

Sample Body of Evidence

Science

Grade 5 – Third Reporting Period

FOSS California Living Systems 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 FOSS California 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 Period
Fifth Grade**

Student: SAMPLE Body of Evidence

Strand	Evidence	Notes on Quality	Report Card Mark
<p>LIFE SCIENCE</p> <p>Plants and animals have structures for respiration, digestion, waste disposal, and transport of materials.</p>	<p><i>Prompt #1</i> No. 1 Science Notebook Circulatory System Review</p> <p><i>Prompt #2</i> No. 2 Science Notebook The Disassembly Line Review</p> <p><i>Prompt #4</i> No.6 Science Notebook Response Sheet – Vascular Plants</p> <p><i>Prompt #6</i> No. 10 Science Notebook Response Sheet – Sugar and Cells</p>	<p><i>Prompt #1</i> <u>Expected Student Response</u> (ESR) explains how blood circulates through the heart chambers, lungs and body. Blood carries oxygen from the lungs to the cells – CO₂ from the cells to the lungs</p> <p><i>Prompt #2</i> <u>ESR</u> explains steps in digestive system. Includes teeth and mouth, esophagus, stomach, small intestine, large intestine and colon.</p> <p><i>Prompt #4</i> <u>ESR</u> explains people have one transport system (circulatory) while vascular plants have two separate one-way systems; xylem tubes (which transport water and minerals) and phloem tubes (which transport sugar).</p> <p><i>Prompt #6</i> <u>ESR</u> explains that plants make their own food using CO₂ (carbon dioxide) and energy from the Sun. Plants and animals obtain energy by breaking down sugar</p>	<p>Advanced</p> <p style="text-align: center;">Proficient</p> <p>Basic</p> <p>Below Basic</p> <p>Not Assessed</p>

Standards Based Report Card

Science Marking Worksheet – Third Reporting Period Student: SAMPLE Body of Evidence (con't.)

Fifth Grade

<p>INVESTIGATION & EXPERIMENTATION</p> <p>Scientific progress is made by asking meaningful questions and conducting careful investigations.</p>	<p><i>Prompt #3</i> No. 4 Science Notebook Celery Experiment A <i>and</i> No. 5 Science Notebook Celery Experiment B</p> <p><i>Prompt #5</i> No. 7 Science Notebook Making Food Experiment A <i>and</i> No. 8 Science Notebook Making Food Experiment B</p>	<p><i>Prompt #3</i> <u>ESR</u> student plans and designs a simple investigation including written instructions.</p> <p><i>Prompt #5</i> <u>ESR</u> student records data accurately and make inferences and draws conclusions based on the data collected.</p>	<p>Advanced</p> <p>Proficient</p> <p>Basic</p> <p>Below Basic</p> <p>Not Assessed</p>
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CIRCULATORY SYSTEM REVIEW

1. What are the basic needs of all living cells?
food (energy), water, gases (gas exchange), and waste removal
2. How do the cells in multicellular organisms get the resources they need to stay alive?
Blood flowing through the circulatory system delivers nutrients and removes wastes.
3. What is the main function of the left side of the human heart?
It collects blood from the lungs and pumps it out to the body tissues.
4. What is the main function of the right side of the human heart?
It collects blood returning from the body tissues and pumps it out to the lungs.
5. What is the function of the red blood cells?
They carry oxygen from the lungs to the cells, and carbon dioxide from the cells to the lungs.
6. What are the main kinds of blood vessels and what functions do they perform?
Arteries carry blood away from the heart. Veins carry blood to the heart. Capillaries touch all cells and carry out gas exchange and nutrient delivery.
7. Describe what happens when blood flows through the lungs.
Red blood cells release carbon dioxide for elimination and pick up oxygen for delivery to cells.
8. Describe what happens when blood in capillaries flows past cells.
Cells take water, food (sugar), minerals, and oxygen from the blood and transfer wastes to the blood.

THE DISASSEMBLY LINE REVIEW

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1. Why do people eat food?

Food provides energy and building blocks for cell function and maintenance.

2. What happens to food in the digestive system?

Food breaks down into simple molecules (nutrients) that cells need for survival.

3. Describe the path taken by food as it passes through the digestive system.

mouth, esophagus, stomach, small intestine, large intestine, colon, rectum, anus

4. Explain what happens to food at each place in the digestive system.

Food enters the mouth where it is broken into small chunks and moistened with saliva. It goes down the esophagus into the stomach, where digestive juice and muscle action reduce it to a thick liquid. In the small intestine more digestive juice reduces the food to simple molecules, which pass through the intestine into the blood. The large intestine removes water. Waste is eliminated from the rectum.

5. How does digested food get to cells?

Simple molecules (sugar) pass through the walls of the small intestine into the bloodstream. The blood transports the food molecules to the cells.

6. Why do people need kidneys?

Cells transfer waste into the blood. The kidney removes the waste to keep the blood environment healthy for cells.

7. Describe how kidneys work.

Blood passes through capillaries in the kidneys. The waste materials pass from the blood into tubes in kidney. The waste materials and some water makes urine, which flows into the bladder. The urine is eliminated from the bladder as needed.

CELERY EXPERIMENT A

Experimental Design

Design an experiment to get information about rootless celery and water.

The materials available to you include

- | | |
|-----------------------------------|---------------------|
| 2 Stalks of celery with leaves | 1 Vial holder |
| 2 Stalks of celery without leaves | • Water |
| 4 Vials | • Measurement tools |

While you work on your experimental design, think about these three things.

- Leaves might affect how celery interacts with water.
- The mass of the celery might change.
- The volume of water in the vial might change.

Question

Plan

• See Teacher's manual page 87
step #5 for suggested plans

Name _____

Date _____

CELERY EXPERIMENT B

Data

Conclusions

see Teacher's manual page 90
Step #12 for suggested data and
analysis

Name _____

Date _____

RESPONSE SHEET—VASCULAR PLANTS

Alexa wrote in her science notebook,

Plants and people are a lot alike because they both have circulatory systems.

When Gary read that sentence, he said,

That's not right, but I think I know what you mean.

What do you think Gary told Alexa about plants and people?

Plants and people both have transport systems, but people have circulatory systems and plants do not.

People have one system, the circulatory system, that supplies all cells with food, water, gases, and waste removal. The blood goes around and around.

Vascular plants have two transport systems. The xylem tubes transport water and minerals from roots to all the cells in the plant. The flow is in one direction. Phloem tubes transport sugar (sap) to cells that need it and to places where it can be stored for later use. Sap flows one way at a time.

MAKING-FOOD EXPERIMENT A

Question

Plants produce food. What is that food made of?

Experimental Design

Five-hundred grams of bean seeds were planted in each of six planting containers filled with 10,000 grams of sand. Record the conditions for each of the experiments in the table below.

	Water	Light	O ₂	CO ₂	N ₂
Experiment A	Y	Y	Y	Y	Y
Experiment B	Y	Y	Y	Y	N
Experiment C	Y	Y	Y	N	Y
Experiment D	Y	Y	N	Y	Y
Experiment E	Y	N	Y	Y	Y
Experiment F	N	Y	Y	Y	Y

Data

After 3 weeks Paco and Eva collected, dried, and weighed the bean plants. They dried and weighed the sand. Record their data in the table below.

	Bean starting mass (g)	Bean ending mass (g)	Bean change of mass (g)	Sand starting mass (g)	Sand ending mass (g)	Sand change of mass (g)
Environment A	500	551	51	10,000	10,000	0
Environment B	500	552	52	10,000	10,000	0
Environment C	500	500	0	10,000	10,000	0
Environment D	500	549	49	10,000	10,000	0
Environment E	500	500	0	10,000	10,000	0
Environment F	500	500	0	10,000	10,000	0

MAKING-FOOD EXPERIMENT B

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Results

Do plants gain mass when they have no water? _____ no _____

Do plants gain mass when they have no light? _____ no _____

Do plants gain mass when they have no nitrogen? _____ yes _____

Do plants gain mass when they have no oxygen? _____ yes _____

Do plants gain mass when they have no carbon dioxide? _____ no _____

Do plants gain mass from the sand they grow in? _____ no _____

What variables must be present for plants to make food? H₂O, CO₂, light

Where does the mass of the produced food come from? H₂O, CO₂

Conclusions

Review the experiment question. Write a conclusion that provides an answer to the question. Use Paco and Eva's data and results to support your conclusions.

Plants need water, carbon dioxide, and light to produce mass. The increased mass did not come from the soil, so it had to come from the water and carbon dioxide (air).

RESPONSE SHEET—SUGAR AND CELLS

Brian was reviewing how cells get energy. He wrote in his notebook,

Plant cells get energy from the Sun. Animal cells get energy from food.

Elana said,

That's part of the story, but there's more.

What do you think Elana would explain to Brian about how cells get energy?

All cells get their energy from food. That includes all plant and animal cells.

The difference is that plants make their own food from carbon dioxide and water in the presence of light. The food (sugar) is then used by all the cells in the plant.

Animals can't make food, so they eat other organisms to get the food they need. But the food animals eat started as food produced by plants, so both plants and animals get energy from the Sun.