

# ScienceWorks!

## Monthly Newsletter

March 2001

Volume 3, No. 6

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### Dear Ms. Inquiry:

I have heard several colleagues talking about the February Science School Team staff development meetings they attended where they learned about something they call "visual tools". What are these – something for your eyes, something pretty to look at, or something to do work with? Can you tell me what they have to do with science and children?  
 Myopic Melinda



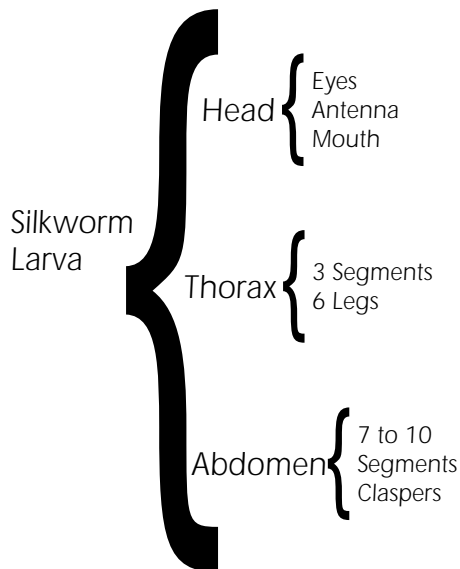
Sure, Melinda. Visual tools are for teachers and thinkers, in other words, they are for you! They are practical, effective and powerful learner centered tools. You have probably heard of strategies such as brainstorming webs, graphic organizers, and thinking-process maps. These "tools" are designed to support learners in filtering, organizing and systematically assessing raw slices of information. In a classroom application they can be used to provide students with a concrete way to transform unprocessed information into useful patterns of knowledge. They take advantage of how the brain

Call Kathy Scoggin  
 (612) 668.5378 for additional information.

works to search for patterns, create networks, and chunk information together. Once students see patterns the information becomes useable and can be easily communicated to others. They're more than just another strategy for your lesson plans, but are devices worth learning more about that can strongly affect your students' work and thinking abilities. You are most likely using some already in your teaching, but adding to your repertoire would help meet the needs of the many diverse learners and thinkers in your classroom. They are infinitely useful in your science teaching.

### Here is an example:

You could use a brace map to identify part-whole relationships of the silkworm larva in the 2nd grade Insects Unit.



### Is a picture worth a thousand words?

Teacher reported outcomes of using Thinking Maps/Visual Tools over time:

- Increased memory of content knowledge when reading
- Well-organized final products, particularly written work
- Deeper conceptual understandings
- Greater capacity to communicate abstract concepts
- Heightened metacognition and self-assessment
- Enhanced creativity and perspective taking
- Transfer of thinking processes across disciplines and out side school (Hyerle, 2000)

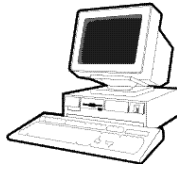
Attend "Visual Tools" training August 6-9, 2001. Call the Science Office at TIS for details. (612) 668.5378



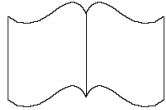
Children at Lake Harriet Upper Campus using visual tools to help them with their Variables unit.

## March Resources:

Hyerle, David.  
Visual Tools for  
Constructing  
Knowledge. Alexandria, VA:  
ASCD, 1996.



Hyerle, David A  
Field Guide To  
Using Visual  
Tools Alexandria,  
VA: ASCD, 2000.



## Coming staff development attractions:

April 21 and May 3, 2001  
Saturday/Thursday Science  
workshop sessions at Bryn  
Mawr (limited space available –  
sign up soon!)

Project WET (Water Education  
for Teachers)/ DNR sponsored  
#SI42

Monarchs in the Classroom with  
Dr. Karen Oberhauser from the  
U of M #SI41

Especially for First grade  
teachers - "READING, WRITING,  
AND ORGANISMS" #SI53

Join experienced First Grade  
Teachers as they share their  
success in integrating basic  
curriculum content areas  
through science with yearlong  
use of the Organisms Kit

University of St. Thomas  
Science Workshops

## Science Try Its

### Potato Polarity Tester

You Will Need:

- A nine volt battery ( these are the small rectangular batteries)
- A potato
- A knife
- Tape
- Two pieces of insulated copper wire about 6 inches long (remove about 1 inch of the plastic coating from each end)



**What is happening?:** The wire connected to the negative pole will start to give the potato around it a greenish color. **Why?** The electric current from the battery is causing electrolysis of the water (H<sub>2</sub>O) in the potato, taking it apart. The positive wire is producing hydrogen (H), which will form bubbles if the potato is moist enough. The negative wire is producing oxygen (O), which combines with the copper of the wire forming a green copper oxide that colors the potato. **Electrolysis:** a chemical change produced by passing a direct current through a liquid that contains ions.

## Minnesota Arbor Month Partnership

Division of Forestry  
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St. Paul, MN 55155-4044  
(651) 297.2214  
(fax) (651) 296.5954  
E-mail:  
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K-12 teachers worldwide are invited to apply for grants of \$1000 to develop or implement environmental curricula that integrates hands-on ecology exercises into the classroom. Curricula that encourage the integration of multiple disciplines (such as integrating art and science), and which include cooperative work with multiple school districts will be given special consideration. Application Deadline: April 6th.

For application details, contact the Melinda Gray Ardia Environmental Foundation, P.O. Box 621, Skaneateles, NY 13152, 607-257-7996, mgaef@clarityconnect.com, or visit:  
<http://www.mgaef.org/grant.html>



For assistance with living organisms for your science kit needs call

Val at our new number at Lincoln Living Materials Center (612) 668.2794 Fax (612) 668.2810.