Testing Liquids for Starch 4-24-09

Today we are testing for starch we are using iodine which will ~~turn a dark color~~ if Starch is present

Conclution

When we tested liquids for starch, our results showed conclusively that the only liquid with starch is cornstarch and water, milk, and cornoil donot contain starch. We these results are conclusive because when we tested cornstarch it turned black, but when we tested water, milk, and cornoil they pretty much just stayed the same color as the iodine and everyone agreed

Some results were inconclusive. The tests that were incoclusive were the ones we did for Cornsyrup. We think these results are Inconclusive because some of the class thinks that there might be a little bit of starch, but some of the class thought the there was no starch in cornsyrup.

I think that those inconclusive results were caused by people stirring their liquids more than 7 times trying to make their liquids change color to a black blue, or purple. Or people put in too many drops of a substance

2/23/10

In my investigation, I tried to figure out what would happen if I polluted our ecocolum with acid rain. At first, our alfalfa and rye grass was bright green, but then the alfalfa turned yellow & droopy. The rye grass also turned yellow. However, unlike the alfalfa, the rye grass seeded before it died. My lichen and leaf compost decomposed and the lichen got moldy. I think if we had had isopods & crickets in the ecocolums when we polluted them, they would have died either because There bodies where directly affected or sceince their food scorce died they would die too.

In the aquariam, there where changes as well. At first our elodea, duckweed, and algae where all green. But then, the elodea lost it's leaves and unrooted it's self from the bottem. And the algae turnd grayish and sank to the bottem. The duckweed turned white and also sunk. The water was clean and transparent at first, but became cloudy and started to evaporate. I think if the snails and cloud fish had been in our polluted ecocolume, they would have died because they wouldn't have any thing to eat seence the plants died. They also might die because of the lack of oxagen because the plants produce oxagen and if they are dead, they wouldn't be able to produce oxagen.

After I did this investigation,

I be live that scerce sulferic dioxide is relised from big factories, and sulferic dioxide turned into acid rain. I think we sould not have as many factories to avoid acid rain harming plants in the real ecosystem.

6-17-10
What effect does length have on the brightness of the bulb?

Changed Varible:
The length of the wire

Controlled Varible:
Lights off
Simple Circuit: (D-cell, Wires, bulb)

Measured Varible:
Brightness of the bulb

I predict length will not make a difference because if the other things are the same, I don't think the length will matter, it will just be like a normal circul but smaller.

Wire length	Brightness #			Average
	Trial 1	Trial 2	Trial 3	
6 cm	10	12	13	11
12 cm	10	10	13	11
18 cm	6	5	7	6

6-18-10
Conclusion
I predicted that the length of the wire wouldn't matter, yet I was wrong. The short wire made the bulb much brighter than the long wire did. For example the average for the short wire was 11 on the brightness meter, while the long wire was 6 on the brightness meter. Therefore I conclude that the short wire makes the bulb brighter than the long wire.

Fourth Grade, Sample A—*Food Chemistry* Unit: Lena

- The basic structure of this conclusion is this frame: "When we tested _____, our results showed conclusively that _____. We think these results are conclusive because _____. Some results were inconclusive _____. I think that those inconclusive results were caused by _____."
- Lena does a good job of using the frame to scaffold her conclusion. She also is able to add her own writing and thinking, moving beyond the possible constraints of the frame. Note, for example, how in the first paragraph, she contrasts the positive and negative test results: "because when we tested . . . , but when we tested . . ." She has learned how to use a "but clause" to set up a contrast. In the last paragraph, she also shows that she has developed an important scientific skill, recognizing that people need to conduct testing procedures carefully and consistently.
- The only question a scientist might have is about the inconclusive results. Is it enough for students to *think* that a certain nutrient is or is not present? What did the test results show that made students think the results were inconclusive?

Fourth Grade, Sample B—*Ecosystems* Unit: Violet

- Students have conducted investigations to determine the effect of different pollutants on their model ecosystems (their *ecocolumns*). In the first paragraph, they are to report what the plants in their terrarium ecocolumn looked like before students added the pollutant and then after they had been polluting for an extended period of time. Then they are to explain what they think would have happened if they had kept animals in their ecocolumn. In the second paragraph, they are to use the same structure to report about their aquarium ecocolumn. Finally, they are to explain how they think the pollutant could affect a real ecosystem and how the negative effects could be avoided. The students can use their data tables to help them organize and include all the necessary details for their conclusion.
- In the first paragraph, Violet reports about what she has observed about each kind of plant. She writes a particularly strong explanation of a cause-effect relationship between the animals and their environment in that she not only states that she thinks the isopods and crickets would have died, but she also explains two reasonable reasons why she thinks that would happen. Many students just say that they think the animals would die because the plants would be dead without explicitly making connections between what the plants provide for the animals. She includes even more detailed evidence in the second paragraph with an equally strong cause-effect explanation. In her final paragraph, she applies what she has learned from her investigation as well as the research she has done about acid rain to recommend a way of preventing pollution from that source.
- To improve the quality of the students' conclusions, we would need to have them compare their polluted ecocolumn with the class ecocolumn that has not been polluted.

Fourth Grade, Sample C—*Circuits and Pathways* Unit: Rees

- This kind of conclusion, as noted earlier, is less complicated to write than those in many life science and earth science units in the elementary grades. Students need to answer the question, make a statement about the qualitative difference (for example, one is *brighter* and the other is *less bright*), then provide quantitative data to support their statement or claim. They also need to write a prediction that includes their reasoning.
- Rees writes a prediction in which she clearly explains her reasoning. The teacher has asked students to begin by referring to their prediction, which Rees does. Then she reports the qualitative evidence for both the short and long wires, which she backs up with quantitative data for both. In classes where students do not learn to use their data tables to structure their conclusions, students typically will include the data from only the longest or shortest wire. Rees then writes an accurate concluding statement.
- Students might not yet have discussed the concept of resistance. But if they have, it would be interesting for them to end their conclusion with their thinking about why the shorter wire makes the bulb shine more brightly. Rees had one idea before the investigation. How has her thinking changed? How does she think she could investigate her new idea? These are the kinds of questions that can make conclusions like this more reflective.