

Salt is like a liquids because ...
can pour and it take the shape of it's
container.

It is different than a liquids because
you can see the particles of it and
it is not wet.

5/14/09 How do tiny particles of some Solids behave?

Liquids and small solid are the same because they can take the shape of it's container. And make a sound when it is pour. Liquids and small solid are different because liquid are wet but small solid are dry unless water is added. Also liquids spread out on the tray but small solid mound up on the tray.

How have the contents
of the settling tubes changed

Last time the clay's
water was like brown.
But today the water is
clear. And the clay last
time the clay was
very bumpy. now the clay
is soft and smooth.

Last time the humus
was at the top of the
test tube. but now the
humus has settled to the
bottom of the test tube
and the water is clear
more.

Last time the sand's
water was green. now the
water is clear.

Second Grade, Sample A—*Solids and Liquids* Unit: Talis

- Students have been discovering the properties of solids and liquids by observing different solids and liquids. Over time, they determine what they think are the shared and contrasting properties of the two forms of matter.
- Talis has used the teacher's frame ("Salt is like a liquid because . . .") to scaffold her entry, noting two accurate similarities and then two accurate differences. Her sentences are complex in that she writes about two similarities or differences in the same sentence rather than making a separate sentence for each one. This skill streamlines her writing, which will help her include more of her thinking.

Second Grade, Sample B—*Solids and Liquids* Unit: Molis

- Students in this class use the Compare and Contrast writing frame after they have had a shared reflection discussion and a writing session. Note that the teacher does not ask students to write an answer to the focus question. This is because the focus question guided students' exploration of the behavior of small particles of some solids. During the shared reflection discussion, students share their observations about how the particles behaved, then they add properties to their chart of solids and liquids. Toward the end of their discussion, the teacher guides them in constructing their understanding of what liquids are and what solids are. Then they make a box and T-chart to help them sort and classify the similarities and differences between the two types of matter.
- Molis has written a strong comparison, including two accurate similarities and two accurate differences. After pointing out specific strengths in the entry, her teacher would have her reread her entry to see if a scientist would understand the important points she is making. Students need to learn the importance of rereading their entries, just as adult scientists do, to check the clarity of their thinking and writing.

Second Grade, Sample C—*Soils* Unit: Atkin

- T-charts are helpful in seeing changes that have happened to something over time. In this unit, students pour clay, humus, and sand into three settling tubes. They draw and write notes about what they observe right after they conduct the investigation. Then the next day, they observe the tubes again. Imagine a T-chart with "Last time" at the top of a left-hand column and "But today" or "But now" on the top of the right-hand column. Students discuss and later write about the differences in the settling tubes following that visual language scaffolding. The teacher has modeled how to talk and write about the soil component first and then about the water.
- Atkin writes a detailed entry about his observations of the water and soil components in the settling tubes. He discusses both the water and the clay in the first paragraph, clearly communicating to a scientist what he has observed. In the second paragraph, he describes the humus well, and he writes that the water "isn't brown anymore [isn't brown anymore]." A scientist might ask, "What do you notice about the water now

that it isn't brown anymore?" In the last paragraph, Atkin is specific about the water. He does not describe the sand, although he might have run out of time to complete the entry. (To help keep track of student's entries, you can have them leave their notebook open after they finish making an entry. Then you can quickly scan each one, putting the unfinished entries aside to be completed later.)