

Sample Body of Evidence

Science

Grade 3 – Third Reporting Period

FOSS California Structures of Life 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
Third Grade**

Student: _____

Strand	Evidence	Notes on Quality	Report Card Mark
<p>LIFE SCIENCE</p> <p>Adaptations in physical structure or behavior may improve an organism's chance for survival.</p>	<p><u>Prompt #2</u> Origin of Seeds—No. 3— Science Notebook</p> <p><u>Prompt #3</u> The Soaked Seed—No. 4— Science Notebook</p> <p><u>Prompt #4</u> Comparing Germinated Seeds—No. 3—Teacher Sheet</p> <p><u>Prompt #5</u> Bean Plant Life Cycle—No. 6—Science Notebook; —No. 4—Teacher Sheet</p> <p><u>Prompt #6</u> Crayfish Structures—No. 7— Science Notebook</p> <p><u>Prompt #7</u> Crayfish Behavior—No. 10— Science Notebook</p> <p><u>Prompt #8</u> Land Snail Log —No. 8—Science Notebook</p> <p><u>Prompt #9</u> Comparing Structures—No. 13—Science Notebook</p>	<p><u>Academic Language</u> Beneficial, cotyledon, dormant, embryo, functions, organism, property, reproduce, structure, germination, hydroponics, mature, nutrient, seedling, adaptation, camouflage,, carapace, crustacean, habitat, territory, estivate, extinct, function</p> <p><u>Scientific Concept</u> Understands that different kinds of fruits have different kinds and numbers of seeds.</p> <p>A seed contains an embryo of a plant and a store of food and water.</p> <p>Identifies specific structures of four different plants.</p> <p>Sequences the plant lifecycle and identifies the different functions in growth, survival and reproduction.</p> <p>Identifies specific crayfish structures.</p> <p>Identifies diverse life forms in different environments and identifies their structural and behavioral adaptations.</p> <p>Understands how a land snail can survive when its environment changes.</p> <p>Identifies structures that are unique to each animal and those that the crayfish and snails have in common.</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> Comparing Seeds—No. 1— Science Notebook</p> <p><u>Prompt #3</u> The Soaked Seed—No. 4— Science Notebook</p> <p><u>Prompt #8</u> Land Snail Log —No. 8—Science Notebook</p>	<p><u>Data Collection</u> Accurately counts or estimates the number of seeds, describes the properties of seeds and provides a drawing or sample of seeds from four different fruits.</p> <p><u>Use of Data</u> Accurately uses numerical data to describe and compare dry and soaked seeds. Identifies reasons that two weighings might be different.</p> <p>Accurately collects data and analyzes the data to explain estivation.</p>	<p>Advanced</p> <p>Proficient</p> <p>Basic</p> <p>Below Basic</p> <p>Not Assessed</p>

Prompt # 1

Name _____

Date _____

COMPARING SEEDS

.....

NAME OF FRUIT
NUMBER OF SEEDS
PROPERTIES OF SEEDS
DRAWING OR SAMPLE OF SEEDS

NAME OF FRUIT
NUMBER OF SEEDS
PROPERTIES OF SEEDS
DRAWING OR SAMPLE OF SEEDS

NAME OF FRUIT
NUMBER OF SEEDS
PROPERTIES OF SEEDS
DRAWING OR SAMPLE OF SEEDS

NAME OF FRUIT
NUMBER OF SEEDS
PROPERTIES OF SEEDS
DRAWING OR SAMPLE OF SEEDS



INVESTIGATION 1: ORIGIN OF SEEDS

PART 1: SEED SEARCH

FOCUS ON STANDARD LS3A

- Students know plants and animals have structures that serve different functions in growth, survival, and reproduction.

FOCUS ON STANDARD I&E5C

- Use numerical data in describing and comparing objects, events, and measurements.

FOCUS ON STANDARD I&E5E

- Collect data in an investigation and analyze those data to develop a logical conclusion.

Students begin to explore fruit and their buried treasure—seeds. In many FOSS modules students are asked to identify properties of fruit, rocks, organisms, and so forth. A property is something that you can observe about an object or a characteristic of an object. Students are also introduced to making a line plot to organize and display data.

TEACHER OBSERVATION

Be sure students understand what it means to describe properties. Have a short discussion about the importance of recording observations. Students may refer to the structures of plants, such as the fruits, as “parts.” Ask them to use the more scientific term *structure*.

Circulate among the groups as students are opening fruit, finding seeds, and recording on notebook sheet no. 1, *Comparing Seeds*.

WHAT TO LOOK FOR

- Students understand that the structure of the plant that carries the seed(s) is called the fruit.
- Students record name of the fruit and number of seeds.
- Students record a variety of different properties of the seeds (size, shape, color, texture, smell, and distinctive features).
- Students describe and draw the properties of each kind of seed.
- Students come up with a way of estimating seeds in fruits that have many seeds.

Prompt #2

Name _____

Date _____

RESPONSE SHEET—ORIGIN OF SEEDS

A group of students in a third-grade class went on a seed hunt. After they opened several fruits, they made a chart with the names of the fruits and the number of seeds they found inside. Here is their chart.

Tomato	Apple	Peach	Banana
1 seed	0 seeds	120 seeds	6 seeds

When their teacher looked at their chart, she thought the students didn't count accurately.

The students insisted that they counted correctly. What do you think happened?

Students counted correctly but recorded in the wrong boxes.

Can you make a chart that accurately shows the number of seeds in each fruit?

Tomato	Apple	Peach	Banana
120 seeds	6 seeds	1 seed	0 seeds



INVESTIGATION 1: ORIGIN OF SEEDS PART 2: THE SPROUTING SEED

Students have been using numerical data to describe their observations of fruit. They are asked to look at data others have collected and to analyze it based on their experience.

RESPONSE SHEET

Use notebook sheet no. 3, *Response Sheet—Origin of Seeds*, for a closer look at students' understanding of seeds and fruit.

WHAT TO LOOK FOR

- Students recognize that the number of seeds in each fruit does agree with reality.
- Students conclude that the investigators recorded incorrectly.
- Based on their knowledge of the kind of fruit, students can fix the chart appropriately.

FOCUS ON STANDARD LS3A

- Students know plants and animals have structures that serve different functions in growth, survival, and reproduction.

FOCUS ON STANDARD 1&E5C

- Use numerical data in describing and comparing objects, events, and measurements.

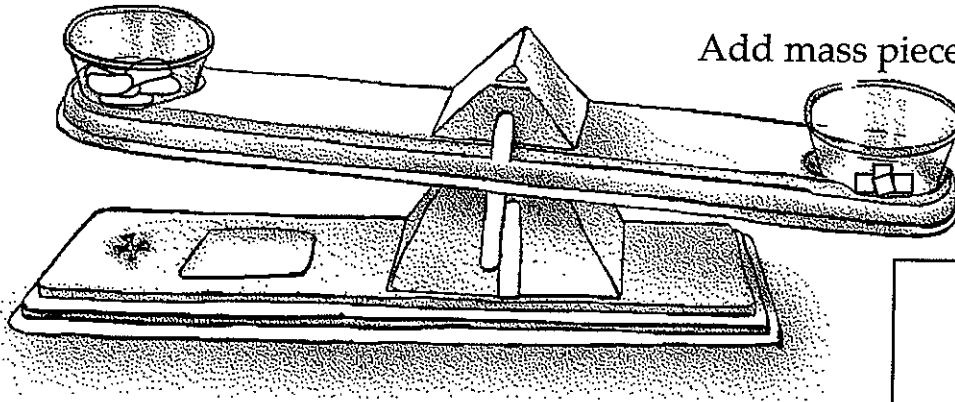
Prompt #3

Name _____

Date _____

THE SOAKED SEED

Put five seeds here.



Add mass pieces here.

Day 1

Mass of five dry seeds _____

Trace one dry seed here.

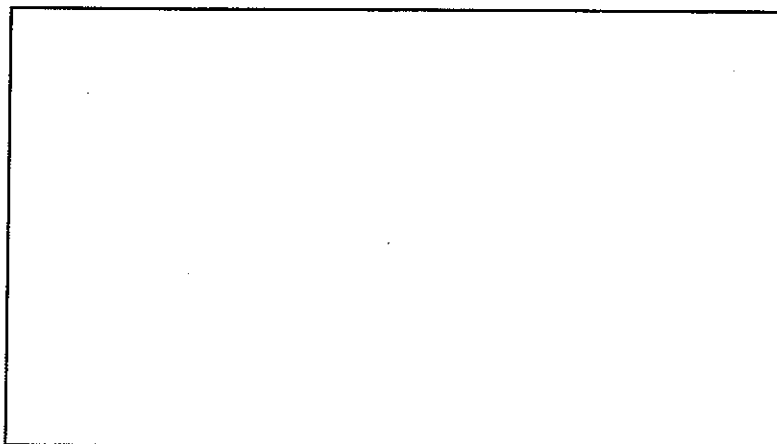
Day 2

Mass of five soaked seeds _____

Trace one soaked seed here.

How much water did the seeds soak up? _____

Open a soaked seed. What is inside?



Draw the inside of a soaked seed.



INVESTIGATION 1: ORIGIN OF SEEDS

PART 3: SEED SOAK

Students have observed some of the effects of water on seeds. In this part of the investigation, students determine the amount of water that a lima bean seed soaks up. They weigh the dry seeds, soak them in water, and wait 24 hours. They observe the seed and estimate (predict) how much water it has taken up. They use a balance to weigh the swollen seeds and compare the actual amount to the prediction.

TEACHER OBSERVATION

While students use the balance to weigh the wet seeds, observe their technique. Each student weighs the seeds, and they compare the results to see if they can improve accuracy.

WHAT TO LOOK FOR

- Students understand the reason for weighing the dry seeds and then the wet seeds to determine the amount of water that has soaked in.
- Students know how to use the balance to weigh the seeds.
- Students can identify reasons that two weighings might be different.
- Students can compare the actual result to their estimate.

FOCUS ON STANDARD I&E5A

- Repeat observations to improve accuracy and know that the results of similar scientific investigations seldom turn out exactly the same because of differences in the things being investigated, methods being used, or uncertainty in the observation.

FOCUS ON STANDARD I&E5C

- Use numerical data in describing and comparing objects, events, and measurements.

FOCUS ON STANDARD I&E5D

- Predict the outcome of a simple investigation and compare the result with the prediction.

Prompt #4

COMPARING GERMINATED SEEDS

Find an example of a seedling that has each property or structure.
Place each example in the boxes below.

	Swollen	Seed coat off	Root	Stem and leaves
Bean				
Pea				
Sunflower				
Corn				



FOCUS ON STANDARD LS3A

- Students know plants and animals have structures that serve different functions in growth, survival, and reproduction.

FOCUS ON STANDARD 1&5E

- Collect data in an investigation and analyze those data to develop a logical conclusion.

**INVESTIGATION 2: GROWING FURTHER
PART 1: GERMINATION**

Students look at the seedling structures of four germinated seeds. They compare the seeds, look for similarities and differences, and place the samples on their chart.

If you want students to make a permanent record, make copies of the group sheet for each student (in addition to the sheet the group will use in the activity), and students can draw each structure. Or they can make a chart in their science notebook and draw the structures there. An additional advantage of this strategy is that you can evaluate their examples outside of class time.

TEACHER OBSERVATION

Use teacher sheet no. 3, *Comparing Germinated Seeds*, to look at students' understanding of seedling structures.

WHAT TO LOOK FOR

- Students complete the chart with correct examples identifying the different structures of germinated seeds: root, stem, cotyledon, leaves, and seed coat.
- Students can make a statement about the functions of these structures.
- The root grows down and gets nutrients and water.
- The stem grows up and supports the leaves. The leaves are the flat, green part of the plant.
- The seed coat softens and comes off.
- The cotyledon provides the food for the germinating seed and the young plant (until it can make its own food).

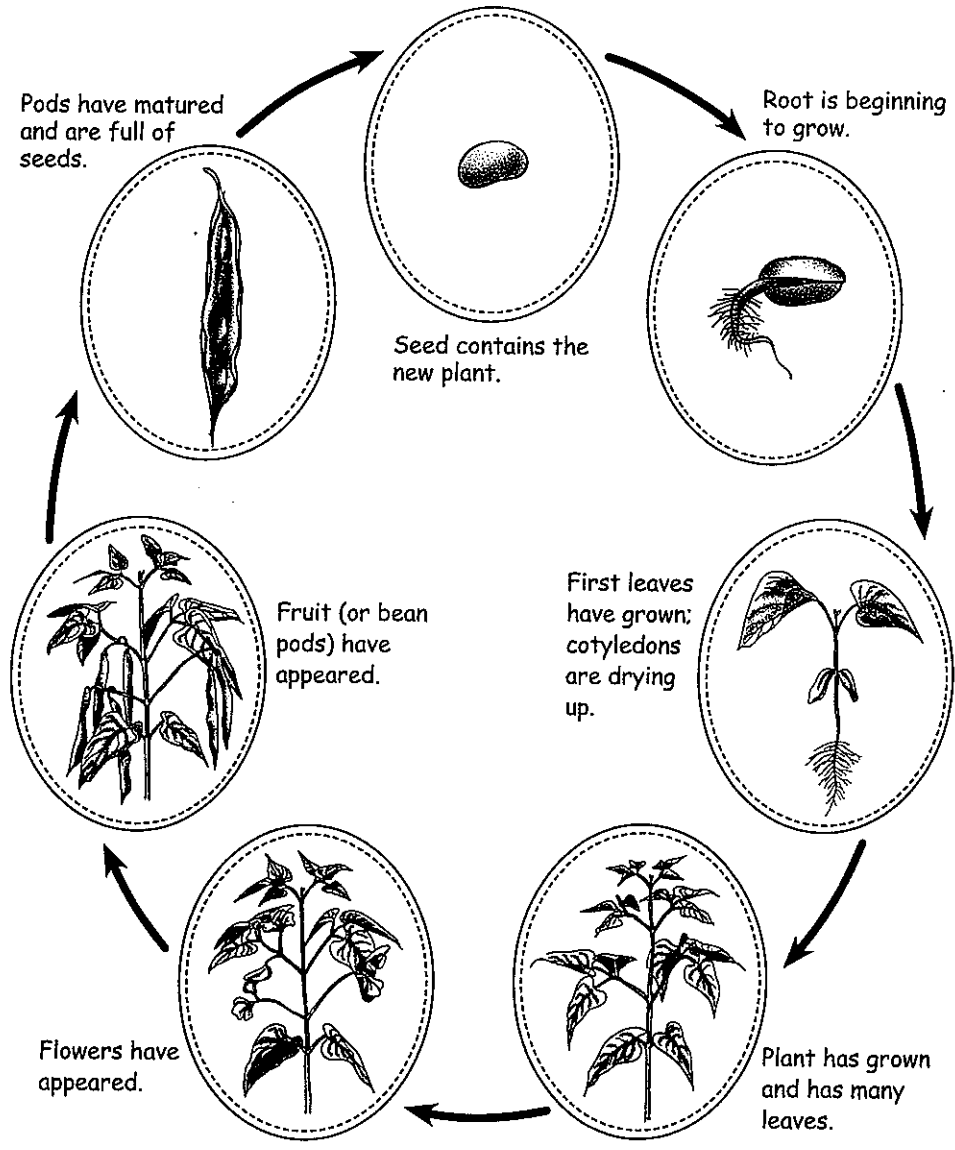


Name _____

Date _____

BEAN PLANT LIFE CYCLE

Write a short description by each picture.





INVESTIGATION 2: GROWING FURTHER PART 2: LIFE CYCLE OF THE BEAN

Students have observed the maturation of the bean plant over 6–7 weeks and discussed the basic requirements for its survival. This part of the investigation looks at the sequence of the growing stages of the bean plant that students have observed in their hydroponic setups.

NOTEBOOK SHEET

Use science notebook sheet no. 6, *Bean Plant Life Cycle*, to look at students' understanding of the sequence of developments in the bean life cycle.

WHAT TO LOOK FOR

- All the pictures are in the correct sequence.
- The captions or narrative includes this sequence.
 1. Seed contains the new plant.
 2. Root is beginning to grow.
 3. First leaves have grown; cotyledons are drying up.
 4. Plant has grown and has many leaves.
 5. Flowers have appeared.
 6. Fruit or bean pods have appeared.
 7. Pods have matured; they are full of seeds
 8. The cycle repeats.

FOCUS ON STANDARD LS3A

- Students know plants and animals have structures that have different functions in growth, survival, and reproduction.

FOCUS ON STANDARD I&E5E

- Collect data in an investigation and analyze those data to develop a logical conclusion.



Name _____

Date _____

CRAYFISH STRUCTURES

Do crayfish have eyes? yes How many? 2

Do crayfish have ears? no How many? _____

Do crayfish have walking legs? yes How many? 8

Do crayfish have antennae? yes How many? 6

Do crayfish have tail flaps? yes How many? 5

Do crayfish have pincers? yes How many? 2

Do crayfish legs have joints? yes How many? 6

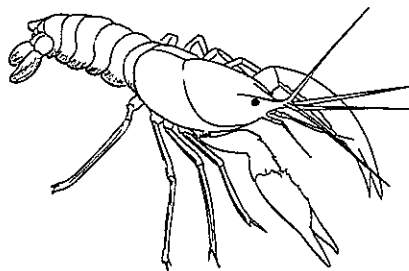
Do crayfish have mouthparts? yes How many? several (2-6)

Do crayfish have tail joints? yes How many? 6

Do crayfish have bristles? yes Where? pincers, tail, mouth

Does the crayfish have bumps and points? yes Where? pincers, carapace

What other crayfish structures did you observe? swimmerets



pincers on walking legs

egg pore (female)

Answers will vary.



INVESTIGATION 3: MEET THE CRAYFISH

PART 1: CRAYFISH STRUCTURES

In this investigation, students make the transition from plants to animals and are introduced to a new organism, the crayfish. Students observe the crayfish, identify structures, and begin to think about the functions of those structures in terms of growth, survival, and reproduction.

NOTEBOOK SHEET

Use notebook sheet no. 7, *Crayfish Structures*, to assess what students know about crayfish structures and how they describe the function of those structures. After students have observed the structures on the crayfish and have engaged in class and small-group discussions about functions, have them select and list three structures and describe their functions (on the bottom of the sheet).

WHAT TO LOOK FOR

- Students identify structures. Observations include the number of each.
- Students list three structures and describe their functions.
 - Eyes [Vision; sensing light.]
 - Ears [None visible.]
 - Walking legs [Mobility, grooming, feeding, holding.]
 - Antennae [Smelling, feeling.]
 - Tail flaps [Moving backward, protecting undertail.]
 - Pincers [Catching and tearing food, holding, defending.]
 - Leg joints [Walking, feeding, reaching in all directions, bending.]
 - Mouthparts [Biting, chewing, cutting, feeding.]
 - Tail joints [Bending, thrusting, protecting undertail.]
 - Bristles [Sensing, protecting.]
 - Bumps [Protecting, defending.]

OPTIONS

You could modify this notebook sheet to provide more or less support for students. Having students make their own detailed drawing of the crayfish will help them notice more details of the crayfish structures.

FOCUS ON STANDARD LS3A

- Students know plants and animals have structures that serve different functions in growth, survival, and reproduction.

Prompt #7

Name _____

Date _____

ADAPTATIONS

Look at the organisms in one of the organism-card sets. What adaptations do the organisms have for movement, getting food, protection, and raising young? Write the names of four organisms and their adaptations in the chart. Here is an example.

Environment Pond

Needs of organisms	Organism	Adaptation (structure or behavior)
Movement	Crayfish	Walking legs with joints

Environment _____

Needs of organisms	Organism	Adaptation (structure or behavior)
Movement		
Getting food		
Protection or defense		
Caring for young		

Environment _____

Needs of organisms	Organism	Adaptation (structure or behavior)
Movement		
Getting food		
Protection or defense		
Caring for young		

Environment _____

Needs of organisms	Organism	Adaptation (structure or behavior)
Movement		
Getting food		
Protection or defense		
Caring for young		

INVESTIGATION 3: MEET THE CRAYFISH

PART 2: ADAPTATION

This part introduces students to eight different environments and a selection of organisms that grow, survive, and reproduce in each environment. The environments include desert, grassland, ocean, pond, rain forest, temperate forest, tundra, and wetland.

NOTEBOOK SHEET

Use science notebook sheet no. 10, *Adaptations*, for a look at how well students can identify structural and behavioral adaptations in four categories: getting food, movement, protection, and reproduction.

WHAT TO LOOK FOR

- Students have completed the information for at least two environments.
- Students have selected different organisms in the environment.
- Students' descriptions of the structure or behavior are logical for the organism and its environment.
- Students have put the adaptation into the correct category (movement, getting food, protection, caring for young).

FOCUS ON STANDARD LS3A

- Students know plants and animals have structures that serve different functions in growth, survival, and reproduction.

FOCUS ON STANDARD LS3B

- Students know examples of diverse life forms in different environments, such as oceans, deserts, tundra, forests, grasslands, and wetlands.

Prompt #9

LAND SNAIL LOG

Key	When	What to do
Food (F)	1-3 times a week	Fresh vegetables or fruit, a little at a time
Water (W)	1-3 times a week	Clean water sprayed on the walls of the habitat
Clean (C)	1-3 times a week	Clean their habitat

Date and group	What we did How are the food and water supply?	What we observed What are the snails doing? How is the habitat?



INVESTIGATION 4: MEET THE LAND SNAIL

- **Cleaning (twice a week).** Gently remove the snails by sliding them off the walls of the terrarium. If they look messy, rinse them quickly under cool water. Spray the walls of the habitat and wipe them clean with paper towels. If you are using paper towels on the floor of the habitat, replace them with new paper towels.
- **Food (twice a week).** Replace any old food with new food. Snails eat fruits and vegetables. Place pieces of chalk, egg shell, or cuttlebone in each habitat to provide calcium, which snails need for shell growth and repair.
- **Water (two or three times a week).** Spray the inside walls of the basins with water.
- **Space.** Always keep the cover on the habitat, with two rubber bands (at least) holding it on.

Ask the Getters to place the snails in their new habitats.

10. DISCUSS CARE AND OBSERVATION LOGS

Show students the *Land Snail Log* sheet that will be posted near each land snail habitat. The log includes the basic care information and has spaces for students to record what they do (review the codes: F = food; W = water; C = clean) and what they see each day. You will need to make additional log sheets to cover the entire time the land snails are in the classroom.

11. ASSIGN GROUPS TO CARE FOR LAND SNAILS

Assign four groups to each habitat. Write the group's identification on the *Land Snail Log* sheet for that date.

12. WATCH FOR ESTIVATION AND EGGS

In the coming weeks, students may observe several changes to the snails or the habitat. When the habitat is dry or food is scarce, students will notice snails that have attached themselves to a smooth surface in the habitat. What they are seeing is a behavior called **estivation**. The snail slows down its metabolism and seals itself up, leaving just a tiny hole for air to pass through. When conditions improve, the snail will emerge, looking for food and water. To activate an estivating snail, spray it with water and let it soak in for a few minutes.

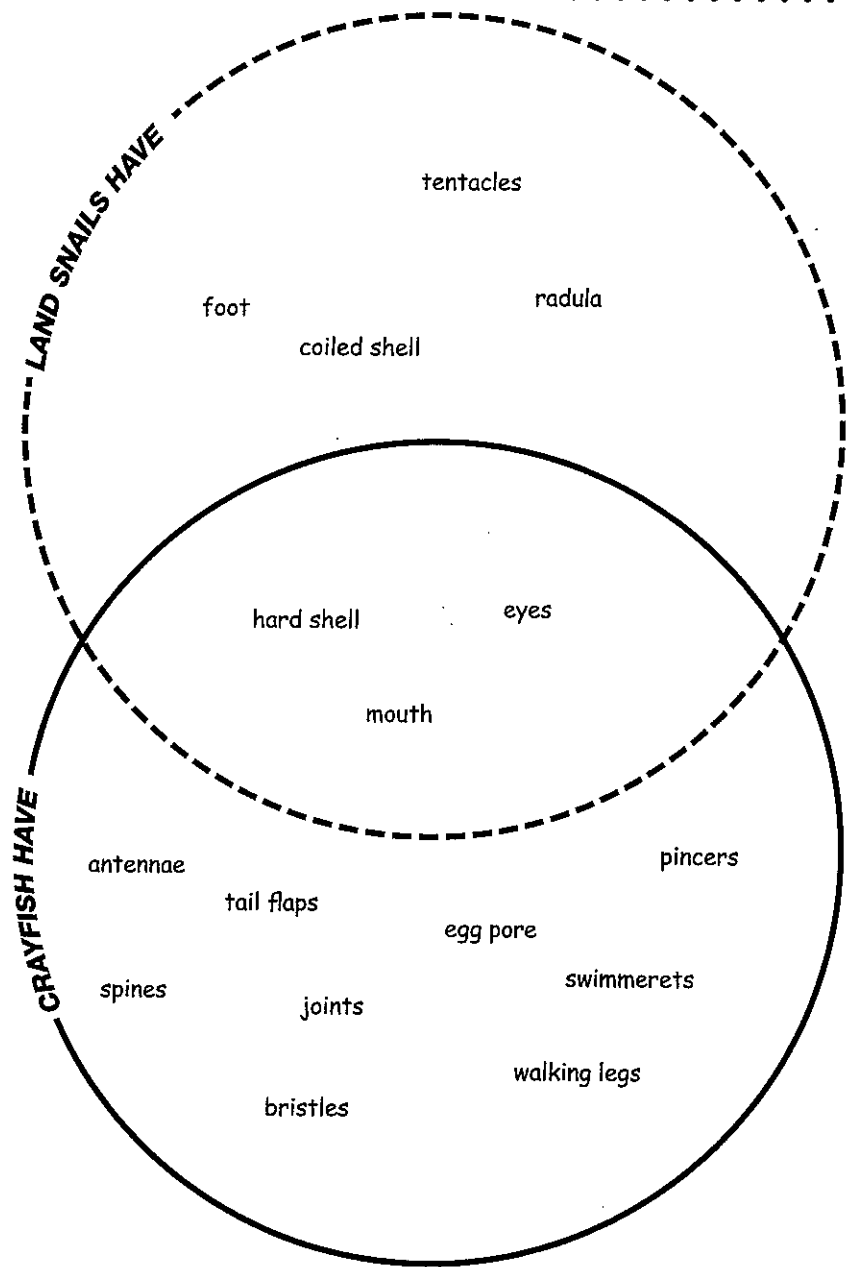
Students may observe different colors of scat, or "poop," depending on what the snail has eaten. It's interesting to feed the snails in one terrarium carrots and the other snails spinach.



Name _____

Date _____

COMPARING STRUCTURES



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Investigation 4: Meet the Land Snail
No. 13—Notebook Sheet



INVESTIGATION 4: MEET THE LAND SNAIL

PART 2: COMPARE CRAYFISH AND SNAILS

Students have observed the structures and behaviors of an aquatic organism (crayfish) and a terrestrial organism (land snail). They now compare the organisms.

NOTEBOOK SHEET

Use notebook sheet no. 13, *Comparing Structures*, for a closer look at students' understanding of structures of crayfish and snails.

WHAT TO LOOK FOR

- Students list structures of crayfish and snails.
- Student identify structures that are unique to each animal and those that crayfish and snails have in common.
- Students understand the relationships that a Venn diagram shows.

FOCUS ON STANDARD LSS3A

- Students know plants and animals have structures that serve different functions in growth, survival, and reproduction.