

11-4-08

What do you know about the properties of the pieces of food that might help you in predicting the weight of a cupful of food?

I predict that the split pea is the lightest because that it is the smallest food and it is the most overes that it is the smallest.

10-21-09

I think there is  
my evidence is

I think that is clay and  
sand with sam. wit pota  
coils

In the roll a ball I observe  
the ball is rough and  
the ball has sam sand  
is hod to the can is  
brown like clay

the smettest is  
bape and smoth and  
lifo rough like the sand

11-6-08

What do the line plots tell us about the weight of the cupfuls of food?

The heaviest is the  
cupful of split peas it weighs  
27 cubes.

The split peas are smaller  
so more can fit in the cup and  
they are solid.

The oat cereal is the lightest  
it weighs 4 cubes.

The oat cereal is puffed up with  
air which does not weigh anything.

The oat cereal has air holes and  
it is bigger so less can fit in it.

The split pea is smaller. The oat cerele  
is bigger but it is the lightest  
because it is puffed up with air.

11/12/09 What evidence have we collected from our soil tests that will help us identify what is in our Local soil?

The soil in which the plant grew healthiest was Local soil.

The evidence is that it is  $4\frac{1}{2}$  cm tall, whereas the sand was  $2\frac{1}{2}$  cm tall. In addition, the local soil plant had solid green, and the roots held the plant down.

I think the Local soil had good nutrients, and that is why it is so tall.

I think the Local soil has humus, sand, and clay in it. I think this because in the smear test, it had the circular pattern like humus, same color of humus, had a light bit, which was sand, and a reddish tinge around the edge.

## Second Grade, Sample A—*Balancing and Weighing* Unit: Brenna

- Students are investigating the relationship between a food's size and its weight. Before the investigation, Brenna makes her prediction, then supports it with her reasoning that the size of food determines its weight. This is a common misconception.
- In her conclusion, she shows that she now understands why the split peas weigh more than the oat cereal. Note that she discusses both the heaviest and the lightest of the foods she has tested. Students need to learn that in a conclusion, they should report the highest and lowest value of the data (unless the test results are not conclusive). Students typically will report the results of only one.
- Also note that she first makes a qualitative or comparative statement (the *heaviest* [food]), then supports that statement with quantitative data (the weight of the food in standardized units, the cubes), and ends with an inference for why the food weighs more or less than another food does. She uses the same structure in writing about the lightest food, the oat cereal.

## Second Grade, Sample B—*Soils* Unit: Angelina

- In this conclusion, Angelina provides evidence for which soil components she thinks are in a sample of local soil. Because she receives special education services during the first half of most science sessions in her classroom, she uses data from the class data table in her conclusion, which is detailed and accurate.
- Angelina copies the first two sentence starters from the writing frame, then uses the first sentence again to begin her conclusion: "I think thar [there] is clay and sand with sam. wit potacols [some white particles]." Then she provides evidence from the "roll a ball test" to support her statement or claim. The properties she includes are typical in the clay samples the class has used. Then she refers to a second test, the smear test, and reports that the soil is "bape and smoth and litol rough [bumpy and smooth and little rough] like the sand." The evidence she includes from these two tests supports her initial claim that clay and sand are in the local soil sample. Angelina clearly has learned to think and write like a scientist.

## Second Grade, Sample C—*Soils* Unit: Maddy

- In Maddy's classroom, students write a conclusion to two ongoing investigations they have been conducting. In the first, they have been growing plants in different types of soil to see what effect soil has on plant growth. Maddy states her claim (the answer to the investigative question) first, then she supports it with evidence from their testing. She reports the height of the local soil plant, and compares it (using *whereas*) with the plant grown in sand. After *In addition*, she provides data about the color of the local soil plant as well as how well the roots hold the plant in place. She has provided strong evidence for her claim for the local soil plant. She is missing information about the sand plant's color and whether its roots are holding the plant down. A scientist would ask her about that evidence. She ends with a logical, clearly stated inference.

- At the end of this conclusion, she writes a second brief (probably because of time constraints) but quite effective conclusion about the soil components found in the local soil. She offers appropriate evidence of one property for each soil component she mentions based on the smear test. We can infer that the last property is characteristic of the clay sample she has tested. A scientist would ask about that last part of the entry.