Inquiry Learning Strategies

Liberty Public Schools
January 31, 2013
9:30 am – 12:30 pm

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@activelearning

Follow along with today's slides at
http://bit.ly/fontblog

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Xenos

Agenda

- 9:30 – 11am
  Presentation

- 11 – 11:45am
  Secondary Q&A

- 11:45am – 12:30pm
  Elementary Q&A

http://hdl.loc.gov/loc.pnp/det.4a27699

HENRY FORD AND THOMAS A. EDISON

I HAVE NOT FAILED. I'VE JUST FOUND 10,000 WAYS THAT WON'T WORK.

THOMAS EDISON

"The world is indeed one global village. We live among determined, well-educated, and strongly motivated competitors. We compete with them for international standing and markets, not only with products but also with the ideas of our laboratories and neighborhood workshops.

" America's position in the world may once have been reasonably secure with only a few exceptionally well-trained men and women. It is no longer ...

"Knowledge, learning, information, and skilled intelligence are the new raw materials of international commerce and are today spreading throughout the world as vigorously as miracle drugs, synthetic fertilizers, and blue jeans did earlier.

"Learning is the indispensable investment required for success in the 'information age" ...

[I]ndividuals in our society who do not possess the levels of skill, literacy, and training essential to this new era will be effectively disenfranchised ...

Name the Document!

Name the Document!

U.S. Department of Education
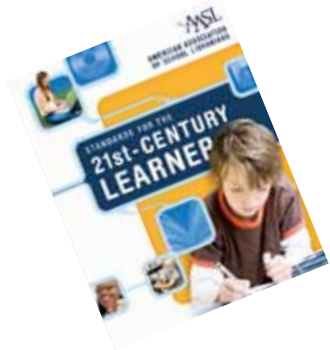
"A Nation at Risk"

1983

We know kids
could be more actively
engaged in learning and
that we could raise the bar
for many of them.

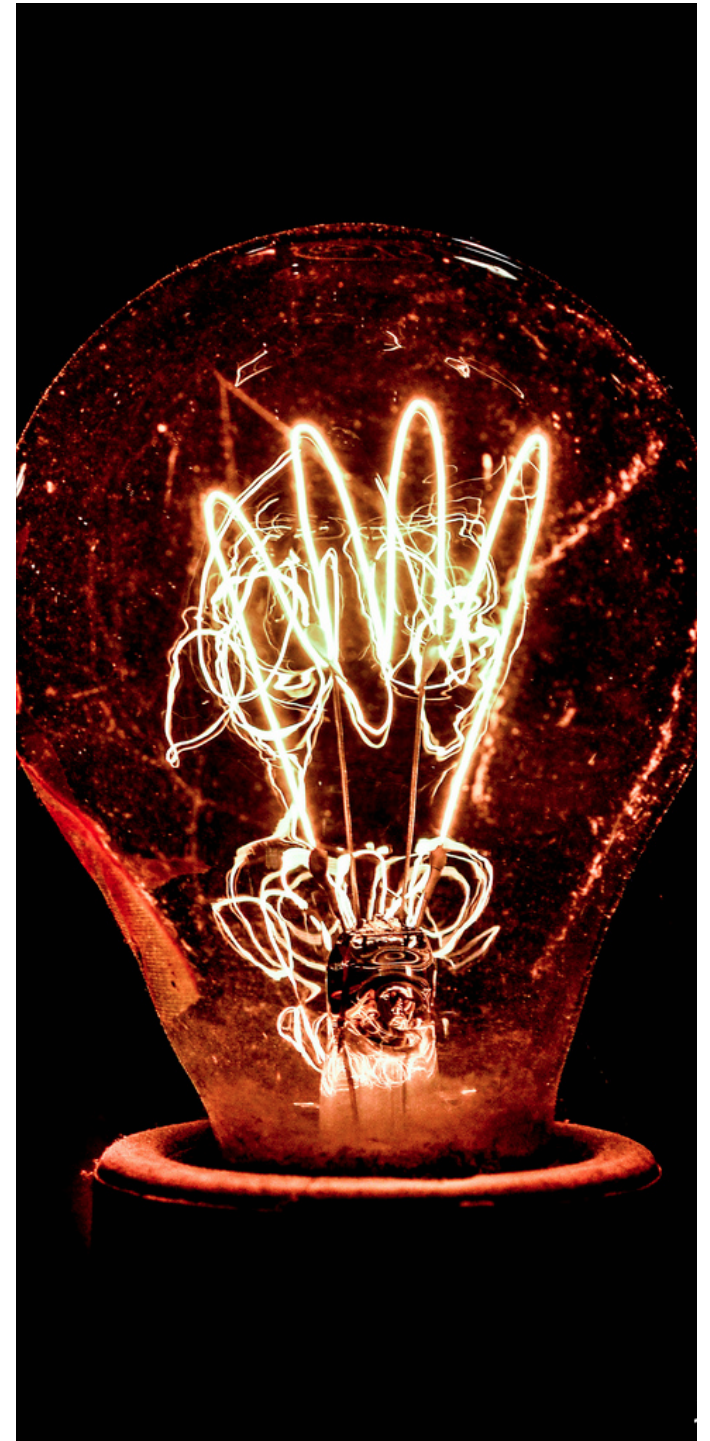**Connecting people, information, and technology in**
more valuable ways

What's Hot   What's Not

What's Hot	What's Not
- Inquiry, thoughtfulness, problem-solving	- "Dump and go": finding answers to specific close-ended, teacher-generated questions
-Using and evaluating information	- Finding information
-Social, collaborative teaching and learning	- Isolated, individual learning
-Authentic work tasks, products, and audiences	- Contrived tasks without resonance to student
-Librarian as instructional partner throughout process	- Librarian as an accessory to learning ("a clerk could do it")

Stripling's Inquiry Model
(*SLM*, 4/07 and 9/09)

- **Connect**
  (awaken prior knowledge)

- **Wonder**
  (generate possible questions)

- **Investigate**
  (seek and discover info)

- **Construct**
  (discover patterns; draw conclusions)

- **Express**
  (create product)

- **Reflect**
  (consider effectiveness of process/product)

Connect

It's All About Prior Knowledge

- Awakening it

- Building it

SEE
think
WONDER
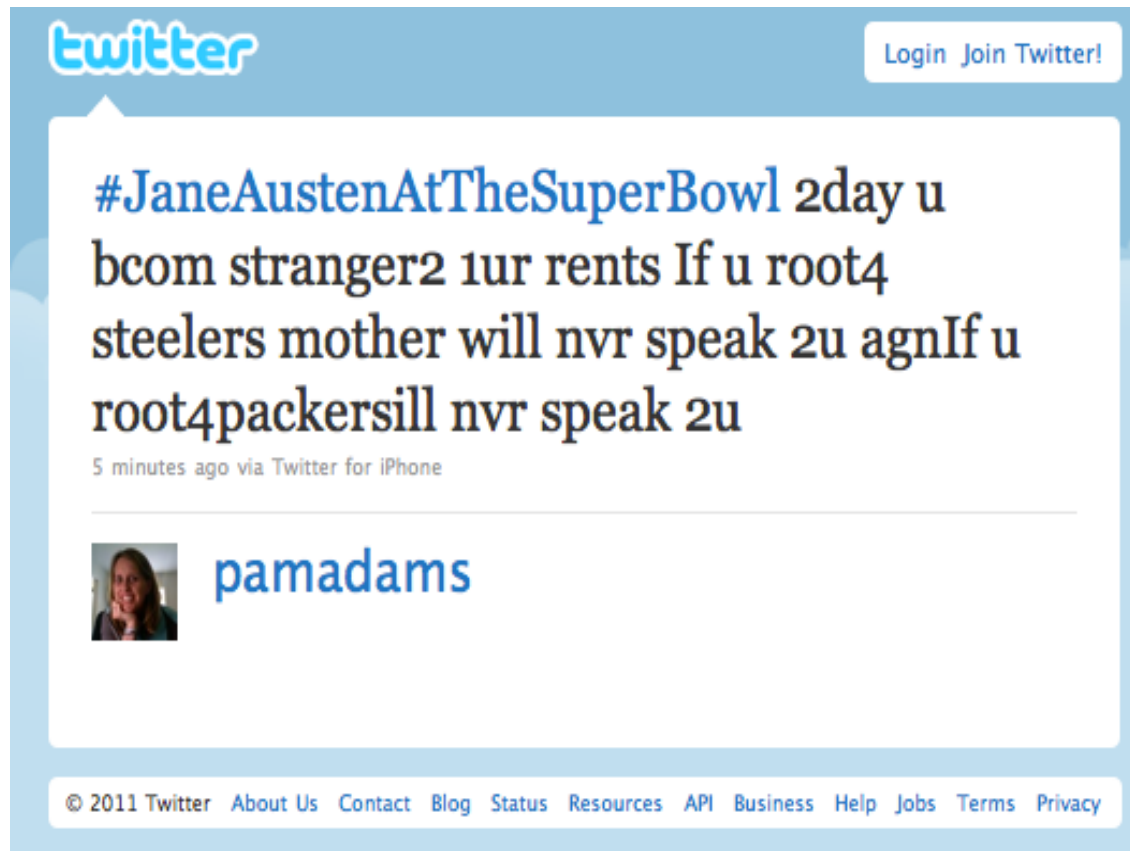
Do you know what this zone is for?

Milwaukee Airport:
Where you go after going through security to put your belt/shoes/jacket back on

Is this funny? If so, why?

Translation tip
http://bit.ly/janeaustenatthesuperbowl

Is This Funny? If so, why?

WHY DO BIRDS SUDDENLY APPEAR EVERYTIME YOU ARE NEAR?

BECAUSE I AM A WORM

http://bit.ly/doodlebyandre

And one more?

If I don't know anything, I can't build good questions.

	K	W	L
Ogle 1986	What do I **know**?	What do I **want** to know?	What have I **learned**?
KWL a la Sandy Buczynski	What do I *think* I **know?**	What do I **wonder?**	What have I **learned?**

What questions do you have about Higgs boson?

Ummm, what movies has he been in?

Tip: Make a K-W-L template on your wiki, and you'll always have it ready to go!

Connect ~ Wonder ~ Investigate ~ Construct ~ Express ~ Reflect

Connect: What Can Go Wrong?

- Time
  - Try: A reading the night before
  - Try: A primary source image in a discussion forum for homework
  - Try: A 2-minute video/audio clip or a photo discussion in class
  - Try: A 3D object
- Note: problems with Connect may not show up until the next phase, which is...

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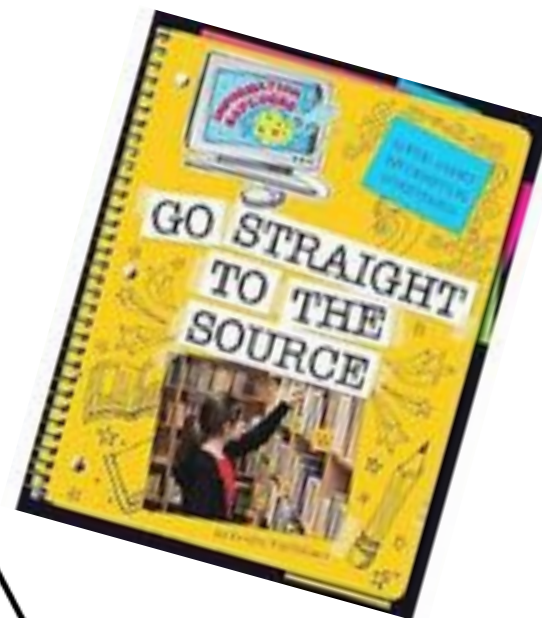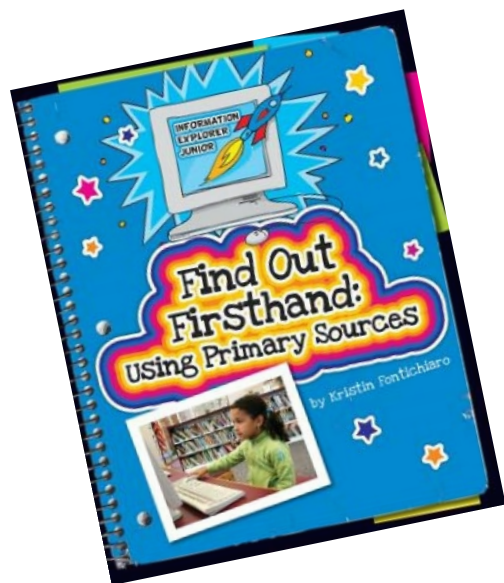 (consider effectiveness of process/product)

Wonder

- Questions

- Hypotheses

- Class graphic organizer based on discussion

- Brainstorming in groups

- Outline objective, then give questions

SEE
think
WONDER

Connect ~ Wonder ~ Investigate ~ Construct ~ Express ~ Reflect

SEE *think* WONDER

THESE HOOVERVILLE CHILDREN ARE ASHAMED OF THEIR HOME—
CAN YOU BLAME THEM?
I LIVE IN ONE ROOM. AND A SMALL ROOM AT THAT!
S.E.R.A. PHOTO 4/17/35

Title:

These Hooverville children are ashamed of their home - can you blame them? 7 live in one room, and a small room at that! S.E.R.A. Photo, 4/17/35

Identifier:

BANC PIC 1954.013:61--PIC

Collection:

Migrant Labor Camp Photographs from the Harry Everett Drobish Papers,

Contributing Institution:

UC Berkeley, Bancroft Library

http://content.cdlib.org/ark:/13030/tf6m3nb4tx/?
layout=metadata&brand=calisphere

Wonder: What Can Go Wrong?

- Time
  - Try: not every project needs to follow each step
- Low level questions
  - Try: More background knowledge
  - Try: Non-textual modalities (e.g., video, audio, images)
- Lack of engagement
  - Try: Group work, team brainstorming challenges a la Boggle
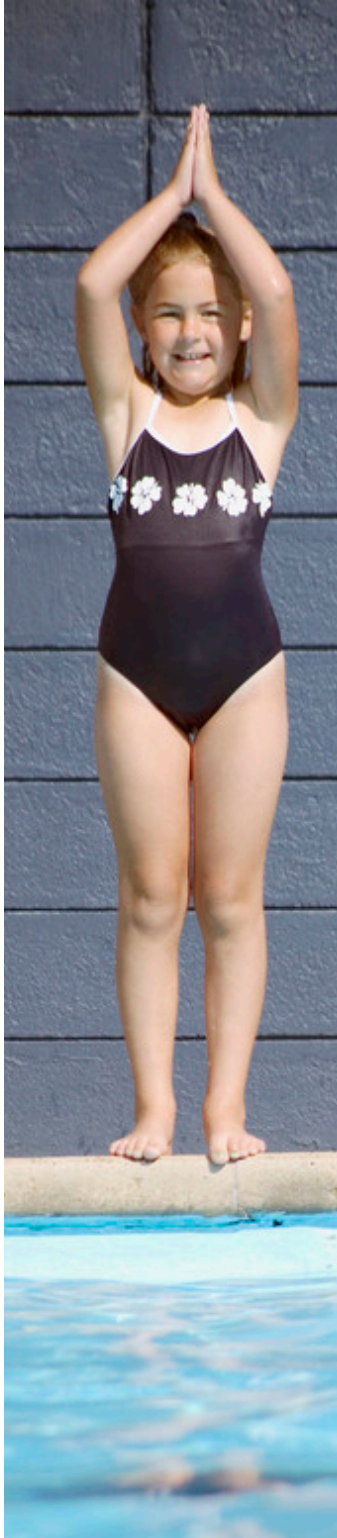
Pool Your Knowledge!

- Analog
  - Whiteboard (*bansho*)
  - Sticky notes

- Digital
  - Wallwisher.com
  - openEtherpad.com
  - Wiki page
  - Google Docs

SEE *think* WONDER

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Investigate (Info Lit)

- Search strategies

- Credibility

- Open Web

- Popular vs. Scholarly Sources

- Is a personal blog legit? (Is a *NY Times* blog legit?)

Connect ~ Wonder ~ Investigate ~ Construct ~ Express ~ Reflect

Investigate: What Could Go Wrong?

- Poor search skills/underdeveloped vocabulary
  - Try: PD *for teachers* on better Google search strategies
  - Try: http://mashable.com/2011/11/24/google-search-infographic/
- Poor sources
  - Try: more teacher PD
  - Try: Valenza's video testimony idea
- Too text-heavy
  - Try: Flickr Commons, American Memory, video archives

Investigate: What Could Go Wrong?

- Underdeveloped resource evaluation skills
  - More teacher PD!
  - More prior knowledge time with students
  - Google Custom Search
- Students only want Google
  - Help them evaluate URLs before they click
  - Not all open web is bad
  - Bake source quality into the grade
  - Get a guest speaker from college classroom or library

Investigate: What Could Go Wrong?

- Topic is too narrow
  - Try: mini-conferencing to nudge it wider
- Topic is too wide
  - Try: "You have enough here for a TV marathon about the topic, but we only have time for one episode. What should that one episode focus on?"
- Topic is unfocused
  - Try: next slides

Frame the Project

Scenarios

Project-Based Learning

Problem-Based Learning

Real-World Situations

Frame the Project

Select a lighthouse. Tell us the history of the lighthouse, its first keeper, the kind of lens it has, where it is located, and whether it is on the mainland or an island. *Spelling and grammar count!*

OR

The Governor of Michigan has proposed selling off ten lighthouses in order to reduce state costs. Identify an existing lighthouse that could be turned into a new kind of business to profit our state. Use PowerPoint to create a proposal you can share at her next open meeting. Think about your audience when planning!

Framing Strategies

- Situate the topic in the student's home, work, school, or social life.
    - How would this impact your family?
    - What if this were in your backyard?
    - How should the principal react to ____?

- Tell a story. Ask students to do research to finish it.
    - The three pigs want to build another house. The hardware store is out of straw, wood, and brick. What would be another good insulator? Why?

- Flip history.
    - How might the U.S. be different today if the war ended at Gettysburg instead?
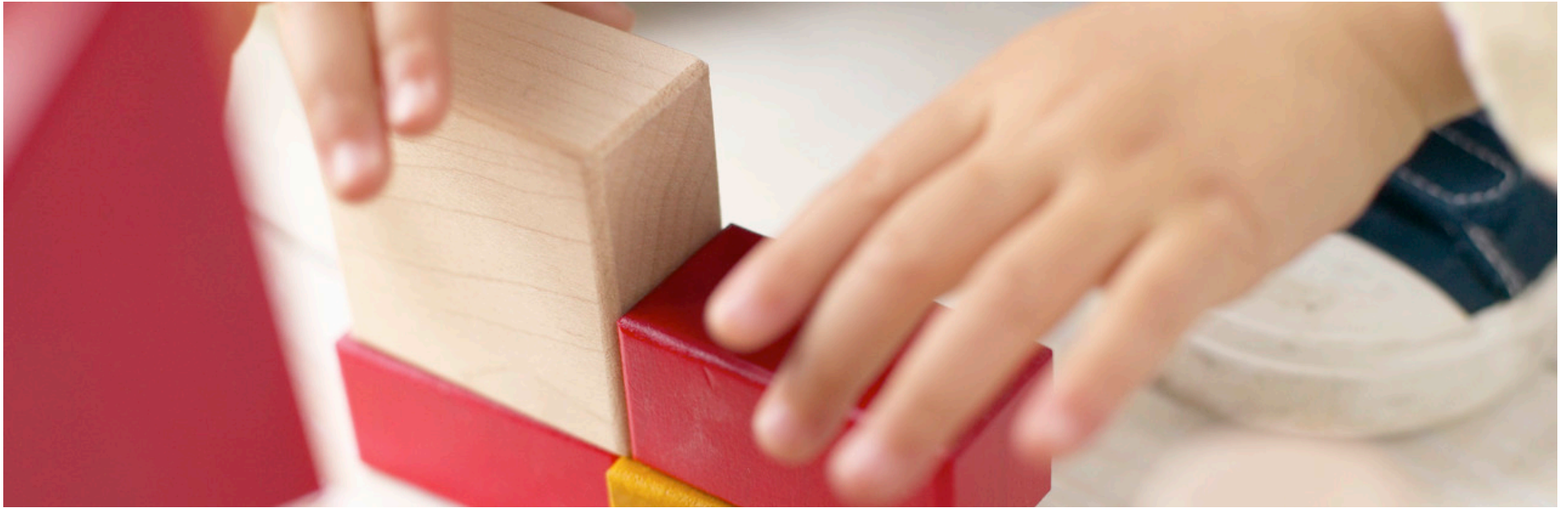
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Construct

- What patterns in data/info do I see?

- What does all of this mean?

- New round of graphic organizers for sensemaking

- Pooling knowledge (*bansho*, discussion, wikis/Google Docs)

Connect ~ Wonder ~ Investigate ~ Construct ~ Express ~ Reflect

Giraffe

From Wikipedia, the free encyclopedia

For other uses, see Giraffe (disambiguation).

The **giraffe** (*Giraffa camelopardalis*) is an African even-toed ungulate mammal, the tallest living terrestrial animal and the largest ruminant. Its specific name refers to its
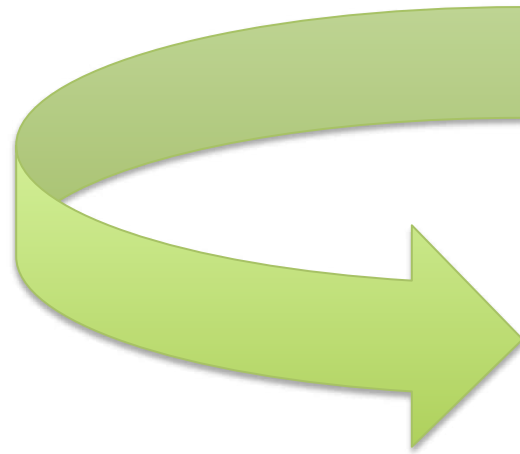
- Giraffa camelopardalisis
- African
- Even-toed
- Ungulate
- Mammal
- Tallest
- Largest
- Ruminant

Construct: What Could Go Wrong?

- Teachers didn't learn digital-age research
  - Some got by in college just reading abstracts
  - In past, just finding information was a success
  - The rules have changed!
  - Try: Offer PD hours to help them learn to be better researchers for their own ongoing coursework

Construct: What Could Go Wrong?

- Step gets skipped
  - Try: Post-mortem with teacher
    - "How did you feel?"
    - "Did you enjoy reading them?" (Teachers don't like being bored!)
    - "I wonder if you could help me try something next time ..."

Construct: What Could Go Wrong?

- Students don't know how to synthesize
  - Try: Scale back to classic essay
    - CCSS: supporting arguments with evidence
  - Try: Prompts and graphic organizers
    - "You said A, B, and C. Mash those up and make the idea fit on a bumper sticker/on a Tweet"
    - "I think _____ *because* _____."
  - Try: Provide examples!
- Time!
  - Try: Skip "making a product"
  - Try: Not to cave! This is the big stuff!
  - Try: smaller projects that encompass just a few steps

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Express

Express: What Could Go Wrong?

- Too much time spent on aesthetics at the expense of content/processing
  - Try: Choose tech tools judiciously
  - Try: Weigh the delight of novel tech tools against the orientation time it takes to learn them
  - Try: Set deadlines and prioritize aesthetic steps
  - Try: Review rubrics and guidelines; often, we accidentally over-emphasize aesthetics/layout

Express: What Could Go Wrong?

- Too many people in a group, too many idle hands
  - Try: Recalibrate collaborative work; make sure everyone has a similar *cognitive load*
- Episodic work, not work that builds over time
  - Try: Outlining (I know, it's old school)
- Inauthentic products – "playing school"
  - Try: "What would a real _____ create with what s/he has learned/"
- Typing Speed
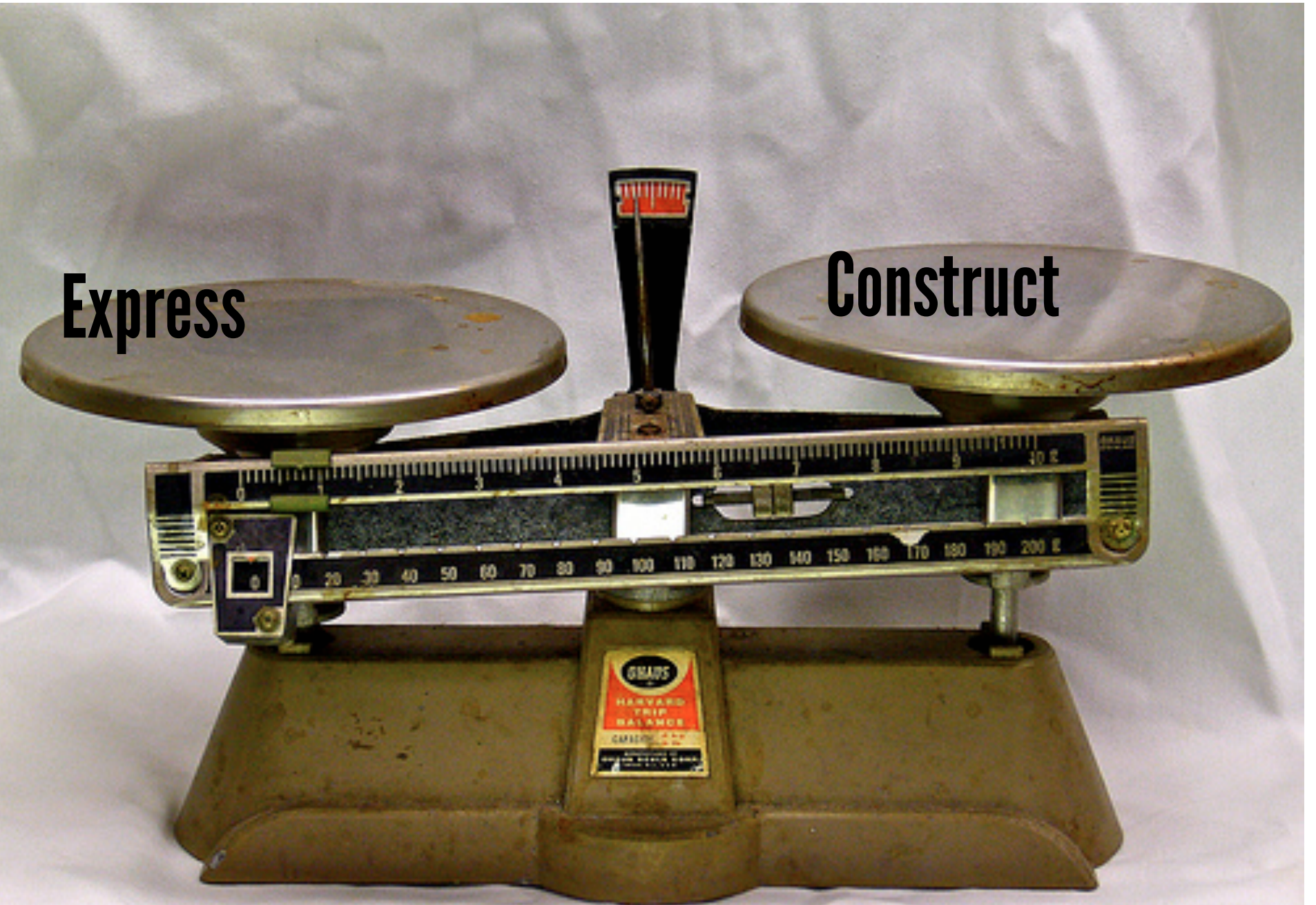 - Try: Oral sharing instead of making something (watch CCSS, though!)

Express

Construct

Image: 'unbalanced and old'
http://www.flickr.com/photos/7194536@N02/4748112382
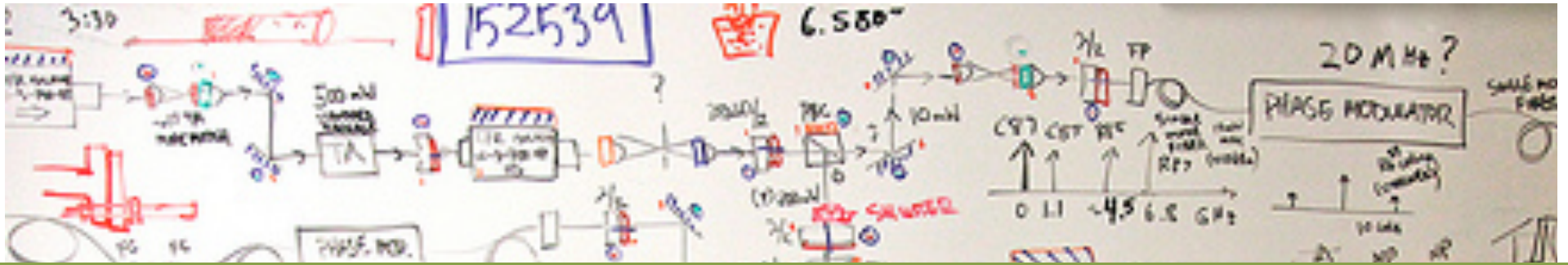
The Parent-Teacher Conference Trap

- "We have to have something to put up for conferences!"

- Why not share process work – letting students explain where they are and where they're going – rather than cranking out non-challenging "projects"?

Image: 'Whatâ ™s That? (94)'
http://www.flickr.com/photos/44124348109@N01/4397463426

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Reflect

Connect   ~   Wonder   ~   Investigate   ~   Construct   ~   Express   ~   Reflect

Reflect: What Could Go Wrong?

- Gets saved until the last minute and then (surprise!) time runs out

- Kids who need to reflect most are still working during "reflection time"
  - Try: Short reflections throughout process
  - Try: Pre-made exit slips (smiley face/frown; "I need help with…")
  - Try: Mid-project form letters to instructors
  - Try: One-minute essays (index cards)
  - Try: Mini-conferences
  - Try: Video confessionals

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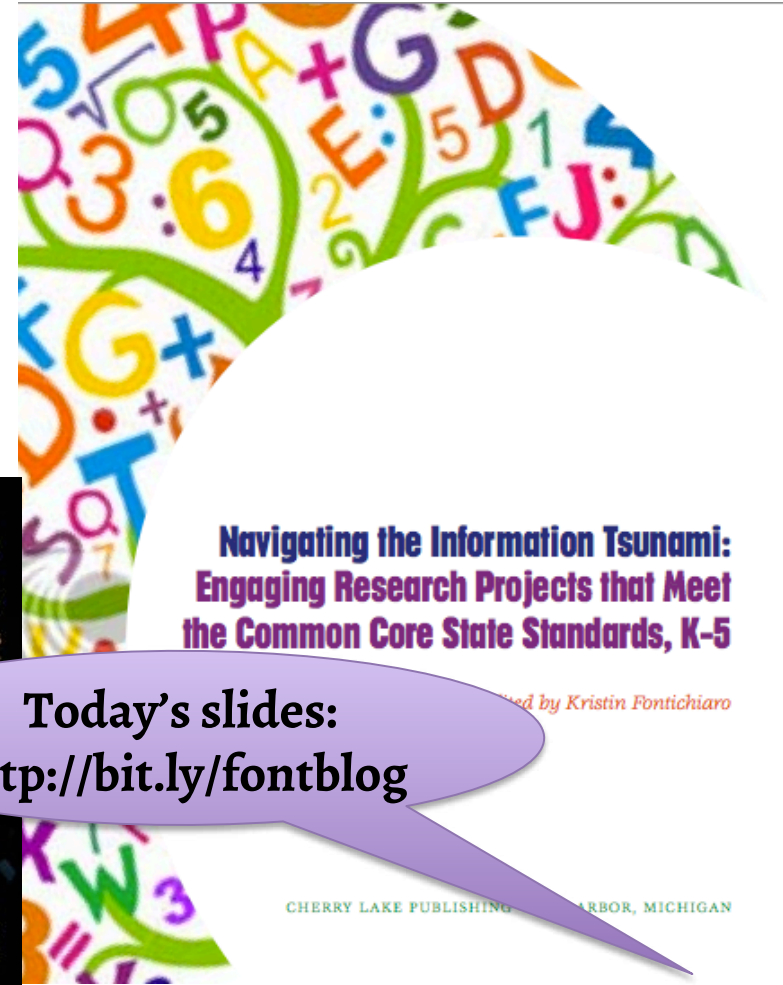 (consider effectiveness of process/product)

PIZZA

PAPA JOHN'S ®

Better Ingredients.
Better ~~Pizza.~~ **LEARNING.**

Thanks!

font@umich.edu

@activelearning

Navigating the Information Tsunami:
Engaging Research Projects that Meet
the Common Core State Standards, K-5

Edited by Kristin Fontichiaro

CHERRY LAKE PUBLISHING ANN ARBOR, MICHIGAN

Today's slides:
http://bit.ly/fontblog

KNOW WHAT TO ASK FOR: FORMING GREAT RESEARCH QUESTIONS

BLOG IT!

GO STRAIGHT TO THE SOURCE

Growing SCHOOLS
Librarians as Professional Developers
Debbie Abilock, Kristin Fontichiaro, and Violet H. Harada, Editors

Active Learning through Drama, Podcasting, and Puppetry

Find Out Firsthand: Using Primary Sources

Podcasting at School
Kristin Fontichiaro

Story Starters and Science Notebooking
Sandy Buczynski
Kristin Fontichiaro

Getting Around Online

21st-CENTURY LEARNING IN SCHOOL LIBRARIES

PODCASTING 101

School Libraries: What's Now, What's Next, What's Yet to Come
Edited by Kristin Fontichiaro and Buffy Hamilton
Foreword by R. David Lankes

Information Literacy in the Wild
Edited by Kristin Fontichiaro
Foreword by Jeffrey MacKie-Mason