

Nudging Learning Along

**Margaret Heritage
Arizona Formative Assessment
Summit**

Phoenix, AZ

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Overview

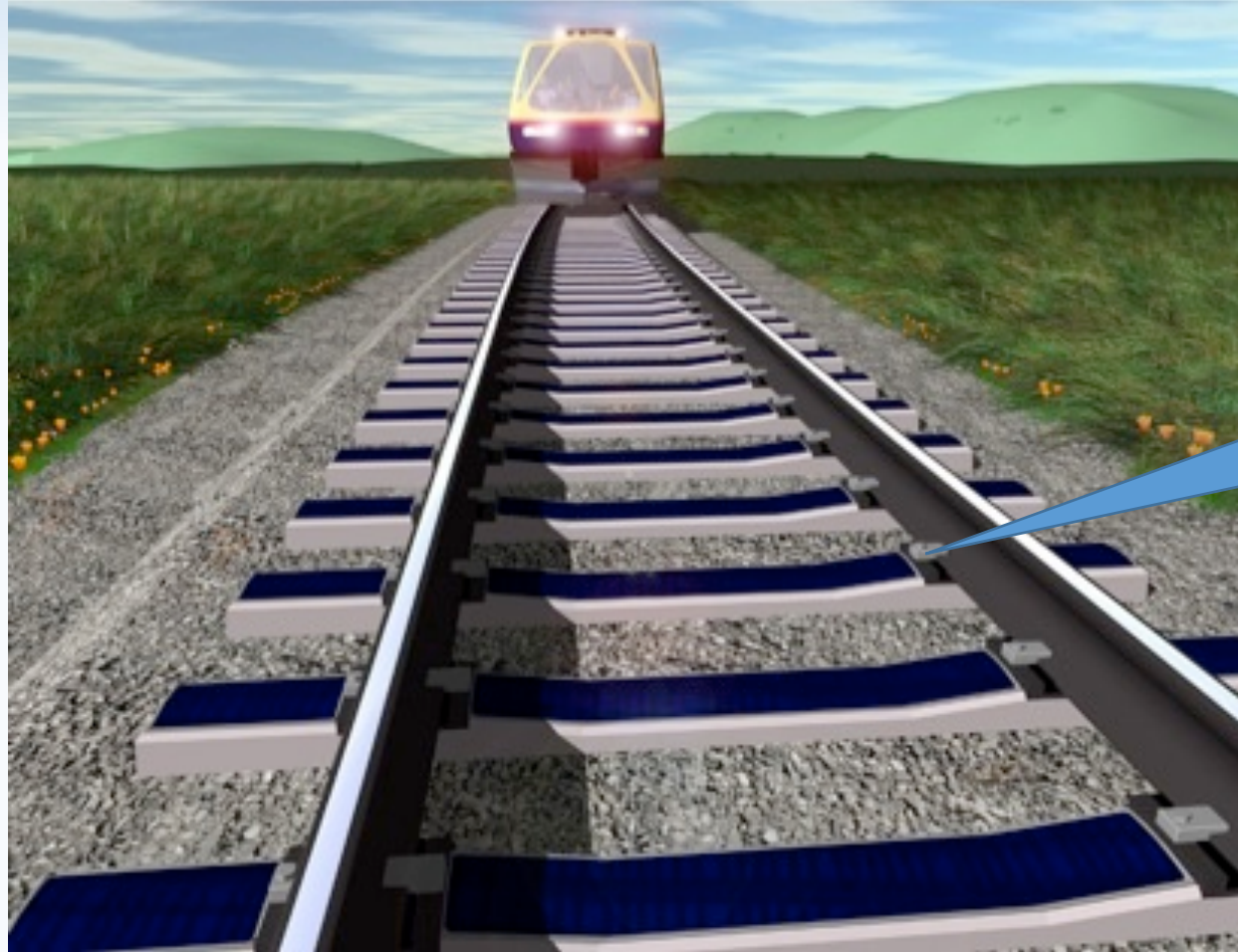
- Notice, Recognize, Respond
- A Lesson of Missed Opportunities
- Knowledge for Nudging
- “Reform” Teaching and Formative Assessment

Notice, Recognize, Respond

[Formative assessment] is a process used by teachers and students to **notice, recognize, and respond** to student learning in order to **enhance** that learning, **during** the learning

(Bell & Cowie, 2001, p. 36).

Keeping Learning on Track to Intended Goals



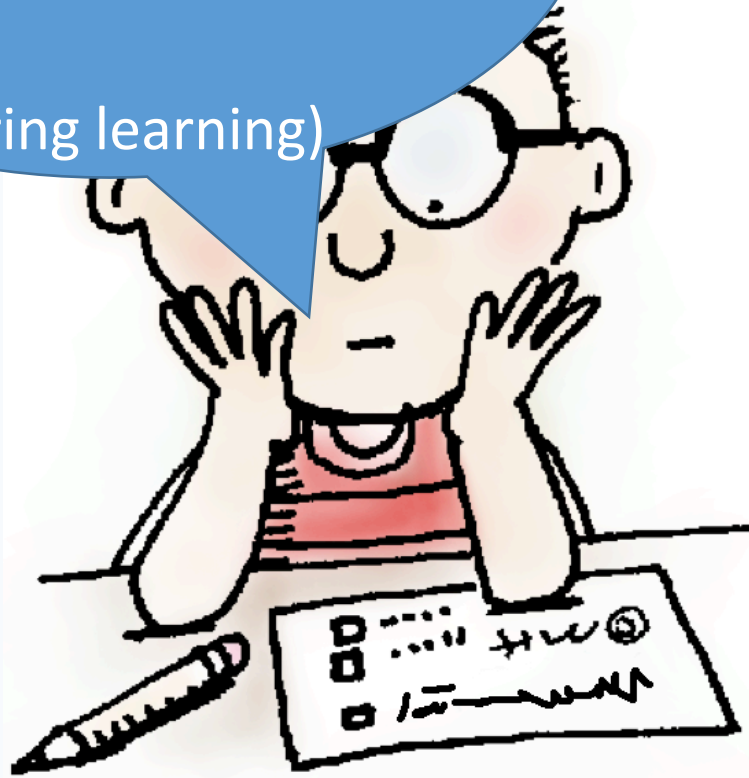
How?



**Evidence:
Qualitative insights
along the way**

Observation
Dialogue
Discussion
Questioning
Student work

(during learning)



**Respond to learning
as it is unfolding**

Nudging Learning Along

Nudge

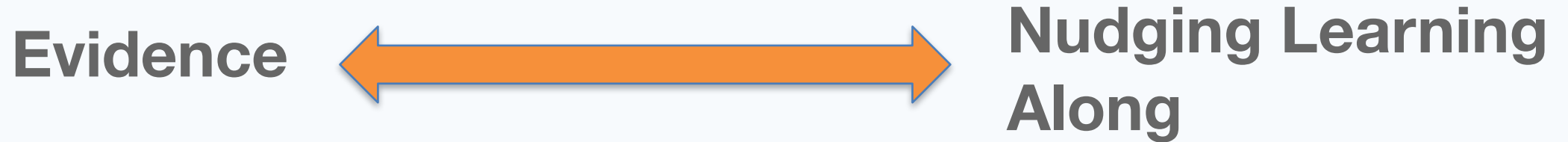
nəj/

a light touch or gentle push



Responding to Evidence

“Reform” Teaching



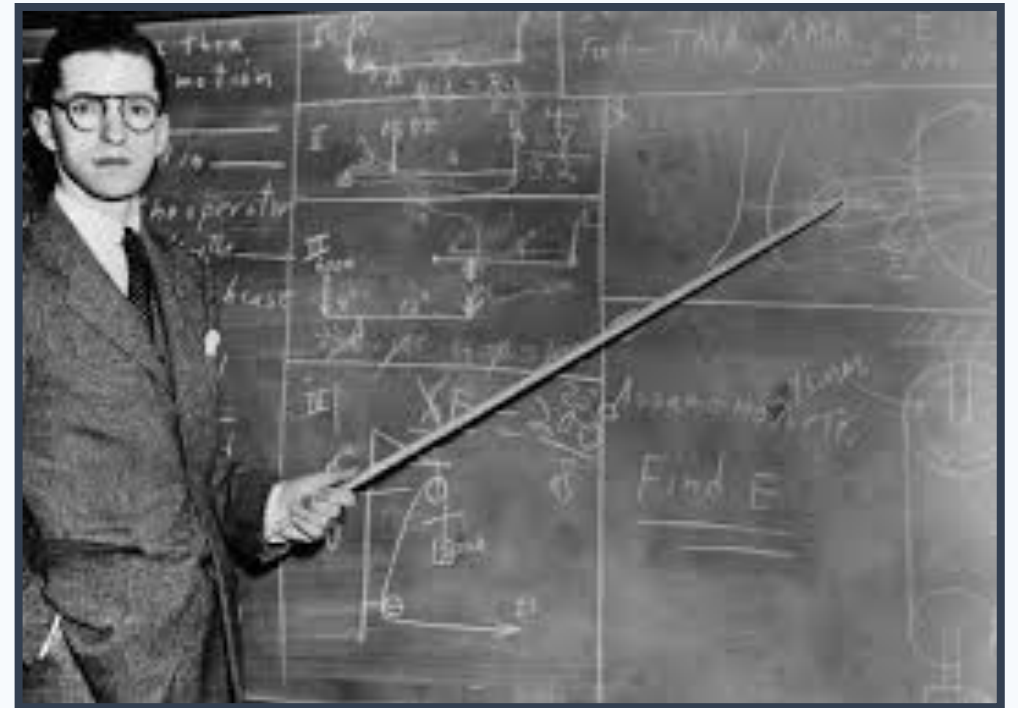
“Reform” Teaching and Formative Assessment

Traditional Lesson

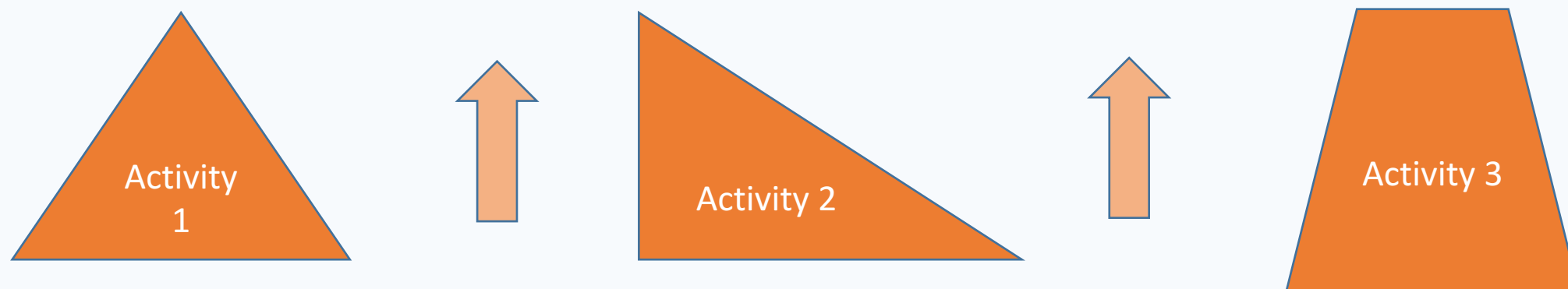
Detailed, pre-planned lessons
according to a fixed curriculum

Sequences of activities

“Remediation” of prescribed concepts



“Check for Understanding”



Got it. Didn't Get It. Reteach!



“Reform” Teaching

Base instruction on the lesson as it unfolds in the classroom, paying particular attention to the ideas that students raise

Involves:

- Guided participation
- Scaffolded assistance
- Apprenticeship



“What ultimately counts is the extent to which instruction requires students to think, not just to report someone else’s thinking”

(Nystrand, Gamoran, Kachur, & Prendergast, 1997, p.72).

”Reform Teaching”

Inquiry

Reasoning

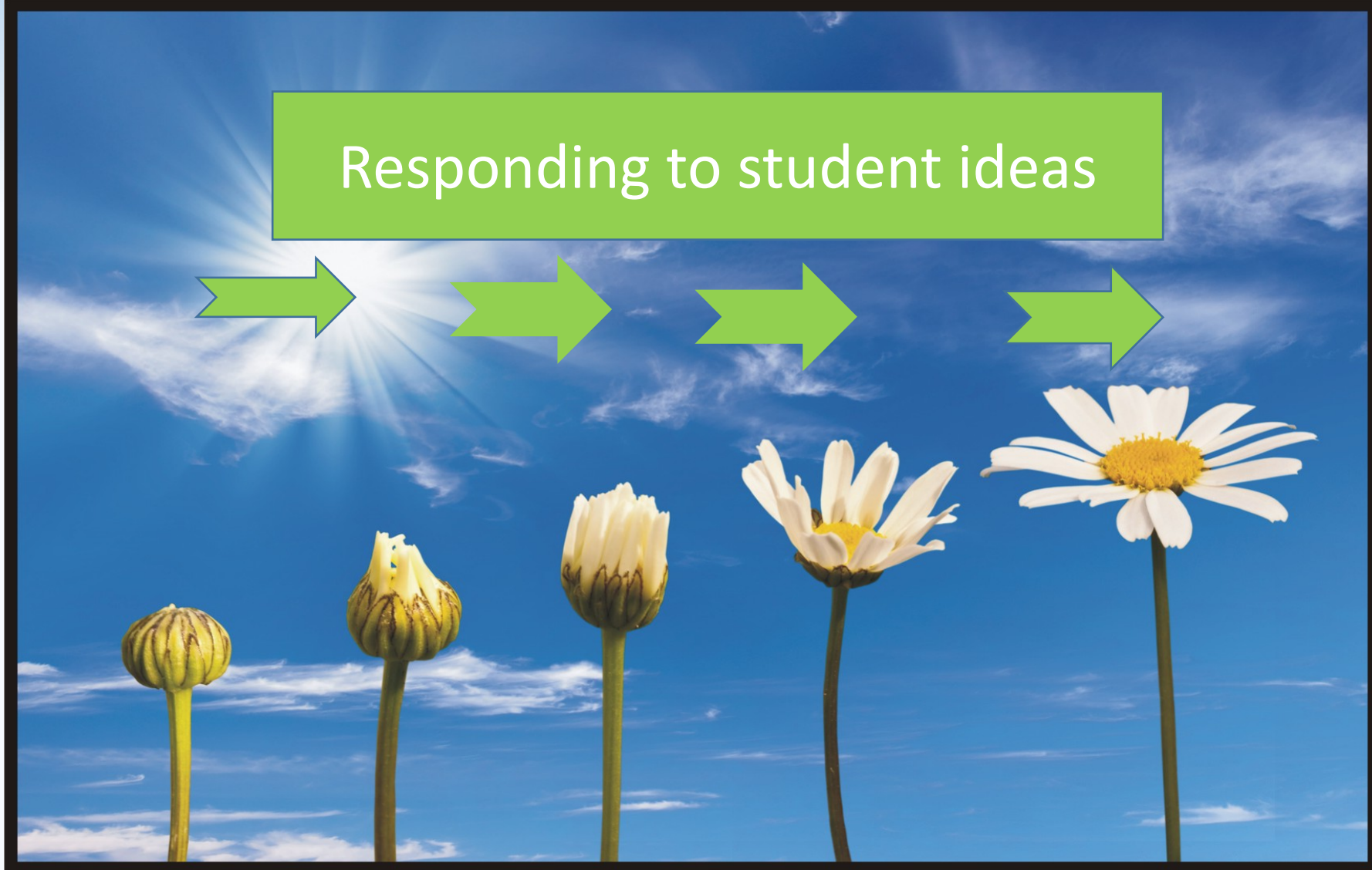
Sense-making (Active construction)

Collaboration

Discourse



Responding to student ideas



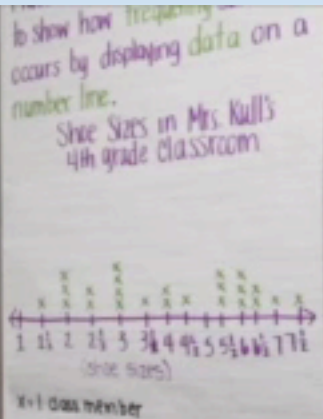


Some important
Benjamin Franklin
they came from
and could be
During
colonists
they believed

to show how frequently
occurs by displaying data on a
number line.
Shoe Sizes in Mrs. Kull's
4th grade classroom

How the introduction
is collected

Example Text



- Success
- Sort and organize data set
 - Plot data points on a line to show frequency
 - Give context to data by labeling units
 - Analyze line plot to draw conclusions about the data set
- What is the data telling me?
- Note: Press "Blank Screen" a

A Lesson of/in Missed Opportunities

(Cowie, Harrison, Willis, in press)



“Well your mom and dad would let you have a bird, fish or a cat as a pet but never an elephant.”

Teacher Response

- Missed the opportunity to learn about students' ideas
- Showed she was not interested in student ideas
- Revealed what is valued in the classroom

What could the teacher have done?

- Planned how she might take any one of the four answers as a bridge to link students' initial ideas with lesson goal
- Elicited how various features of the elephant, cat and bird helped those creatures survive in their environments - setting up for observation of characteristics of fish
- Nudged students along the intended route keeping them focused on adaptation

What could the teacher have done?

- Asked which groups agree with this group? Why?
- Joined groups to debate reasons for their choices
- Elicited how various features of the elephant, cat and bird helped those creatures survive in their environments - setting up for observation of characteristics of fish
- Listened for reasons and redirect focus to adaptive characteristics of fish

What could the teacher have done?

- Justify answers in terms of what they already knew about animals from stories and family events (funds of knowledge)
- Responded to thinking, leading students to consider fish, habitat and adaptations

Nudging Learning Along

Nudge

nəj/

a light touch or gentle push



Poetic Device

Purpose

Rhyme

Repeated
Line

Alliteration

I noticed the
poet used...

The poet used _____
because...

¡Buenos días!
Good morning!

- Reading
- Counting
- Circle
- La Mañana
- Lunch
- Mercoledì
- Writing
- Cultura
- Art Time
- Circle
- pedida
- pool/
- ended Day

Foxes

A litter of little black foxes. And
A litter of little gray foxes. And
A litter of little white foxes.
The white ones are lighter than gray. Not a lot.
The gray ones are lighter than black. Just a little.
The litters are lighter in moonlight. They glitter.
They gleam in the moonlight. —
They glow and they glisten.
Out on the snow see the silver fox
sparkle.

Mary Ann Hoberman



viembre del 2011.

ember 30th, 2011.

Today your goal as readers is to understand
that poetic devices can be used to supply
rhythm and meaning in a poem.

Poetic Device	Example	Purpose
Rhyme	<p>The Elephant An elephant, <u>rhyming</u>, Finds grass <u>appetizing</u>. And here it loves to <u>stretch</u>! More grass for its <u>lunchbox</u>. As well as its <u>lunchbox</u>. It's not getting <u>thinner</u>. And not looking <u>hinner</u>. It's just growing <u>gladder</u>.</p> <p>-Douglas Florian</p>	<ul style="list-style-type: none">• Hooks in the reader• Makes the poem fun to read• Gives the poem rhythm• Makes poem easier to memorize• Makes poem fun to share
Repeated	<p>The Hippo By day the hippo <u>loves</u> to <u>stretch</u> His <u>orange</u> and <u>spare</u>, <u>stretch</u> like a <u>stretch</u>. At night he <u>loves</u> to <u>stretch</u> <u>his</u> <u>stretch</u>. And <u>stretch</u> <u>his</u> <u>stretch</u> <u>stretch</u>.</p>	<ul style="list-style-type: none">• Hooks in the reader• Makes poem fun to read• Makes poem interesting

I noticed the
poet used...

The poet used _____
because...



Ms. L: So what did you notice? [*FA*]

Jules: Well I noticed that they had different-sized letters, like capitalized and lower case. Oh, and one more like in bumpy, and uhm, uhm, you also have spaces, big spaces [*Active construction*]

Ms. L: Spaces here (pointing at the text) and what did we call this (pointing at the word STOP) ... when all the words... all the letters... all the words... they look different [*Nudging*]

Jules: Bold

Ms. L: So what do you think this is doing? (Points to the text) [*FA*]

Jules: Well, maybe to describe uh... to describe... uh how the bus... how the uh... fast the bus. [*Active construction*].

Ms. L: How about you read to me. Read me the poem. And read it with the effect you think the author is trying to create [*Nudging*]

[Jules reads the poem with expression]

Ms. L: Because there is so much going on here with just the way the author chose to display the words. [*Scaffolding*]

Jules: Mmm. (Jules nods)

Ms. L: Why do you think it's important for the author that you read it a certain way? [*Nudging*]

Jules: Well... because it makes it sound better... and makes it ...like... makes it sound better and makes it ... um... makes it sound... makes it sound like what the poem is describing
[*Active construction*]

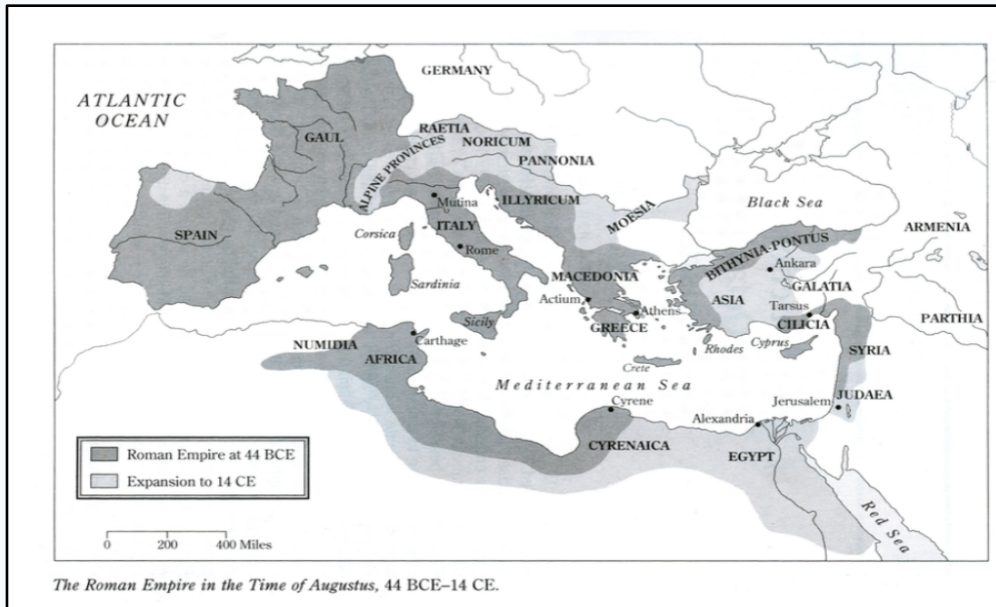
The College, Career, and Civic Live (C3) Framework for Social Studies State Standards

Developing Claims and Using Evidence

BY THE END OF GRADE 2	BY THE END OF GRADE 5	BY THE END OF GRADE 8	BY THE END OF GRADE 12
INDIVIDUALLY AND WITH OTHERS, STUDENTS ...			
<i>Begins in grades 3–5</i>	D3.3.3-5. Identify evidence that draws information from multiple sources in response to compelling questions.	D3.3.6-8. Identify evidence that draws information from multiple sources to support claims, noting evidentiary limitations.	D3.3.9-12. Identify evidence that draws information directly and substantively from multiple sources to detect inconsistencies in evidence in order to revise or strengthen claims.

Social Studies Lesson: Use evidence to answer an historical question: What kind of leader was Augustus?

<https://sheg.stanford.edu/history-lessons/augustus>



Document B: Coins

Context: The denarius was a silver coin used in the Roman Empire. On the front side of the coin is the head of Octavian and the inscribed word "CAESAR." On the back is a Crocodile inscribed with "AEGVPTO CAPTA" which means "Egypt Captured." This coin was used in celebration of Augustus's victory in Egypt, specifically the Battle of Actium in 31 B.C.E.

FRONT OF COIN



BACK OF COIN



Based on this evidence, what can we learn about what kind of leader Augustus was?

What kind of leader was Augustus?

Round 1

<i>Document</i>	<i>Based on these documents, what kind of leader was Augustus?</i>	<i>Evidence from documents to support these reasons</i>
<i>A & B: Map and Coins</i>		

What if Augustus was the one who decided to print these coins?

Document C: Augustus (Modified)

When Emperor Augustus felt ill and thought his life was coming to an end, he began writing down his accomplishments. This is a first person account of his life and accomplishments. Initially, it was carved into bronze and put in Augustus' mausoleum. Later copies were distributed throughout the empire. Here is an excerpt from the account.

Document D: Soldier (Modified)

The passage below was written by Velleius, who served as a soldier while Augustus was emperor.

<i>Document</i>	<i>Based on this document, what kind of leader was Augustus?</i>	<i>Evidence from document to support these reasons</i>	<i>Is this document reliable? Why or why not?</i>
<i>C: Augustus</i>			
<i>D: Soldier</i>			

Respond based on evidence and reliability

Claim: What kind of leader was Augustus?

Document E: Cassius Dio (Modified)

- *This excerpt was written by the historian Cassius Dio, who was born 150 years after Octavian died.*

Document F: Seutonius (Modified)

The excerpt below was written by the historian Seutonius, who wrote almost 100 years after Octavian died.

- Are contradictions irreconcilable?
- What questions remain about Augustus's leadership?
- What evidence might we find that could answer our questions?

Phase	Summary
Engagement	Task accesses learners' prior knowledge, engages new concept through activities that promote curiosity and elicit prior knowledge; make connections between past and present learning, expose prior conceptions
Exploration	Conceptual change facilitated. Lab activities to generate new ideas, explore questions and possibilities, design and conduct preliminary investigation
Explanation	Focuses students attention of particular aspect of their engagement and exploration experiences; teachers directly introduce a concept, process or skill
Elaboration	Challenge and extend students' conceptual understanding and skills. Through new experiences, the students develop deeper and broader understanding, apply conceptual understanding/skills
Evaluation	

Phase	Summary	
Engagement	Task accesses learners' prior knowledge, engages them through activities that promote curiosity and elicit prior knowledge; make connections between past and present; expose prior conceptions	<div>Student self-assessment</div> <div>Teacher formative assessment</div>
Exploration	Conceptual change facilitated. Lab activities to generate ideas, explore questions and possibilities, design and conduct investigation	
Explanation	Focuses students attention of particular aspect of engagement and exploration experiences; teacher introduce a concept, process or skill	
Elaboration	Challenge and extend students' conceptual understanding and skills. Through new experiences, the students develop and broader understanding, apply conceptual understanding to skills	

Observing Phenomena

Make a Prediction

- Which fruit/vegetable will decompose first/last?
- Why?



Observing Phenomena

Make a Prediction

- What might students say?
- How to respond?
- How to guide/nudge learning forward?



FRUIT AND VEGETABLE DECOMPOSITION

74 DAYS 1 PICTURE/40 MINUTES

PLAYED BACK AT 30 FRAMES/SEC

Nudging Learning Along

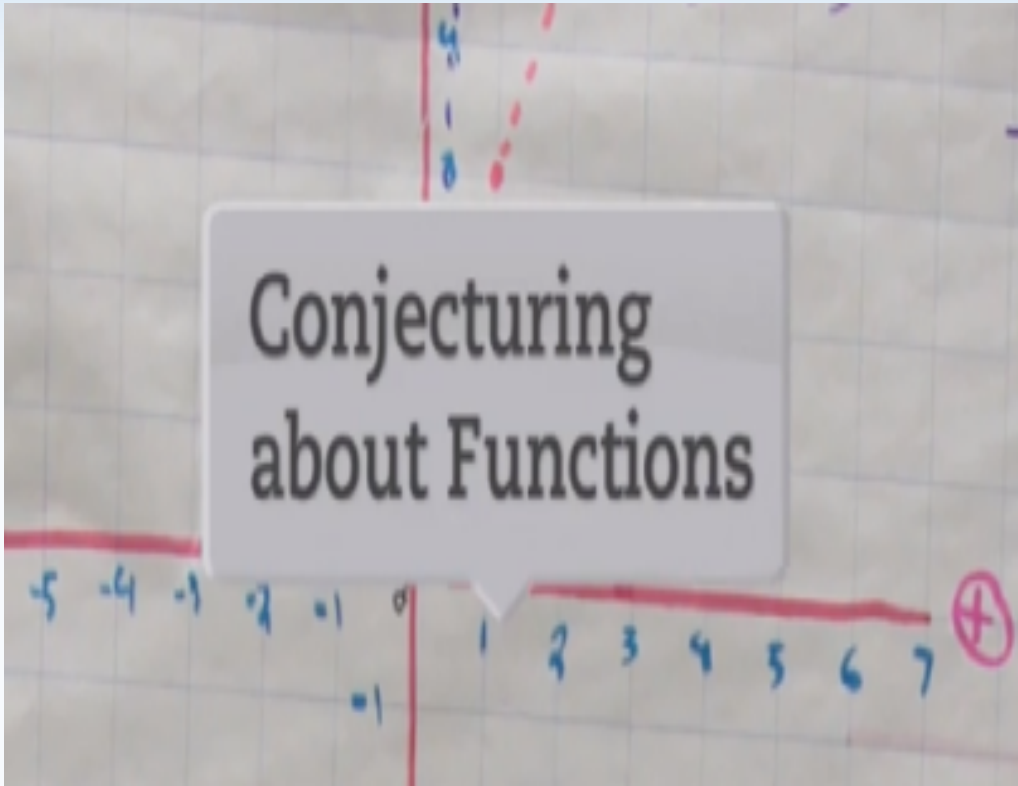
Nudge

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a light touch or gentle push



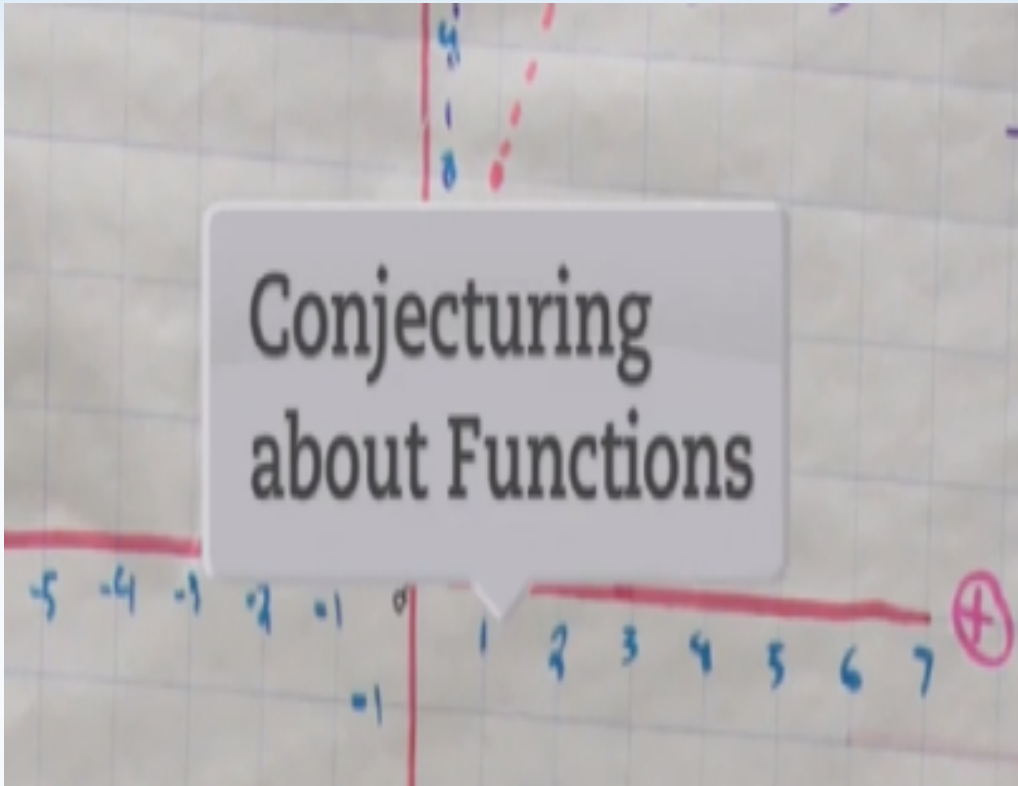
Lesson (2 class periods)



Prior to lesson:

- Students examined a different set of growing patterns that differed in their rate of change
- Investigated them to determine the function of each pattern and make conjecture about the set

Lesson (2 class periods)



This lesson:

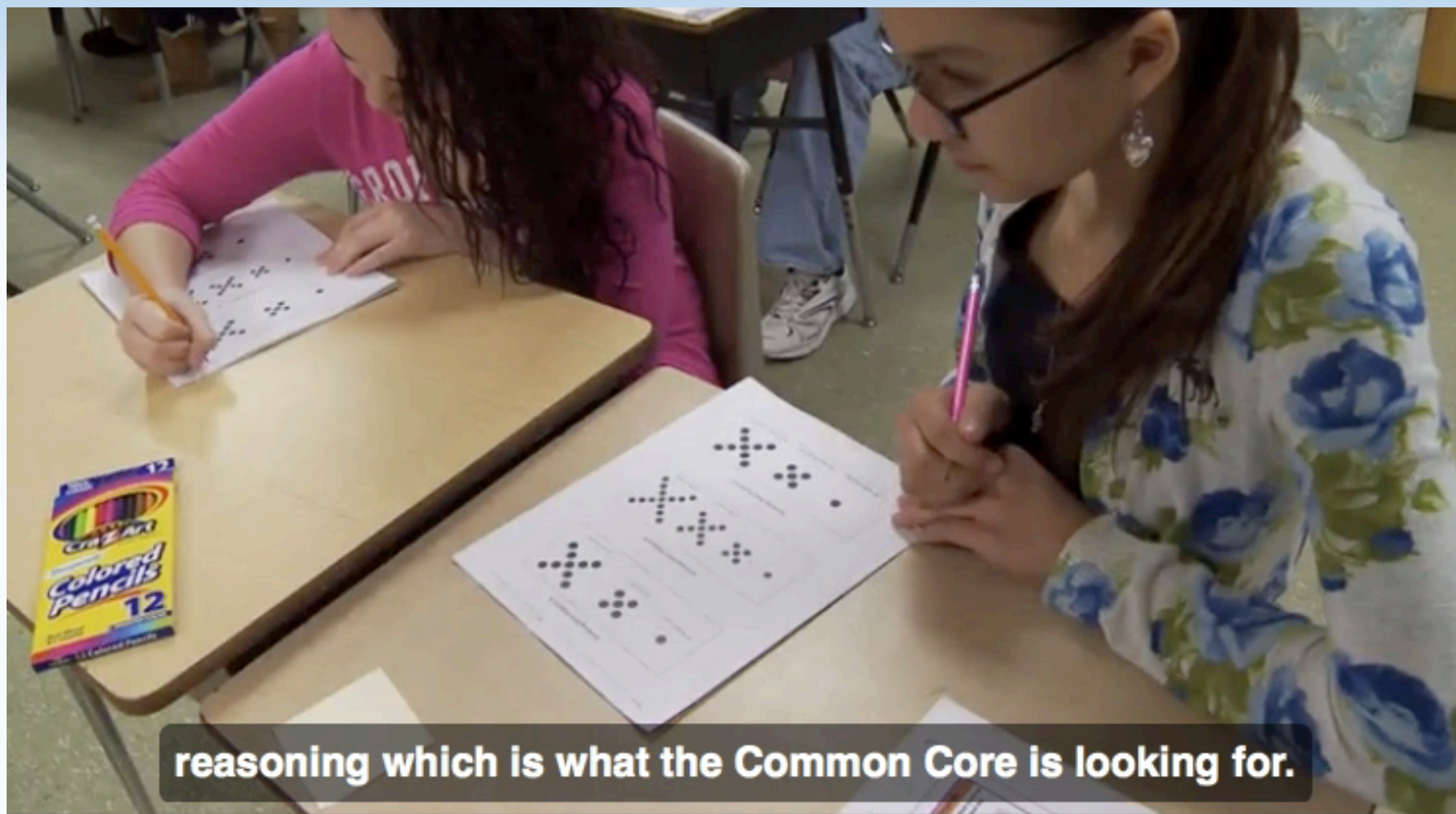
- Examining what happens when the pattern stays the same but the starting point shifts or changes

Subsequent lessons:

- Examine patterns that do not have a constant rate of change; extending learning to non-linear functions

As you watch the video...

- What do you notice about the task?
- How is she “nudging” learning along?



So they'll be able to apply that later on.

Growing Dots Pattern C



At one minute



At two minutes



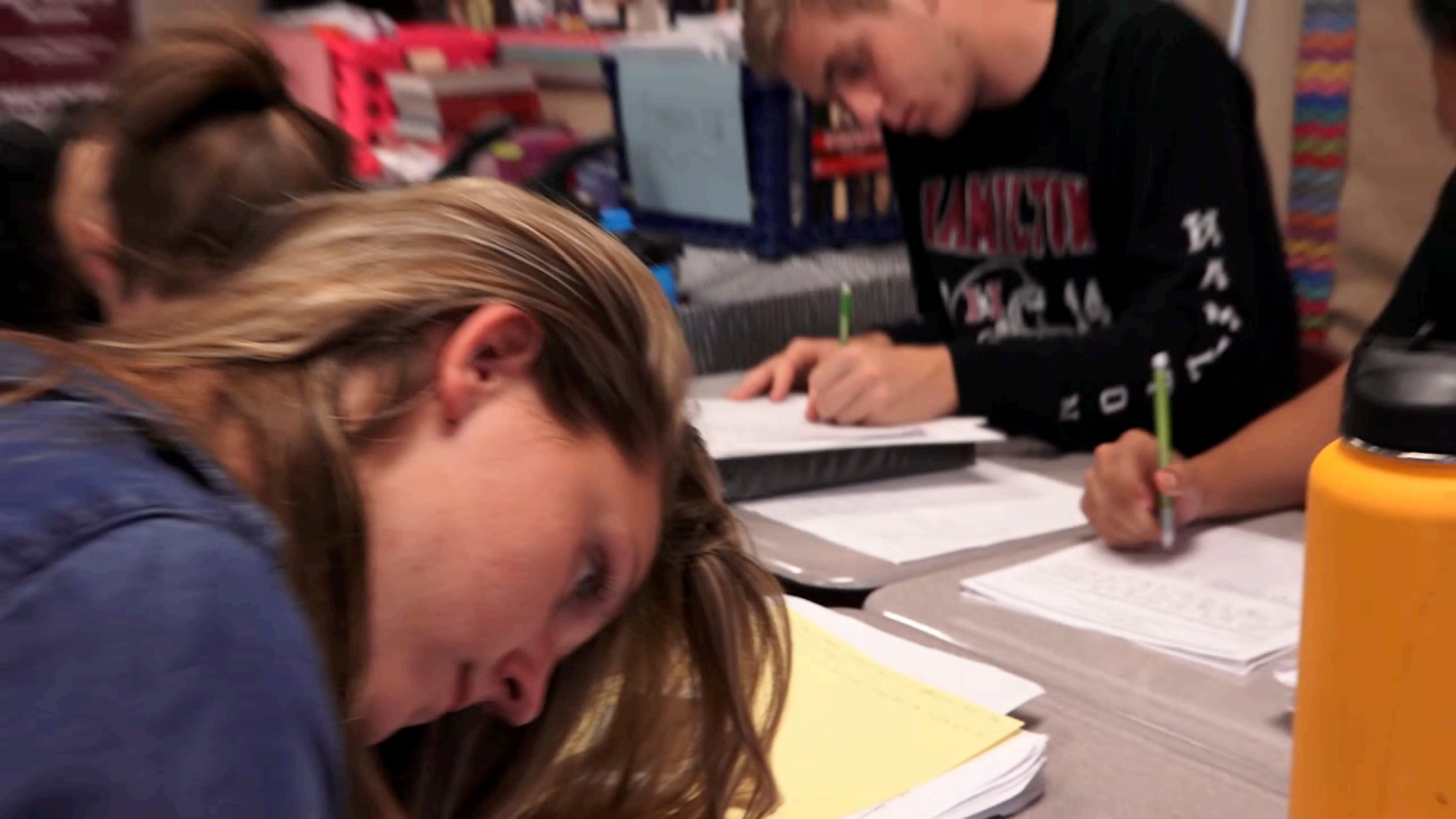
At three minutes



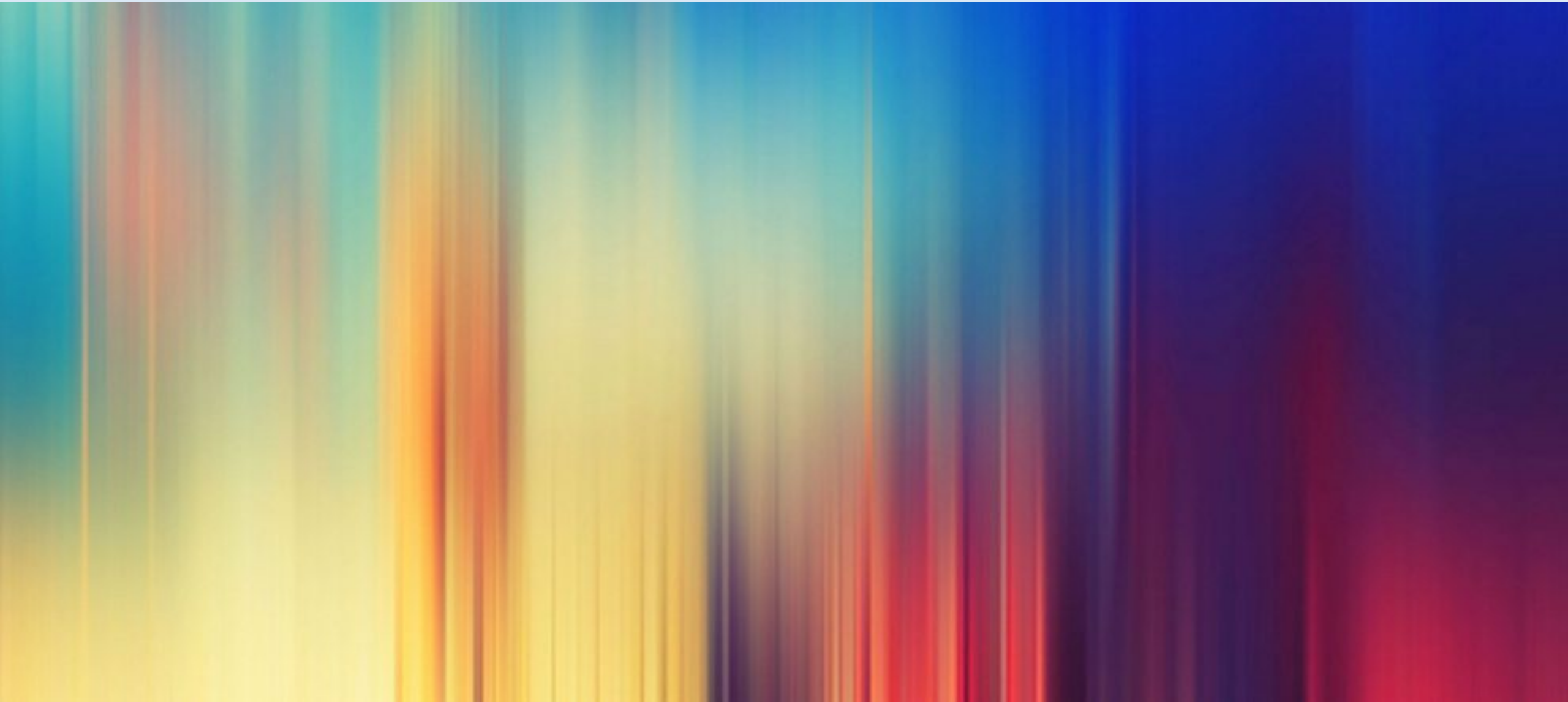
with all of the other representations.

As you watch the video...

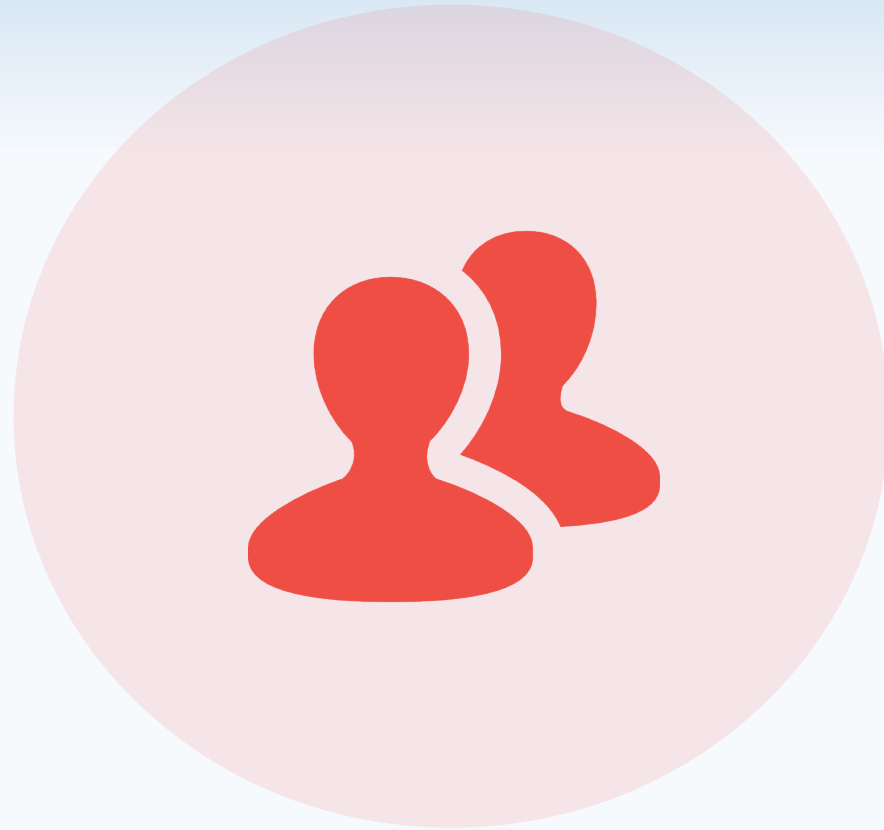
- How is the teacher “nudging” learning along?



Teaching/Learning/Assessment



- **AGENCY**
- **IDENTITY**
- **EQUITY**





Thank You!



Round 3

<i>Document</i>	<i>Based on this document, what kind of leader was Augustus?</i>	<i>Evidence from document to support these reasons</i>	<i>Is this document reliable? Why or why not?</i>
<i>E: Cassius Dio</i>			
<i>F: Seutonius</i>			



The problem
with “checking
for
understanding”?

A problem of
teaching

Final Claim: What kind of leader was Augustus?
