Sample Body of Evidence

Science

Grade K – Second Reporting Period

FOSS California Wood and Paper
Physical 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.

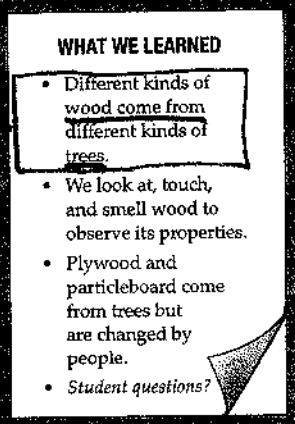
Important Note:
For the first two grading periods, students are evaluated based upon their progress toward end-of-year standards. Students who receive a mark of "proficient" for the first and second grading periods are making consistent and adequate progress toward achieving end-of-year expectations. 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).

Winter 2008

SCIENCE NOTEBOOK QUESTIONS

Prompt #1	Inv. 1 Part 1:	Where does wood come from?
Prompt #2	Inv. 1 Part 2:	What is made of wood?
Prompt #3	Inv. 1 Part 3:	What happens when wood gets wet?
Prompt #4	Inv. 1 Part 5:	How did you test the wood?
		What did you find out?
Prompt #5	Inv. 2 Part 1:	How can you change the shape of wood?
	Inv. 2 Part 2:	How are sawdust and wood shavings different?
	Inv. 2 Part 3:	How did you make particleboard?
	Inv. 2 Part 4:	How did you make plywood?
Prompt #7	Inv. 3 Part 1:	What is made of paper?
	Inv. 3 Part 2:	Are all papers good for drawing on?
	Inv. 3 Part 3:	Are all papers easy to fold?
	Inv. 3 Part 4:	What happens when paper gets wet?
	Inv. 4 Part 1:	How did you make new paper from old paper?
	Inv. 4 Part 2:	How did you make a bowl from old paper?
	Inv. 4 Part 3:	What materials do we recycle at school?
Prompt #10	Inv. 4 Part 4:	How does water change from a liquid to a solid and back again?
	Inv. 5 Part 1:	How are paper boxes made?
	Inv. 5 Part 2:	How did you weave paper?
	Inv. 5 Part 3:	What did you make? What did you use?

Prompt #1



11. START A CONTENT CHART

A content chart lists simple concept statements that summarize the knowledge acquired in the activities. To generate the statements, ask students what they learned from the investigations. If they need prompting, ask a question related to the inquiry just completed, and write the answer on a sheet of chart paper, using students' words as much as possible.

- *Where does wood come from?*
- *How did you observe the wood samples? What senses did you use?*

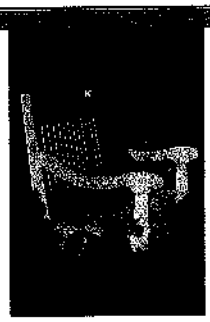
Use a different-color marker to add a question or two that students might have about wood.

Use the first question as a writing/drawing prompt in science notebooks.

Prompt #2

CA STANDARD

PS1a. Students know objects can be described in terms of the materials they are made of (e.g., clay, cloth, paper) and their physical properties (e.g., color, size, shape, weight, texture, flexibility, attraction to magnets, floating, sinking).



The Story of a Chair

Here is a chair you might sit on in a park.
Do you know how it was made?

3

READING IN SCIENCE RESOURCES

10. READ *THE STORY OF A CHAIR*

Ask students what they found in the classroom that was made of wood. Briefly review the items that students found during the wood hunt. Continue the discussion by asking where the wood came from to make the items. Introduce "The Story of a Chair." Tell students that this story will tell them how a chair is made from wood.

Read aloud "The Story of a Chair" in *FOSS Science Resources: Wood and Paper*. Pause to discuss key points in the story, to review the pictures, and to make predictions.

11. DISCUSS THE READING

Discuss the reading, using these questions as a guide.

- *Where did the wood come from to make the chair?*
- *How does the wood from a tree become a chair?*
- *Why is wood a good material to use to make a chair?*

12. ASK SCIENCE NOTEBOOK QUESTION

Use the prompt "What is made of wood?" for students to respond to in their science notebooks.

13. EXTEND THE READING

Use this activity to deepen students' understanding after students have reread the story.

In small groups, have students use the format of "The Story of a Chair" to dictate their own story of a wooden object. For instance, one group could create the story of a table, another group the story of a baseball bat, and a third group the story of a rocking horse. Write the stories on chart paper and have each student illustrate a portion of the group's story. Post the completed stories and, as a class, discuss the similarities among them.

*Student responses should be reasonable. Following the reading most students will probably answer, A chair is made of wood.

Prompt #3

WRAPPING UP PART 3

11. REINFORCE VOCABULARY

Review key vocabulary added to the word bank at the center.
Here's a suggested cloze review.
Students answer chorally.

T: *When I tell about something by talking or writing, I* _____

S: Communicate.

T: *When wood stays on top of the water, we say it* _____

S: Floats.

T: *When the wood goes to the bottom of the tub of water, we say it* _____

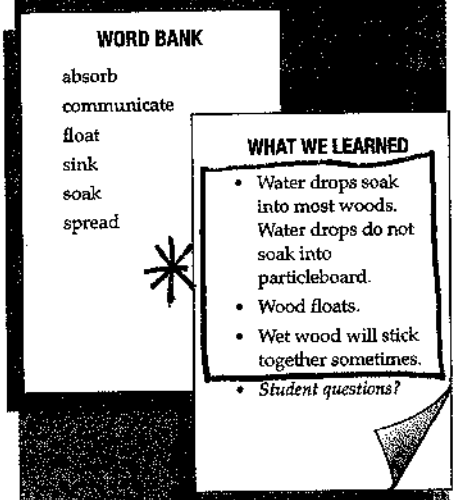
S: Sinks.

T: *When the wood absorbs the water, we say the water* _____ *in.*

S: Soaks.

Additional words to discuss and write on the word bank include

- absorb
- spread



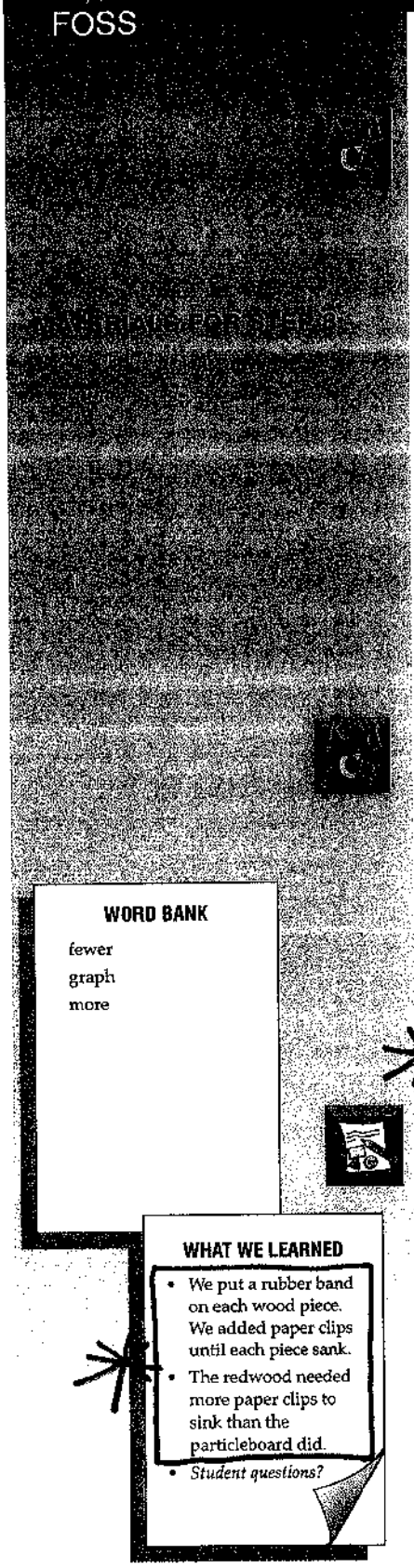
12. MAKE CONTENT CHART ENTRIES

Add new concepts to the content chart.

- *What happens when wood gets wet?*

Use this question as a writing/drawing prompt for students to respond to in their science notebooks.

Prompt #4



7. ADD TO THE WORD BANK

As students offer their observations, add any new or important vocabulary to the class word bank. Let students be the guides—acknowledge the words they use and offer new vocabulary as needed.

8. CLEAN UP

When you have finished discussing the graphs, get the center ready for the next group. Return paper clips and rubber bands to their containers, and put wood samples on the newspaper or in a basin to dry overnight.

When all groups have finished, dry all equipment thoroughly before returning it to the kit. Spread the paper clips on newspaper, pat them dry with a paper towel, and let them dry overnight to prevent rust.

WRAPPING UP PART 5

9. REINFORCE VOCABULARY

Review key vocabulary added to the word bank at the center.

- fewer
- graph
- more

10. MAKE CONTENT CHART ENTRIES

Add new concepts to the chart.

- *How did you test the wood?*
- *What did you find out?*

Use these as writing prompts for students to respond to in words or drawings in their science notebooks.

Prompt #5

6. COLLECT THE SAWDUST

Introduce the word **sawdust**. Use a plastic cup to collect the sawdust from each student's plate. Tell students that you are saving the sawdust for another project.

7. CLEAN UP

Prepare the center for the next group. The paper plates should be reused. The wood pieces and sandpaper can also be reused, but check the condition of both and replace them if necessary.

WRAPPING UP PART 1

8. REINFORCE VOCABULARY

Review key vocabulary added to the word bank at the center. Here's a suggested cloze review. Students answer chorally.

T: *Paper with sand glued on it is called* _____

S: Sandpaper.

T: *We can change the shape and smooth the wood. We use sandpaper to* _____

S: Sand.

T: *A person who works with wood is called a*

S: Woodworker.

T: *When we rub the wood with sandpaper, the dust that comes off is called* _____

S: Sawdust.

Additional words to discuss and write on the word bank include

- change
- shape

WORD BANK

change
sand
sandpaper
sawdust
shape
woodworker

WHAT WE LEARNED

- Sandpaper changes wood into wood dust.
- *Student questions?*

9. MAKE CONTENT CHART ENTRIES

Add new concepts to the content chart.

- *How did you change the shape of wood?*

Use this question as a writing/drawing prompt for students to respond to in their science notebooks. Save the sawdust students made and let them tape bits in their notebook. They can draw the shape of the wood before sanding and after sanding.

10. SAND ON ANOTHER DAY (OPTIONAL)

Use some of the wood scraps that you have been collecting for Investigation 5 to focus on sanding to make wood smoother. Use pieces of wood that are fairly rough, but not splintery.

Prompt #6

FOSS

GUIDING THE INVESTIGATION
PART 3: MAKING SAWDUST WOOD

1. OBSERVE THE PARTICLEBOARD SAMPLES

Call students to the rug. Hold up the samples of pine and particleboard. Remind the class that one kind of wood came right from the tree and the other started from a tree, but was changed and processed by people. Ask them which they think came right from the tree. Review the poster that shows how particleboard is made. Tell students that they will each make a piece of particleboard when they work at the center.

2. RECALL THE SAWDUST

Have students recall their experience with sawdust in Part 2. Remind them that they put the sawdust in water and then used the screen to separate it. At the end of the session, the sawdust was all wet. Bring out the cup of wet sawdust with the lid and show it to the class. Retrieve the sawdust on the newspaper and put it in a cup. Pass it around so that students can feel it and see that it is dry. Ask,

- *What happened to the water that was on the sawdust on the paper? Where did it go?*
- *What happened to the water that was on the sawdust in the cup? Where did it go?*

(on the paper)

Confirm that when the water on the sawdust was open to the air, the water dried up. But when the water wasn't open to the air, as in the cup with the lid, the water didn't dry up. Tell them that another word that describes the water drying up is **evaporate**. When water evaporates, it goes into the air.

Some students may say that the water went into the paper and that's why it dried up. Suggest they remove the lid from the cup of wet sawdust and see if tomorrow the water is still in the cup.

3. CHECK THE CUPS OF WATER

Remind students that they also had two cups of water, one with a lid on it and one without. Hold up the two cups and ask students to observe the water in the cups. Is there still the same amount of water in the two cups? Depending on the number of days that has elapsed, they may or may not observe a difference. This will be an ongoing investigation for students to observe each day.

Prompt #7

WRAPPING UP PART 1

9. REINFORCE VOCABULARY

Review key vocabulary added to the word bank earlier. Here's a suggested cloze review. Students answer chorally.

T: *Most cereal boxes are made from* _____

S: Chipboard.

T: *A wavy layer of paper is called*_____

S: Corrugated.

T: *Most large boxes are made from* _____

S: Corrugated cardboard.

T: *Paper that has a waxy finish is called* _____

S: Waxed paper.

T: *Newspapers are printed on*_____

S: Newsprint.

T: *The paper we use for cleaning up spills is* _____

S: Paper towels.

T: *The paper that we use for art projects and that comes in many colors is*_____

S: Construction paper.

T: *This kind of paper is used for wiping noses.* _____

S: Facial tissue.

T: *This kind of paper is used for paper bags.*_____

S: Kraft paper.

T: *This kind of paper is used for making posters.* _____

S: Tagboard.

WORD BANK

chipboard
construction paper
corrugated
corrugated cardboard
facial tissue
kraft paper
newsprint
paper towel
tagboard
waxed paper

WHAT WE LEARNED

- Many things are made of paper, like boxes, books, writing paper, wrappers, and bags.
- Paper is light, you can cut it, and you can throw it away.
- Paper is made from wood from trees.
- *Student questions?*

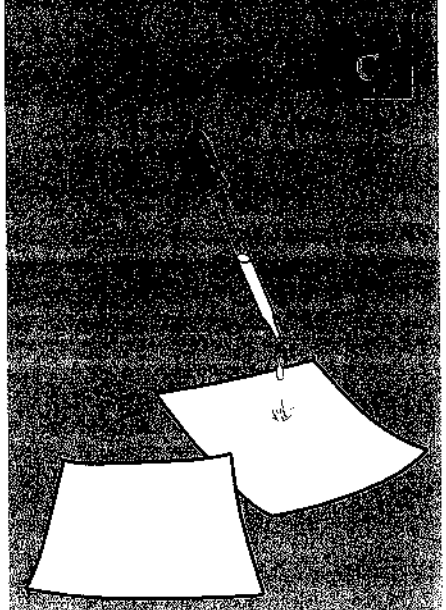
10. MAKE CONTENT CHART ENTRIES

Add new concepts to the content chart.

- *What is made of paper?*
- *Why might people make things from paper instead of other materials?*
- *What is paper made of?*

Use the first question as a writing/drawing prompt for students to respond to in their science notebooks.

Prompt #8



NOTE: *Soak at least one sample of each kind of paper.*

NOTE: *Save these paper samples to use with another class, to recycle into chipboard (Investigation 4), or to use in sculptures (Investigation 5).*

3. USE QUESTIONS TO GUIDE OBSERVATIONS AND DISCUSSION

As students drop water on the various paper samples, guide their observations. As students describe their observations, note the key words on the class word bank.

- *Compare what the water does on each sample. How is it the same, and how is it different?*
- *Which samples would be good for soaking up spills? Why do you think so?*
- *Are there any samples that would be good to wrap things in to protect them from water?*
- *Which papers stayed the same, and which changed? How did they change?*

4. SOAK PAPER SAMPLES OVERNIGHT

After students have finished dropping water on the paper samples, ask them what they think the samples would look like if they were soaked in water overnight. Show students the basins of water, have them choose one sample to soak overnight, and let them put the samples in one of the basins.

5. CLEAN UP

Collect the remaining paper samples and spread them out to dry; the dried samples can be used again for this part with another group or another class. Set the droppers and cups out to dry.

BREAKPOINT

6. LOOK AT SOAKED SAMPLES THE NEXT DAY

Observe the samples that were soaked overnight, and discuss the changes that occurred.

7. DRY THE WET SAMPLES

Hang a set of paper samples out to dry. When they are dry, ask students to compare the dried samples to a set that has not been soaked.

Ask students to explain what happened to the water. During the discussion, note the use of "evaporate," "the water dries up," or "the water goes into the air."

Prompt # 9

FOSS

WRAPPING UP PART 1

9. REINFORCE VOCABULARY

Review key vocabulary added to the word bank at the center. Here's a suggested cloze review. Students answer chorally.

T: *The paper fiber and water mush is called* _____

S: Pulp.

T: *We used this to pour the paper pulp onto and drain out the water.* _____

S: Screen.

T: *We used the bottle like a rolling pin to press the paper pulp. This is called* _____

S: Rolling.

T: *We used a sponge to absorb water that got squeezed onto the waxed paper. This is called* _____

S: Blotting.

T: *We made new paper out of old paper. This is called* _____

S: Recycling.

Additional words to discuss and write on the word bank include

- absorb
- fiber
- flip
- pattern

WORD BANK

absorb
blotting
fiber
flip
pattern
pulp
recycling
rolling
screen

WHAT WE LEARNED

- Paper comes from trees. When we recycle paper, we don't need to cut as many trees.
- The water in the paper pulp dried up into the air.
- Recycling is using old things for something new.
- *Student questions?*

10. MAKE CONTENT CHART ENTRIES

Add new concepts to the content chart.

- *How did you make new paper from old paper?*
- *Why use old paper to make new paper?*
- *What happened to the water in the paper pulp?*
- *How is the paper you made different than the paper you started with? How is it the same?*
- *What does recycling mean?*

Use the first question as a writing/drawing prompt for students to respond to in their science notebooks. Students' paper samples can be stapled on the page to illustrate the final step.

Prompt # 10

every 30 minutes or so. In addition to looking at the change, students can use their sense of touch and feel the water and the ice as it **melts.** As students describe the changes, write their descriptive words on the word bank. These are some of the things students will see on the ice on the stick.

- The outside of the ice block becomes wet as it starts to melt.
- If you lift the ice out of the cup by the stick, you will see drops of water coming off the ice.
- The ice gets smaller, and liquid water forms in the cup.
- When there is enough water, the ice will float in the water.
- The ice gets smaller and smaller as more and more water forms in the cup.
- Eventually the last bit of ice will slip from the stick.

8. GATHER WHEN ALL THE ICE HAS MELTED

It may take 3 or 4 hours for the ice to completely melt. Gather students and ask them what would happen if they put the cups of water back in the freezer. Consider doing it another time so that students can reconfirm the process.

WRAPPING UP PART 4

9. REINFORCE VOCABULARY

Review key vocabulary added to the word bank. Here's a suggested cloze review. Students answer chorally.

T: *When water changes to ice, it becomes a* _____

S: Solid.

T: *When ice changes to water, it becomes a* _____

S: Liquid.

T: *To change water from liquid to solid, we* _____

S: Freeze it.

T: *To change water from solid to liquid, we* _____

S: Melt it.

10. MAKE CONTENT CHART ENTRIES

Add new concepts to the content chart.

- *How does water change from a liquid to a solid and back again?*

Use this question as a writing/drawing prompt for students to respond to in their science notebooks.