



Science STARS
Funded by the National Science Foundation

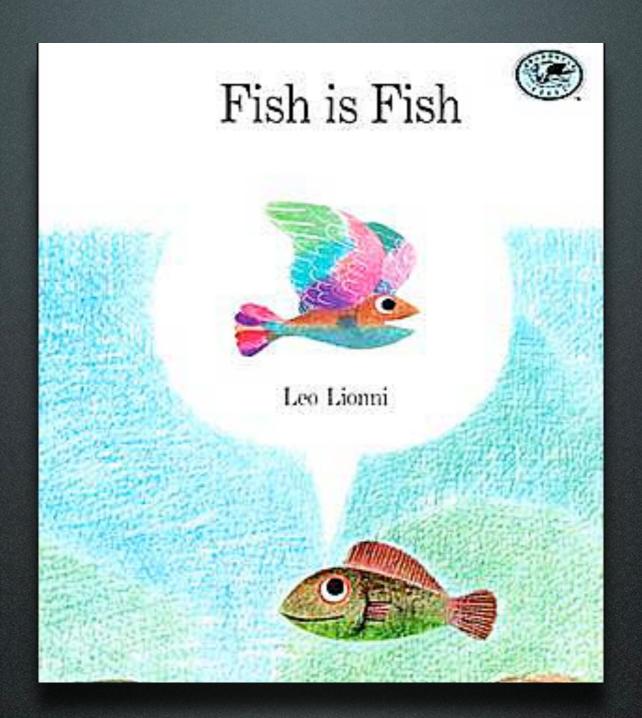
critical issues



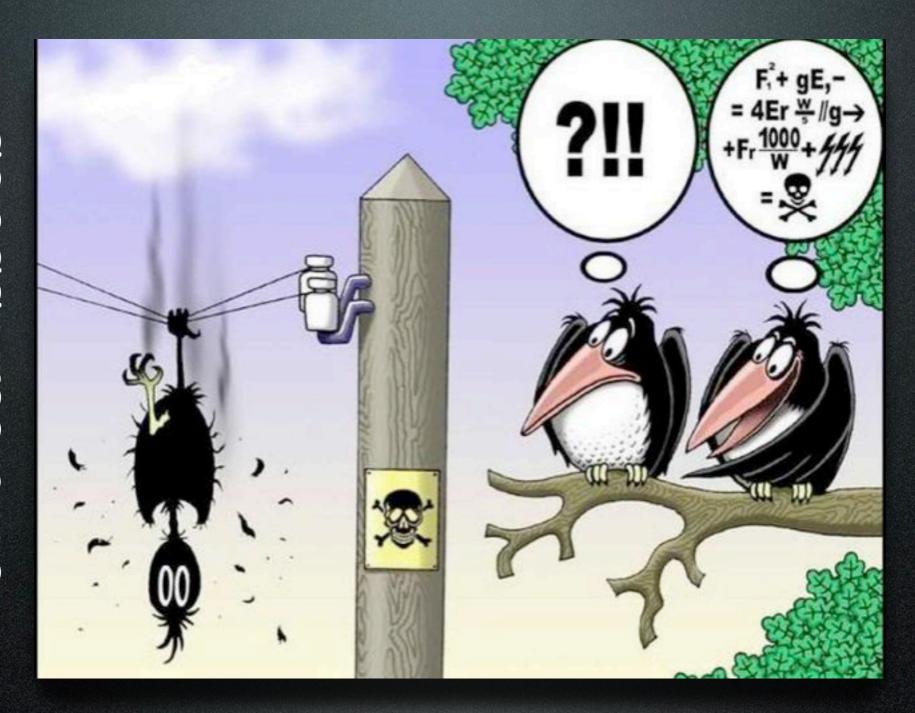
theoretical framework



planning



starting with the learner



content knowledge



identity work



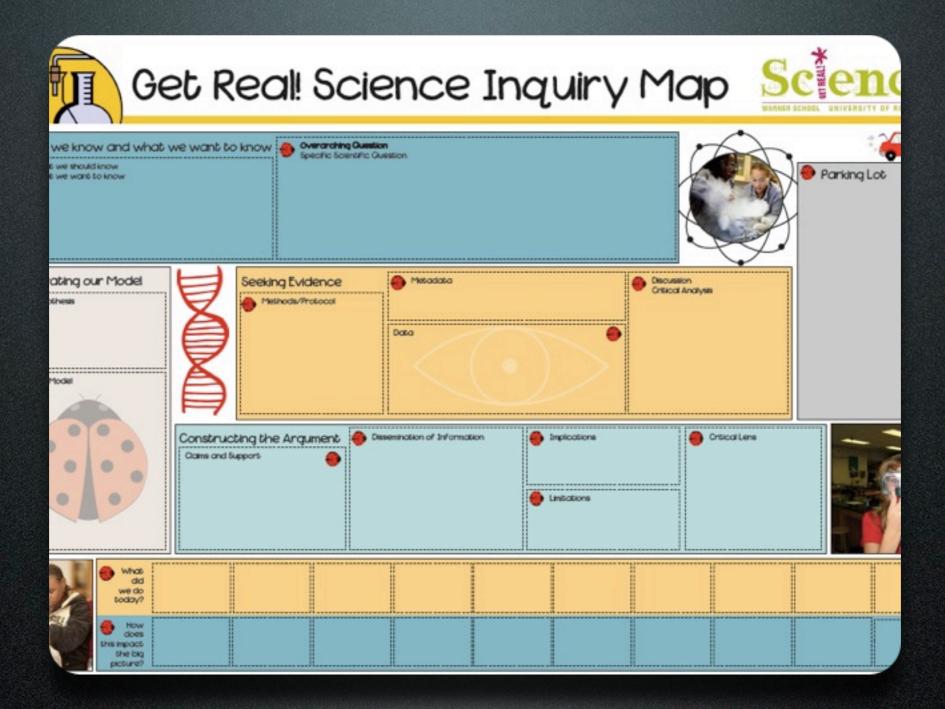
Friday, February 3, 2012



## Theoretical Framework

Objectives (Given X, VBAT Y, as demonstrated by Z)		4. NYS/National Standards (cut and paste complete standard)		Connections (described)		Assessme (e.g. quiz,
Assessment Attached (name [ F or S])	What Counts (as evidence for understanding)		Example (sample student language)		How will you <i>use</i> results?	
rmative Assessment	Contribution	to the Summative Assessment?	,			
		2				

### Planning: Behind the Scenes



## Planning: In Action

#### Green Team (7th Graders)

Driving Question How clean is our school?

#### Investigable Question

What cleaning products are most effective at reducing the microbes at East High?

#### Team Members

Nicole Bennett, Shayna Brown, Marissa Colaianna, Jada Ellis, Joyce Gonzalez, Alexis Griffin, Jahneice Johnson, Jenny Lindor, Sonylice McGrew, Ciara Rodgers, Marilyn Romero, Jahonne Smith, Kavonna Smith, Alicia Stewart, Kentassia Taylor, Sydney Rajab

eacher-Facilitators



#### Purple Team (Third Years)

Driving Question What are the health impacts of the food we eat?

Investigable Question

Does our school food contain

more sugar than food from the
community?



#### Red Team (8<sup>th</sup> Graders)

Driving Question
What is in our school lunches?

#### Investigable Question

How do meats (pork & beef) differ with respect to bacteria growth over hours of exposure to room temperature?

#### Team Members

Tonia Adger, Aaliyah Appleberry, Quanice Blocker, Rickia Bryant, Lakeisha Gardner, Venezia Hernandez-Andino, Tamra Law,

Khajeeah Leggett, Fartun Mohamed, Tyasia Nelson, Chamara Rufflin, Sophia Vasguez, Kim Harris

Teacher-Facilitators

Zach White-Stellato, Lisa Zeller, Alex Perez, Rachel Chaffee



#### Yellow Team (10-12 The Graders

Driving Question How do environments impact the way youth participate in their learning?

Investigable Question How does the color of the room impact a person's ability to concentrate?

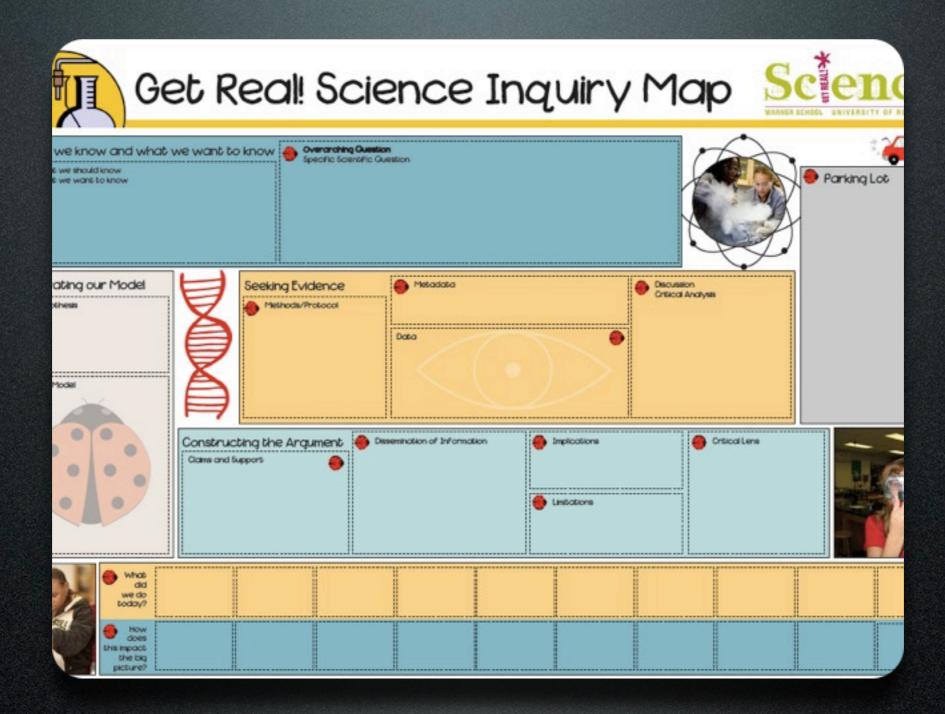
Team Members Alexis DeJesus, Nanilelyn (Angela) Lopez, Brianna Miles, Abigail Milliman, Trishia Sampson, Alysha Schnizing



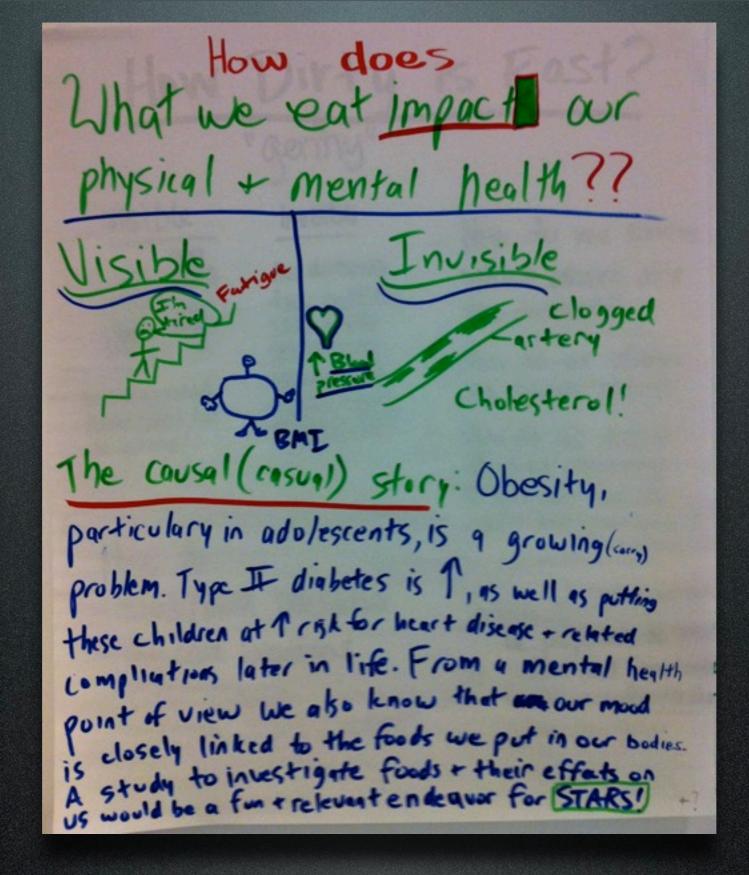
## Starting with the Learner



## Starting with the Learner



### Starting with the Learner

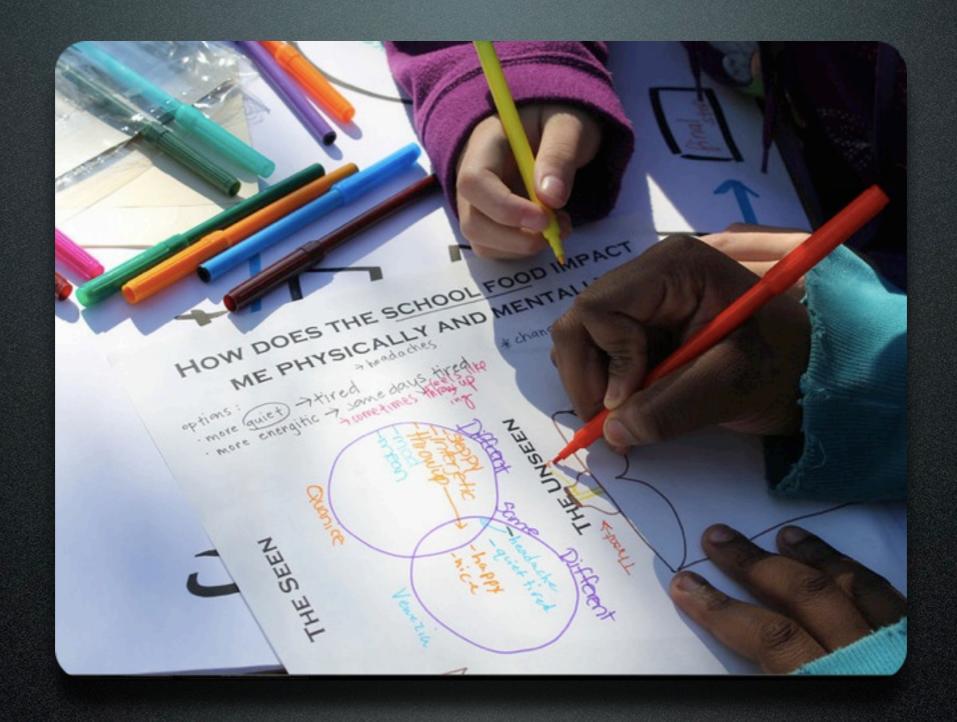


## Content Knowledge

Level 1	Level 2	Level 3
Student describes what happened.     Student describes, summarizes, or restates a pattern or trend in data without making a connection to any unobservable/ theoretical components.	Student describes how or partial why something happened.     Student addresses unobservable/ theoretical components tangentially.	<ul> <li>Student explains why something heapt can trace a full causal store phenomenon occurred.</li> <li>Student uses powerful science ide unobservable/theoretical componishmetic molecular theory) to explain events.</li> </ul>
The Bromothymol Blue changed color after exercise because the body exhaled more carbon dioxide as compared to when the body is stationary.	When exercising the body requires more oxygen. As oxygen intake increases so does the carbon dioxide output.	When exercising the body requires rewhich is taken from the lungs to must the circulatory system and diffusion the oxygen to breakdown glucose in carbon dioxide. Muscles use the energy and to dioxide the bit the lungs to must be an exhalter to the lungs to must be an exhalter to the lungs to must be an exhalter to the lungs to must be a personal to the bit be a personal to the lungs to must be a personal to the lungs to th

Row 2 of the Rubric for Examining 3 Dimensions of Evidence-based Explanat explanation co-developed by a group of teachers.

### Content Knowledge Thompson, Braaten & Windschitl, 2009



Content Knowledge



"D"iscourse: ways of combining & integrating language, actions, interactions, ways of thinking, believing, valuing, using various symbols, tools & objects to enact a particular, socially recognizable identity. -Gee, 2001



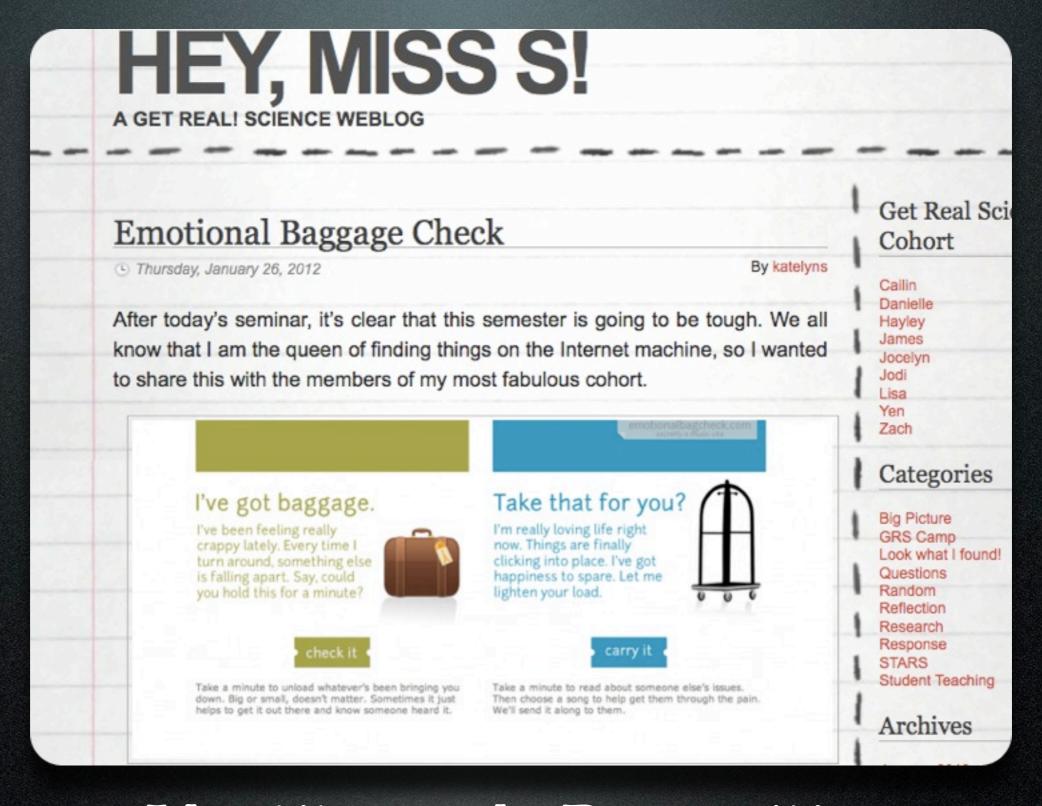
Identity Work: Participation



Identity Work: Participation



Identity work: Recognition Cohort-based Collaborative Work



Identity work: Recognition Personal, Professional, Public Blogging



Identity work: Recognition Debriefs: +'s & ->'s



Identity work: Recognition When Learners are Recognized

#### TABLE 1 Teacher Learning Dimensions and Practices

Dimension of Teacher Learning (L) Addressed	Teacher Learning Practice (P) Employed	
L1. Developing a clearer vision for one's practice	P1. Awareness and consideration of personal educational autobiography	
L2. Developing_understandings about teaching, learning, and children	P2. Engagement in critical inquiry-based reflection and thinking	
L3. Developing dispositions about how to use this knowledge	P3. Engagement in community-based interactions	
L4. Developing practices to act upon one's intentions and beliefs  L5. Developing or acquiring new tools to	P4. Studying practice in a way that is connected to, yet removed from, content-specific daily practice	
support these efforts	P5. Consideration and integration of an expert voice	
	P6. Engagement in thoughtful intentional professional practices over a long term and in sustained ways	

#### Dimensions of Teacher Learning & Teacher Learning Practices

(Luehmann, 2008; Darling-Hammond & Hammerness, 2005)

Research & Evaluation



Identity Resources - Luehmann, 2010; Nasir & Hand, 2001 Positioning: Activity, Agency & Accountability Support: Expertise, Feedback & Recognition



HANG

# Innovative Methods Luehmann, 2011



