

Rigorous Learning with Technology

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Download slides: bit.ly/fontblog

Missouri Association
of School Librarians

April 13, 2014, 9am - noon

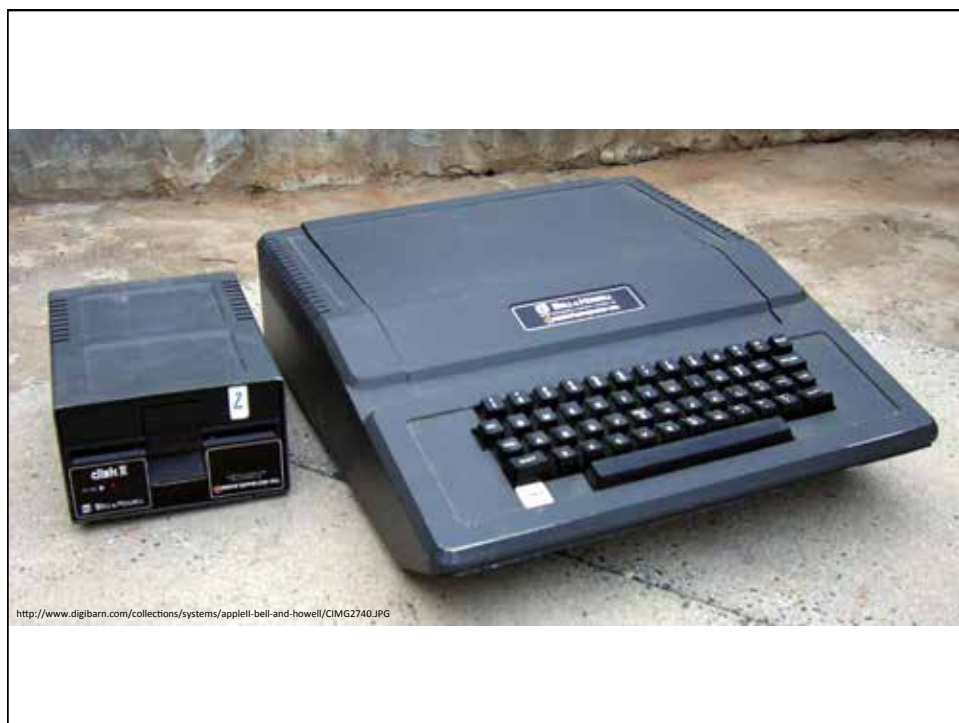
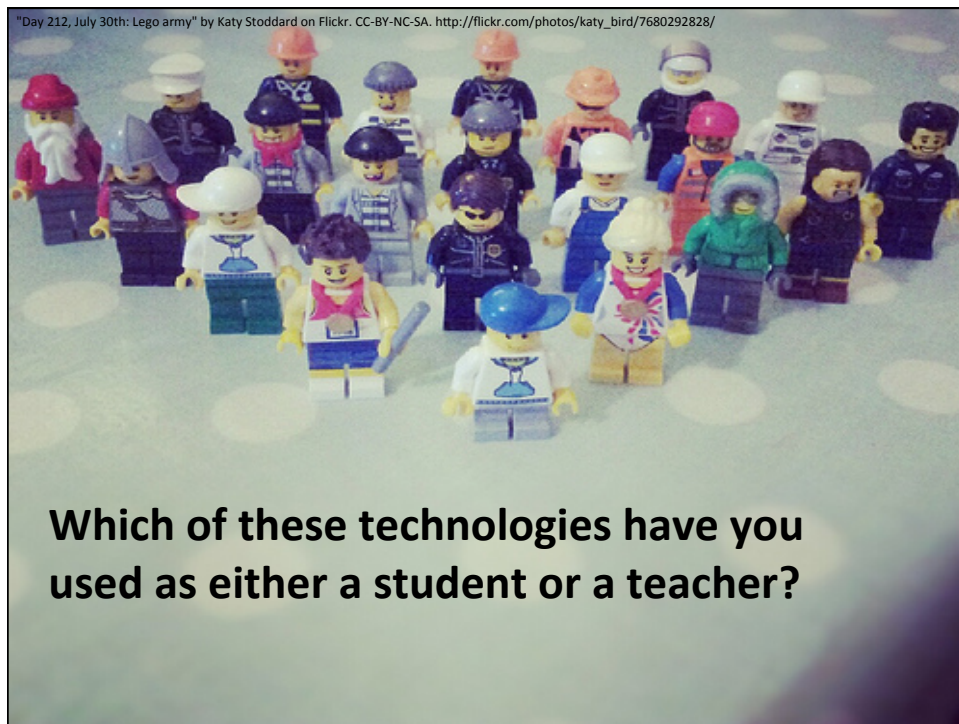


Big Questions Road Map

Today

- What have we learned in our 35 years of bringing ed tech into the schools?
- How can we develop building-wide vocabulary to discuss tech-rich, thinking-rich work with one another?
- How do we go beyond, "Make a video! Be creative!" to identify and communicate what "good work" looks like in various multimedia genres?
- What does it feel like to do more rigorous work?

Download today's slides:
<http://bit.ly/fontblog>





http://bebetooool.files.wordpress.com/2010/06/macintosh_classic.jpg



<http://upload.wikimedia.org/wikipedia/commons/e/e7/PalmPilot5000.jpg>



TURN AND TALK:

How have past technology initiatives improved student learning?

What made them succeed?

Where have we fallen short?

How far have we come in using computers to promote cognitive growth in the past 35ish years?



Image: http://en.wikipedia.org/wiki/File:Bell_and_Howell_Apple_II.jpg by Jeff Keyzer, used with a Creative Commons Generic Attribution 2.0 License



THEN
Paucity & High Cost
Careful Selection of Tools

NOW
Abundance & Low/No Cost
Careful choice doesn't matter...
Or does it?



<http://bit.ly/bridger-ipad>





TURN 'N' TALK!

If a two year-old can use an iPad, what are the implications for our work?

Image: 'whoa' <http://www.flickr.com/photos/54021469@N00/653976303>



I would add ... what does reading mean to this kid?

What does an iPad represent to him?

What are *those* implications?

Image: 'whoa' <http://www.flickr.com/photos/54021469@N00/653976303>

Turn and Talk ...

How effectively are we teaching students...

- to interpret the world beyond text?
- to create multimedia products that effectively convey messages and content understandings?
- about employing compelling aesthetics
- about multimedia genres?

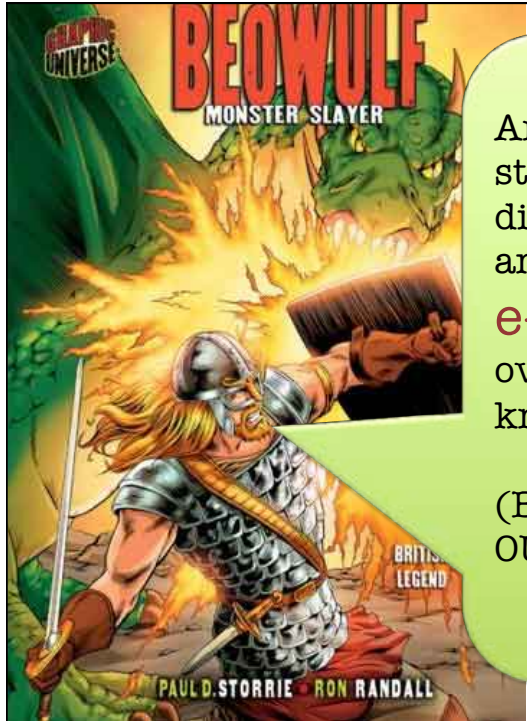
"Fossil Sitting in Sunlight" by A Guy Taking Pictures on Flickr. CC-BY.
<http://flickr.com/photos/80901381@N04/7649502498/>

*It's so easy to
make things look
fancy...*

**...that sometimes we credit
students what programmers
behind the scenes have
actually facilitated.**

(Little input > Big output)





And sometimes, our students expend a disproportionate amount of **e-effort** over knowledge-building.

(BIG INPUT > LITTLE OUTPUT)

Let's look at a student work sample.
Which do you see: Fancy Nancy or E-Effort?



"Funny - A Hoot by @Doug8888 on Flickr. CC-BY-NC-SA
<http://flickr.com/photos/doug8888/3295094303/>



Christopher
Columbus
was born in
1461.



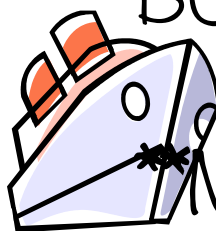


HE WAS
BORN
IN
ITALY.

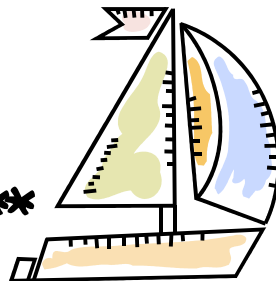


HOME OF PIZZA!!!!!!! YUM!!!!

HE HAD THREE
BOATS:



NINA



PINTA



SANTA MARIA


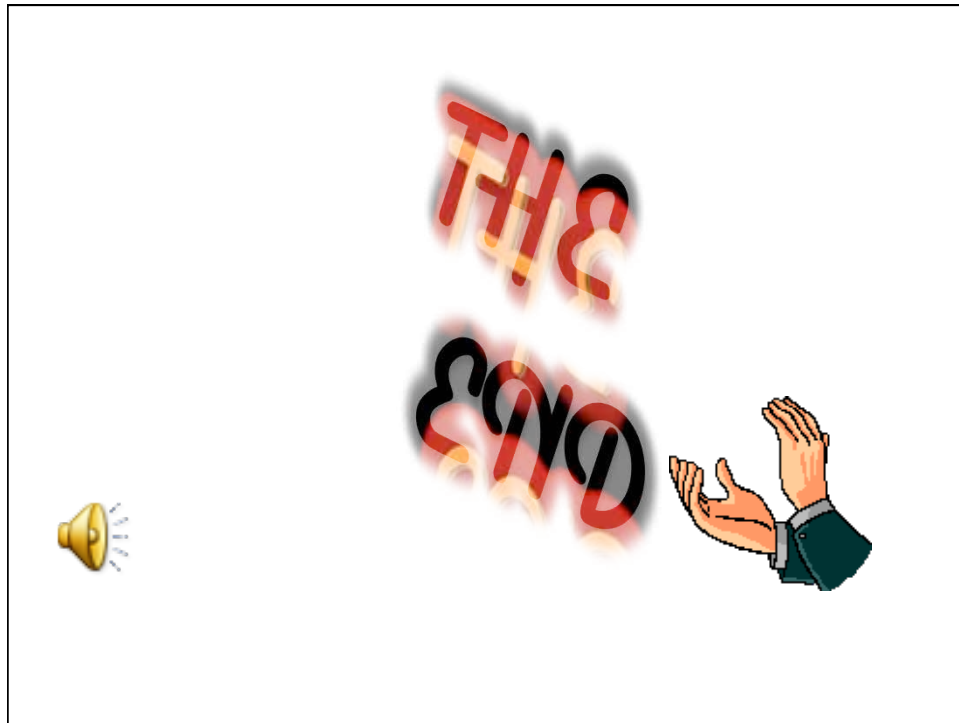


He
discovered
AMERICA!!!

He died in 1506.

It was sad.





What are students gaining from this experience?

Yes, they're using technology, but where is the knowledge-building?

Image: 'Question mark made of puzzle pieces'
<http://www.flickr.com/photos/10361931@N06/4273168957>

student + tech > student



* Charles Friedman, definition of Informatics


student + tech ^{+ school} > student



* Charles Friedman, definition of Informatics


Ed Tech Math

$\text{student} + \text{tech} + \text{school} > \text{student}$



BEWARE: IF STUDENT + TECH
CAN SUCCEED ON THEIR OWN,
WE'RE ALL OUT OF A JOB.

* Charles Friedman, definition of Informatics



Which parts of this project could NOT be outsourced to India? (And who would buy it?)





* Bernajean Porter; ** Joanne Yatvin

Where's the Beef?*
How Do We Know ~~Rigor~~ When We See It?
*vigor***

Norms Matter.



"Harrison Roses" by Susan Noakes McCord, around 1860.
From the collection of The Henry Ford.
http://www.thehenryford.org/exhibits/quiltinggenius/quilts/73_120_1.asp



Quilt for Bobby Unser by "Racing's Quilt Lady" Jeanette Holder.
From the collection of The Henry Ford.
<http://www.thehenryford.org/exhibits/pic/2010/may/quilt.asp>

**You can't just
push away
the uncertainties;
you have to
push through
them."**

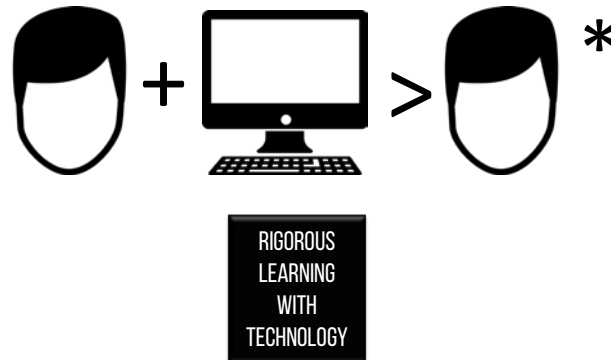
-Jeff Stanzler

So I started pushing

Rigor means exciting
challenge, not rigor
mortis! Insert VIGOR
if you prefer*

RIGOROUS
LEARNING
WITH
TECHNOLOGY

(with thanks to Roberta Sibley, Laurie Olmsted, Jeff Stanzler, and Raya Samet for contributing their feedback!)



* Charles Friedman, definition of Informatics

"Person" by Antonis Makriyannis on thenounproject.com. CC-BY-3.0. <http://thenounproject.com/term/person/2231/>.
 "Computer" by Patrick Morrison on thenounproject.com. CC-BY-3.0. <http://thenounproject.com/term/computer/12565/>
 (with thanks to Roberta Sibley, Laurie Olmsted, Jeff Stanzler, and Raya Samet for contributing their feedback!)

Decontextualized

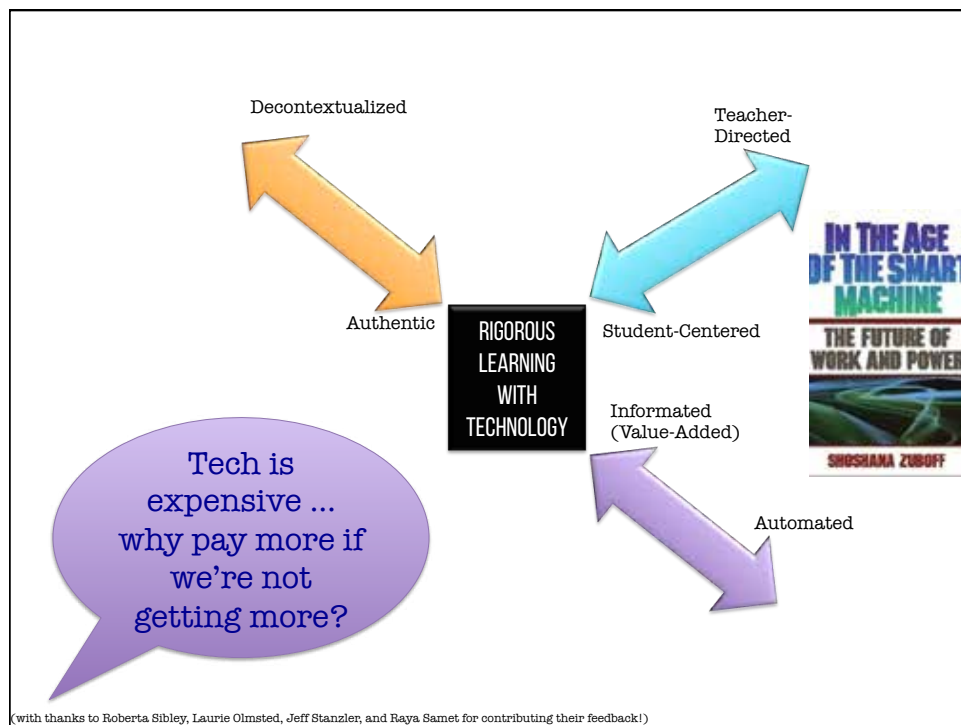
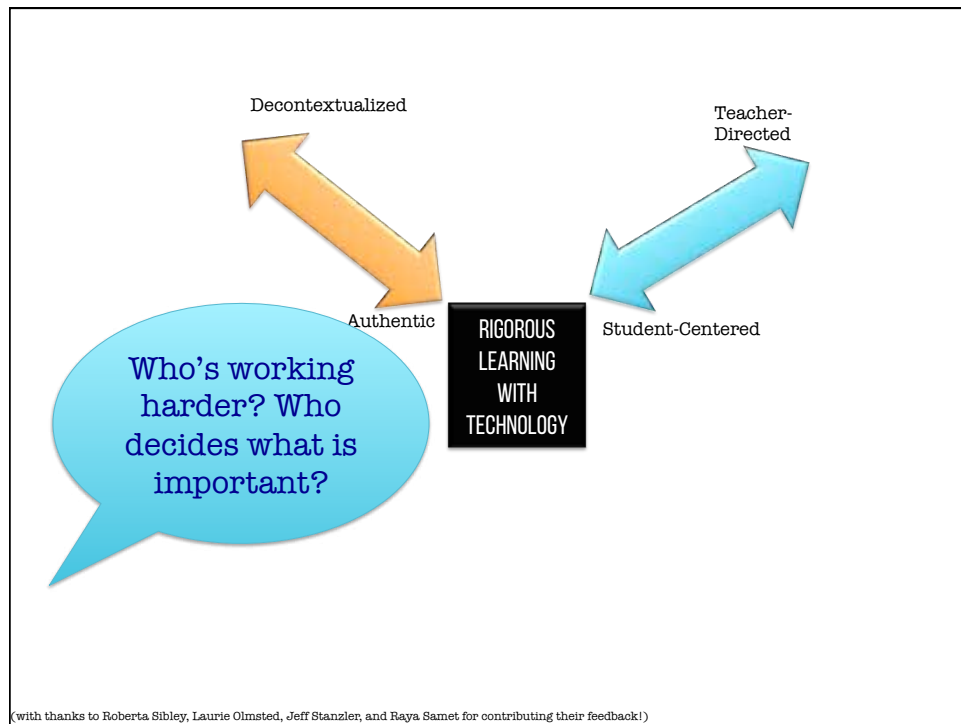


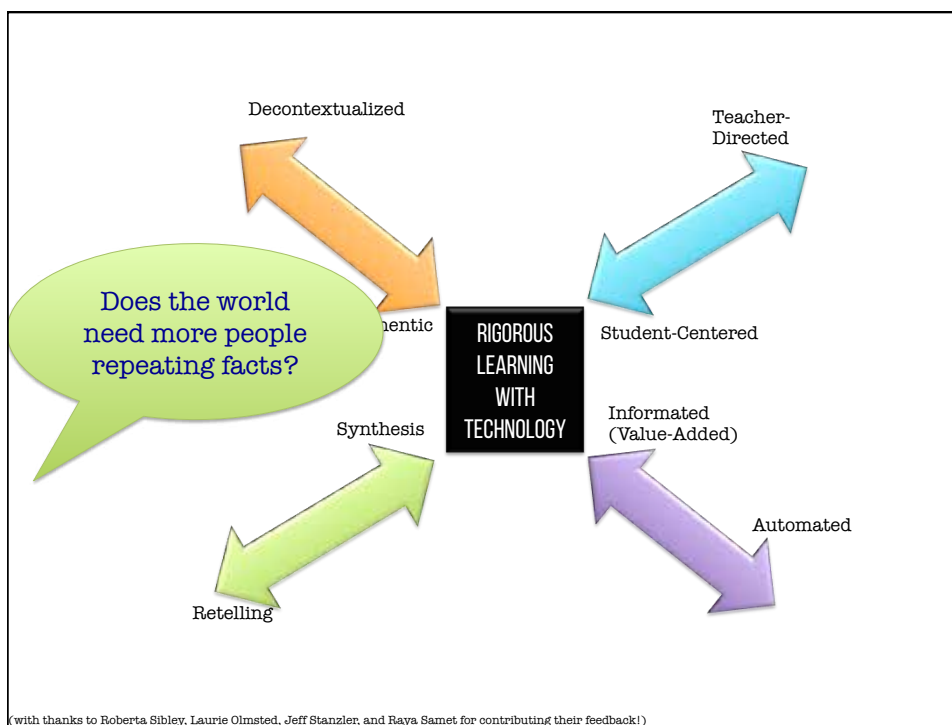
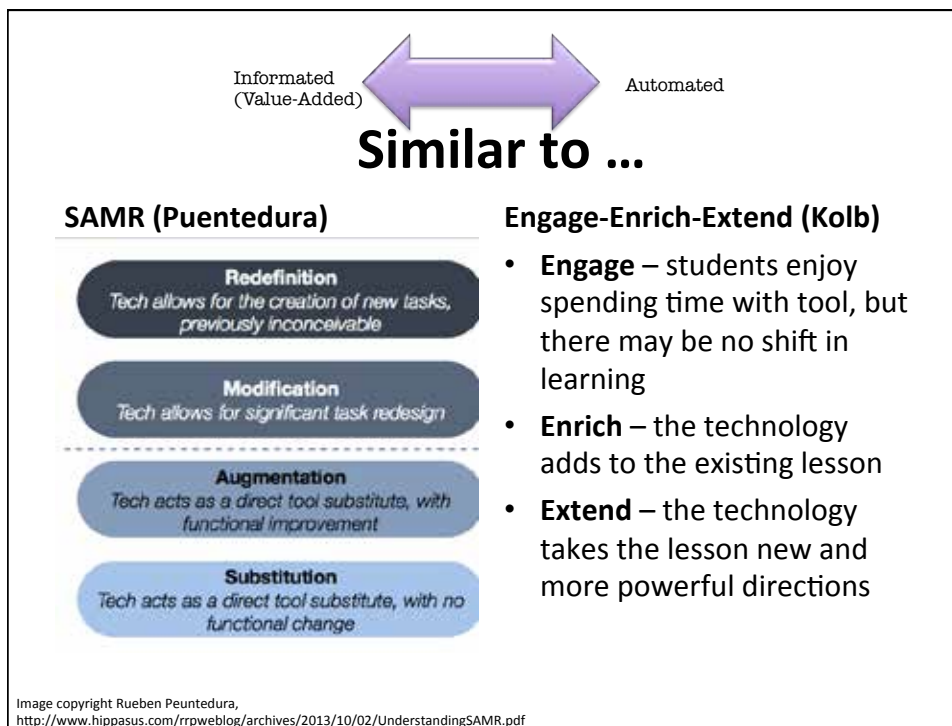
Authentic

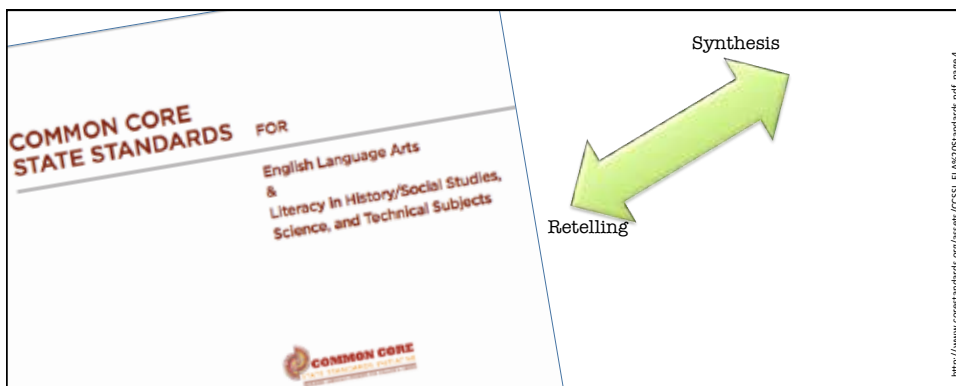
RIGOROUS
LEARNING
WITH
TECHNOLOGY

What's in it for me?
How does this apply
to me? Why does this
matter to me?

(with thanks to Roberta Sibley, Laurie Olmsted, Jeff Stanzler, and Raya Samet for contributing their feedback!)







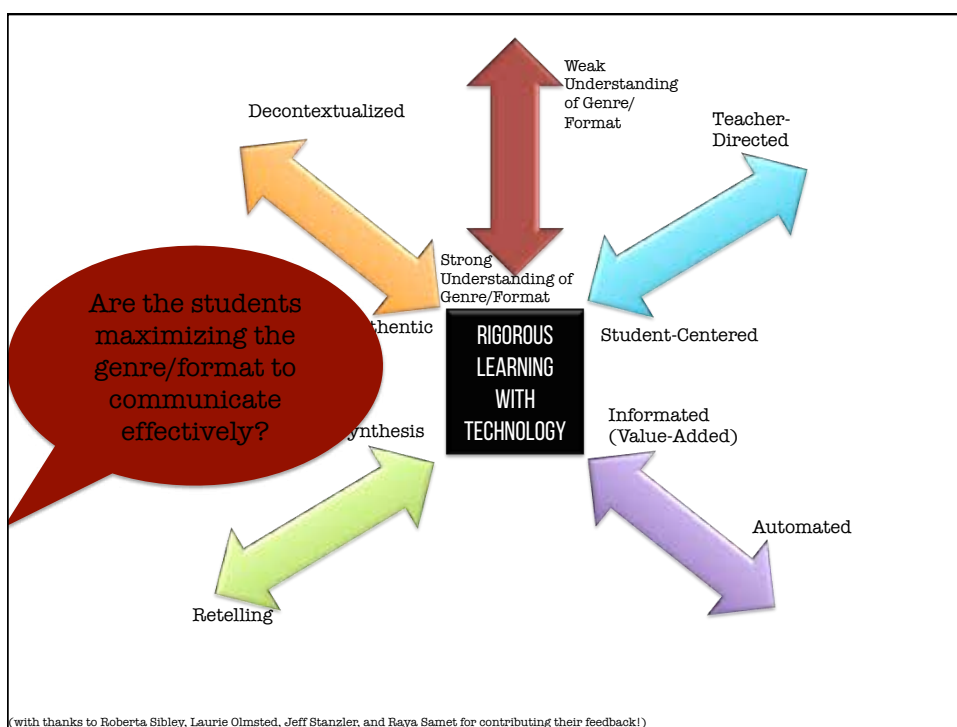
COMMON CORE STATE STANDARDS FOR
English Language Arts &
Literacy in History/Social Studies,
Science, and Technical Subjects

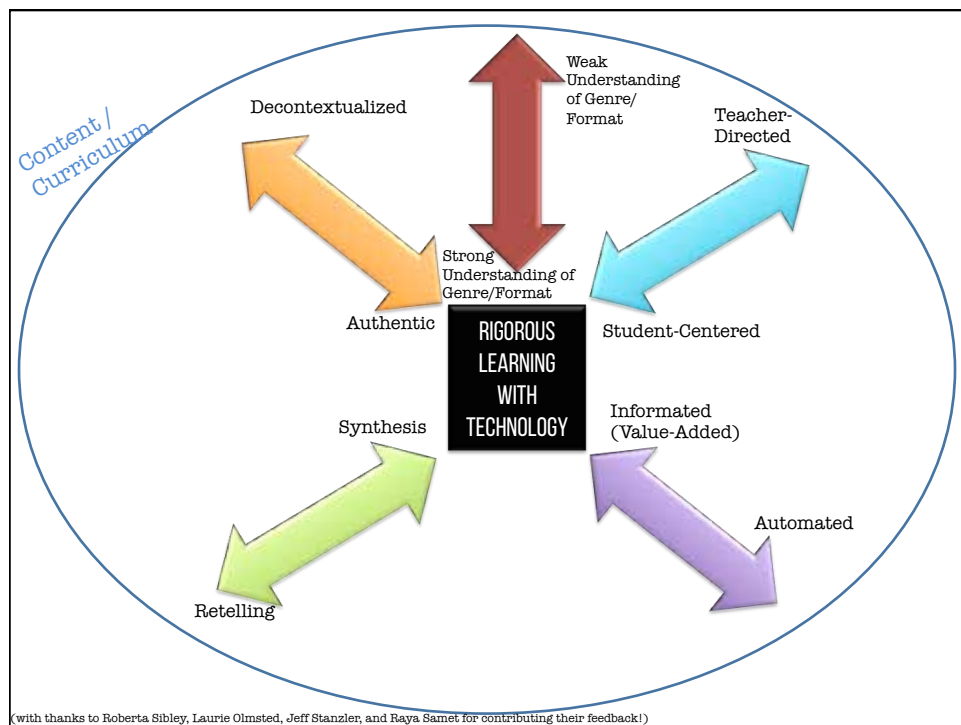
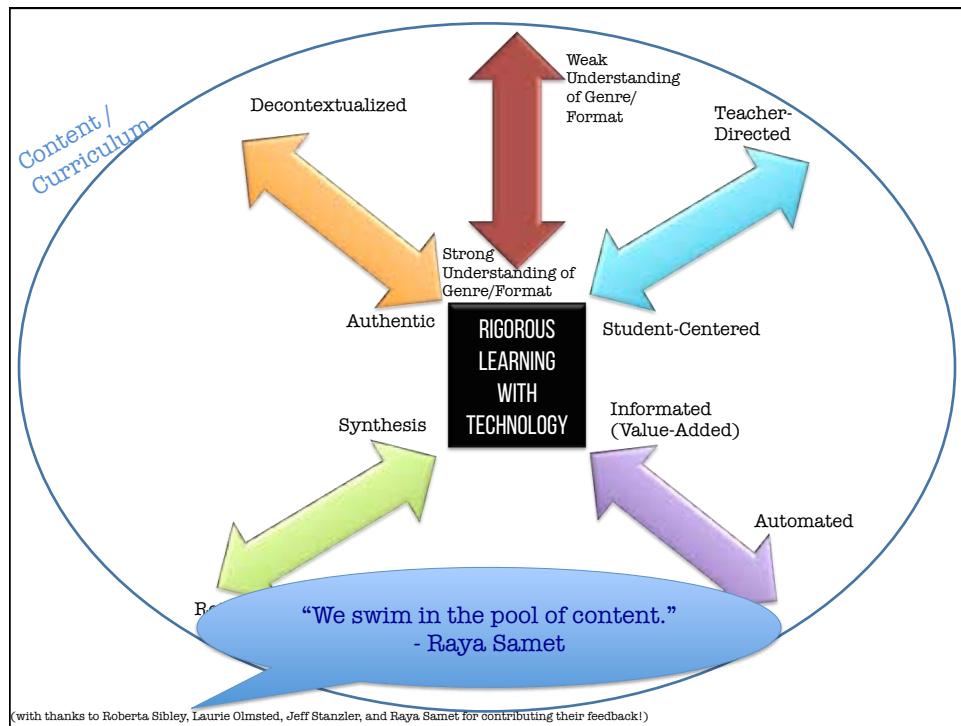
Retelling ↔ **Synthesis**

Research and media skills blended into the Standards as a whole

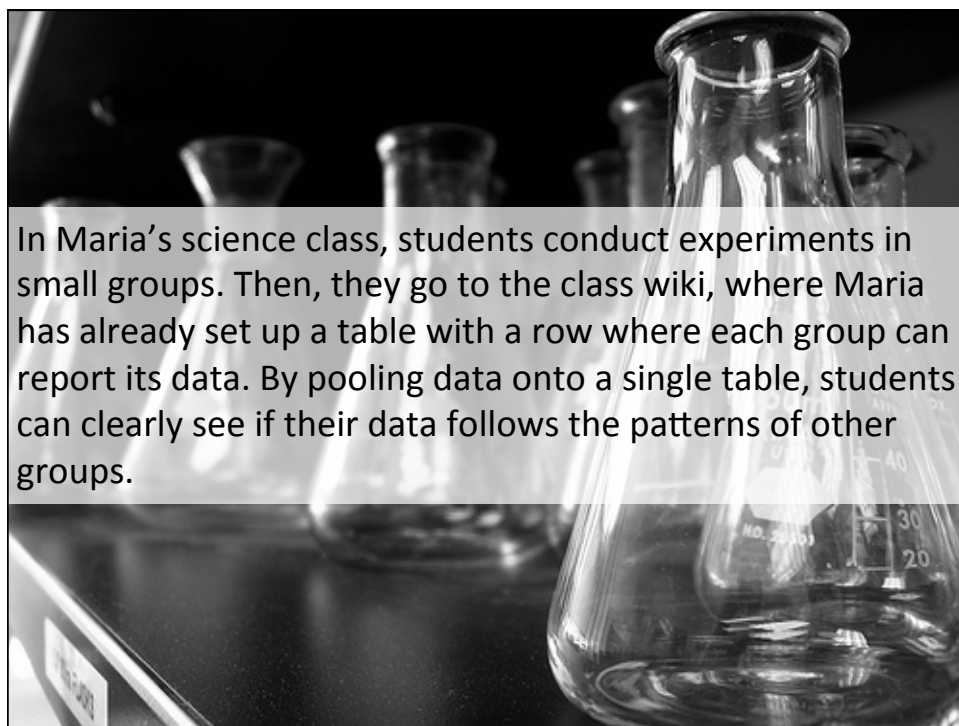
To be ready for college, workforce training, and life in a technological society, students need the ability to gather, comprehend, evaluate, **synthesize**, and report on information and ideas, to **conduct original research** in order to answer questions or **solve problems**, and to **analyze and create** a high volume and extensive range of print and nonprint texts in media forms old and new. The need to conduct research and to produce and consume media is embedded into every aspect of today's curriculum. In like fashion, research and media skills and understandings are embedded throughout the Standards rather than treated in a separate section.

http://www.corestandards.org/assets/CCSS_ELA%20Standards.pdf page 4









Sofia's Animal Report

[http://bit.ly/
sofia-otter](http://bit.ly/sofia-otter)

<http://bit.ly/sofia-otter>



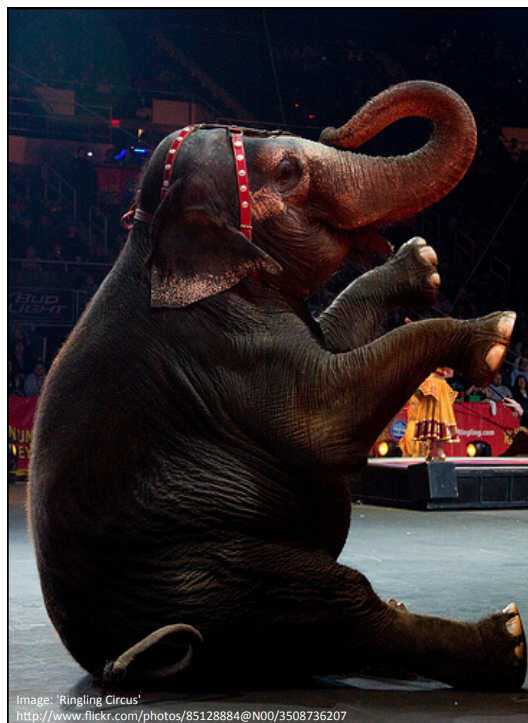
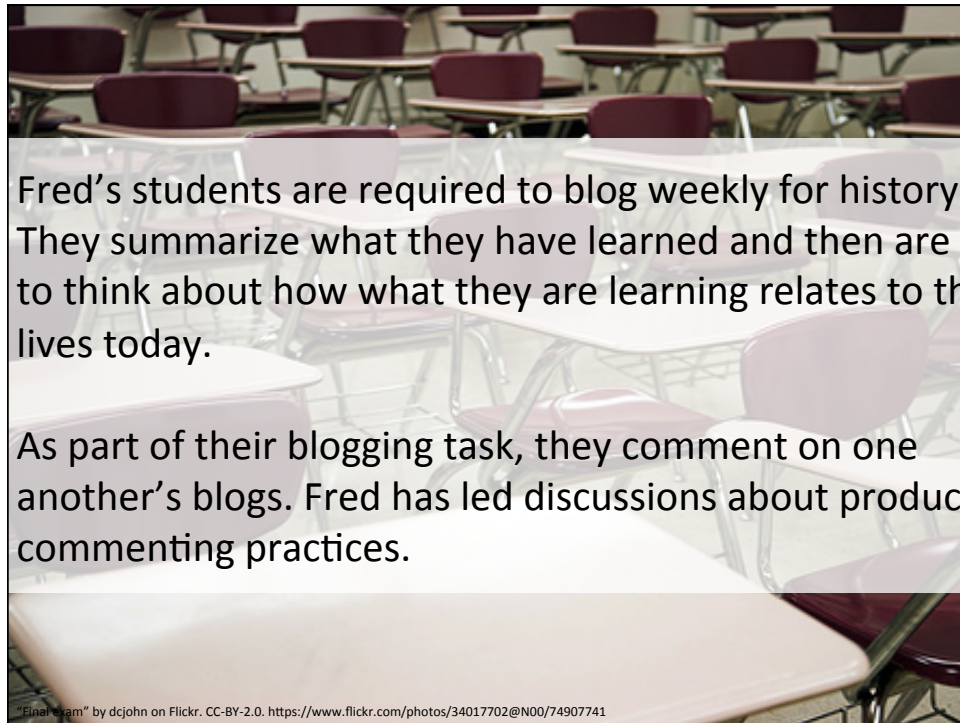
Hamlet
goes to high
school

bit.ly/hPn588

<http://bit.ly/hPn588>

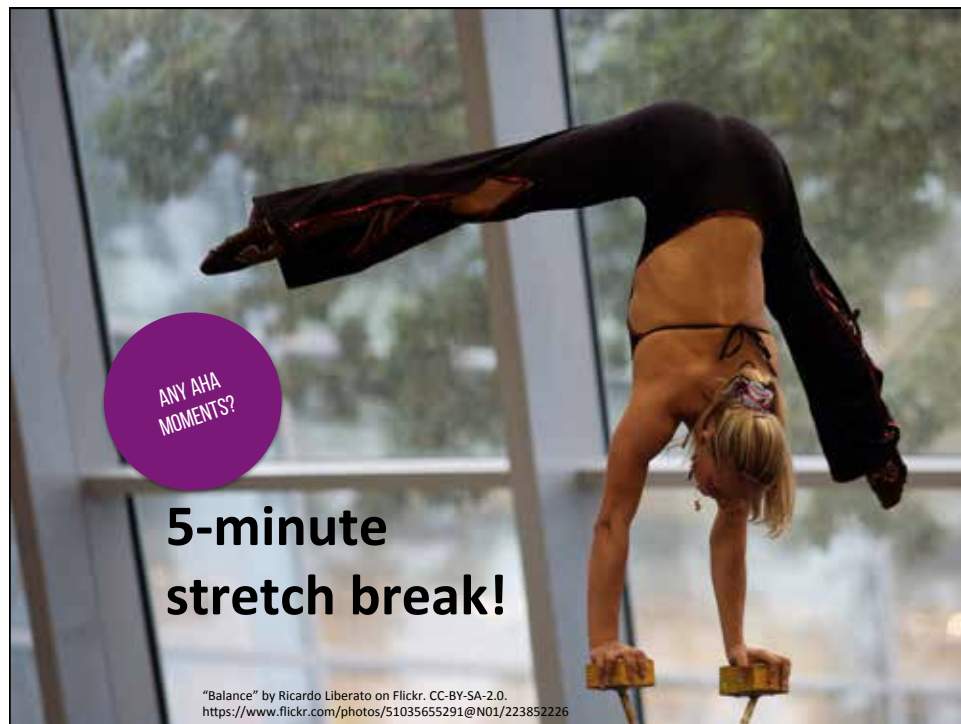


Reflective
Blogging

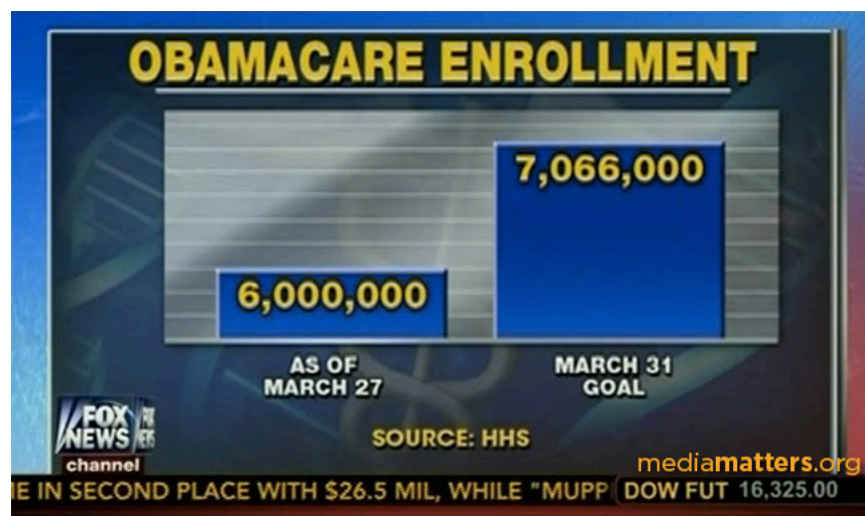


How could we improve these projects?

- reflective blogging
- science data wiki
- Sofia's animal report
- *Hamlet* report

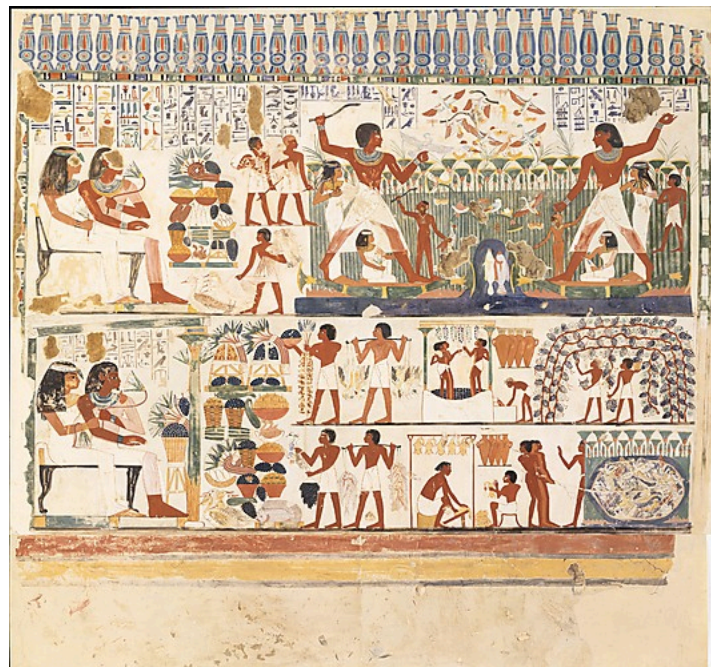


So let's look at *better rigor* through technology, using **infographics** as our sample medium



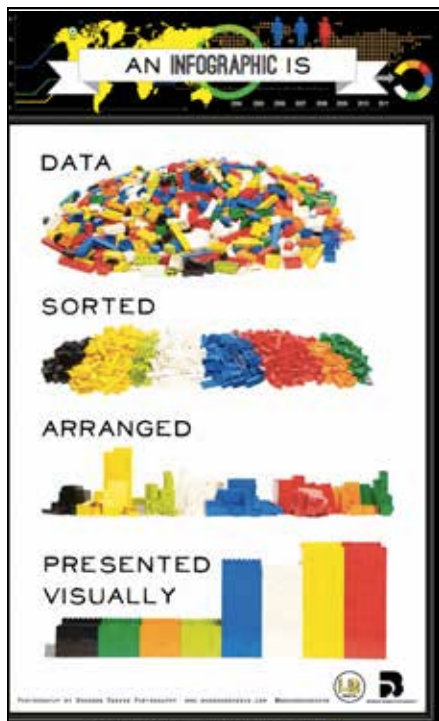
This section of the workshop was developed with Debbie Abilock

So ... what is an infographic?



<http://www.metmuseum.org/Collections/search-the-collections/548578>

Google Image Search: [usa today snapshots]



Yes, and ...

<http://visual.ly/what-infographic-2>

Phil Ethington,
with Adrian Amler and Samuel Krueger

<http://bit.ly/getty-video>





milk life

Milk Drive | Recipes | Food/Nutrition | At Home Tips | Just For Fun | Promotions | Videos

The Great American Milk Drive

While milk is one of the top nutrients being requested by food bank clients, it's rarely donated. 04/05/2014

TO MOST PEOPLE HUNGER IS INVISIBLE

LEARN MORE >>

What's Happening

The Launch of The Great... 04/04/2014

Infographic: The Milk Gap 04/07/2014

Milk Life: Breakdancer 03/07/2014

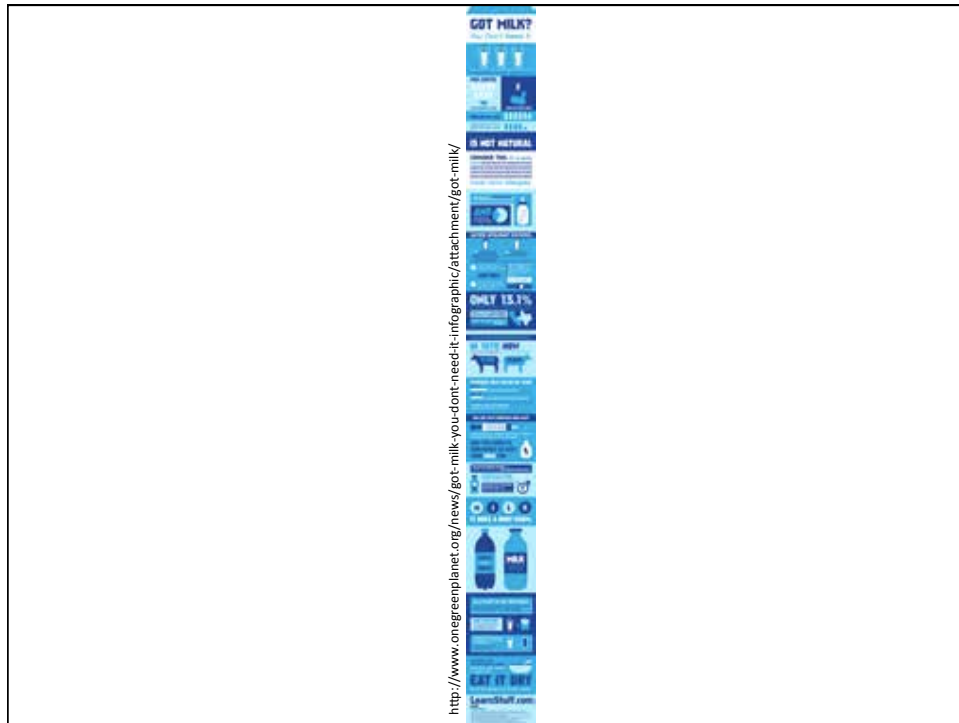
Milk Life: Dog Walker 01/07/2014

Sort by: Most Recent | Most Viewed

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Somebody's gotta feed the world, and we've got it. All about our company, milk, dairy, and the delicious goodness of being green.

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<http://www.onegreenplanet.org/news/got-milk-you-dont-need-it-infographic/attachment/got-milk/>

GOT MILK?

You Don't Need It.



The USDA tells American kids to drink 3 servings of milk a day.

<http://www.onegreenplanet.org/news/got-milk-you-dont-need-it-infographic/attachment/got-milk/>

**COW'S MILK IS ALSO THE NUMBER ONE CAUSE OF
FOOD ALLERGIES AMONG INFANTS AND CHILDREN.**

AND

a whopping 33%
of American adults
are lactose intolerant.



LACTOSE INTOLERANT STATISTICS:



**75% of African-American,
Mexican-American, Native-
American and Jewish adults
are lactose intolerant.**



**90% of Asian-Americans
are lactose intolerant.**

<http://www.onegreenplanet.org/news/got-milk-you-dont-need-it-infographic/attachment/got-milk/>

**SO THE NEXT TIME
YOU HAVE A BOWL OF CEREAL
and your only option
is cow's milk.**



EAT IT DRY
you'll be doing your body a favor.

LearnStuff.com



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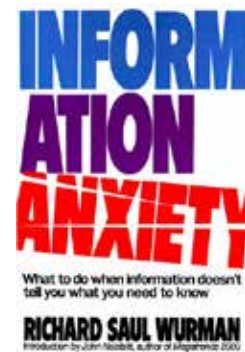
REFERENCES:

http://www.ars.usda.gov/SP2UserFiles/Place/12355000/pdf/Pyret_94.PDF
http://www.huffingtonpost.com/2011/06/27/americans-soda-beer_n_885340.html
<http://www.foodallergy.org/page/facts-and-stats>
http://www.usatoday.com/tech/science/2009-08-30-lactose-intolerance_N.htm
<http://milk.procon.org/view.answers.php?questionID=000826>
<http://farm.ewg.org/progdetail.php?flips=00000&progcode=dairy>
<http://www.ers.usda.gov/topics/animal-products/dairy/background.aspx>

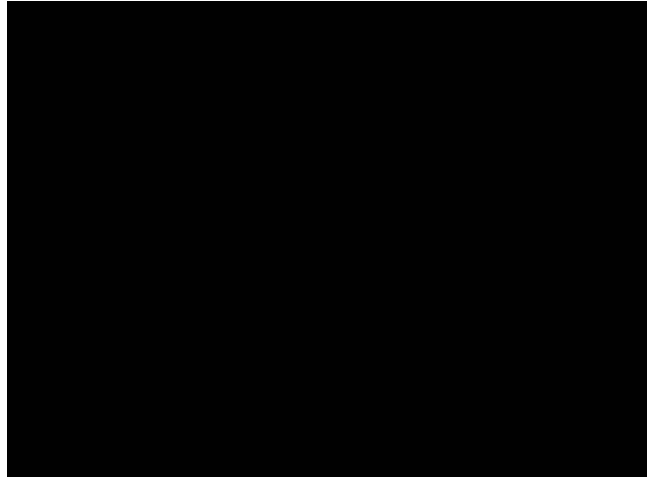


Ways to organize information

- Geographical
- A → Z
- Chronological
- Concept
- Scale, Outline
- Location
- Alphabet
- Time
- Category
- Hierarchy



Organizing Information: Wurman's LATCH



Nothing an artist creates is accidental.



"Migrant Mother" by Dorothea Lange
http://www.loc.gov/rr/print/list/128_migm.html

1.) **Reproduction number:** LC-USF34-9058-C (film negative)
Caption: "Destitute peapickers in California; a 32 year old mother of seven children. February 1936." (retouched version)
Location: FSA/OWI - J339168 (the original photographic print has been replaced by a copy print) (Also available on microfilm and microfiche: Microfilm LOT 344; Chadwyck-Healey Far West fiche #29:E11.)
[\[view catalog record\]](#)



1a.) **Reproduction number:** LC-DIG-ppmsca-12883 (digital file from print); LC-USZ62-95653 (film copy negative)
Caption: "Destitute peapickers in California ..."
Location: LOT 997
Note: This is an unretouched version of the image listed in #1. This version of the image shows a thumb in the immediate foreground on the right side.



http://www.loc.gov/rr/print/list/128_migm.html

2.) Reproduction number: LC-USF34-9093-C (film negative)
Caption: "Nipomo, Calif. Mar. 1936. Migrant agricultural worker's family. Seven hungry children. Mother aged 32, the father is a native Californian. Destitute in a pea pickers camp, because of the failure of the early pea crop. These people had just sold their tent in order to buy food. Most of the 2,500 people in this camp were destitute."
Location: FSA/OWI - J355. (Also available on microfilm and microfiche: Microfilm LOT 344; Chadwyck-Healey Far West fiche #32:A-8.)

[\[view catalog record\]](#)



3.) Reproduction number: LC-USF34-9095 (film negative)
Caption: "Migrant agricultural worker's family. Seven children without food. Mother aged 32, father is a native Californian. March 1936."
Location: FSA/OWI - J355. (Also available on microfilm and microfiche: Microfilm LOT 344; Chadwyck-Healey Far West fiche #32:A-9.)

[\[view catalog record\]](#)



http://www.loc.gov/rr/print/list/128_migm.html

4.) Reproduction number: LC-USF34-9097-C (film negative)
Caption: "Nipomo, Calif. Mar. 1936. Migrant agricultural worker's family. Seven hungry children. Mother aged 32. Father is a native Californian."
Location: FSA/OWI - J361. (Also available on microfilm and microfiche: Microfilm LOT 344; Chadwyck-Healey Far West fiche #33:A-7.)

[\[view catalog record\]](#)



5.) Reproduction number: LC-USZ62-58355 (film copy negative)
 (Note: Original negative was declared missing; original negative number was: LC- USF34-9098-C.)
Caption: "Nipomo, Calif. March 1936. Migrant agricultural worker's family. Seven hungry children and their mother, aged 32. The father is a native Californian."
Location: FSA/OWI - J355. (Also available on microfilm and microfiche: Microfilm LOT 344; Chadwyck-Healey Far West fiche #32:A-10).

[\[view catalog record\]](#)



capstone

speed scan

HOME

PRODUCT

DIGITAL

RESOURCES

SERVICES

KID STU

[< Back](#)

Migrant Mother: How a Photograph Defined the Great Depression (Hardcover)

by [Don Nardo](#)

In the 1930s, photographer Dorothea Lange traveled the American West documenting the experiences of those devastated by the Great Depression. She wanted to use the power of the image to effect political change, but even she could hardly have expected the effect that a simple portrait of a worn-looking woman and her children would have on history. This image, taken at a migrant workers' camp in Nipomo, California, would eventually come to be seen as the very symbol of the Depression. The photograph helped reveal the true cost of the disaster on human lives and shocked the U.S. government into providing relief for the millions of other families devastated by the Depression.

★ [See awards for this title](#)

👍 [See reviews for this title](#)

🔗 [See related titles](#)

Reading Level: 5-7
Interest Level: 5-9
GRL: W
Lexile Level: 900L
ATOS Level: 6.5
AR Points: 1.0
AR Quiz Number: 141360
Early Intervention Level: 29

Dewey: 973.917
This title covers these subjects: [United States -- History -- 1933-1945](#), [Great Depression, 1929-1939](#), [Photography -- Influence](#)

Accelerated Reader

So if, as a visual creation, there are intentional choices, how would we structure an infographic around an argument?

- Claim / thesis
- Backed up with evidence
- Reason why the evidence supports the claim
- Alternatives to consider (rebuttal)

CER+A

Persuasion vs. Argument

Persuasion

- Rests on the credibility, character, or authority of the writer
- May appeal to the audience's self-interest and sense of identity
- Includes emotional appeal

Argument

- Rests on perceived merit and logic of the claims and proofs
- Requires evidence
- May include personal experience as evidence

To summarize

Reading infographics well

- Start at the bottom
 - Citations
 - Authorship
 - Stake in the issue?
- Look for the "hidden message"
- Look for cherry-picked information
- Look for how information unfolds on the page (e.g., sequencing)
- May be persuasive, informative, argumentative

Writing infographics well

- Combinations of visuals, text, statistics that are organized to create an implicit or explicit message
- Color and layout help support the message
- Information is organized and structured to create an argument

And arguments matter in CCSS ...

Students Who are College and Career Ready in Reading, Writing, Speaking, Listening, and Language

The descriptions that follow are not standards themselves but instead offer a portrait of students who meet the standards set out in this document. As students advance through the grades and master the standards in reading, writing, speaking, listening, and language, they are able to exhibit with increasing fullness and regularly these capacities of the literate individual:

They demonstrate independence.

Students can, without significant scaffolding, comprehend and evaluate complex texts across a range of types and disciplines, and they can construct effective arguments and convey intricate or multifaceted information. Likewise, students are able independently to discern a speaker's key points, request clarification, and ask relevant questions. They build on others' ideas, articulate their own ideas, and confirm they have been understood. Without prompting, they demonstrate command of standard English and acquire and use a wide-ranging vocabulary. More broadly, they become self-directed learners, effectively seeking out and using resources to assist them, including teachers, peers, and print and digital reference materials.

They build strong content knowledge.

Students establish a base of knowledge across a wide range of subject matter by engaging with works of quality and substance. They become proficient in new areas through research and study. They read purposefully and listen attentively to gain both general knowledge and discipline-specific expertise. They refine and share their knowledge through writing and speaking.

They respond to the varying demands of audience, task, purpose, and discipline.

Students adapt their communication in relation to audience, task, purpose, and discipline. They set and adjust purpose for reading, writing, speaking, listening, and language use as warranted by the task. They appreciate nuances, such as how the composition of an audience should affect tone when speaking and how the connotations of words affect meaning. They also know that different disciplines call for different types of evidence (e.g., documentary evidence in history, experimental evidence in science).

They comprehend as well as critique.

Students are engaged and open-minded—but discerning—readers and listeners. They work diligently to understand precisely what an author or speaker is saying, but they also question an author's or speaker's assumptions and premises and assess the veracity of claims and the soundness of reasoning.

They value evidence.

Students cite specific evidence when offering an oral or written interpretation of a text. They use relevant evidence when supporting their own points in writing and speaking, making their reasoning clear to the reader or listener, and they constructively evaluate others' use of evidence.

They use technology and digital media strategically and capably.

Students employ technology thoughtfully to enhance their reading, writing, speaking, listening, and language use. They tailor their searches online to acquire useful information efficiently, and they integrate what they learn using technology with what they learn offline. They are familiar with the strengths and limitations of various technological tools and mediums and can select and use those best suited to their communication goals.

They come to understand other perspectives and cultures.

Students appreciate that the twenty-first-century classroom and workplace are settings in which people from often widely divergent cultures and who represent diverse experiences and perspectives must learn and work together. Students actively seek to understand other perspectives and cultures through reading and listening, and they are able to communicate effectively with people of varied backgrounds. They evaluate other points of view critically and constructively. Through reading great classic and contemporary works

http://www.corestandards.org/assets/CCSSI_ELA%20Standards.pdf, p. 4

Let's put our thinking to work ...



"daily20060904" by Calvin Dellinger on Flickr.CC-BY-2.0.
<https://www.flickr.com/photos/15321188@N00/234040168>

Cities around the country have considered legislation on soft drinks. Your town is now considering creating a law limiting soft drink portions as well. Using “your notes” (the handout) for sources, create a rough draft of a visually-impactful argument for a specific audience of your choice in your town.

- You have until _____
- Use the paper, pens, pencils on your table
- Remember, this is just a learning exercise



Large Group Chat

- How did you decide what image, content and data to use?
- Problems encountered...
- Questions that arise...
- What did you notice about selecting?

"Pears" by Turinboy on Flickr. CC-BY-2.0.
<https://www.flickr.com/photos/18922948@N08/2889602485>

What criteria would you use to assess the work we just did?

An Artist Statement

Can Convey

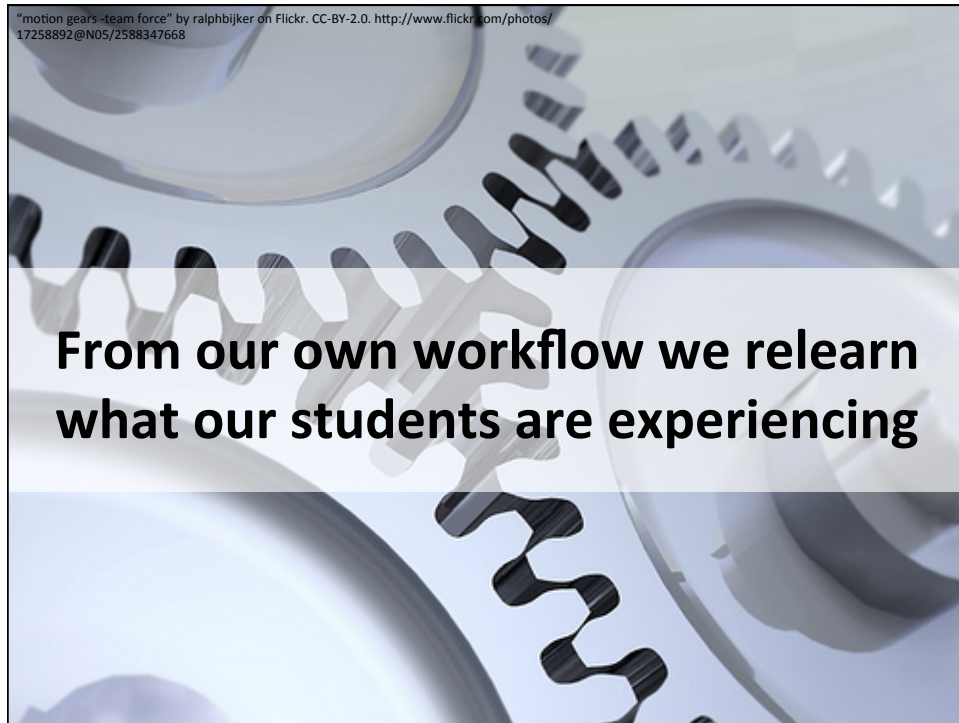
- Purpose/intent
- Process (if succinct)
- Inspirations
- Unpack your thinking about the product you made

Should Not

- Compare your work to others
- Brag about your work's awesomeness
- Use fancy, jargony, confusing, or other language that a layman would not understand

Great resource for your teaching:
<http://www.artbusiness.com/artstate.html>

What can we assess via artist statements?



Some other work to explore later

- <http://visual.ly/evolution-camera>
- <http://visual.ly/21-ways-say-hello>
- http://www.easel.ly/create/?id=https://s3.amazonaws.com/easel.ly/all_themes/vhemes/meals/&key=pub
- <http://langwitches.org/blog/2013/12/14/critical-thinking-via-infographics/> Scroll down to the one comparing populations

What can go wrong...?

- **Kinds of errors students make**
 - Lack of knowledge → collages
 - Flaws in reasoning or weak evidence → poorly reasoned arguments
- **Kinds of errors educators make**
 - Misconceptions about genre → collages
 - Poor estimate of time needed → weak arguments

Let's think a little more about planning for the classroom

1. What do we want students to know and be able to do?
2. What learning activities will help them learn these things?
3. How will we know we've been successful?

**Think – Pair –
Share**

What do we
analyze when
we evaluate
visual literacy
with our
students?

"Whistler's Mommy-Blogger by Mike Licht on Flickr. CC-BY-2.0.
<https://www.flickr.com/photos/notionscapital/3961139526/>

Sample Rubric

<http://bit.ly/masl-rubric>

RUBRIC: UNDER CONSTRUCTION

What is the visual argument?	Exceeds expectations	Meets expectations	Does not yet meet expectations	Insufficient
Audience	Engages the intended audience effectively	Demonstrates awareness of the intended audience	Not demonstrating an intended audience	Intended audience is unclear, and student cannot articulate the desired audience if asked
Claim	Stimulates debate, engage reader Constructs complex claim	Presents clear/logical claim	Trivializes topic Offers vague claim	Not related /missing/ incomprehensible
Evidence	Conveys complexity of the topic	Uses strong/ high-quality evidence	Cherry-picks evidence, reveals bias	Not relevant Non-existent
Design	Compels intellectual and emotional response and new questions	Additive Selects the format/image that best suits the audience's and topic's needs	Reiterative Echoes the text without adding value	Decorative only

Documentation	Relates to disciplinary conversations - picks sources that are credible to the discipline	Selects sources relevant to the audience and argument Reflects the full range of the works cited	Remains partial, irrelevant, or incorrect	Missing
Process reflection	Identifies and reflects upon new learning	Reflects upon and identifies what choices and why	Provides little, if any, insight into process	Unable to explain

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The background of the slide is a photograph of a wooden chopstick resting on a piece of white paper inside an open cardboard box filled with white rice. A yellow sticky note is attached to the chopstick. The entire slide has a bright green background.

Takeaways

1. Develop common tech integration vocab
2. Tech can be a game-changer. What game do you want it to change?
3. E-Effort and Brain Effort are different!
4. Know

'Riced out.'
<http://www.flickr.com/photos/65694461@N00/350982994>

Questions and

Door Prizes!

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