

Sample Body of Evidence

Science

Grade 2 – Third Reporting Period

**FOSS California Insects and Plants
Life Science/Investigation & Experimentation**

This sample is intended to demonstrate the essential elements of a body of evidence. The evidence includes:

- Expected Student Responses to Grade Level Prompts (Science Notebook Sheets) identified in the Recommended Body of Evidence

This sample includes Expected Student Responses on Student Notebook Sheets identified in the Recommended Body of Evidence. This sample will be replaced with San Diego Unified School District proficient student work when it becomes available.

Important Note:

For the first two grading periods, students are evaluated based upon their progress toward end-of-year standards. Students who receive a mark of “proficient” for the first and second grading periods are making consistent and adequate progress toward achieving end-of-year expectations. In the final reporting period, the report card marks reflect a student’s actual achievement of the cumulated skills, strategies, and concepts identified in the California frameworks and content standards (SBRC, 2007).

**Standards Based Report Card
Science Marking Worksheet – Third Reporting
Second Grade**

Student: _____

Strand	Evidence	Notes on Quality	Report Card Mark
<p>LIFE SCIENCE</p> <p>Plants and animals have predictable life cycles.</p>	<p><u>Prompt #1a-c</u> Insect Record—No. 2—Science Notebook</p> <p><u>Prompt #2</u> Environment Review—No. 3 — Science Notebook</p> <p><u>Prompt #3</u> Flowers and Seeds Review—No. 6— Science Notebook</p> <p><u>Prompt #4</u> Brassica A—No. 7—Science Notebook</p> <p><u>Prompt #6</u> Variation Review—No. 10—Science Notebook</p> <p><u>Prompt #9</u> What Makes an Insect Review—No. 14—Science Notebook</p> <p><u>Prompt #12</u> Life Goes Around Review—No. 18— Science Notebook</p>	<p><u>Academic Language</u> Seedpod, fertilizer, leaf, soil, space, living, flower, caterpillar, environment, eyespot, female, inherit, life cycle, larva, metamorphosis, molt, characteristic, nectar, pollen, proboscis, proleg, pupa, segment, spinneret, spiracle</p> <p><u>Scientific Concept</u> Accurately draws and describes the structures, behavior, and changes of the mealworm lifecycle: larva, pupa, adult. Notes variation among the mealworm in its stage.</p> <p>Explains that the environment affects some characteristics of an organism.</p> <p>Identifies flowers that are associated with different plants and names the parts of plants important for their lifecycle.</p> <p>Identifies important elements associated with the lifecycle of a Brassica plant.</p> <p>Gives examples of variation within human and animal populations.</p> <p>Identifies the characteristics of insects (how insects resemble each other according to body parts.)</p> <p>Identifies sequential stages of lifecycles of different animals.</p>	<p>Advanced</p> <p>Proficient</p> <p>Basic</p> <p>Below Basic</p> <p>Not Assessed</p>
<p>INVESTIGATION & EXPERIMENTATION</p> <p>Scientific progress is made by asking meaningful questions and conducting careful investigations.</p>	<p><u>Prompt #1</u> Insect Record—No. 2—Science Notebook</p> <p><u>Prompt #5</u> Milkweed Bug Habitat—No. 9— Science Notebook</p> <p><u>Prompt #7</u> Life Cycle of the Triangle Bug—No. 11—Science Notebook And <u>Prompt #11</u> Life Cycle of the Square Moth—No. 17—Science Notebook</p> <p><u>Prompt #8</u> Insect Record, Silkworm—No. 2— Science Notebook</p> <p><u>Prompt #10</u> Caterpillar Structures—No. 15— Science Notebook</p>	<p><u>Data Collection</u> Uses magnifying lens to observe and draw mealworm.</p> <p>Draws and labels milkweed habitat to show what it needs to survive.</p> <p><u>Use of Data</u> Sequences the stages of an imaginary insect as it progresses through simple metamorphosis.</p> <p>Draw and/or writes descriptions of a sequence of observations of the silkworm.</p> <p>Follows oral instructions to conduct ongoing investigation. Makes and records qualitative and quantitative observations.</p>	<p>Advanced</p> <p>Proficient</p> <p>Basic</p> <p>Below Basic</p> <p>Not Assessed</p>



- What color do you think it will be tomorrow?
- Is there anything new in the vial with the white mealworm?

Hold up the *Mealworm Larva* poster and tell students, *The mealworm will go through different stages during its life cycle. The name for this life stage of the mealworm is larva. When the mealworm larva needs to grow, it first sheds its outer skin. This is called molting. Mealworms must molt in order to grow. The old skin, also called a molt, is left behind.*

5. USE HAND LENSES

Distribute a hand lens and paper plate to each student. Tell students to put just one mealworm molt in their vial. Ask them to describe what they see.

6. RECORD CHANGES

Record new observations on the content chart, word bank, and class calendar. Put up the *Mealworm Larva* poster. Distribute *Insect Record* sheets for students to record their observations. Continue to model what to write, if students are inexperienced. Students can copy the text from the board into their own notebook and draw a picture. Many students like to tape the first molt they find onto their recording page.

BREAKPOINT

7. DISCUSS MEALWORM "EGGS"

Students will notice tiny granular objects at the bottom of the vial. Some may think they are eggs; others will think they are "poop." Ask how students can tell if the grains are eggs or **droppings**. Listen to their ideas. Make additional observations as time passes.

BREAKPOINT

8. OBSERVE THE FIRST PUPAE

After 1–3 weeks the mealworms will undergo a major life transformation—they will turn into pupae. The time to pupation will depend on how mature the mealworm larvae were when they arrived in your classroom. The pupa is the inactive, nonfeeding stage beetles go through during complete metamorphosis. During this pupal stage the feeding, growing larva transforms into the fertile, reproducing adult.

Students may report that their mealworm got shorter, turned white, or died. When this happens, introduce the vocabulary associated with the second stage in the life of these insects. Hold up the *Mealworm Pupa* poster and tell students,

NOTE: Larvae become inactive for several days.

MATERIALS FOR STEPS 5-6

- Hand lenses
- Vials with mealworms
- Paper plates
- Paper plates
- *Insect Record* sheets



MATERIALS FOR STEP 8:

- Hand lenses
- Vials with mealworms
- *Mealworm Pupa* poster

NOTE: Larvae become inactive for several days before pupating. Students may think the larvae died. Dead mealworms are black or hard.

Prompt #1 b and c



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INVESTIGATION 1: MEALWORMS

The mealworm has entered a new stage in its life cycle, called a *pupa*. Until this time it has been a *larva*, but now it is a *pupa*. It is alive, but it does not eat or drink. Some insects, like mealworms, look very different at different times in their life, but they are still the same insect. We will watch it closely to see what will happen next.

Put up the *Mealworm Pupa* poster beside the *Mealworm Larva* poster. Write the vocabulary word in the word bank and incorporate it into discussions from now on.

MATERIALS FOR STEP 9:

- *Insect Record sheets*



9. RECORD CHANGES

Make an entry on the content chart and class calendar. Have students whose mealworms have pupated record the events on an *Insect Record sheet* and their *Life of a Mealworm calendar*.

BREAKPOINT

MATERIALS FOR STEP 10:

- *Hand lenses*
- *Vials with mealworms*
- *Mealworm Adult poster*



10. OBSERVE THE FIRST ADULTS

Two or three weeks after pupation the mealworm beetles will emerge. Students may be alarmed and confused at first to see a beetle in their vial, but they will be excited when they realize that the pupa gave rise to the beetle. Hold up the *Mealworm Adult* poster and tell students,

The beetle is the adult stage of the mealworm. It is known as a darkling beetle. We will observe the beetle to see what happens next.

- *What changes do you think will happen?*

MATERIALS FOR STEP 11:

- *Basin*
- *Wheat bran*
- *Vegetable cubes*

11. ESTABLISH AN ADULT-BEETLE HOME

As soon as a beetle emerges in a student's vial, establish a second class basin with *fresh* bran and small pieces of vegetable for the new adult beetles. Have students put the newly emerged adults into the adult-beetle home. As adults emerge in the class mealworm culture, put them into the class adult-beetle basin.

MATERIALS FOR STEP 12:

- *Insect Record sheets*



12. RECORD CHANGES

Make an entry on the content chart, word bank, and class calendar. Have students whose pupae have changed to adults record the events on an *Insect Record sheet*.

BREAKPOINT

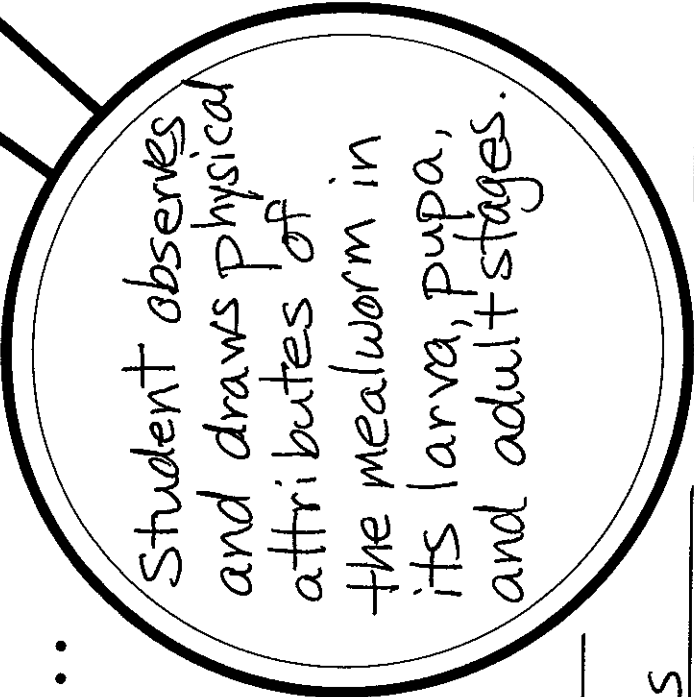


Name _____

Date _____

INSECT RECORD

.....



Student observes and draws physical attributes of the mealworm in its larva, pupa, and adult stages.

Expected student response:

Student identifies major structures

noting one or more physical attributes (e.g., color, shape, texture, size, movement) and behavior.



READING IN SCIENCE RESOURCES

10. READ "ENVIRONMENT"

Introduce the title, *Environment*, and explain that this article will tell students how the environment can affect the way organisms look.

Read the article, using the strategy that will be most effective for your class.

11. DISCUSS THE READING

Discuss the reading, using these questions as a guide.

- *How does the environment change the way a beetle or a tree looks?* [A beetle may have a damaged leg or wing; a tree may lose branches or lean to one side because of the wind; a tree may not make many seeds because of a drought.]
- *Will environmental changes be passed on to offspring?* [No.]

These questions can be used to deepen students' understanding and are best used after students have reread the story in small groups.

- *What characteristics do beetles get from their parents?* [Size, color, and types of body parts.]
- *What characteristics did the oak tree get from the parent tree?* [The kind of leaves, seeds, and bark.]
- *Which characteristics did the environment influence?* [Minor changes to the appearance caused by wind, drought, or animals.]

12. ANSWER REVIEW QUESTIONS

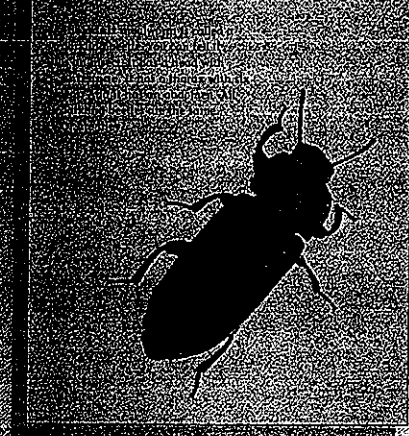
Have students respond to the review items on science notebook sheet no. 3. Read the items aloud to the class.

- *What can happen to a darkling beetle to change its characteristics?* [It can get into a fight and break its wing or leg.]
- *Will these changes be passed to offspring?* [No.]
- *What characteristics of a tree can be changed by the environment?* [Its shape can be changed by the wind. It will grow fewer acorns because the weather was bad.]

CA STANDARD

LS2a. Students know that organisms reproduce offspring of their own kind and that the offspring resemble their parents and one another.

Environment



MATERIALS FOR STEP 12:

- *Environment Review sheets*

ORGANISM PHOTOS ARE:

- *Page 8–10: Darkling beetles (Tenebrio molitor)*
- *Page 11: Cypress trees*
- *Page 12–13: Oak trees*
- *Page 14: Darkling beetle (Tenebrio molitor) (left), oak tree (right)*

Prompt #2, cont. Expected Student Response

Name _____

Date _____

ENVIRONMENT REVIEW

.....

1. What can happen to a darkling beetle to change its characteristics?

It can get into a fight
and break its wing or leg.

2. Will these changes be passed to offspring?

No.

3. What characteristics of a tree can the environment change?

Its shape can be changed
by the wind. It will grow fewer
acorns because the weather
was bad.



READING IN SCIENCE RESOURCES

12. READ FLOWERS AND SEEDS

Introduce the reading by asking students why plants have flowers. Briefly discuss students' answers. Introduce the title of the reading and explain that the article will tell them how seeds and flowers are related.

Read the article using the strategy that will be most effective for your class.

13. DISCUSS THE READING

Discuss the reading, using these questions as a guide.

- *What is the purpose of a flower?* [To produce fruit, which contain seeds to produce a new plant of the same kind.]
- *What plants make seeds?*
- *How do people use flowers and fruit?*
- *How do seeds get planted?*

The concept that flowering plants produce mature ovaries called fruit is beyond students in grade 2. To a young child, fruit is a food they eat, not a seed-bearing part of a plant. But students can begin to associate flowers with the production of fruit, and learn that fruits contain seeds to make a new plant. This will be a concept developed further in the **Structures of Life Module** in grade 3.

Introduce the term **reproduction** as the process of producing seeds from flowers to get new plants.

14. ANSWER REVIEW QUESTIONS

Have students respond to the review items on science notebook sheet no. 6.

- *Name one of the plants and tell about its flower.* [Brassica has groups of yellow flowers; cherry has large white flowers; tomatoes have a large yellow flower; strawberries have white flowers with yellow in the middle.]
- *Where are the seeds on a full-grown brassica plant?* [In a seedpod.]
- *Name two fruits you like to eat.*
- *Name the parts of plants that are important for their life cycle.* [Flowers, fruits, seeds, seedpods.]

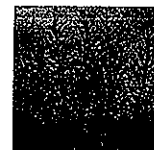
CA STANDARDS

LS2a. Students know that organisms reproduce offspring of their own kind and that the offspring resemble their parents and one another.

LS2f. Students know flowers and fruits are associated with reproduction in plants.

Flowers and Seeds

These are wild brassica plants. Each plant grows lots of flowers. But the brassica plant does not grow flowers to look pretty. The flowers are an important part of the plant's life cycle.



Soon the flowers fade and dry up. And something new appears right where each flower once grew. It looks like a little green bean. It is a seedpod.

Name _____ Expected Student Response _____ Date _____

FLOWERS AND SEEDS REVIEW

1. Name one of the plants, and tell about its flower.

[Brassica has groups of yellow flowers; cherry has large white flowers; tomatoes have a large yellow flower; strawberries have white flowers with yellow in the middle.]

2. Where are the seeds on a full-grown brassica plant?

[In a seedpod.]

3. Name two fruits you like to eat.

4. Name the parts of plants that are important for their life cycle.

[Flowers, fruits, seeds, seed pods.]

Prompt #4

develop. It takes longer for them to bloom than the plants that get more light. Plants in the dark will be weak and pale and may not flower at all. Help students describe the best conditions for brassica plants to grow.

23. REVIEW LIFE CYCLE OF A PLANT

Review the term *life cycle*. Discuss what the term means. Emphasize the idea that a life cycle is a continuous pattern of reproduction. Ask students what elements would be in the life cycle of a plant. Allow students to share their ideas, encouraging them to use what they know from their investigation of brassica to list the important elements: seeds, stems and leaves, flowers, and seedpods (fruit) containing the seeds from which new plants grow. Have students diagram the life cycle of a plant. They can draw representations of each stage, label the stage, and draw arrows showing the transition from one stage to another. The drawing should be circular, illustrating how the cycle continues.

24. LABEL A MATURE PLANT

The teacher guide includes two sheets depicting mature brassica plants. *Brassica A* (notebook sheet no. 7) has a list of plant-structure words for students who are not yet competent writers. *Brassica B* (notebook sheet no. 8) is for writers.

Hand out notebook sheet *Brassica A* or *B* to each student. Have individual students identify as many parts of the plant as they can. Give them ample time to label an illustration, either by writing the word and drawing a line to the structure (*Brassica B*), or simply drawing a line from the word to the structure (*Brassica A*). They should be able to identify bud, flower, leaf, seedpod, root, seed, and stem.

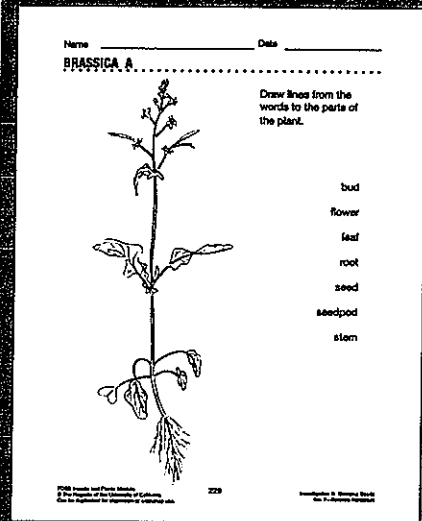
Often a student will have a better-developed reading vocabulary than writing vocabulary. You may want to give every student an opportunity to complete both sheets on different days and compare the results.



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MATERIALS FOR STEP 23:

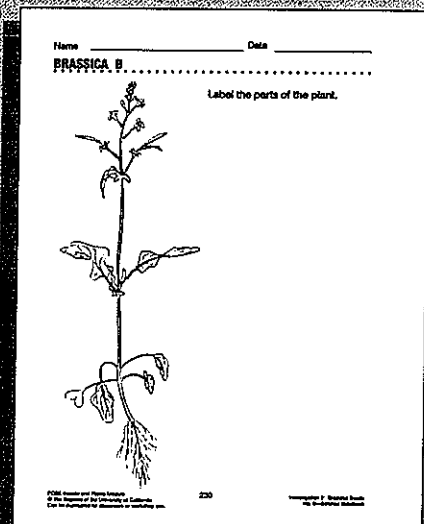
• *Brassica* plants



No. 7 — Science Notebook

MATERIALS FOR STEP 24:

• *Brassica* sheets



No. 8 — Science Notebook

Prompt #4, cont.

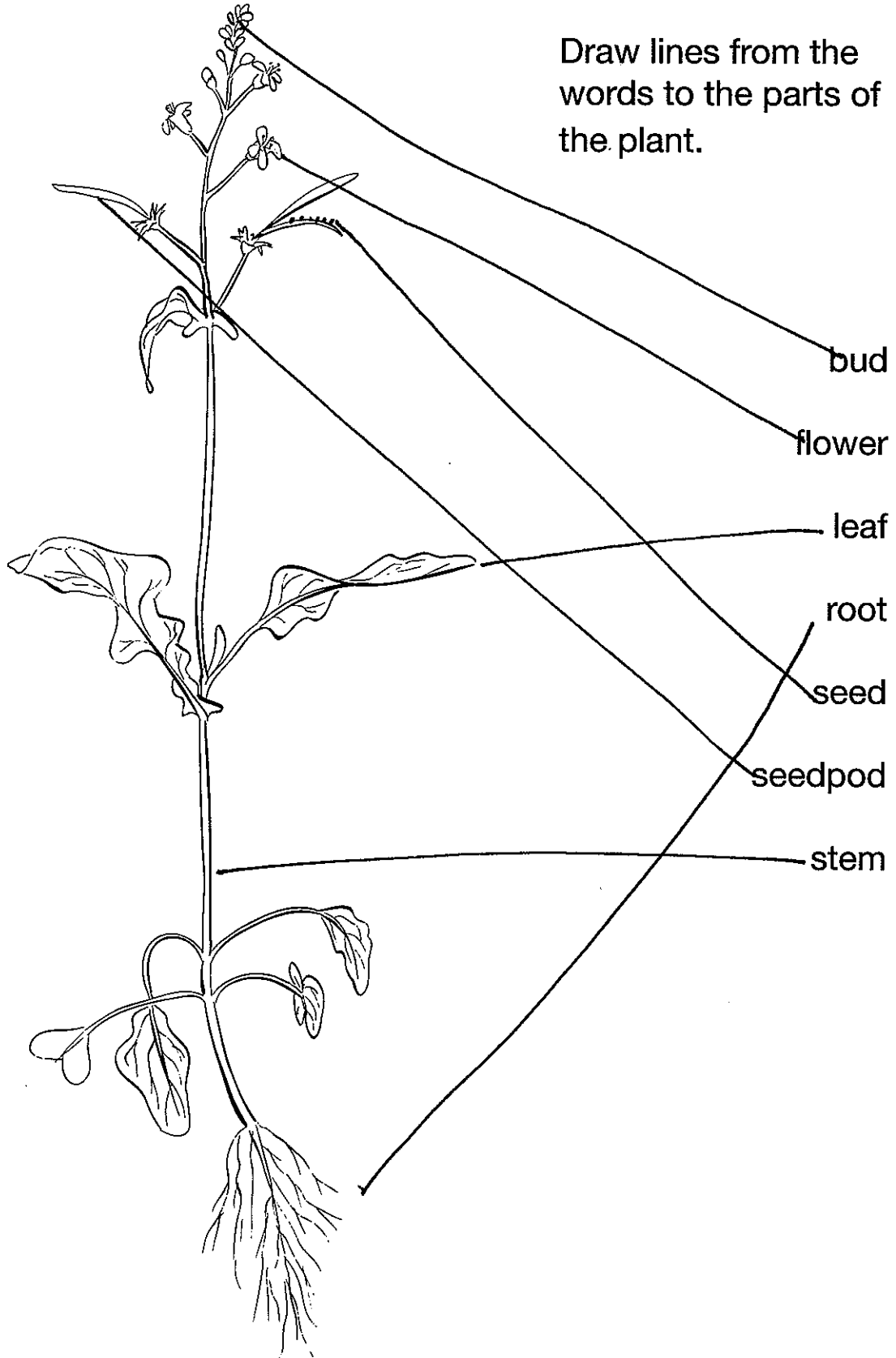
Name _____

Date _____

BRASSICA A

.....

Draw lines from the words to the parts of the plant.





MATERIALS FOR STEP 14:

- Glass container
- Graduated cylinder
- Rug



14. RECORD THE ARRIVAL OF THE NYMPHS

Call students to the rug. Have them help you enter the arrival of the nymphs on the class calendar. Demonstrate how to read the thermometer. Record the temperature on the calendar.

15. ASSESS PROGRESS: NOTEBOOK SHEET

Distribute the *Milkweed Bug Habitat* sheet to students. Ask students to draw a picture and label it to show all the things milkweed bugs need in order to survive.

Prompt #5, cont.

Name _____ Date _____

MILKWEED BUG HABITAT

Draw the home you have made for the milkweed bugs.

Student observes and draws the milkweed bug habitat including the means by which the bug accesses air, space, food and water.

What will they need?

Expected student response
Student indicates the needs of milkweed bugs: air, food, water, and space.



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INVESTIGATION 3: MILKWEED BUGS

READING IN SCIENCE RESOURCES

18. READ VARIATION

Introduce the title, *Variation*, and ask students if they know what *variation* means. Explain that it means difference. Individuals of a single kind of insect can have variations that make individuals different from each other. Ask if other kinds of animals have variations that make individuals of that kind different from one another. Briefly discuss students' ideas.

Read the article using the strategy that will be most effective for your class.

19. DISCUSS THE READING

Discuss the reading, using these questions as a guide.

- *What organisms have variation from individual to individual?*
[All of them.]
- *How do individual organisms of one kind vary from each other?*
[Color, size, pattern.]
- *Are variations always easy to see?* [No.]

20. ANSWER REVIEW QUESTIONS

Have students respond to the review items on science notebook sheet no. 10.



- *Name five variations you can observe in people.* [Hair color, skin color, eye color, height, and running ability.]
- *Tell about variation in trout.* [Trout vary in color, spots, and pattern.]
- *Think of another animal and tell about variation.*

CA STANDARD

LS2d. Students know there is variation among individuals of one kind within a population.

Variation

There are many differences between individuals of the same kind. For example, some ladybird beetles are black and some are red. Some have spots and some do not. Some have black tails and some have white tails. Even people are different. Everyone has different hair, eye, and skin colors.



PHOTOS ARE:

- Page 20: Humans from Oakland, CA
- Page 21: Black bear (*Urus americanus*)
- Page 22: Brown trout
- Page 23: Iceland scallop shells
- Page 24: Pansies
- Page 25: Black bear (*Urus americanus*) (top), cluster of ladybird beetles (bottom).

VARIATION REVIEW

1. Name five variations you can observe in people.

[Hair color, skin color, eye color, height, and running ability.]

2. Tell about variation in trout.

[Trout vary in color, spots, and pattern.]

3. Think of another animal, and tell about variation.

Answers will vary.



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INVESTIGATION 3: MILKWEED BUGS

NOTE: Have several students
maintain the habitats for you.



9. CONSOLIDATE HABITATS

The bugs from the group habitats can be consolidated into one or two habitats with 25–30 bugs each and maintained for the rest of the year.

BREAKPOINT

10. END THE LIFE CYCLE

As long as the four needs are attended to, new generations of milkweed bugs will continue to flourish in the habitat. At some point you may want to end the cycle. Although the bugs would probably soon perish if released into the environment, it is not suggested that you do so, as they were not originally from the environment. Place the bag in the freezer overnight to kill the bugs; discard the bag in the trash.

MATERIALS FOR STEP 11:

- *Life Cycle of the Triangle Bug* sheet
- Scissors
- Glue



11. ASSESS PROGRESS: NOTEBOOK SHEET

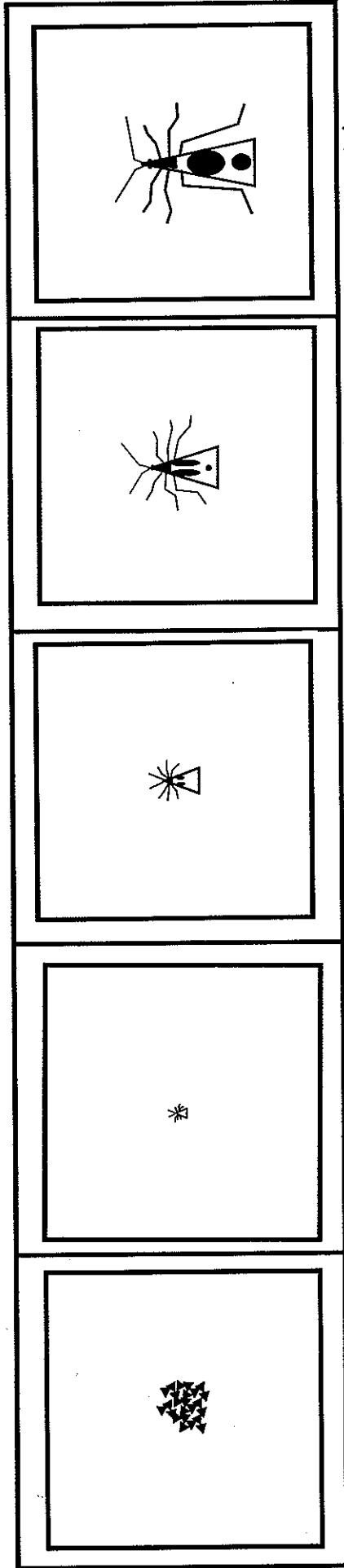
Distribute a copy of *Life Cycle of the Triangle Bug*, scissors, and glue to each student. This assessment should be conducted after students have seen the adult milkweed bugs laying new eggs and have discussed their life cycle.

Expected Student Response

Prompt #7, cont.

Name _____

Date _____



eggs

nymph

nymph

nymph

adult

1. Put the pictures in order to show how the make-believe triangle bug grows.
2. Write the name of the stage under each picture.

c. Hold up a mulberry leaf and tell students that silkworms eat only **mulberry leaves**. The fresh mulberry leaves provide the food and water that the silkworms need. Cover the bottom of the shoe box with a paper towel. Place one mulberry leaf in the box and put it in the center of the rug.

6. ADD SILKWORMS TO THE HABITAT

Call the groups to the habitat one at a time. Have them transfer their eggs and larvae to the box. If the larvae stick in the vial, use the little paintbrush to gently coax them onto a leaf.

If the eggs are scattered all over the box, that is OK, but the larvae should be placed on a leaf. Each day one of the groups will be responsible for feeding the silkworms and looking for new hatchlings. New larvae must be rounded up each day and delivered to a fresh mulberry leaf. Ask students what they predict might happen to the silkworms as they grow and develop. Have them think back to their mealworm and milkweed bug investigations. Write their ideas on the content chart.

7. PLACE THE HABITAT

Choose a place in the room where the silkworms will be warm but not in direct sunlight. Place the shoe box in an open plastic bag. The idea is to reduce evaporation from the leaves a bit without developing a humid environment.

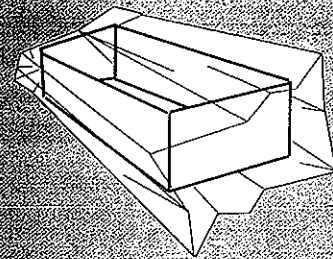
8. CLEAN UP

Collect the empty vials and return extra leaves to the refrigerator.

9. ASSESS PROGRESS: NOTEBOOK SHEET

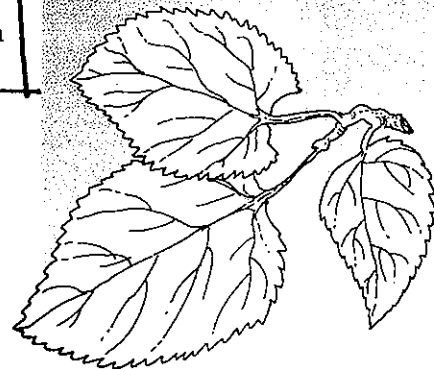
Distribute science notebook sheet nos. 2 and 13 to each student. Help students record the silkworm arrival date and encourage them to record first impressions with a drawing. They should use Insect Record sheets for recording their observations throughout the silkworms' life cycle.

Have students help you enter important silkworm information on the class calendar.



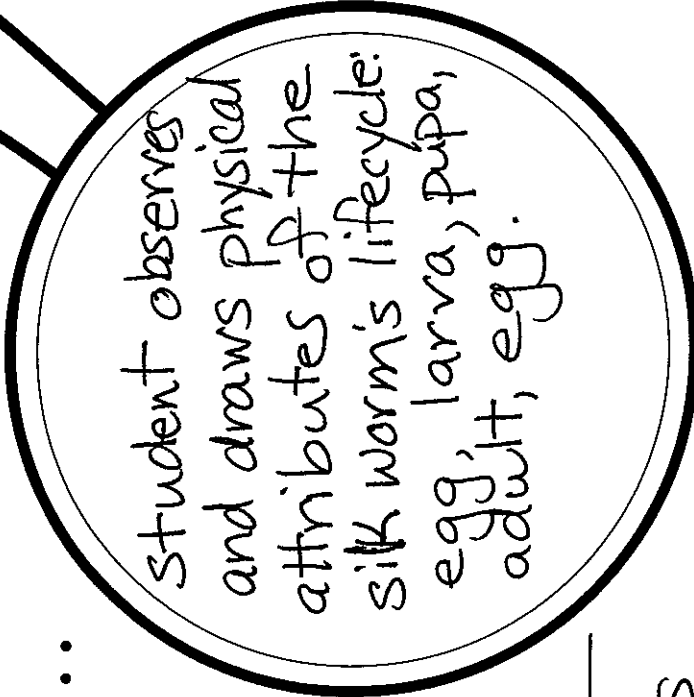
MATERIALS FOR STEP 9:

- *Insect Record sheets*
- *Life of a Silkworm sheets*
- 1. *Class calendar*
- 1. *Overhead-transparency pen*



Name _____ Date _____

INSECT RECORD



Expected Student Response: _____

Student identifies major structures
noting two or more physical attributes (eg. color,
shape, texture, size, movement) and behavior.

Prompt #8, cont.



MATERIALS FOR STEP 14:

What Makes an Insect an Insect? Review Sheets

14. ANSWER REVIEW QUESTIONS

Have students respond to the review items on science notebook sheet no. 14.

- *What are the three body parts of an insect?* [Head, thorax, abdomen.]
- *Tell about legs, antennae, and wings.* [Insects have six legs, two antennae on their head, and two or four wings attached to the thorax.]

15. REVIEW THE GLOSSARY

Review what students can do when they come to a word they don't know while reading (look for context clues, use phonetic clues, ask someone for help, guess at the word, skip the word, look it up in a dictionary). Explain that in a book like *Insects and Plants* there is another tool they can use. Have students turn to the glossary, page 57. Explain that a glossary is like a dictionary made for that particular book. In this book, if there is a bolded word they do not know, it will be in the glossary. The glossary lists the word and the word's meaning.

Turn to page 30 of the text. Reread the sentence "Most insects have one pair of **antennae** and one or two pairs of wings." Ask students if they know what an antenna is. Explain that since antennae is bolded, they could look up the word in the glossary. Ask students to find *antennae* in the glossary. Read the definition. You might look up a second example that a student suggests. Close the lesson by reviewing what students can do when they come to a bolded word they don't know while reading. Be sure students add "look in the glossary" to their responses.

Prompt # 9, cont.

Name _____

Date _____

WHAT MAKES AN INSECT AN INSECT? REVIEW

1. What are the three body parts of an insect?

[Head, thorax, abdomen.]

2. Tell about insect legs, antennae, and wings.

[Insects have six legs, two antennae on their head, and two or four wings attached to the thorax.]



will make careful observations to see what the larvae are doing and make a report in the painted lady notebook.

- What do you think might happen to the caterpillars over time?

6. INTRODUCE THE PAINTED LADY NOTEBOOK

Show students the painted lady class notebook open the booklet to the first recording page and date the entry. Ask students to report some observations. Record them on the first page. Students should report on size, color, shape, movement, and some structures.

Ask for a volunteer to draw a picture of a painted lady larva in the drawing space to show life size, and another picture in the magnified-view section to show more detail of structures.

7. FIND A PLACE FOR THE PAINTED LADIES

Let students help you find a place to keep the container of painted lady larvae. It should be convenient for viewing, out of direct sunlight, and away from drafts. Keep the painted lady class journal there as well.

8. ASSESS PROGRESS: TEACHER OBSERVATION

Give each student a blank sheet of paper. Have them draw what they think might happen at each stage in the life cycle of the painted lady. They can add words to describe what will happen.

Conduct 30-second interviews with students as they draw. Ask them to predict how the caterpillars will change over time.

BREAKPOINT

9. OBSERVE THE CATERPILLARS

During the 1–2 weeks following the introduction of the painted lady larvae, allow small groups of students to go to the center where they can observe the caterpillars. When the larvae are larger, allow students to open the container and carefully take the caterpillars out. They should look closely for structures and behaviors that are similar to those observed for the mealworms and silkworms.

10. DISTRIBUTE CATERPILLAR STRUCTURES SHEETS

If students have observed mealworms or silkworms and have developed vocabulary for larva structure, distribute *Caterpillar Structures* sheets to guide their observation of the painted lady caterpillars. Second graders should be able to use the sheet independently or help each other along.

MATERIALS FOR STEP 6:

- Painted lady class notebook



MATERIALS FOR STEP 10:

- Caterpillar Structures sheets
- Hand lenses



Name _____ Date _____

CATERPILLAR STRUCTURES

sample ex

Do caterpillars have legs? Yes How many? It has sixteen legs.

Do caterpillars have bristles or hairs? Yes, it has bristles.

Do caterpillars have antennae? Yes How many? Two

Do caterpillars have ears? No How many? _____

What colors are on the caterpillar? It has yellow stripes on brown.

Prompt #10, cont.

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INVESTIGATION 5: BUTTERFLIES

MATERIALS FOR STEP 9:

- Sheet of chart paper
- Markers/pen

9. REVIEW THE BUTTERFLY LIFE CYCLE

Call students to the rug. With their assistance, make a butterfly life-cycle chart. Fill in as many structures and behaviors for each stage as students can recall.

BUTTERFLY LIFE CYCLE		
Stage	Structures	Behaviors
Larva	bristles segments prolegs	eats a lot crawls over others
Pupa	chrysalis golden dots	wiggles
Adult	head thorax abdomen wings antennae	sips nectar lays eggs flies a lot



10. ASSESS PROGRESS: NOTEBOOK SHEET

Distribute notebook sheet no. 17, *Life Cycle of the Square Moth*. Tell students,

Two students found some eggs that they thought might be insect eggs, so they took them home. Four days later the eggs hatched. The students watched the insects grow up to be square moths. They drew pictures of the square moths as they grew up.

Read the directions and have students do the assessment.

MATERIALS FOR STEP 10:





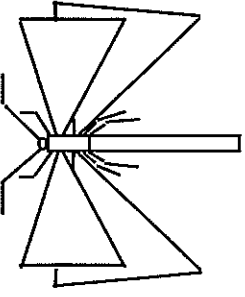
- *Life Cycle of the Square Moth* sheets
- Scissors
- Glue
- Colored pencils (optional)



Prompt # 11, cont.

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Name _____ Date _____

				
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eggs larva larva pupa adult

1. Put the pictures in order to show how the make-believe square moth grows.
2. Write the name of the stage under each picture.



FOSS

INVESTIGATION 5: BUTTERFLIES

READING IN SCIENCE RESOURCES

13. READ LIFE GOES AROUND

Ask students what a life cycle is. Brainstorm with students what they know about life cycles. When does a life cycle start? When does it end? Why is it called a cycle? What are the stages? Introduce the title *Life Goes Around* and explain that this article will tell students about different animals' life cycles. Ask students to listen for similarities and differences between different animals' life cycles.

Read the article, using the strategy that best fits your class's ability level. Pause and discuss the questions posed in the text.

14. DISCUSS THE READING

Discuss the reading, using these questions as a guide.

- *According to the story, what does cycle mean?* [To go around.]
- *What did the story tell us about life cycles?*

The following questions can be used to deepen students' understanding and may best be used after students have reread the article in small groups.

- *What animals were discussed in the reading?* [Ladybugs, trout, frogs, ducks, mice.]
- *Does every animal have the same life cycle?* [No.]
- *How are the animals' life cycles the same?* [The young grow and become adults.] *How are they different?* [Some molt and pupate.]
- *Some animals hatch from eggs. Others do not hatch from eggs but have "live birth." What animals hatch from eggs? What animals have live birth?* [Ladybugs, trout, frogs, and ducks hatch from eggs. Mice are born live.]
- *What is a human's life cycle?* [Live birth, grow to adult.] *Which animal in the story has a life cycle most like a human's?* [Mouse.]

15. ANSWER REVIEW QUESTIONS

Have students respond to the review items on science notebook sheet no. 18. Read the items aloud to the class.

- *Does the ladybug larva look like its parents?* [No.]
- *Tell about the life cycle of a ladybug.* [Egg, larva, pupa, adult.]

CA STANDARDS

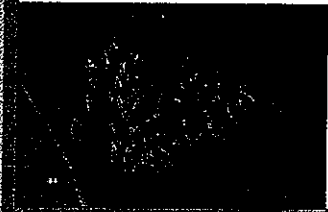
LS2b. Students know the sequential stages of life cycles are different for different animals, such as butterflies, frogs, and mice.

LS2c. Students know many characteristics of an organism are inherited from the parents. Some characteristics are caused or influenced by the environment.

Life Goes Around

On a lucky day, you might see a ladybug. It is red with black spots. It is an adult ladybug. But have you ever seen a baby ladybug?

Adult ladybugs mate. Then the female lays eggs. When an egg hatches, a larva comes out. The black larva is the baby ladybug. But it doesn't look like its parents. The larva eats and grows for three or four weeks.



Prompt #12, cont.

Name _____

Date _____

LIFE GOES AROUND REVIEW

1. Does the ladybug larva look like its parents?

[No.]

2. Tell about the life cycle of a ladybug.

[Egg, larva, pupa, adult.]

3. Tell about the life cycle of a different animal.

[Egg, baby trout, adult trout;
egg, tadpole, frog;
baby mouse, adult mouse.]

4. Name five animals that hatch from eggs.

[Trout, frog, butterfly, silkworms,
milkweed bugs.]

5. Name some animals that are born alive (not as eggs).

[People, mouse, elephant,
dog, cat.]