



# **A Practical Approach for Spotting Talent in Elementary School Age Multilingual Students**

Del Siegle, Susan Dulong Langley, John Burrell, Kelly Kearney,  
Talbot Hook, Celeste Sodergren, and Mei Zheng

University of Connecticut

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NAGC24 Annual Convention – Friday, November 22, 2024

1:15 –2:15 p.m., Location: 602-604



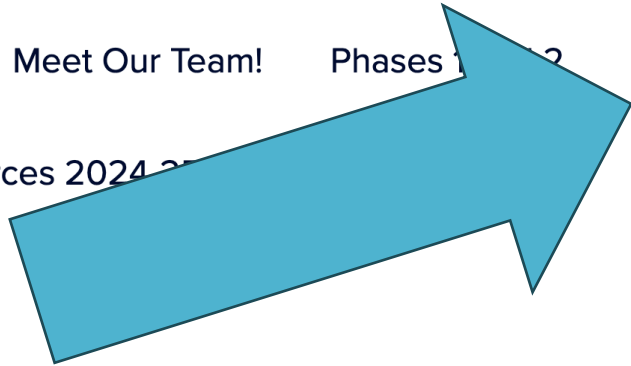
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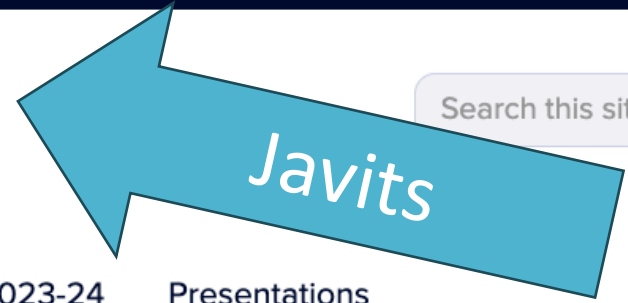
Project

**EAGLE**

Eliciting Advanced Gifted Learning Evidence

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# Project EAGLE (Eliciting Advanced Gifted Learning Evidence)

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## Teacher Resources

### Project EAGLE Points of Promise

 <b>EAGLE</b> <small>Eliciting Advanced Gifted Learning Evidence</small>	
<b>I am thinking mathematically when...</b>	
	1. I enjoy working on math and continuing to try to find the answer even when the problems are difficult.
	2. I connect what I am learning to what I have learned before in math.
	3. I relate the math we are learning to everyday life outside of math class.
	4. I try different strategies to solve math problems.
	5. I use logical reasoning to make sense of math problems and determine what to do next.

### Explanation and Examples of the Nine Points of Promise



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

## Project EAGLE (Eliciting Advanced Gifted Learning Evidence)

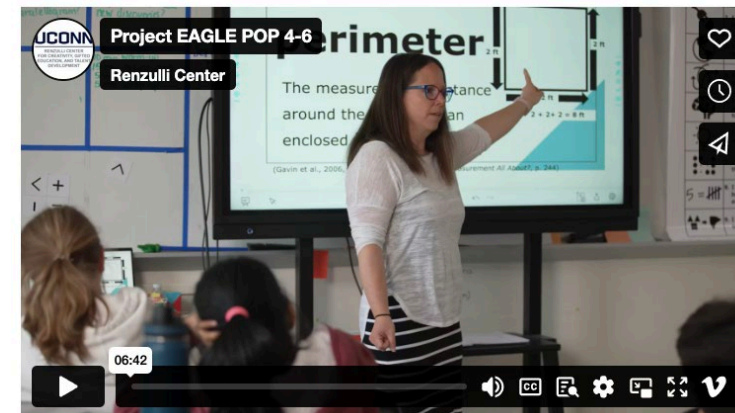
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## Teacher Resources

### Project EAGLE Points of Promise


 I am thinking mathematically when...	
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	6. I think of new ways to solve math problems and new problems to solve.
	7. I recognize patterns in math and use them to organize information.
	8. I understand and use relationships between numbers to order, compare, and estimate.
	9. I can figure out how shapes fit together in different ways.



# Rationale



Underrepresentation  
of gifted ELs



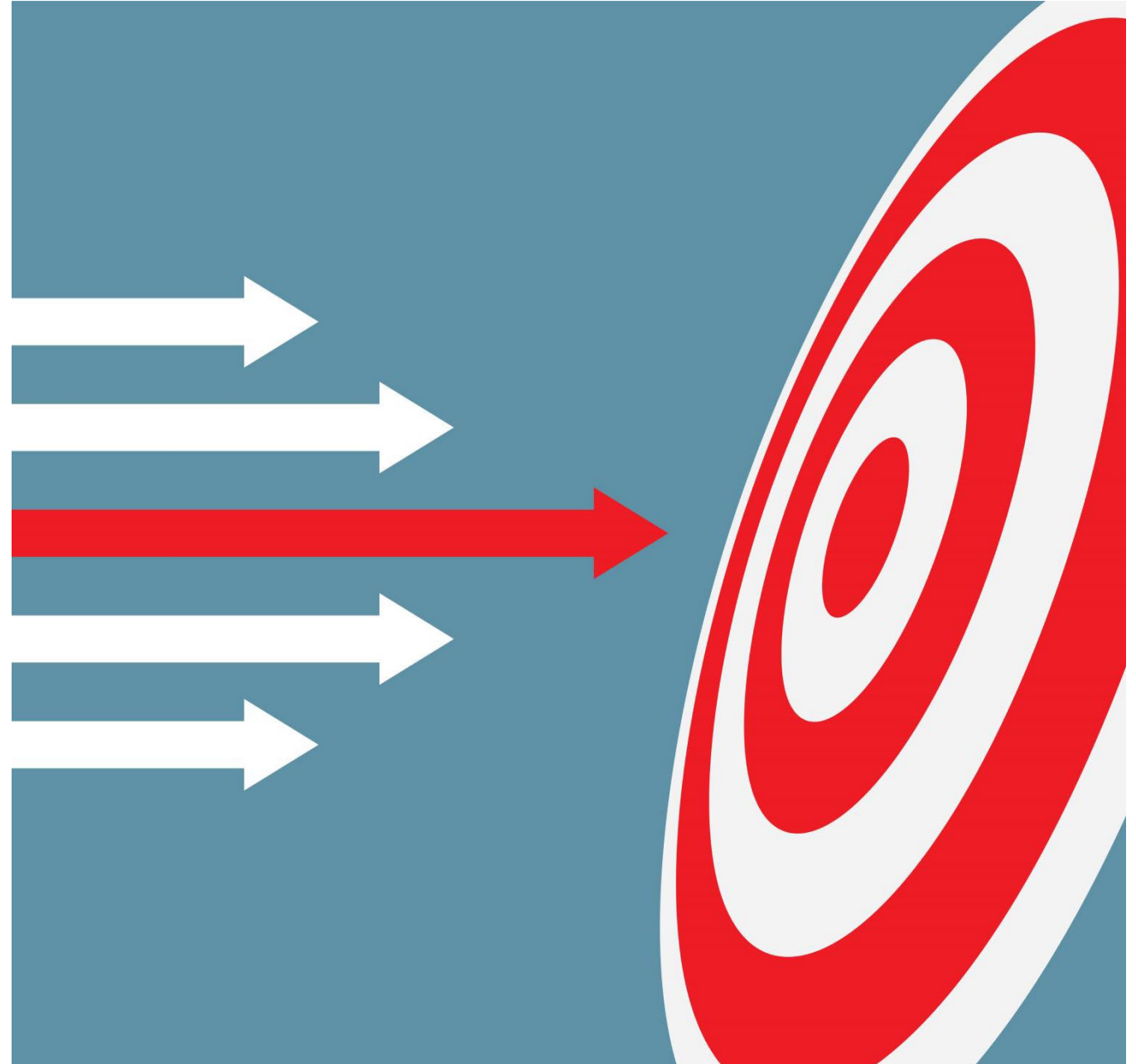
Little attention to EL  
mathematical  
thinking





# Goals

- Create dynamic ID approach
- Increase capacity for spotting EL/ML talent
- Increase EL/ML gifted referrals





# Lessons to Elicit POP Behaviors

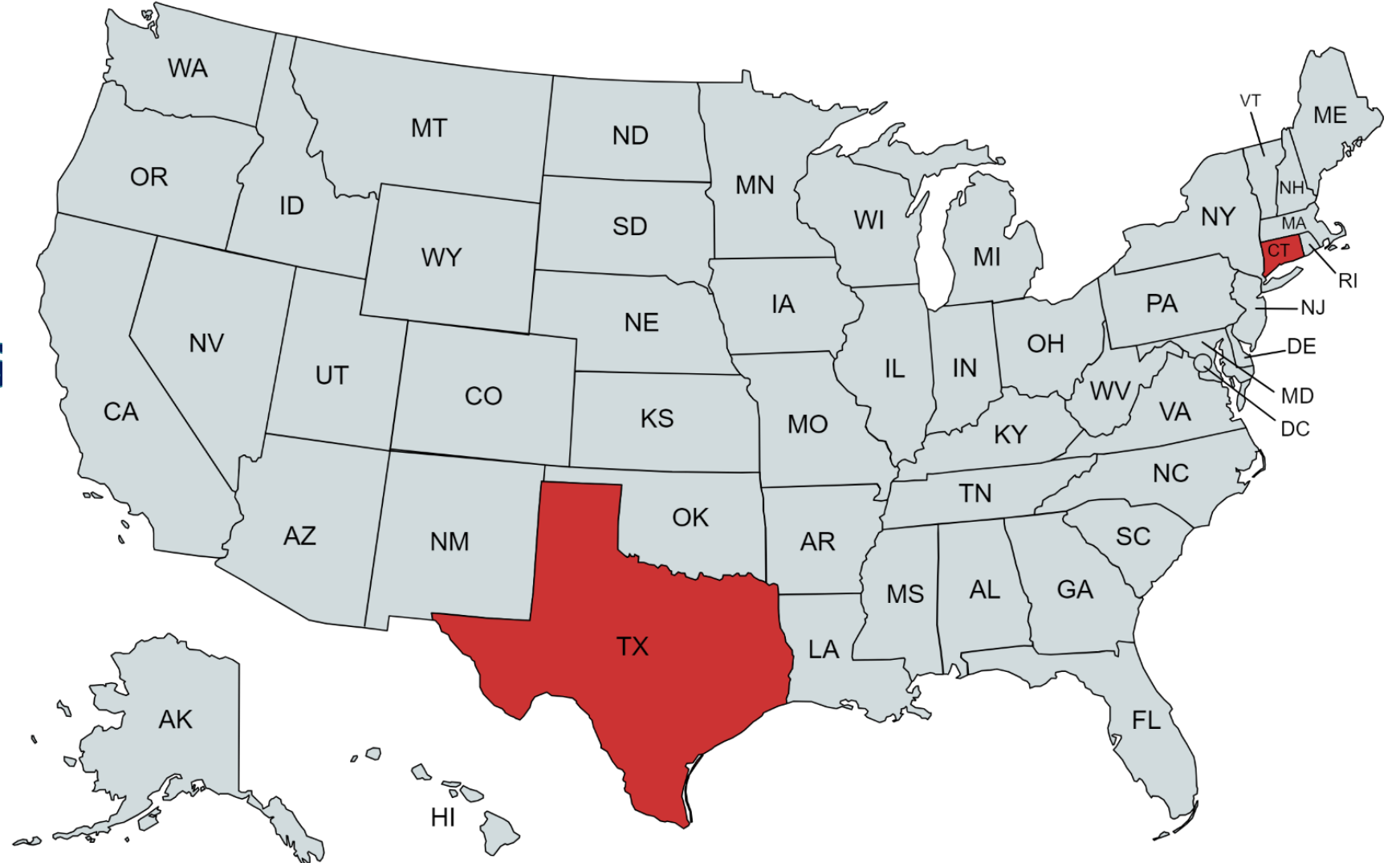
- Problem-based math tasks
- EL scaffolds
- Dynamic approach
  - Encourage
  - Elicit





# Phase 1

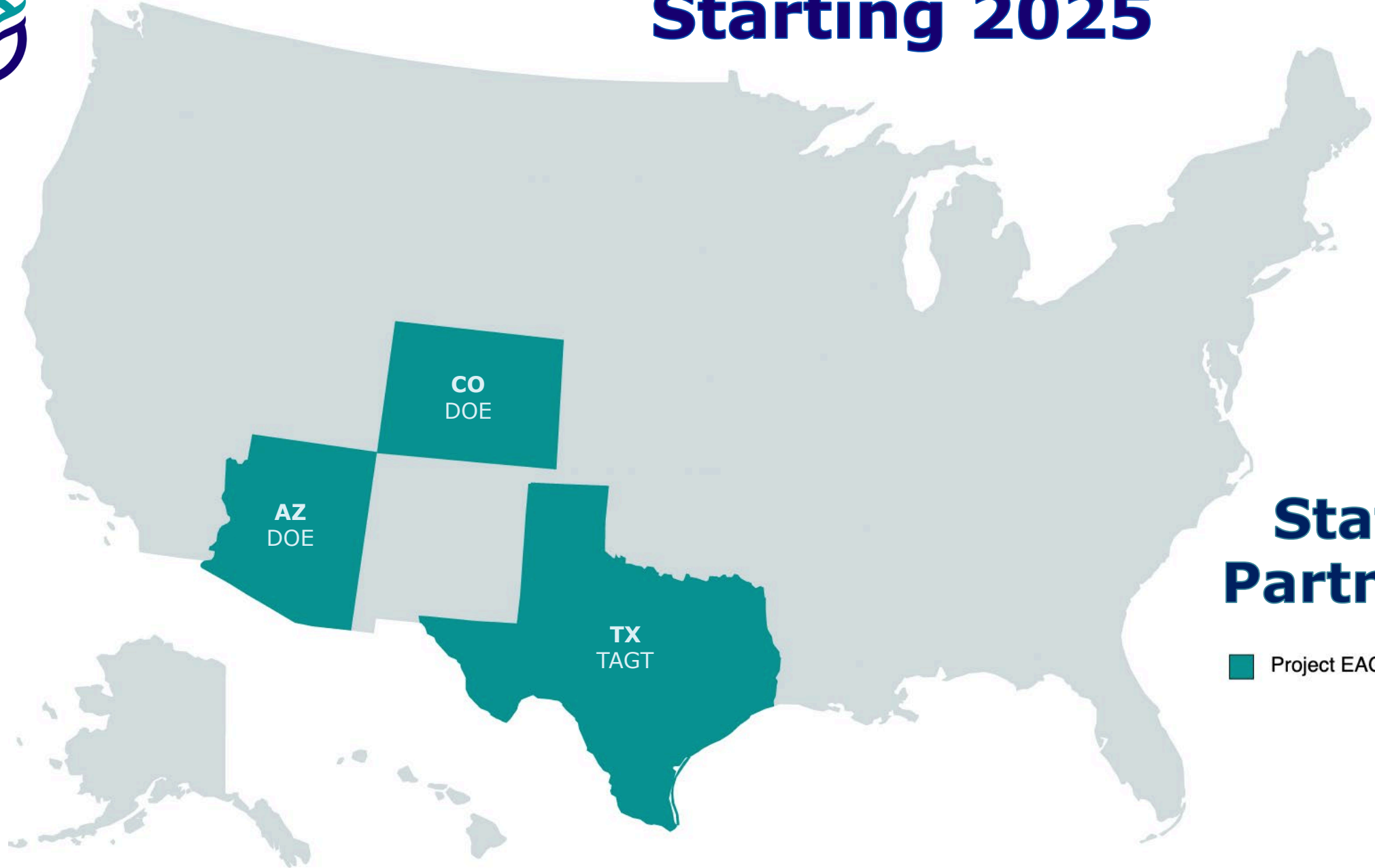
**Field Test  
Classrooms**  
EL Population







# Starting 2025



## State Partners

 Project EAGLE Partners



# Seeking Educators from Arizona, Colorado, and Texas to Serve as Project EAGLE Trainers

*Trainers will...*

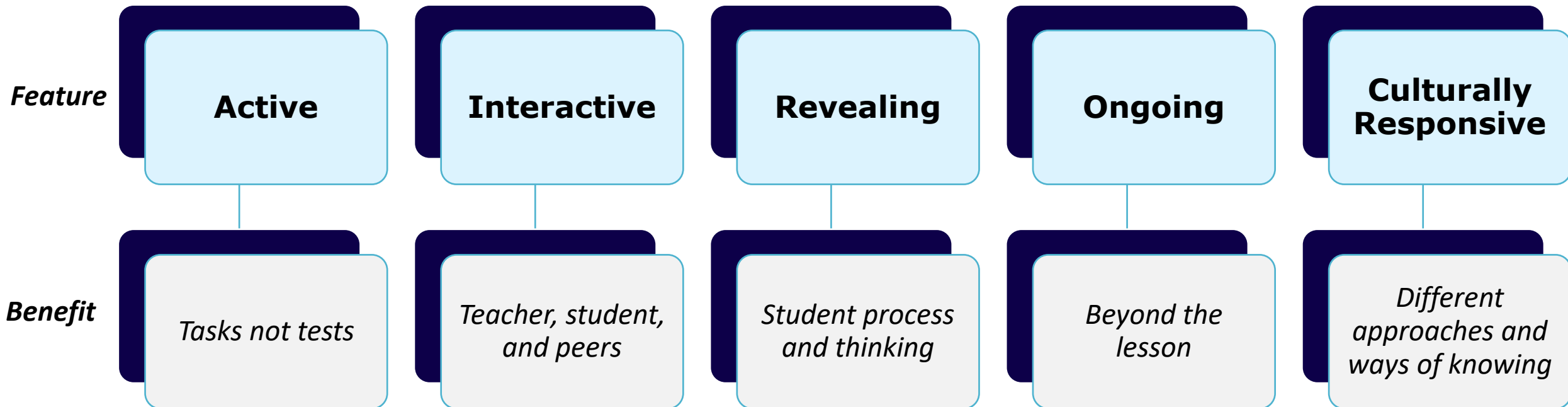
- \* participate in a **five-day orientation** on the Project EAGLE dynamic identification system, to be held from July 13-17, 2025, at the University of Connecticut's Confratute.
- \* receive **complimentary Confratute registration, meals, lodging, and travel expenses** to and from Connecticut.
- \* earn a **\$3,600 stipend** for participating in the training and for later conducting five in-state workshops during the 2025-26 academic year.
- \* be provided **supplies and reimbursement** for expenses related to conducting workshops.

**Apply by March 15, 2025**

<https://identifygifted.education.uconn.edu/trainer>



# Project EAGLE: Dynamic Approach












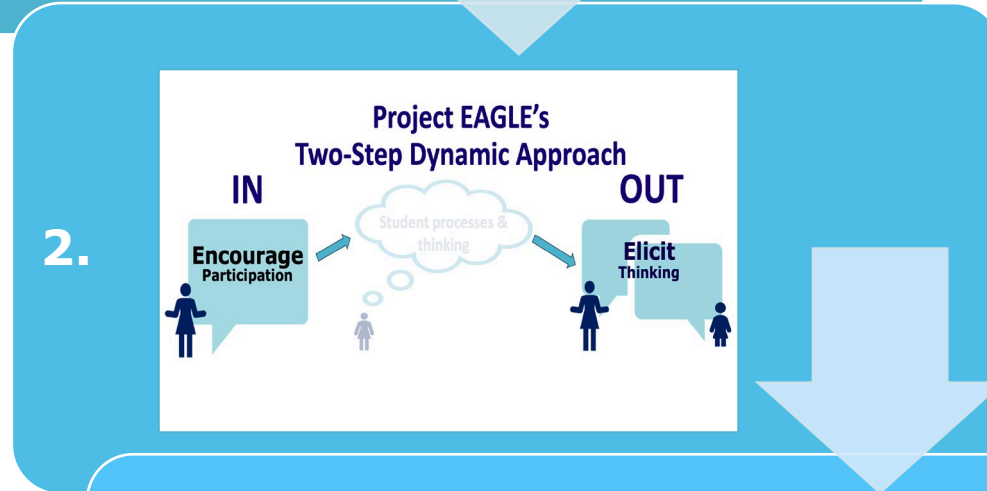
(Sternberg, 2002; Tzuriel, 2018)



# Today

1.

EAGLE	
I am thinking mathematically when...	
	1. I enjoy working on math and continuing to try to find the answer even when the problems are difficult.
	2. I connect what I am learning to what I have learned before in math.
	3. I relate the math we are learning to everyday life outside of math class.
	4. I try many different strategies to solve math problems.
	5. I think of unique ways to solve math problems and new problems to solve.
	6. I use logical reasoning to make sense of math problems and determine what to do next.
	7. I recognize patterns in math and use them to organize information.
	8. I understand and use relationships between numbers to order, compare, and estimate.
	9. I can figure out how shapes fit together in different ways.



3.

**EL/ML supports**

- Language
- Culture



# Why Points of Promise?

- **Asset based**
- **Foster and spot mathematical talent**
  - Research-based
  - Expert advisory board
- **Utilize a checklist**
  - **Any** indication of behavior is acknowledged
  - Behaviors “POP” out



# Nine Points of Promise (POPs)

Teacher Language

Student Language

1. Is motivated and persists in solving difficult math problems.	1. I enjoy working on math and continuing to try to find the answer even when the problems are difficult.
2. Learns new concepts easily by making connections.	2. I connect what I am learning to what I have learned before in math.
3. Applies mathematical concepts to real-world situations.	3. I relate the math we are learning to everyday life outside of math class.
4. Shows flexibility in using a variety of thinking or problem-solving strategies.	4. I try different strategies to solve math problems.
5. Demonstrates original ways of approaching math problems	5. I think of new ways to solve math problems and new problems to solve.
6. Makes inferences based on logical reasoning.	6. I use logical reasoning...
7. Organizes information in a variety of ways to discover mathematical patterns.	7. I recognize patterns in math and use them to organize information.
8. Demonstrates a strong number sense.	8. I understand and use relationships between numbers to order, compare, and estimate.
9. Displays spatial abilities.	9. I can figure out how shapes fit together in different ways.

[Connections]

[--Creativity--]

[-----Patterns-----]






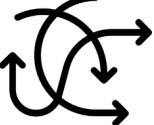


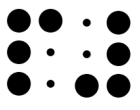
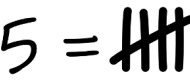

# Project EAGLE Points of Promise

## "I am thinking mathematically when..."

1. I enjoy working on math and continuing to try to find the answer even when the problems are difficult.
2. I connect what I am learning to what I have learned before in math.
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**I am thinking mathematically when...**

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[ — connections — ] [ — creativity — ] [ — patterns — ]



- Identifies problems where math might be useful
- Connects mathematical concepts to personally meaningful experiences
- Recognizes patterns in phenomena or experiences



### **3. Applies mathematical concepts to real-world situations**

I relate the math we are learning to everyday life outside of math class.

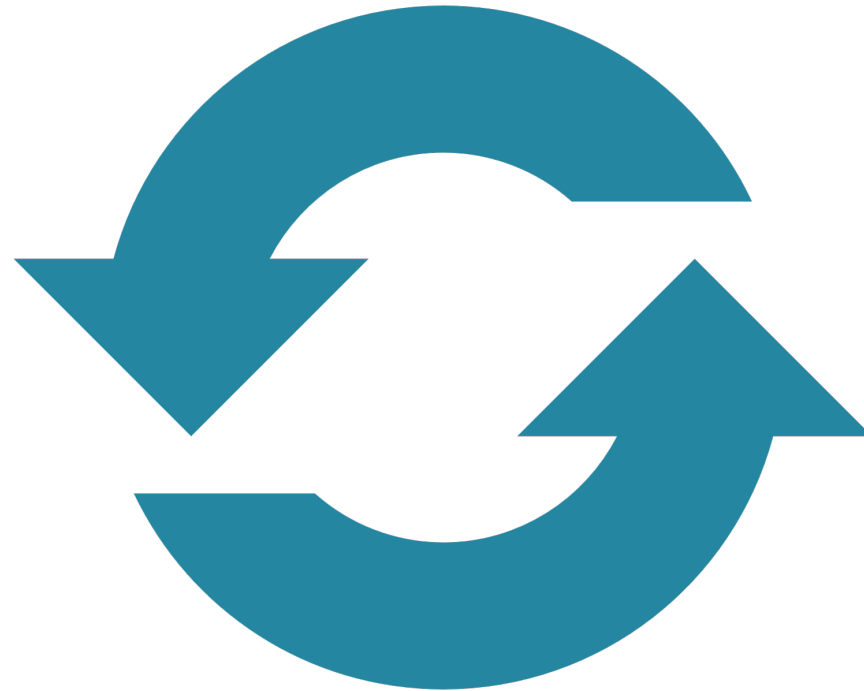


- Student moves on when making mistakes
- Makes meaningful, sustained progress on a challenging task
- Is curious, intrigued or interested by math
- Persistence of effort



## **1. Is motivated and persists in solving complex math problems**

I enjoy working on math and continuing to try to find the answer even when the problems are difficult.

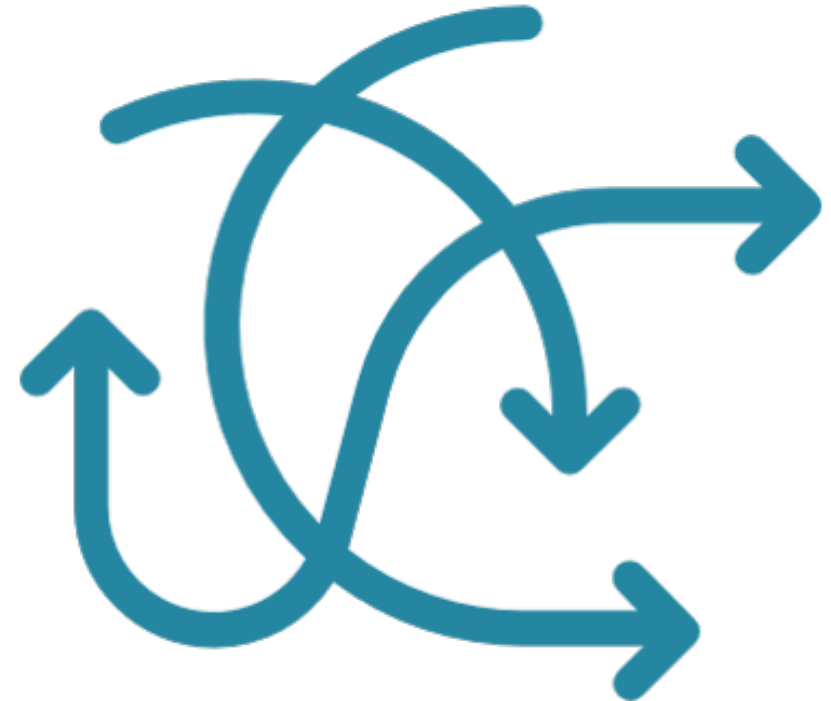


- Changes strategies to a more efficient approach, as needed
- Restructures a problem to find a more workable form



## 4. Shows flexibility in using a variety of thinking or problem-solving strategies

I try many different strategies to solve math problems.





## 7. Organizes information in a variety of ways to discover mathematical patterns

- Draws inferences from recognizing patterns
- Recognizes and uses patterns to solve problems
- Groups multiple pieces of information together

I recognize patterns in math and use them to organize information.





## 5. Demonstrates original ways of approaching math problems

- Generates unique questions or problems to solve
- Devises a novel approach or strategy for solving a problem

I think of unique ways to solve math problems and new problems to solve.



- Demonstrates an understanding of and can represent place value
- Uses mental computations easily
- Uses appropriate numerical operations intuitively
- Compares and orders large numbers or fractions easily



## 8. Demonstrates a strong number sense

I understand and use relationships between numbers to order, compare, and estimate.

$$5 = \text{||||}$$

- Sees connections between new material and past material
- Connects ideas to other broader concepts
- Makes relationships between different mathematical ideas
- Picks up concept quickly



## 2. Learns new concepts easily by making connections

I connect what I am learning to what I have learned before in math.

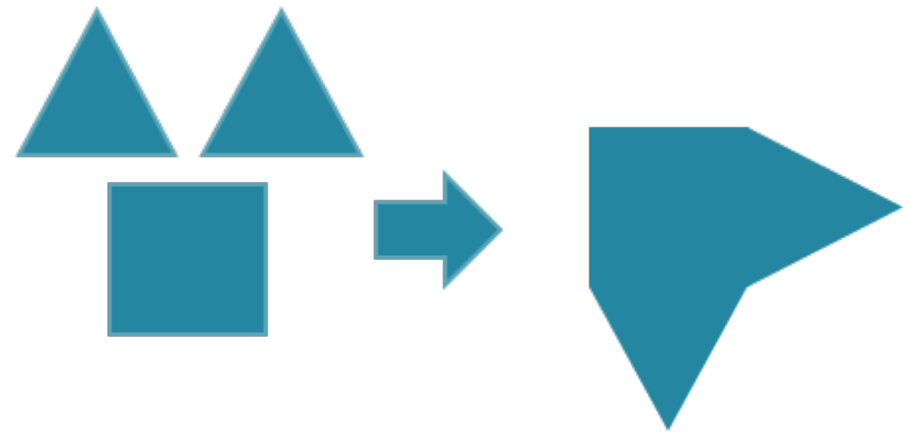


- Mentally manipulates an object without physically touching it
- Solves problems using spatial representations
- Composes an object from component parts



## 9. Displays spatial abilities

I can figure out how shapes fit together in different ways.










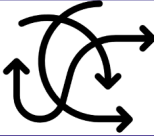


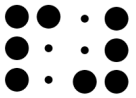
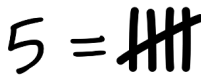

## 6. Makes inferences based on logical reasoning

- Draws logical conclusions from key ideas
- Generalizes based on specific examples
- Can think a few steps ahead
- Utilizes relational thinking

I use logical reasoning to make sense of math problems and determine what to do next.



**I am thinking mathematically when...**

	1. I enjoy working on math and continuing to try to find the answer even when the problems are difficult.
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

[ — connections — ] [ — creativity — ] [ — patterns — ]

# Which POPs do you think would be ...

- Easier to spot?
- More challenging to spot?



# POP Check- list

 Eliciting Advanced Gifted Learning Evidence <b>Points of Promise:</b> <b>Classroom Observation Checklist</b> identifygifted.education.uconn.edu		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
patterns ——— ] [ — creativity — ] [ — connections — ]	 1. Is <b>motivated and persists</b> in solving difficult math problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 2. Learns <b>new concepts</b> in mathematics quickly by making connections.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 3. Applies mathematical concepts to <b>real-world</b> situations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 4. Shows <b>flexibility</b> in using a variety of thinking or problem-solving strategies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 5. Demonstrates <b>original</b> ways of approaching math problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 6. Makes <b>inferences</b> based on logical reasoning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 7. <b>Organizes</b> information in a variety of ways to discover mathematical patterns.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 8. Demonstrates a strong <b>number sense</b> .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 9. Displays <b>spatial</b> abilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>










Lesson: As a Rule    Fraction Memory    Is It Worth It?    Keep Your Balance    Measuring Up    Date \_\_\_\_\_    Time \_\_\_\_\_



# POP Matrix

## Project EAGLE: POP Matrix

Lesson: As a Rule   Fraction Memory   Is It Worth It?   Keep Your Balance   Measuring Up   Date: \_\_\_\_\_   Time: \_\_\_\_\_

connections	 <b>1. Motivated and persists:</b> <i>Perseverance, growth-mindset, grit, curiosity, interest</i>	
	 <b>2. New concepts in mathematics quickly</b> by making connections: <i>Connects to concepts or operations.</i>	
	 <b>3. Applies mathematical concepts to real-world situations:</b> <i>Applies math to own life or other situations.</i>	
creativity	 <b>4. Shows flexibility</b> in using a variety of thinking or problem-solving strategies: <i>Changes conceptualization or strategies.</i>	
	 <b>5. Demonstrates original</b> ways of approaching math problems: <i>Novel strategy, unique insight, alternate solution.</i>	
patterns	 <b>6. Makes inferences</b> based on logical reasoning. <i>Thinks ahead, relational thinking, uses reason/logic</i>	
	 <b>7. Organizes information</b> in a variety of ways to discover mathematical <b>patterns:</b> <i>Strategic grouping, pattern-spotting</i>	
	 <b>8. Demonstrates a strong number sense.</b> <i>Place value, operations, number fluency</i>	
	 <b>9. Displays spatial</b> abilities. <i>(De)composes shapes, manipulates mentally, represents spatially</i>	

# Project EAGLE Approach

Emphasis on  
encouraging  
participation and  
eliciting thinking to  
spot potential



# Project EAGLE's Two-Step Dynamic Approach

## IN

**Encourage  
Participation**



- Encourage
- Provide language supports
- Model
- Reassure
- Teach in the moment
- Provide a hint

Student participation  
& thinking



## OUT

**Elicit  
Thinking**



- Determine understanding
- Ask to justify
- Ask to elaborate
- Challenge to solve another way
- Probe for deeper thinking
- Seek connections in thinking



# From the teacher to the student

## IN



**Encourage  
Participation**

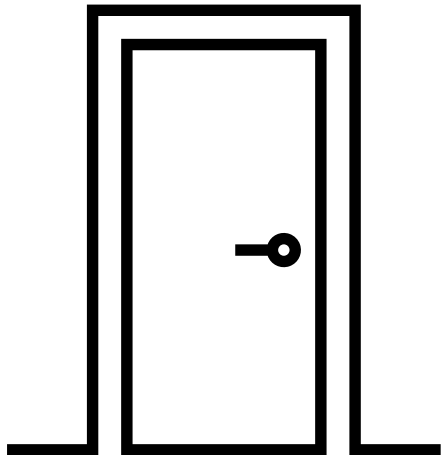
- **I – Inspire**
  - Emotional/Affective supports
- **N – Nudge**
  - Task supports



# IN: Continuum of Encouraging

## Student is not yet engaging

- Language
- Directions
- Purpose
- Background



### *Inspire:*

- Demonstrate significance of activity
- Build confidence
- Assure/reassure

### *Nudge:*

- Clarify directions; purpose
- Model
- Remind them of similar info
- Make a connection
- Language supports
- Hint Cards

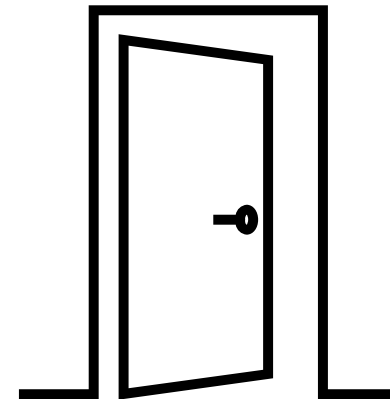




# IN: Continuum of Encouraging

## **Student is engaging**

- Communicating ideas in the current modality/choosing another
- Motivation to continue
- Support explaining thinking





# IN: Continuum of Encouraging

## ***Inspire:***

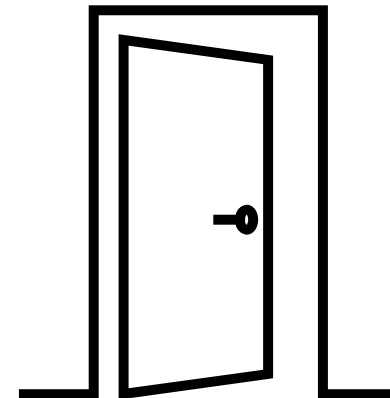
- Errors as opportunities; part of the learning process
- Build confidence

## ***Nudge:***

- Provide other ways of showing thinking
- Sentence frames to support verbalization
- Encourage thinking extensions

## **Student is engaging**

- Communicating ideas in the current modality/choosing another
- Motivation to continue
- Support explaining thinking



# Between Teacher and Student

## OUT

*Help students share **OUT** their thinking*



**O** – Orient – Where?



**U** – Understand – Depth?



**T** – Transfer – Breadth?



# O-Orient

Finding where the student is in the process



- A sense of student thinking
- Start general and focus as needed

## Eliciting in general: “Tell me about...”

For students who have a difficult time articulating, teacher might elicit more specifically:

**“I notice you drew 4 circles. Tell me about that.”**

# U-Understanding

Zooming in on student thinking

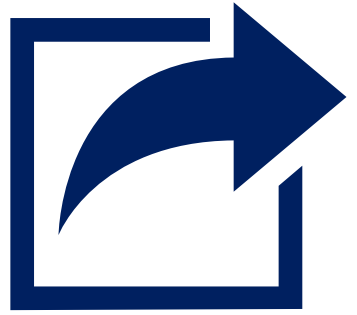


- Explain
- Justify
- Elaborate
- Decide
- Reflect

# T-Transfer

Delving for breadth

- Other mathematical concepts
- Other strategies
- Other situations



# Eliciting to draw out students' thinking via...

- Images
- Ideas
- Strategies
- Conjectures
- Conceptions
- Ways of viewing mathematical situations



(Adapted from Lobato et al., 2005)

# Eliciting thinking involves . . .

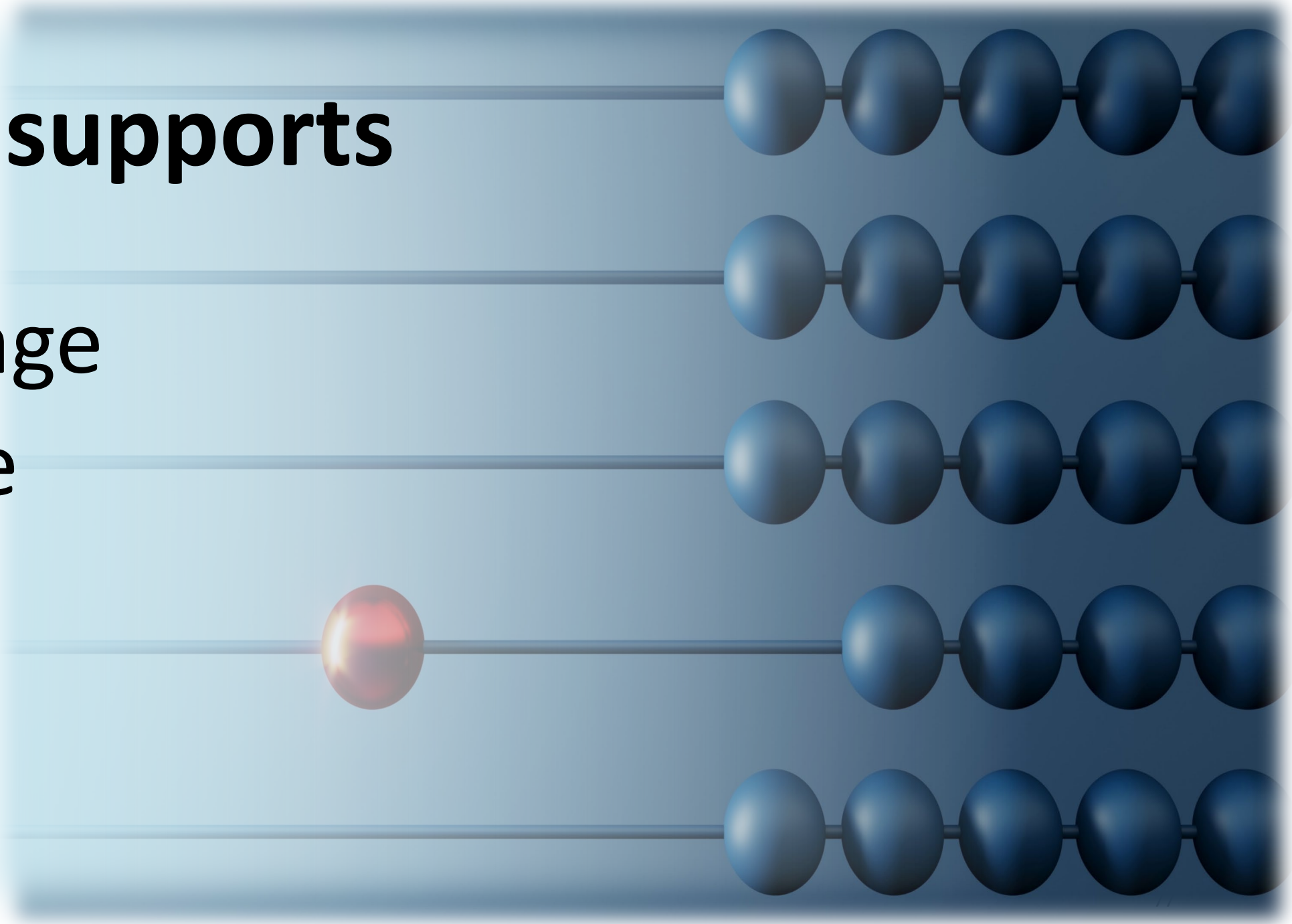
1. Allowing a student's thinking to unfold.
2. Guiding a student's use of tools.
3. Asking open-ended questions.



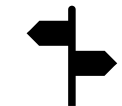
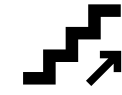


# EL/ML supports

- Language
- Culture



# Language



	What is needed?	What can I do?	How might this look in a lesson?
	Building background	Determine what information is needed and discuss	Show and discuss how lesson items work (e.g., balance scales).
	Student's language level	Consult student records and EL/ML specialists	Simpler sentence structures when speaking; avoid/reduce figurative speech (metaphors, similes, idioms).
	Language support	Sentence starters or frames	<ul style="list-style-type: none"> <li>○ I notice/wonder _____.</li> <li>○ The rule is _____.</li> <li>○ It is important because _____.</li> <li>○ An example is _____ because _____.</li> </ul>
	Visuals and manipulatives	Provide pictures, videos, or actual items	Show pictures or videos of items referenced in lessons (e.g., show and discuss machines before demonstrating an input/output machine).
	Real-world examples	Connect or adapt the lesson to students' lives	Ask students about machines they have seen and how they work.
	Vocabulary support	Word wall vocabulary with images	Introduce, discuss, and post word wall cards with definitions and images/ examples of relevant terms (e.g., rule).
	Processing time	Build in wait time, allow peer-peer practice, let students draw/write before responding	Allow students to turn and talk with a partner to hear and practice responses.
	Modalities of expression	Offer a range of options for answering questions	Include opportunities to speak, write, draw, or model with choices as often as possible.



	<b>What is needed?</b>	<b>What can I do?</b>	<b>How might this look in a lesson?</b>
	Consider students' cultures	Check lesson context that may/may not be ubiquitously known	Use soccer rather than basketball for math tasks.
	Honor prior experience (Funds of Knowledge)	Tap into a student's experiences	Relate a fraction task to recipes from students' cuisine or calculate percentages from data relevant to students' lived experiences.
	Respect communication preferences	Check comfort with asking/answering questions.	Provide multiple pathways for individual versus collaborative work and answering to honor students' preferences
	Be mindful of body language and gestures	Check thumbs up, pointing, eye contact, etc.	Do not use thumbs up as a gesture of understanding/agreement if their culture finds it offensive.



# Culture

# EAGLE EL/ML Quick Reference Guide

## #1 LANGUAGE OBJECTIVES

Write out and share with students what new math language they will be able to use by the end of the lesson. This includes new academic vocabulary, its definitions, and how it might be used in sentences.

## #2 BUILD BACKGROUND & DEVELOP ACADEMIC VOCABULARY

Prompt student recall of concepts and relate this lesson to prior learning and/or real-world experiences. Ensure students have the correct mathematical vocabulary for the lesson.

## #3 MODEL & PRACTICE ACADEMIC VOCABULARY

When new academic vocabulary is introduced, carefully demonstrate the pronunciation of the word and have students repeat it back to you in chorus. Ask students if they recognize the word or know of similar words. Draw out associations they may make with other words they know, root words, and even words in their own language. Place the new word and its visual cue on the word wall. Use the new vocabulary consistently and encourage students to do so as well.

## #4 SENTENCE STEMS OR FRAMES

I notice/wonder \_\_\_\_\_.

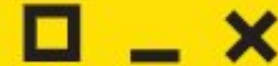
The rule is \_\_\_\_\_.

It is important to do more than one pair to figure out the rule because \_\_\_\_\_.

I know they are equivalent because \_\_\_\_\_.

# EAGLE EL/ML Quick Reference Guide

## #5 CLEAR DIRECTIONS & VISUAL CUES



### rule

a method used for solving a problem



### equivalent fractions

fractions that have equal value



### equilateral triangle

a triangle in which all sides are equal in length



## #6 WORD WALLS

Keep visual vocab cards posted & accumulating throughout unit.

## #7 USE OF VISUALS

Visuals include visual depictions of concepts and definitions, gestures and body language, and other charts, diagrams, & graphic organizers.

As a Rule Machine



## #8 CHARTS, DIAGRAMS, & GRAPHIC ORGANIZERS



## #9 RANDOMIZATION STRATEGIES

Draw random names from a cup, or use strategies like “whoever is wearing the most blue today speaks for the table.” Popsicle sticks with names on them help to keep track of who has already been called on, as do talking tokens and other devices. Be sure to have your randomization strategies prepared in advance and your students trained to respond to them.



## #10 HANDS-ON ACTIVITIES



Use games, manipulatives, real-world adventures, and other hands-on activities to engage students more fully in the work and build relevance.

$$1+2=3$$
$$3+5=$$



## #12 STUDENT DRAWING

Allow students to draw a picture to represent their thinking rather than write or speak out loud.

## #11 STRUCTURED CONVERSATIONS

**Turn & Talk** - Talk to your neighbor and then return to whole group



**Think, Pair, Share** - Think for a specified period of time (may include writing it down), then talk to a partner, then one or both partners share back with the whole group.

### QSSSA

**Question:** The teacher asks a question or offers a challenge

**Stem** - teacher offers one or more sentence stems they may use to share their answer

**Signal:** Students signal silently when they are ready to share

**Share:** Students share their answers with a partner

**Assess:** Teacher randomly calls on a few students to assess learning



Thank you!

[projecteagle@uconn.edu](mailto:projecteagle@uconn.edu)