



Literacy Connections – Common Core State Standards and NGSS

Employing dialogue, reading and writing to help understand content

Council of State Science Supervisors

April 8, 2013

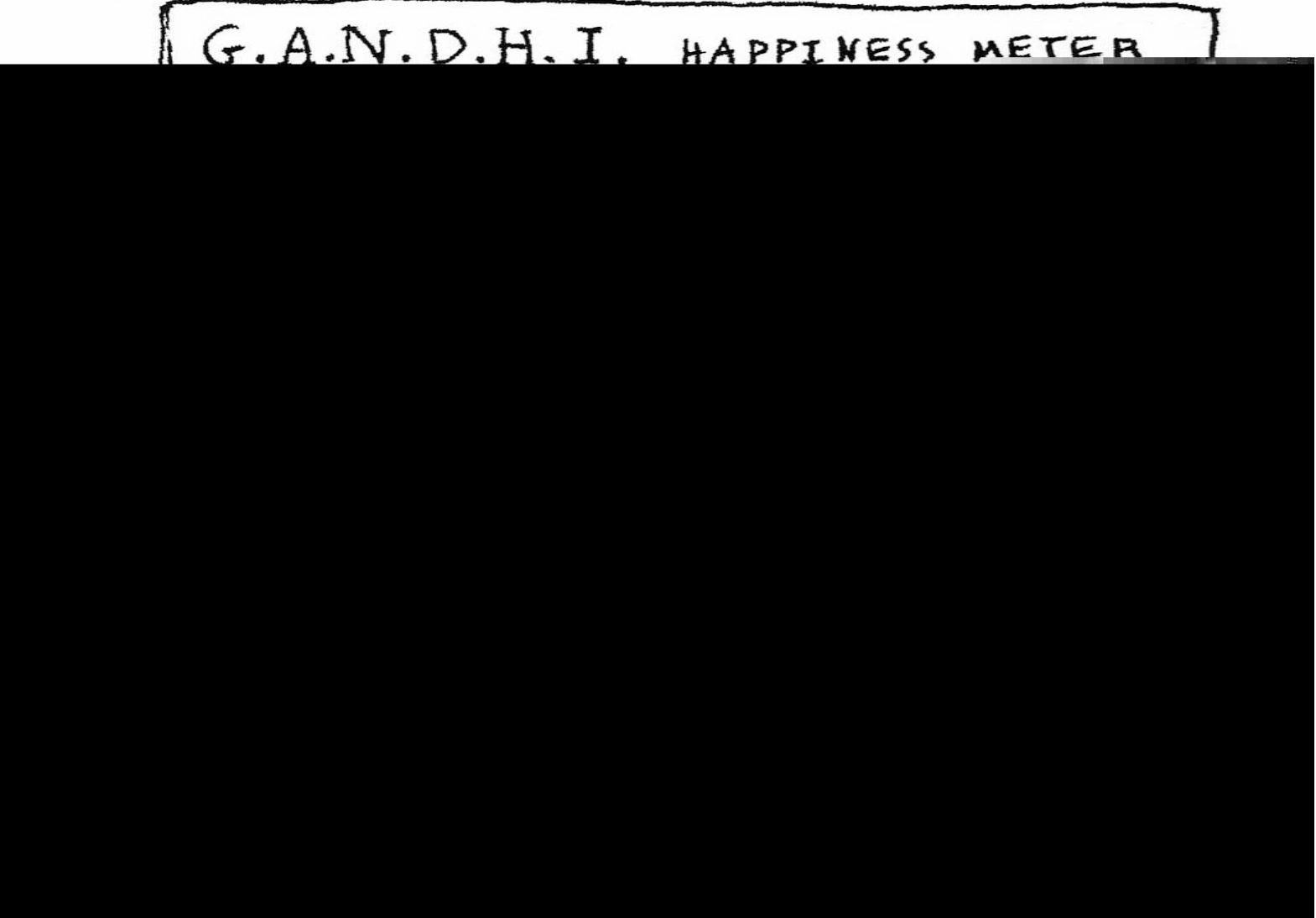
GROUNDING

(note-taker please take notes)

- At your table, in round robin fashion, share:
 1. Your name
 2. Where you are from
 3. A question you have about CC or NGSS
- Once you have progressed around the table have a brief dialogue about the questions that were raised, select two or three questions, write them on chart paper and tape it up on the wall.



What are you noticing?

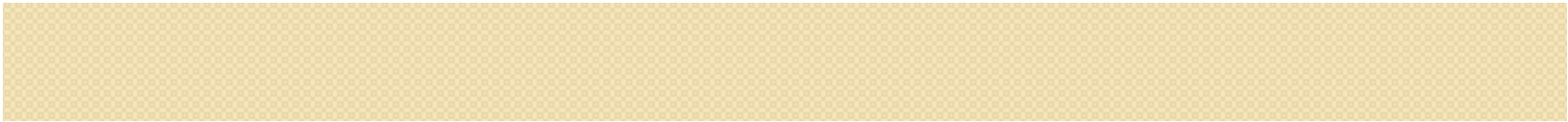


G.A.N.D.H.I. HAPPINESS METER



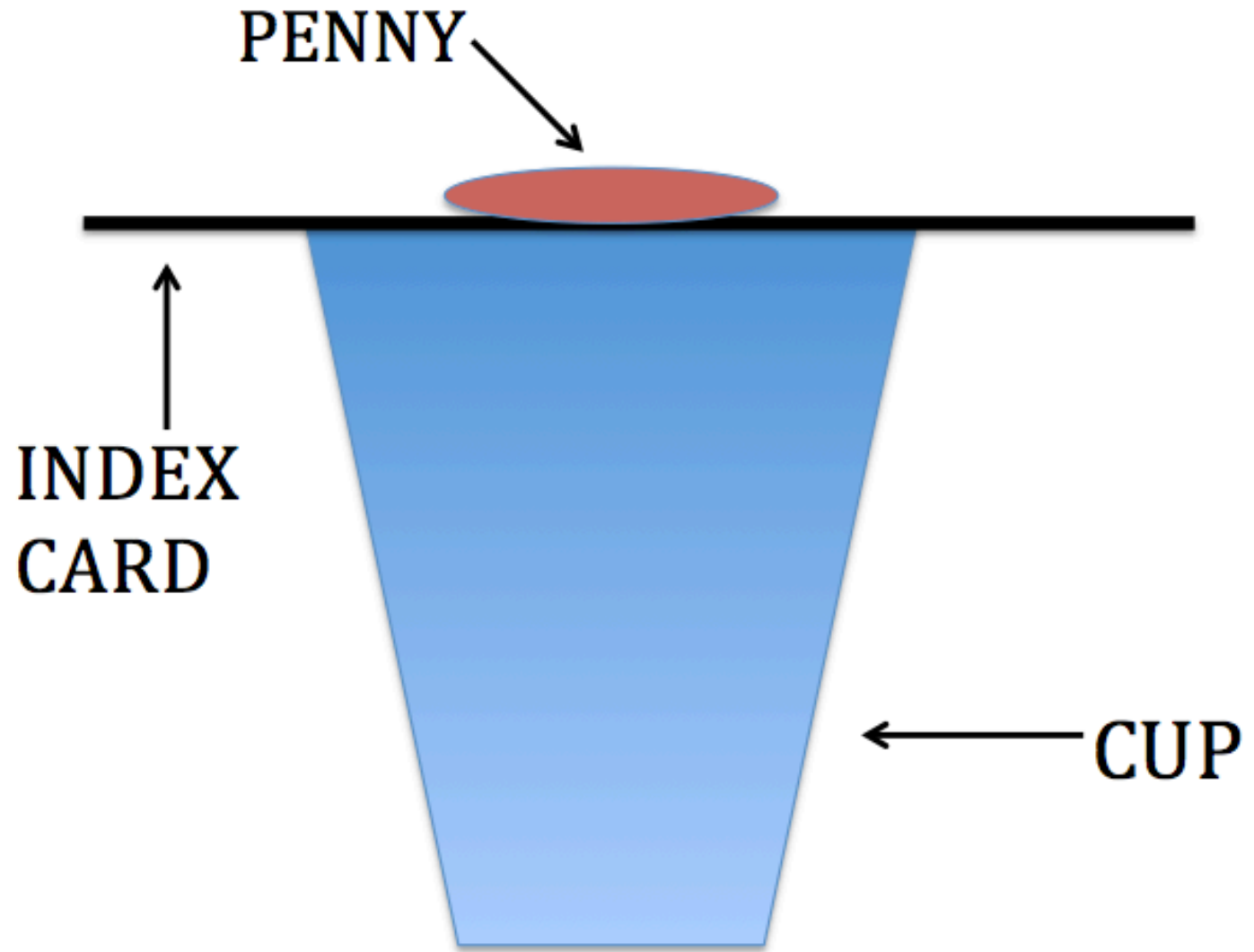
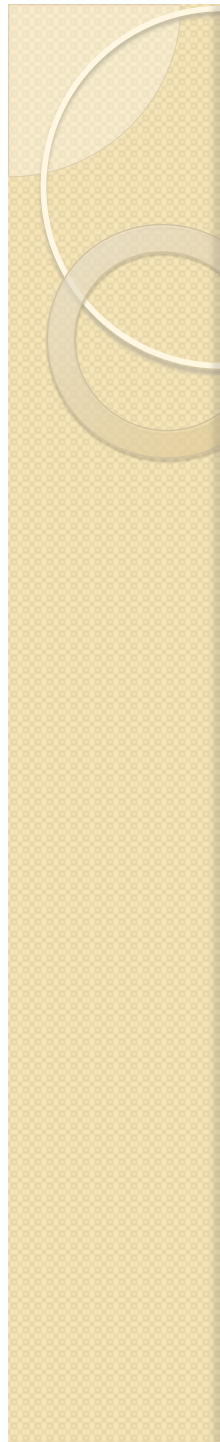


Goals

- Increase our capacity to support teachers in their transition to Common Core and NGSS aligned instructional practices.
 - Identify some design elements that can aid us in developing professional learning for K-12 teachers.
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Entering the Content

- Think about the statements in the **Anticipatory Set** (page 1 of handout)
- Fill in your responses (A for agree, D for Disagree).
- Once you and your partner have finished filling in your responses have a two-minute partner conversation explaining your thinking to each other.



Using the **Think-Pair-Share** organizer

- Fill in the **Think** box with **what** you think will happen. (page 2 of handout – top portion)
- Once you and your partner have completed the **Think** portion, have a brief conversation in which you listen to each other and summarize each other's thoughts in the **Pair** box.
- Lastly, record in the ideas you can share in the **Share** portion.

Experiencing a Phenomena

- Set up the cup, index card and penny as was previously shown.
- Rapidly flick the index card sideways
- Observe what happens
- Repeat a few times

Using the **Think-Pair-Share** organizer

- Fill in the **Think** box with your explanation of **why** what you observed happened. (page 2 of handout – bottom portion)
- Once you and your partner have completed the **Think** portion, have a brief conversation in which you listen to each other and summarize each other's thoughts in the **Pair** box.
- Lastly, record in the ideas you can share in the **Share** portion.

Obtaining Information from Text

Use a Paired Reading protocol, where –

- Partner A reads a paragraph
- Partner B summarizes
- Switch roles, B reads and A summarizes
- Continue until finished with the assigned sections

(handout page 3)

Try it Again – a different way

- Set up the cup, index card and penny.
- Come up with a different way of obtaining the same result.
- To a pair next to you, explain why the new way yields the same result as the original way.

Formative Assessment

Odd One Out

Science Formative Assessment (page Keeley)

Have a dialogue with others at your table about which term in each set you would consider as not belonging there. Explain your thinking and rationale to one another.

• Which is the Odd One?

- Force
- Inertia
- Object
- Friction

Why is it the Odd One?

• Which is the Odd One?

- Motion
- Inertia
- Mass
- At rest

Why is it the Odd One?

(handout page 4)

Potential Writing Tasks

- You have been studying inertia and are showing your mother the penny on the card on the cup activity. Your little brother who is 10 comes into the room just as you flick the card. He thinks it is magic. Write a note to him explaining the science behind the phenomenon (why the penny did what it did).
- At a birthday party a friend shows you a trick. She puts a glass of water on a towel on the table. Then she quickly pulls the towel out from under the cup without tipping it over or spilling any water. She claims she can do this because of friction. Write an email to her either agreeing or disagreeing with her (include claims and evidence you might use to make your point).

(handout page 4)

Lesson Sequence

1. Anticipatory Set
2. Think–Pair–Share (what do you think will happen?)
3. Phenomenon
4. Think–Pair–Share (why do you think it happened)
5. Paired Reading from text
6. Try it a different way - phenomenon
7. Formative Assessment (Odd One Out)
8. Writing Task

What do Common Core and NGSS ask for?


Common Core	Next Generation Science Standards
<p><u>Speaking and Listening:</u></p> <ul style="list-style-type: none"> • Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on topics and texts, building on others' ideas and expressing their own clearly. <p><u>Reading:</u></p> <ul style="list-style-type: none"> • Ask and answer questions to demonstrate understanding of text, referring explicitly to the text as the basis for the answers. • Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. <p><u>Writing:</u></p> <ul style="list-style-type: none"> • Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section. • Write opinion pieces on topics or texts, supporting a point of view with reasons. • Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence. 	<ul style="list-style-type: none"> • Ask Questions and Define Problems • Design, conduct, and evaluate an investigation • Plan and Carry Out Investigations • Make observations and collect data • Ask questions about data • Analyzing and Interpreting Data • Conduct short as well as more sustained research projects to answer a question • Use information from texts and diagrams • Interpret information presented visually, orally, or quantitatively • Construct an argument using evidence • Engaging in Argument from Evidence • Support an argument • Obtaining, Evaluating, and Communicating Information • Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas • Produce technical writing and/or oral presentations

What Did We Hit?



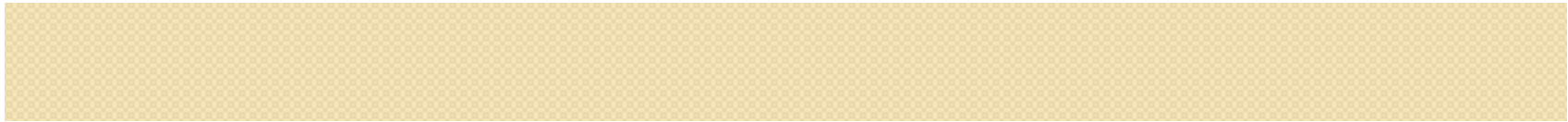


What might we identify as design elements for professional learning?

- Record potential design elements on a piece of chart paper.
 - Once you have about three design elements written down, post your chart paper.
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Potential Design Elements for Professional Learning that aligns to Common Core and NGSS

- Create a safe enough environment to risk (sharing thinking, being wrong, learning)
 - Engage in content in robust ways (have teachers experience the science in the way students will learn it)
 - Use dialogue frequently in the service of learning
 - Make thinking audible/visible
 - Employ writing (formative and summative)
 - Incorporate reflection (set up situations where teachers can be critical of their own practice)
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Science Literacy Framework

Engaging Science Experience
Interact with data – Hands-on – Phenomena – Inquiry

**Purposeful
Reading**

Productive Dialogue

**Meaningful
Writing**



Thank You

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Why
science
teachers
are not
asked to
monitor
recess.





SUCCESS IN SCIENCE

through **DIALOGUE,**
READING and **WRITING**

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