

### Enhanced Learning Maps: Roadmaps for Formative Assessment

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# Enhanced Learning Maps Project Goal

To improve teachers' ability to use effective formative assessment tools and practices to provide personalized instruction resulting in greater student achievement.



# Many paths to student understanding...

- Different start and end points
- Different routes
- Different gaps along the way





### The ELM Project provides a mechanism to represent the wide array of student learning and abilities

- How do you figure out where students are?
- How do you move them forward?



# Informed Instructional Framework



Formative Assessment Approach to teaching that is a process for moving students forward <u>Learning Map</u> <u>Model</u> Visual representation of how students learn Instructional Resources Set learning goals and create the conditions for noticing where students are

### Instructional Resources include:

- Learning Map Model document
- Teacher Notes
- Instructional Activities

- Student Activity
- Solution/Feedback Guide



### How do we get students from point A to point B?

Visualizing learning progressions in the likeness of a roadmap



# ELM Learning Map Model

Models how children learn from birth through high school

- History
- ELA:
  - 2310 nodes
  - 5910 connections
- Math:
  - 2285 nodes
  - 4945 connections



# Map Views

- Nodes
- Connections
- Standards
- Research based
- Teacher selected

Target skill

Prerequisite

or related skill





### Multiple Pathways of Learning





### Shana Poettker 6<sup>th</sup> grade - South Middle School

- Planning purposes
  - Connections between nodes and the
  - Progression of concepts and skills
  - Gaps in knowledge
- ELM map views support development of lessons
  - Provide evidence of concepts and skills to include





## The map alone will not move students forward

Learning Map Model Visual representation of how students learn Formative Assessment Approach to teaching that is a process for moving students forward

### Formative Assessment: Assessment *for* learning

- Identify learning goals
- Generate and collect evidence of student thinking
  - Observation
  - Discussion
  - Questioning
  - Review of student work
- Adjust immediately (or near immediately) based on evidence
- Provide ongoing feedback to teachers and learners, not for grading purposes



### Formative Assessment

### Assessment and the learning map

# Moving students forward with the map and

- Where is the student going?
- Where is the student now?
- Where to next?

formative assessment:



Adapted from Margaret Heritage Presentation, 2016

## Guiding Questions in Lessons

- Unique component of the ELM resources
- Link back to the learning map model
- Bring formative assessment into each lesson
- Allow teacher to adjust instruction based on student response

### GUIDING QUESTIONS

### Elicit student thinking:

- What do you think of when you hear the term "box"?
- What mathematical term could be used to describe an object like a box?
- What do you think is the purpose of a box?
- Why do you think boxes come in different shapes and sizes?

### Determine if the student is ready to EXPLAIN VOLUME

- Is this box [reference one of the clear boxes] two-dimensional or threedimensional? How do you know?
- How would you measure the amount a box or a container can hold?
- ▶ How do you know if a container is big enough to hold a given amount?

### Determine if the student can DEMONSTRATE ITERATION OF A VOLUME UNIT

- What was used to measure the volume of each box?
- What do you notice about the way the candies fill the box?
- How is the way the sand fills the box different than the way the candies fill the box? Why do you think they are different?
- If you were to count the number of grains of sand compared to the number of candies, would there be more grains of sand, more candies, or would they be the same? How do you know?





### **Guiding Questions**

### Student Activity Solution Guide/Student Feedback Guide

- Independent task
- Solution Guide/Feedback Guide - link back to the learning map model
- Bring formative assessment into each unit or lesson
- Allow teacher to adjust instruction based on student response
- Flexible implementation

### CORRECT ANSWER

ERRORS.

Learning Goal	Level 1	Level 2	Level 3
Identify signal words	I know that signal words show what structure the text uses.	I can identify signal words of one structure (chronological or cause/ effect).	I can identify signal words of chronological and cause/ effect structures.





Less: B Greater: A

Example Error

The student identifies figure A as the

lesser volume.

MISCONCEPTIONS, AND MISSING KNOWLEDGE

Misconcept

does not recognize that a gallon of milk is

AMOUNT

Locater Tool: a device or system used for determining the position or location of something

- Grounded in the map model and guided by the instructional units
- Assist teachers in creating personalized learning progressions/maps for students



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### Connections: Map Model and Test Item



Read the sentence from the text and answer the question.

"This frame protects the net from the rain and the sun."

What does the sentence most likely mean?

Option	Understood node(s)	Misunderstood node(s)	% answered
A. The net works best when dry and cool.		Describe the explicit meaning of an informational text using provided details and examples Make inferences about an informational text using provided details and examples	0%
B. The frame looks like an umbrella.		Describe the explicit meaning of an informational text using provided details and examples Make inferences about an informational text using provided details and examples	0%
C. The frame is stronger than the net.		Describe the explicit meaning of an informational text using provided details and examples Make inferences about an informational text using provided details and examples	0%
D. The net is in an outdoor space. ✓	Identify a point the author makes in an unfamiliar informational text		100%



### Benefits of an Informed Framework for Formative ( Assessment



- Teacher
- Student
- Instruction





## **Roadmaps for Formative Assessment**

- Support teachers' use of formative assessment.
- Move all kids from point A to point B, no matter where they start.
- Improve student understanding.





### Teacher video clip





# **Enhanced Learning Maps:** Instructional Resources elmap.us User name: jayhawk1@ku.edu Password: ncme



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The contents of this presentation were developed under a grant from the U.S. Department of Education administered by the Kansas State Department of Education. However, the contents do not necessarily represent the policy of either of these organizations and you should not assume endorsement by the federal government or the state of Kansas.

