency; (E) share information in cooperative learning interactions;

Science TEKS:

2.2 Scientific investigation and reasoning. The student develops abilities necessary to do scientific inquiry in classroom and outdoor investigations. The student is expected to:

- (A) ask questions about organisms, objects, and events during observations and investigations;
- (D) record and organize data using pictures, numbers, and words.

2.4 Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:

- (A) collect, record, and compare information using tools, including computers, hand lenses, rulers, plastic beakers, magnets, collecting nets, notebooks, and safety goggles or chemical splash goggles, as appropriate; timing devices; weather instruments such as thermometers, wind vanes, and rain gauge