November 2011

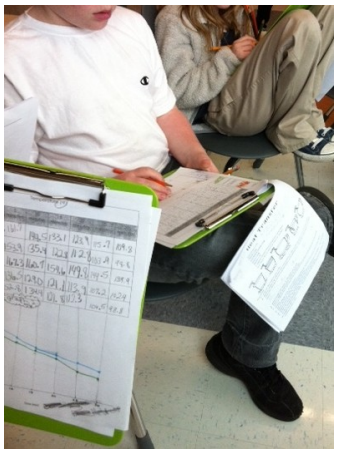
5th grade Science PLC

Focus on Physical Science

PLC meeting date
November 8, 2011

Special points of interest:

* Materials and resources for Physical Science Centers are available for your use. Student instructional materials are located on the wiki under Matter. Lab equipment can be checked out from me at Midland.



Physical Science Centers

What does the study of matter look like in 5th grade? The most common questions I am asked from any grade level concern physical science and how to incorporate authentic, quantifiable experiences into the classroom. I worked with 5th grade teachers at Adams last year and developed a set of physical science centers where students would conduct investigations yielding quantifiable results.

There are six centers

1. Evaporation (qualitative)
2. Evaporation (quantitative)
3. Melting
4. Condensation
5. Heat Transfer
6. Conduction

Students move through the centers much like stations. Each center is designed to be a 30 minute experience during which students collect data at timed intervals.

Student data collection includes: the change in mass of water evaporated from three different containers, the volume of water formed from melting under three different conditions, the mass of water condensation collected on a glass beaker, the decrease in the temperature of water over time in different containers (heat transfer) and the change in temperature of water (conduction) between two containers.

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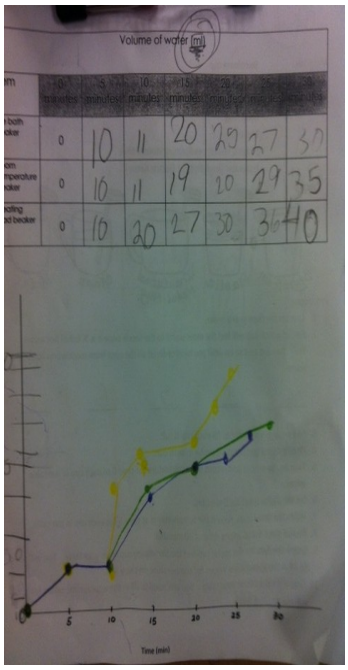


Example of student work from experiment on how differing conditions change the rate that ice melts.

Do you wiki?

The wiki space is a central location for resources so we can share ideas and help each other improve our practice in science instruction.

If you haven't joined the wiki yet, you should. I'll be posting what we do in each PLC group on the wiki so if you are unable to join us, you can still participate. It is important when we use these resources that we post back any updates or changes so others can benefit from what we've learned.

To join the wiki, email me through school mail and I'll send you an invitation to join. Now that we have Barracuda, you should see the invitation as a Barracuda email where you choose to delete or deliver. Choose deliver!!

Inside this issue:

Physical Science Centers (continued from front page)

A digital timer is used and the students are responsible for setting and keeping the time.

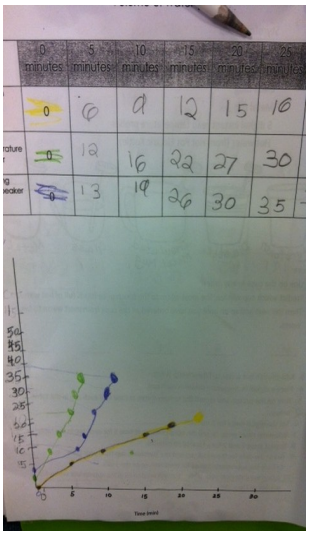
Once students have collected data, they can either move to the next center as a group or come back for whole class instruction about how best to represent their data. It is important to note that students aren't provided with the increments already written on the axes. Students' data vary and in science, students must be able to let the data dictate the scale of the graph. I've found they need additional support in setting up the axes. They need discussions about the range of their data, including an explanation that a general rule is to graph time on the x-axis. I model explicitly how to look at the data, find the range and how to be smart about choosing a range that is easily divisible into intervals. Their extensive knowledge of halves and doubles is very helpful here.

It is important to plan enough time for this part of the lesson because it is essential that students build capacity in data representation and interpretation. They develop a deeper level of understanding when they are using data they collect themselves. They also need to discuss their data with each other, especially with students outside their group to compare results. The discussions about the graphs are critical. I have all the materials needed to set up and do the physical science centers. You are welcome to check them out from Midland to use for your class. You can email me for more information or go to the wiki. The student lab book is posted under 5th grade in Matter.

I've included a table of GREAT Seeds of Science books for you to use to support science and literacy.

SEEDS OF SCIENCE BOOKS AND STRATEGY GUIDES FOR **Models of Matter** THEY'RE IN YOUR BOOK ROOM!

Strategy Guide	Student Book
Teaching Summary Writing	*Made of Matter*
Using Roundtable Discussions	*Break It Down: How Scientists Separate Mixtures*
Interpreting Visual Representations	*Phase Change at Extremes*
Teaching About How Scientists Make Inferences	*Science You Can't See*



Tennessee Curriculum Center

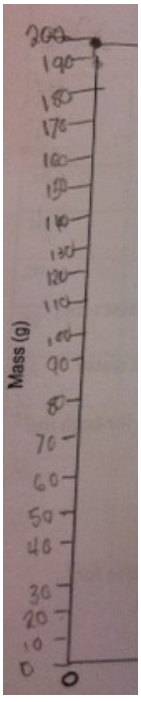
The Curriculum Center is a continually expanding resource for teachers. Videos and supporting materials are available and each resource is linked for you to a specific GLE. The website for the Center is http://www.tncurriculumcenter.org

At the Curriculum Center website, Tennessee educators can find:

- Basic curriculum mapping information for Grades K-8 and major High School courses in all four major content areas based on the Tennessee Curriculum Frameworks.
- Details that "unpack" or shed additional light on the intended meaning of Learning Expectations for students.
- Ideas for developing scaffolded learning experiences associated with particular Learning Expectations.
- Questions to help focus instruction on specific Learning Expectations.
- Academic Vocabulary lists organized by general curriculum topics.
- Quarterly pacing guides.

For a virtual tour of what is available on the Curriculum Center go to:

http://www.tncurriculumcenter.org/tour



Why PLC? Isn't that just one more thing for me to do?

Your time is incredibly valuable and time is the one thing none of us can make more of. BUT we are more efficient when working together. In a PLC, everyone brings something valuable to the PLC through their knowledge, experience or insight.

During the one hour we are together, we will plan for next month's science instruction. Bring your materials and ideas to share with the group. If the PLC decides there is a need for lessons or centers in a particular topic, you can assign that for me to create and provide for the group. I am here as a worker and a resource. Each PLC group sets its own goals and determines what the group needs.

I wanted us to start having Science PLC groups so we aren't working in isolation. Isn't it likely someone in the district already has a great resource for just about every topic? We just need to put the pieces together.