DEPARTMENT OF EDUCATION

Statewide Student Assessment & Data Analytics

Teaching and Learning Led by Evidence Session 5: Assessment *of Learning - Summative Assessments for the Classroom*

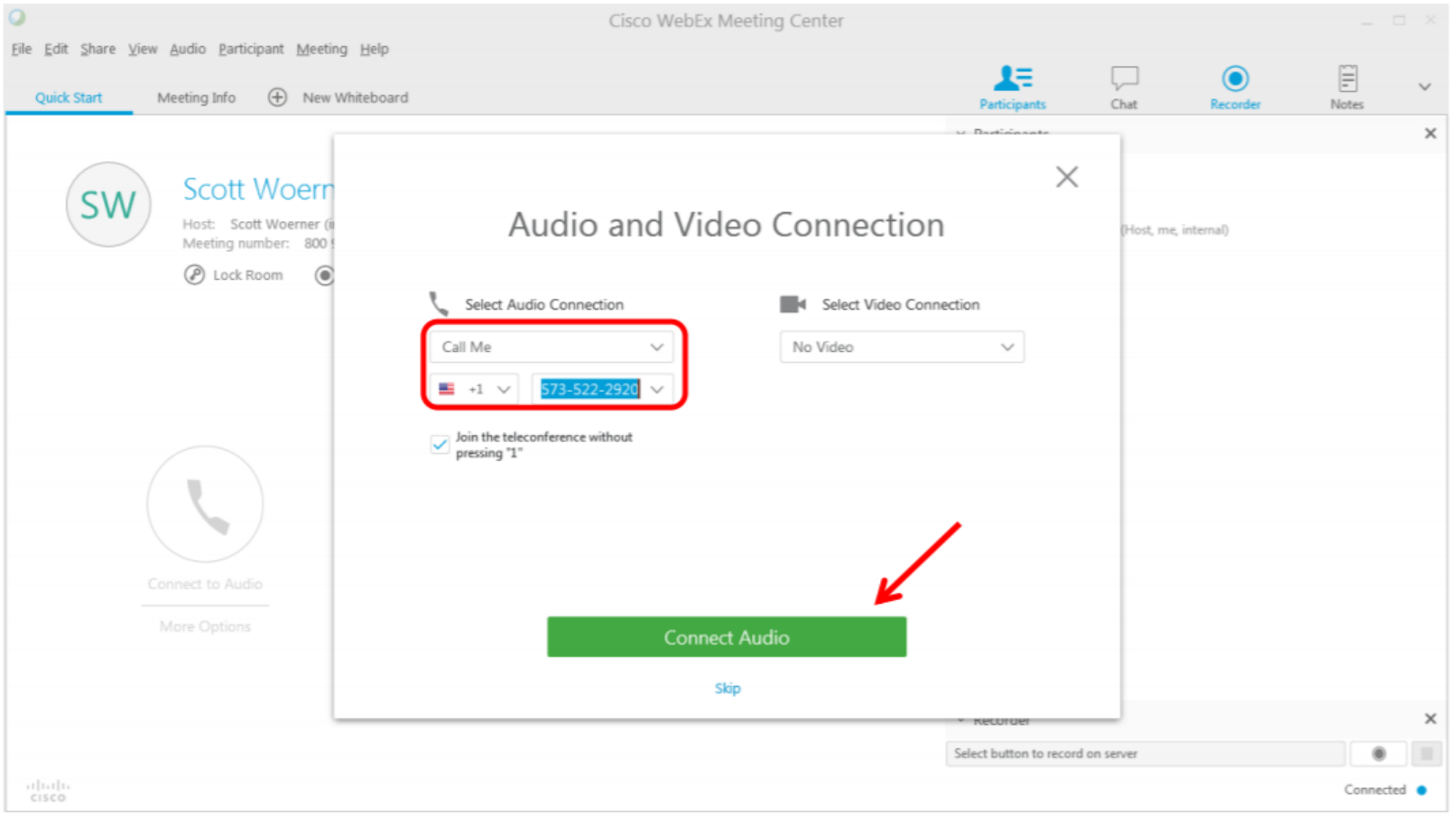
Tony Aarts | Reading Assessment Specialist

Angela Hochstetter, Mike Huberty | Math Assessment Specialist

Kendra Olsen | Outreach Specialist

November 12, 2020

Connect to Audio



Welcome!

Today's materials and slides :

https://bit.ly/32VDoZ1

Introduce yourself in the chat:

- What is your role?
- Where are you from?

Learning Outcomes

By the end of today's session, you will gain…

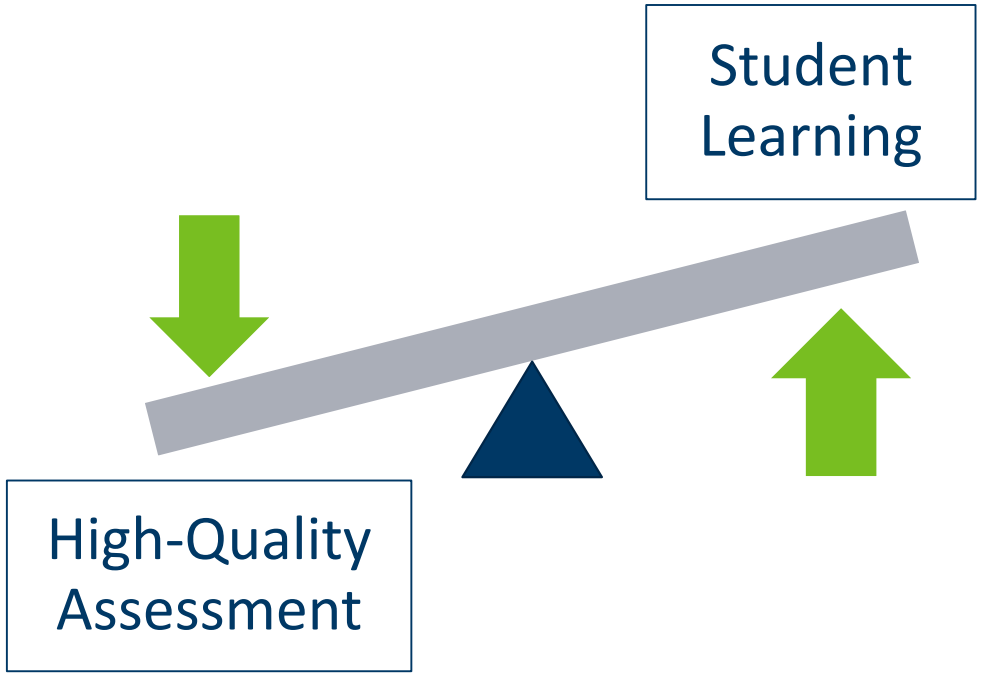
- An understanding of the types of summative assessments and how to determine which to use
- A framework for designing and evaluating performance assessments.
- Resources and tips for evaluating the cognitive complexity and rigor of classroom assessments

Agenda

1. Purpose of assessment in teaching and learning (5 min.)
2. Types of Assessments (10 min.)
3. Performance Tasks (15 min.)
4. Cognitive Complexity and Examples (10 min.)
5. Adjusting Rigor of Summative Assessments; Benchmark ALDs (15 min.)
6. Closing; Q & A (5 min.)

Why focus on classroom assessment?

- The pandemic is changing the landscape of education.
- Identifying **student knowledge, skill,** and **understanding gaps in the midst of classroom instruction** is a crucial aspect to closing persistent achievement gaps.
- Focusing on assessment (particularly richer and deeper assessments) can serve as a **lever** to improve the quality of teaching and learning.



Ten Minnesota Commitments to Equity

1. Prioritize equity.
2. Start from within.
3. Measure what matters.
4. Go local.
5. Follow the money.
6. Start early.
7. Monitor implementation of standards.
8. Value people.
9. Improve conditions for learning.
10. Give students options.

Discussion

Do you agree or disagree with this statement:

What gets measured at your school or district is what gets taught? *Explain.*

https://www.menti.com

voting code **83 32 06 3**

What does a good assessment look like in the eyes of a student?

- 2-minute video on what a good assessment activity looks like.
- Dr. Jim Pellegrino- University of Illinois at Chicago discusses how assessment can support teaching and learning.

https://youtu.be/eAaeUBxqI1M

Types of Assessment

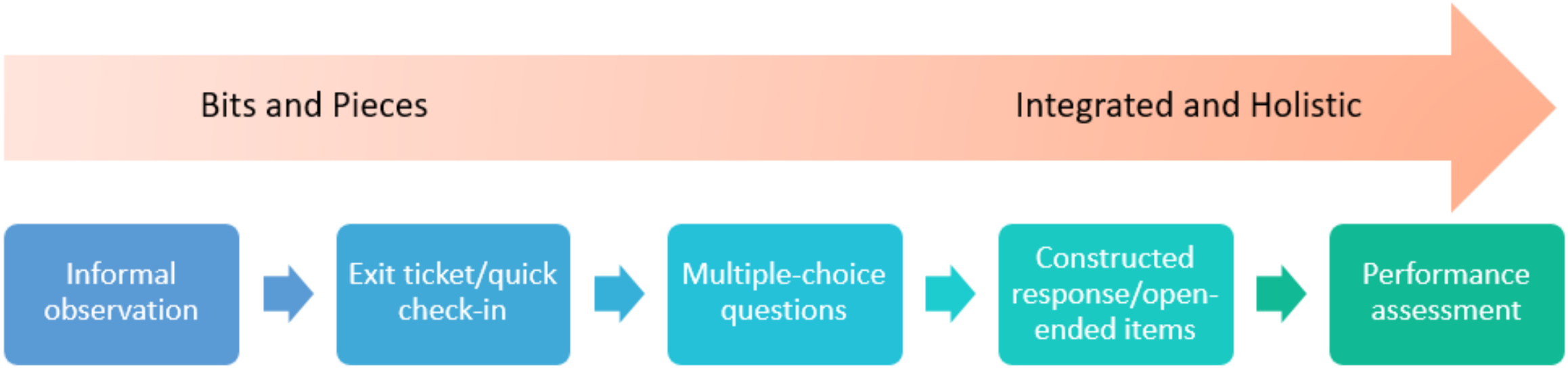
Formative

- Formative assessment is a planned, ongoing process *during* learning.
- Used to elicit evidence of learning outcomes to improve student understanding and help students become self-directed learners.
- Sometimes referred to as "assessment *for* learning."

Summative

- Summative assessment evidence shows a snapshot of student learning related to a set of learning objectives or criteria.
- Used as a way to document what students have learned as a result of instruction.
- Sometimes referred to as "assessment *of* learning"

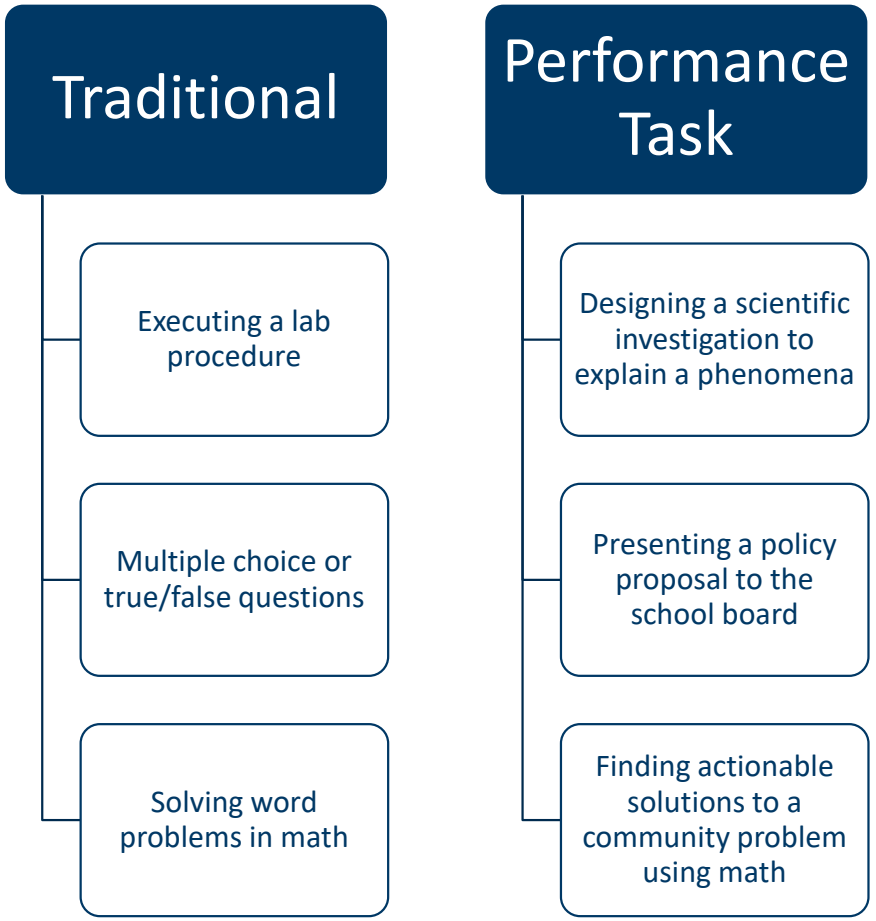
Assessment Continuum



(Source: Conley, 2014, p. 12)

Center for Assessment

Traditional and Performance-Based Summative Assessments



Performance Assessment

- **Performance assessments** measure how well students apply their knowledge, skills, and abilities to authentic problems.
- Performance assessments require students to produce something (e.g., a report, product, experiment, performance), scored against specific criteria.
- A performance assessment may be designed to occur over a period of hours, days or weeks depending on the range and complexity of skills to be assessed.

Center for Assessment

Which approach would you use to design a high-quality performance assessment?

Approach 1: I have a great idea for a project that will be really engaging and fun.

Approach 2: I found this project on the internet that looks really interesting.

Approach 3: What are the essential questions and enduring understandings (i.e., what did I teach) and what information would help me *make a claim* about the extent to which students actually learned the intended learning targets?

https://www.menti.com

voting code **83 32 06 3**

Evidence Centered Design

Unit Learning Targets

What do we want to claim about what students know and can do?

Evidence

What evidence would allow you to make that claim?

Assessment Design

What projects, tasks, or questions will elicit that evidence?

Center for Assessment

Unit Learning Targets

Unit Learning Targets | Evidence | Assessment Design

- What is the claim we want to make about students' knowledge and skills (what do we intend to measure)?
- Unit learning targets are broad concepts you want students to know or do at the end of the unit. This is not one particular lesson objective or target.

How do we develop claims about student understanding?

Unit Learning Targets | Evidence | Assessment Design

- *Carefully examine and **unpack** what we want students to know and do.*
- Consider the "**big ideas**" of the discipline, or the "**essential understandings**" we want students to develop, transfer, or apply.

Unit Learning Targets- Examples

Unit Learning Targets | Evidence | Assessment Design

- Examples of unit learning targets:
  - Students will demonstrate their understanding of **adding and subtracting fractions** in a real-world context.
  - Students will demonstrate their understanding of composing an **argumentative essay**.
  - Students will demonstrate their understanding of **energy transfer** in a real-world investigation.

Evidence

Unit Learning Targets | **Evidence** | Assessment Design

- What sort of evidence would convince you that the student demonstrated the knowledge and skills described in the unit learning targets?
- What will you accept as evidence?

Categorize the Evidence by Key Features

Unit Learning Targets | **Evidence** | Assessment Design

Thinking about evidence:

- What are the **key features of this evidence**?
- What types of **products** and/or **processes** would you expect to see from students who have mastered the knowledge and skills described in the unit learning targets?

Assessment Design

Unit Learning Targets | Evidence | **Assessment Design**

- Based on the evidence phase:
  - ***What questions, tasks, and/or prompts would elicit demonstration of the unit learning targets?***
- Start with the learning goals, then work backward.
- DON'T start with the questions, tasks, or prompts and try to fit them to the learning goals.

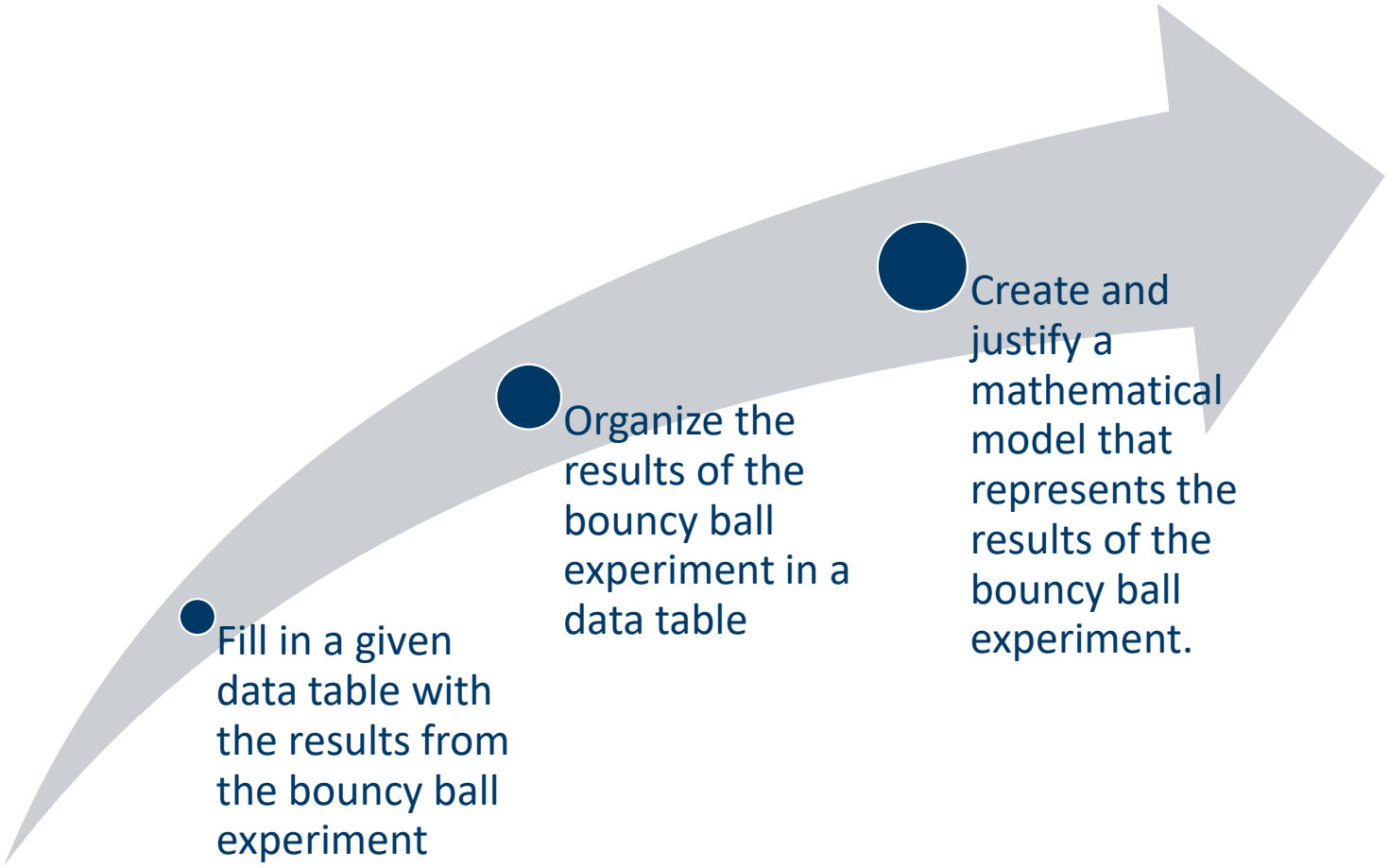
Features of High-Quality Performance Assessments

- **Center for Assessment Module** – Creating high quality performance tasks
- Develop criteria for success (rubrics, how to communicate them to students)
- **Performance Task Review Tool**
  - Evaluate the quality of a summative performance assessment using the review tool.
  - Discuss your review notes with a colleagues or in PLCs.
  - Revise task (as appropriate).

Cognitive Complexity

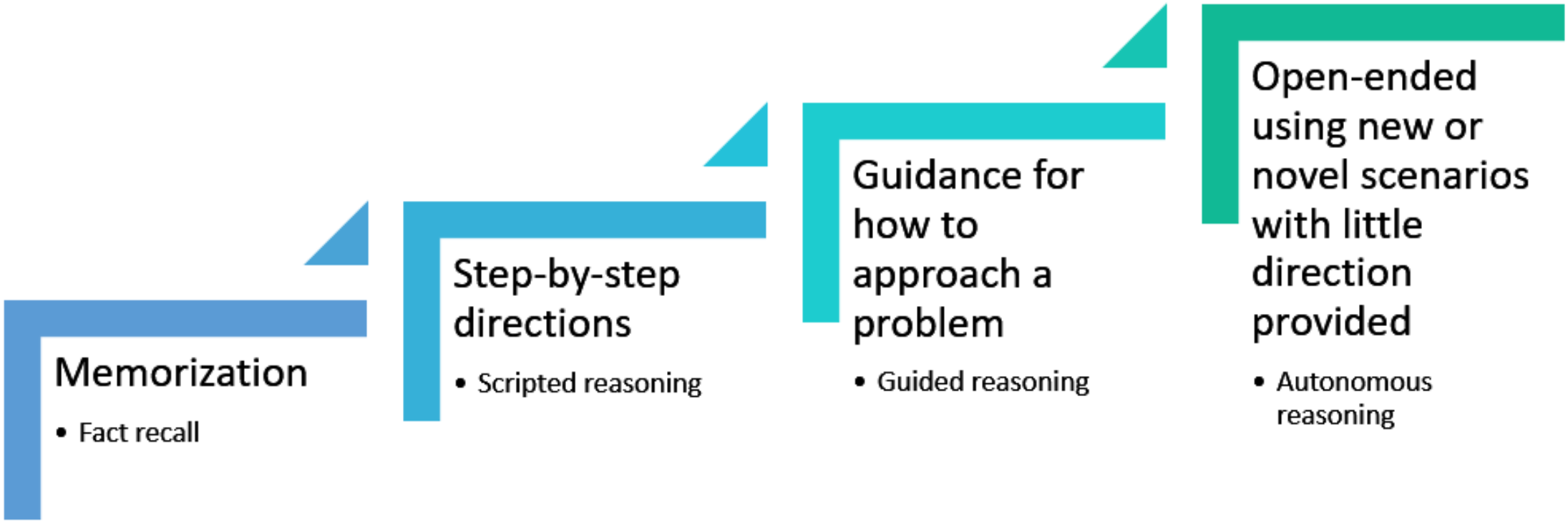
Cognitive complexity refers to the cognitive demand associated with a question or task as well as level of thinking and reasoning required of the student.

Cognitive Complexity in Performance Tasks



For more information, see "The Scaffolding Brief" – *Center for Assessment*

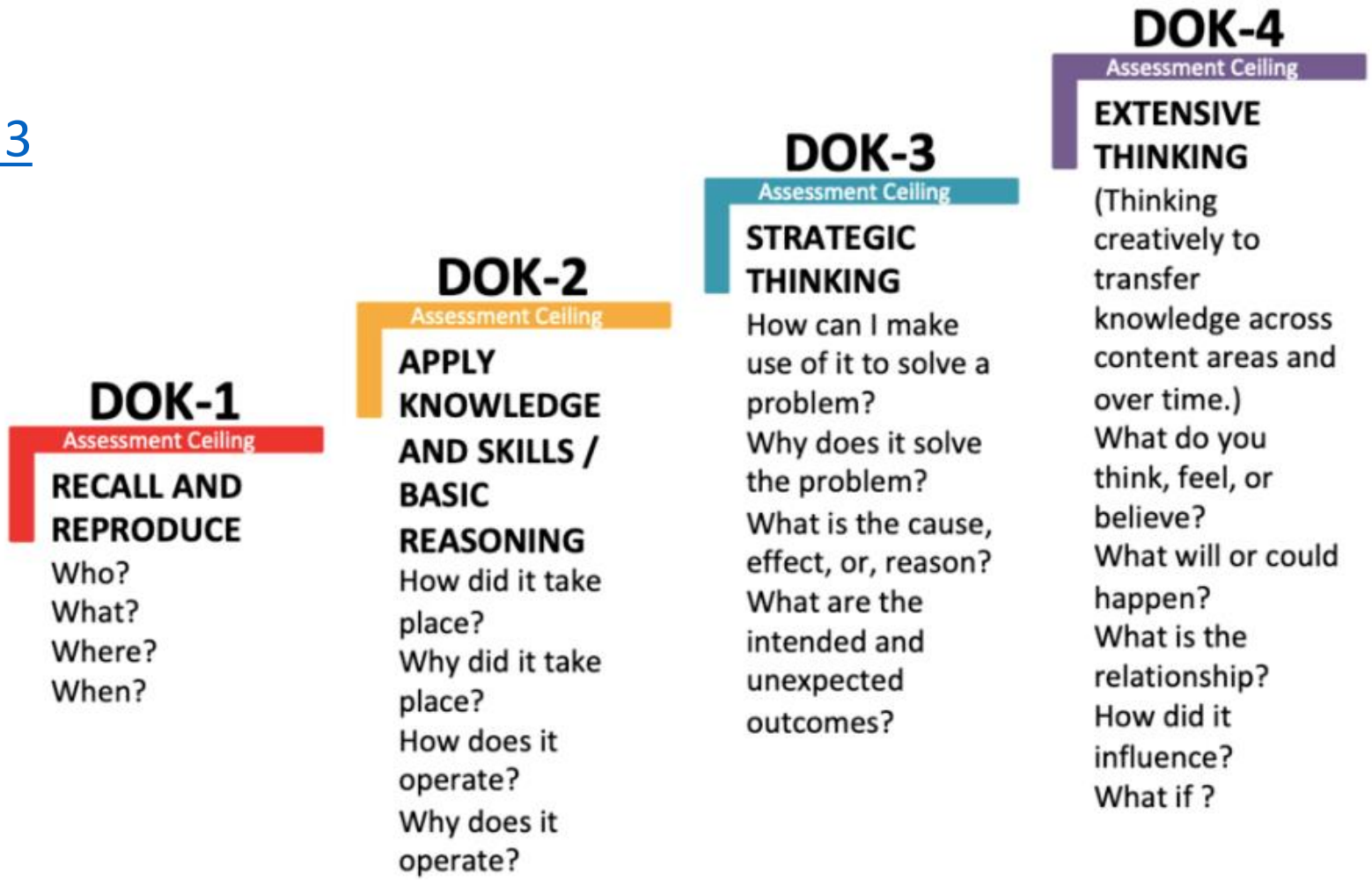
A continuum for cognitive complexity



(Tekkumru-Kisa, 2015)

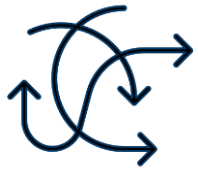
Webb's Depth of Knowledge

[Testing 1, 2, 3]



Cognitive Complexity vs Difficulty

Not about **difficulty**!



Difficult but not cognitively complex (traditional assessment example):

Who served as the Vice President under President Rutherford B. Hayes?

It is about **mental processes**

Cognitively complex but not difficult (traditional assessment example):

A list of 7 numbers is shown.

14, 26, 37, 45, 109, 206, 334

A student separate these numbers into 2 groups. What are two different criteria that the student can use to make the groups?

DOK I—Recall or Reproduction, Math

[A DOK I question] requires the recall of information such as a fact, definition, term or simple procedure, as well as performing a simple algorithm or applying a formula. A well-defined and straight algorithmic procedure is considered to be at this level. A Level 1 item specifies the operation or method of solution and the student is required to carry it out.

Avery wants to measure distance.

Which tool can she use to measure distance?

A. Clock

B. Scale

C. Tape measure*

D. Thermometer

DOK I—Recall or Reproduction -Reading

- Requires students to recall facts or to use simple skills or abilities.
- Reading passages that do not include analysis of the text; basic comprehension
- Questions require only a shallow understanding of the text; often consist of verbatim recall from a text, slight paraphrasing of specific details from a text, or simple understanding of a single word or phrase.
- Questions may include words such as “recall,” “recognize,” “locate,” and “identify.”
- Examples that represent some DOK I level performance:
  - Follow the sequence of information in a passage.
  - Locate key ideas or details in a passage.
  - Identify essential information necessary to accomplish a task.

DOK I—Recall or Reproduction –Reading Example

1. Complete the diagram to show the structure of the plot.

   Drag the sequence of events into the order in which they happen from top to bottom.

Mr. Gutierrez calls the quilt a "beautiful mess."
Mr. Gutierrez's students present him with the quilt.
Mr. Gutierrez's students wait for him in the classroom.
Mr. Gutierrez tells a story about bringing cookies to school.

DOK II—Skills and Concepts/Basic Reasoning

[A DOK II question] calls for the engagement of some mental processing beyond a habitual response, with students required to make some decisions as to how to approach a problem or activity. Interpreting information from a simple graph and requiring reading information from the graph is a Level 2. An item that requires students to choose the operation or method of solution and then solve the problem is a Level 2. Level 2 items are often similar to examples used in textbooks.

The shape of Avery's wading pool is a circle.

Which statement describes the best way Avery can measure the distance around her wading pool?

A. Place a tape measure across the top of her pool from one side to the other side.

B. Place a tape measure along the bottom edge of the pool around the whole circle.*

C. Place a tape measure from the bottom edge of the pool to the top edge of the pool.

D. Place a tape measure from the bottom inside edge of the pool over the top to the bottom outside edge of the pool.

DOK II—Skills and Concepts/Basic Reasoning - Reading

- DOK II requires some mental processing beyond recalling or reproducing a response.
- Requires both comprehension and subsequent processing of a text.
- Inter-sentence analysis or inference is required; Explicit main ideas are stressed.
- Standards and questions at this level may include words such as summarize, interpret, conclude, infer, classify, organize, compare, and distinguish between fact and opinion.
- Some examples of DOK II performance:
  - Interpret literal and nonliteral meanings of words or phrases, based on context.
  - Make inferences or draw conclusions based on the text.
  - Apply knowledge of organizational patterns to understand a text.

DOK II—Skills and Concepts/Basic Reasoning, Reading Example

2. Read these sentences from paragraph 5.

> I'm a bundle of nerves because I can't see Mr. Gutierrez's face. I feel myself turning red as Carl tells everyone about the quilt and explains it was my idea.

Which emotions best express Mei's behavior in these sentences?

A. Anxiety and embarrassment

B. Fear and anger

C. Disappointment and confusion

D. Impatience and shame

DOK III—Strategic Thinking/Complex Reasoning

[A DOK III question] requires students to reason, plan or use evidence to solve the problem. In most instances, requiring students to explain their thinking is a Level 3. A Level 3 item may be solved using routine skills but the student is not cued or prompted as to which skills to use.

The shape of Avery's wading pool is a circle.

What could Avery do to find the distance around the pool?

A. Find sticks in the yard and line the sticks across the pool. Count the number of sticks.

B. Find a garden hose and wrap the hose along the outside of the pool. Measure the hose with a tape measure.*

C. Find a thermometer and place the thermometer in the pool. Measure the temperature of the water.

D. Find a bucket and fill the bucket with water from the pool. Count the number of buckets of water needed to fill the pool.

DOK III – Strategic Thinking/Complex Reasoning - Reading

- More complex cognitive processing and reasoning
- Students are encouraged to go beyond the text; however, they are still required to show understanding of the ideas in the text.
- Students may be encouraged to explain, generalize, or connect ideas.
- Standards and questions involve reasoning and planning; may involve abstract theme identification or inference across a passage. Students must be able to justify their thinking.
- Questions at this level may include words such as "interpret," "analyze," "verify," "justify," and "cite evidence."

Some examples that represent, but do not constitute all, DOK III performance are:

- Explain the appropriateness of an argument for an intended audience.
- Analyze or evaluate the use of supporting details as they relate to the author's message.
- Explain the main ideas and their importance in a passage.

DOK III—Strategic Thinking/Complex Reasoning, Reading Example

3. Which sentences best support the idea that Mei is responsible for the class making the quilt for Mr. Gutierrez?

Drag the three sentences that best support the idea into the box.

Mei hopes the quilt will look like a rainbow.	**Mei works hard on the party for Mr. Gutierrez.**
Mei thinks Mr. Gutierrez will like Katie's square.	**Mr. Gutierrez says thank you to Mei for the quilt.**
Carl wants Mei to help give the quilt to Mr. Gutierrez.	**Carl says the quilt would not have been finished without Mei.**

Support for Idea

DOK I versus DOK II

Multiply.

406×58

Enter your answer in the box.

Two numbers are multiplied together.

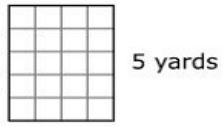
$$\begin{array}{r} 724 \\ \times\ 8\square \\ \hline 62{,}264 \end{array}$$

Which digit goes in the box?

- A. 0
- B. 1
- C. 4
- D. 6

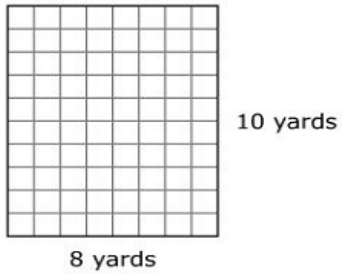
DOK II versus DOK III

A rectangle is shown



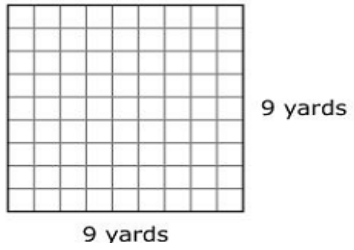
Which figure has the same area as the rectangle shown?

A.

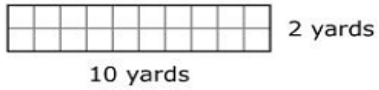


B.

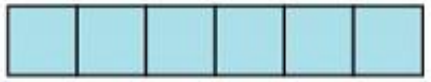
C.



D.



Kira is using 1-inch square tiles to cover a table top. The table top is 24 inches long and 18 inches wide. She lays the tiles into strips of 6.



How many strips of tiles will Kira need to cover the table with no gaps or overlaps?

A. 14

B. 18

C. 72

D. 432

Clear Performance Criteria

- It's important that students know how their responses, performance, demonstration or product will be judged/evaluated not only because of fairness, but because **it helps students internalize features of high-quality work.**
- ***Performance criteria*** *are guidelines, rules, or principles by which student responses, products, or performances are judged.*
  - *They describe what to look for in student performances or products to judge quality.*

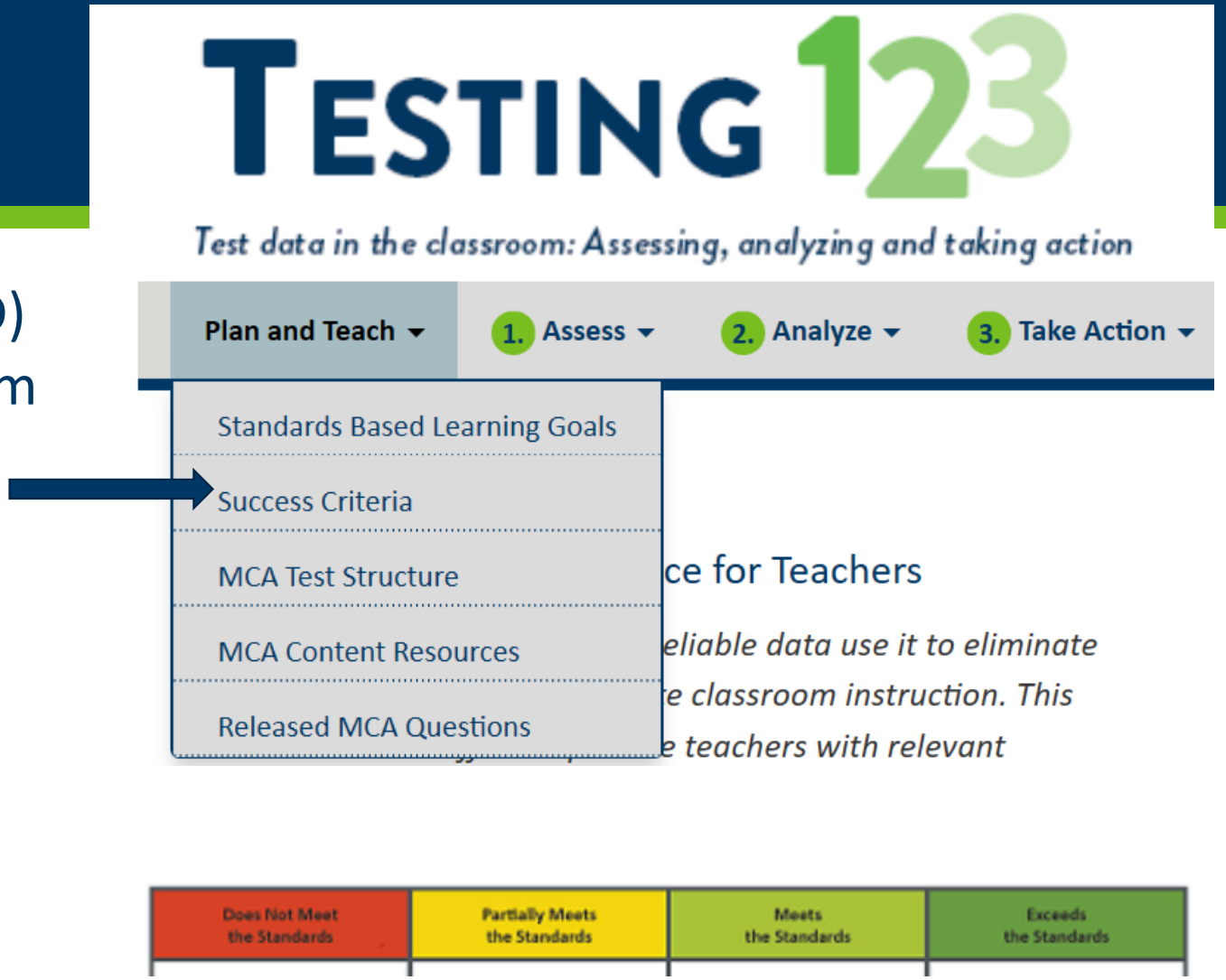
Goal of Clear Performance Criteria

The goal is to make an essentially subjective, judgmental process as ***clear***, ***consistent***, and ***defensible*** as possible. One does this through explicitly defined performance criteria in a **rubric**.

Performance criteria in a rubric are **not** how you assess student learning – the **task or assessment experience** is how you assess student learning and the performance criteria are used to **evaluate the quality of their response, product, performance, etc..**

Achievement Level Descriptors

- Use Achievement Level Descriptor (ALD) resources to analyze *depth* of curriculum and instruction.
- The (ALDs) describe the four levels of mastery specific to grade-level for the MCA, based on the standards.
- These are created by educator committees.



https://testing123.education.mn.gov/test/plan/success/

Benchmark Achievement Level Descriptors

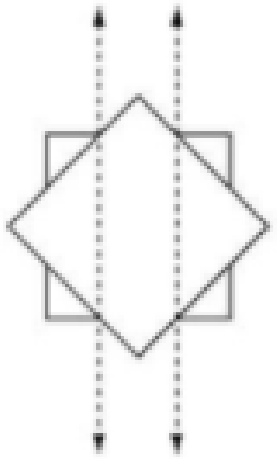
- The Benchmark ALDs offer even more detail
- Promote equity by providing a tool to evaluate rigor of classroom assessments

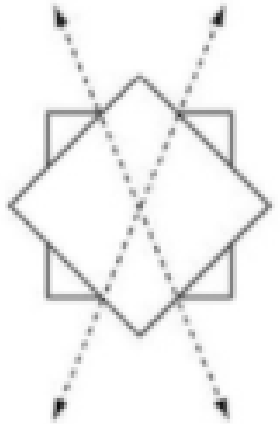
Benchmark	Does Not Meet *A typical student at this level of mathematics succeeds at few of the most fundamental mathematics skills of the Minnesota Academic Standards.* **Some of the skills typically demonstrated may include:**	Partially Meets *A typical student at this level of mathematics partially meets the mathematics skills of the Minnesota Academic Standards.* **Some of the skills typically demonstrated may include:**	Meets *A typical student at this level of mathematics meets the mathematics skills of the Minnesota Academic Standards.* **Some of the skills typically demonstrated may include:**	Exceeds *A typical student at this level of mathematics exceeds the mathematics skills of the Minnesota Academic Standards.* **Some of the skills typically demonstrated may include:**
4.3.3.1 Apply translations (slides) to figures.	Knows that a translation moves an object	Identifies images from translations when shown on a grid	Identifies images from translations of shapes	Applies and describes translations to shapes

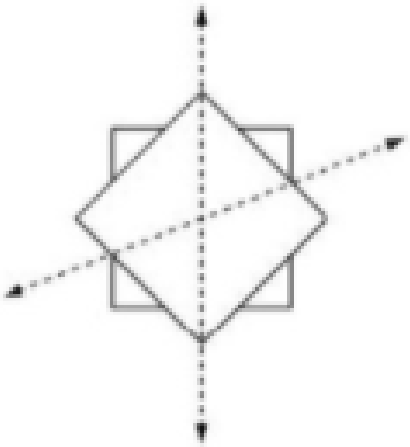
https://testing123.education.mn.gov/test/plan/success/

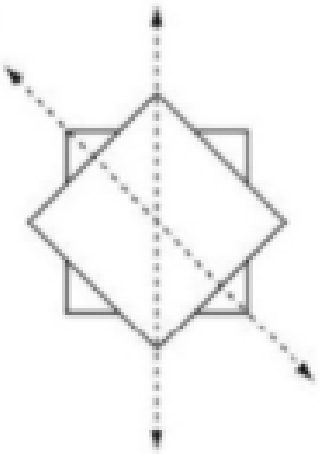
Math Example Question

Which figure shows 2 lines of symmetry?

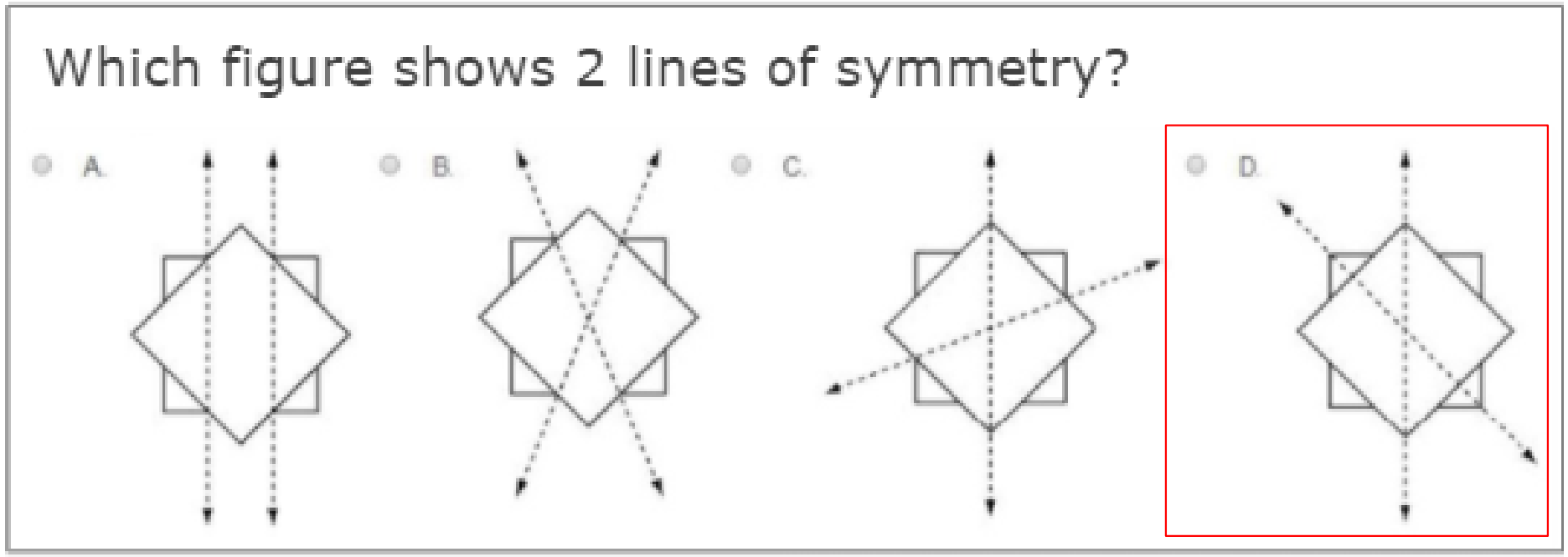
A 

B 

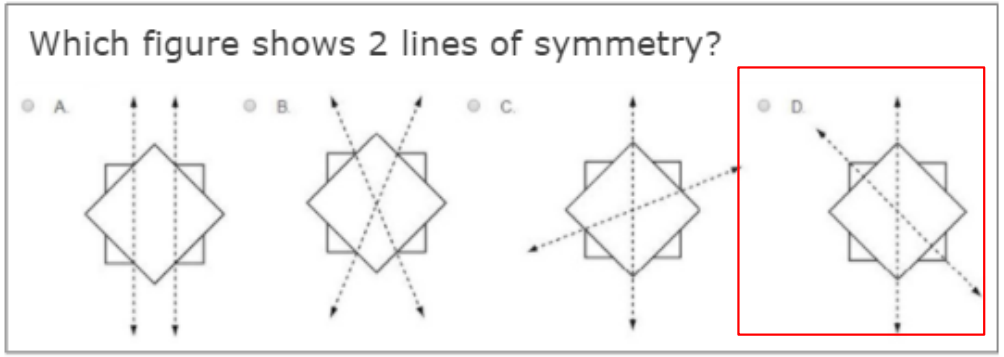
C 

D 

Math Example Question – Correct Answer



Math Example Question with Benchmark ALD



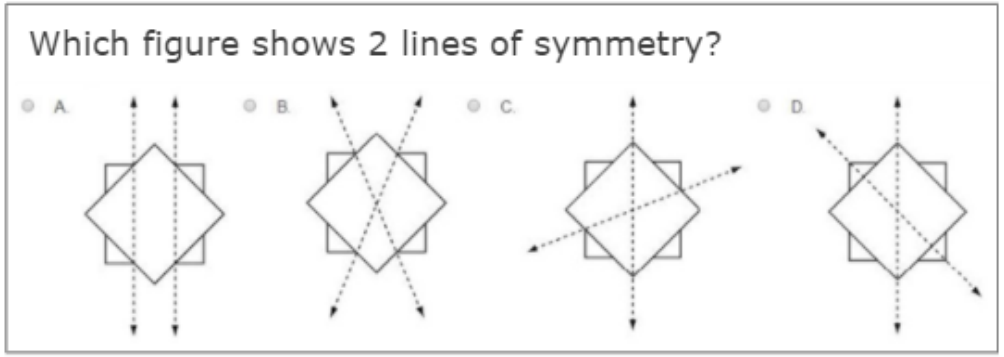
	Does Not Meet	Partially Meets	Meets	Exceeds
4.3.3.2 **Apply reflections (flips) to figures by reflecting over vertical or horizontal lines and relate reflections to lines of symmetry.**	Identifies a line of symmetry in simple shapes	Identifies lines of symmetry in complex shapes and complex situations Draws a line of symmetry in simple shapes	Reflects shapes over lines	Identifies lines of symmetry in multiple shapes (compound as well as multiple single shapes)

Math Example Question – Which ALD?

What is the lowest achievement level at which students typically answer this question correctly?

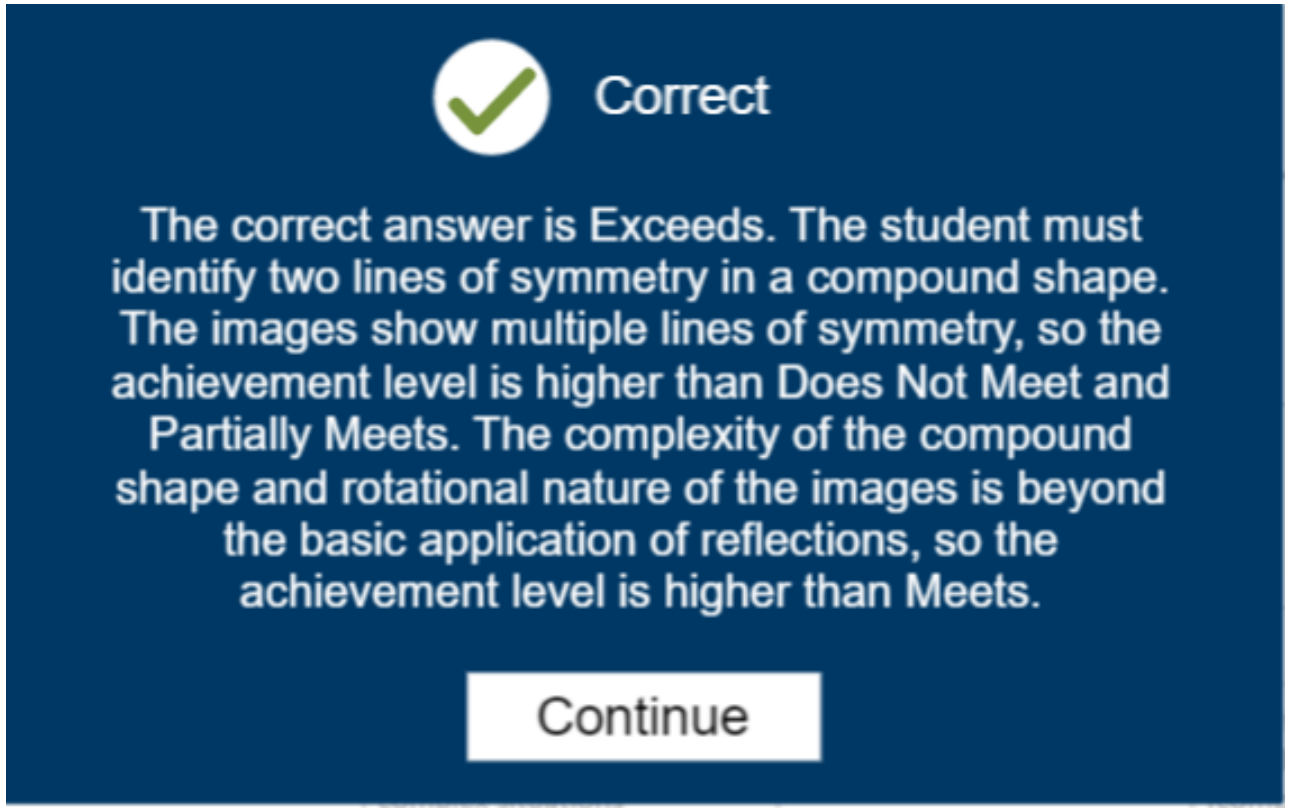
1. **Does Not Meet**
2. **Partially Meets**
3. **Meets**
4. **Exceeds**

https://www.menti.com
voting code **83 32 06 3**



	Does Not Meet	Partially Meets	Meets	Exceeds
4.3.3.2 **Apply reflections (flips) to figures by reflecting over vertical or horizontal lines and relate reflections to lines of symmetry.**	Identifies a line of symmetry in simple shapes	Identifies lines of symmetry in complex shapes and complex situations Draws a line of symmetry in simple shapes	Reflects shapes over lines	Identifies lines of symmetry in multiple shapes (compound as well as multiple single shapes)

Correct Answer and Rationale - Math



Reading Example Test Question

Which quotations from the letter most clearly reveal the letter writer's point of view about volunteering?

Select the two appropriate quotations that most clearly reveal the letter writer's point of view about volunteering.

- ☐ "During this campaign, individuals are encouraged to seek out productive, imaginative ways to serve their communities." (paragraph 1)
- ☐ "Besides profiting your community, your volunteer work also benefits you personally in unexpected ways." (paragraph 3)
- ☐ "Researchers at the London School of Economics studied how volunteering affected the happiness of a large group of American adults." (paragraph 4)
- ☐ "Let this special day be the beginning of your lifelong commitment to serve others." (paragraph 7)

Reading Example Test Question

Which quotations from the letter most clearly reveal the letter writer's point of view about volunteering?

Select the two appropriate quotations that most clearly reveal the letter writer's point of view about volunteering.

- ☐ "During this campaign, individuals are encouraged to seek out productive, imaginative ways to serve their communities." (paragraph 1)
- ☐ "Besides profiting your community, your volunteer work also benefits you personally in unexpected ways." (paragraph 3)
- ☐ "Researchers at the London School of Economics studied how volunteering affected the happiness of a large group of American adults." (paragraph 4)
- ☐ "Let this special day be the beginning of your lifelong commitment to serve others." (paragraph 7)

Reading Example Test Question

Which quotations from the letter most clearly reveal the letter writer's point of view about volunteering?

Select the two appropriate quotations that most clearly reveal the letter writer's point of view about volunteering.

- ☐ "During this campaign, individuals are encouraged to seek out productive, imaginative ways to serve their communities." (paragraph 1)
- ☐ "Besides profiting your community, your volunteer work also benefits you personally in unexpected ways." (paragraph 3)
- ☐ "Researchers at the London School of Economics studied how volunteering affected the happiness of a large group of American adults." (paragraph 4)
- ☐ "Let this special day be the beginning of your lifelong commitment to serve others." (paragraph 7)

	Does Not Meet	Partially Meets	Meets	Exceeds
Informational Text 6.5.6.6 **Determine an author's point-of-view or purpose in a text and explain how it is conveyed in the text.**	Author's Perspective: Recognize author's point of view.	Author's Perspective: Identify author's point of view.	Author's Perspective: Identify author's use of perspective (personal point of view) and tone (attitude toward subject of writing).	Author's Perspective: Analyze how author's message is shaped by perspective.

Reading Example Test Question

What is the lowest achievement level at which students typically answer this question correctly?

1. **Does Not Meet**
2. **Partially Meets**
3. **Meets**
4. **Exceeds**

https://www.menti.com
voting code **83 32 06 3**

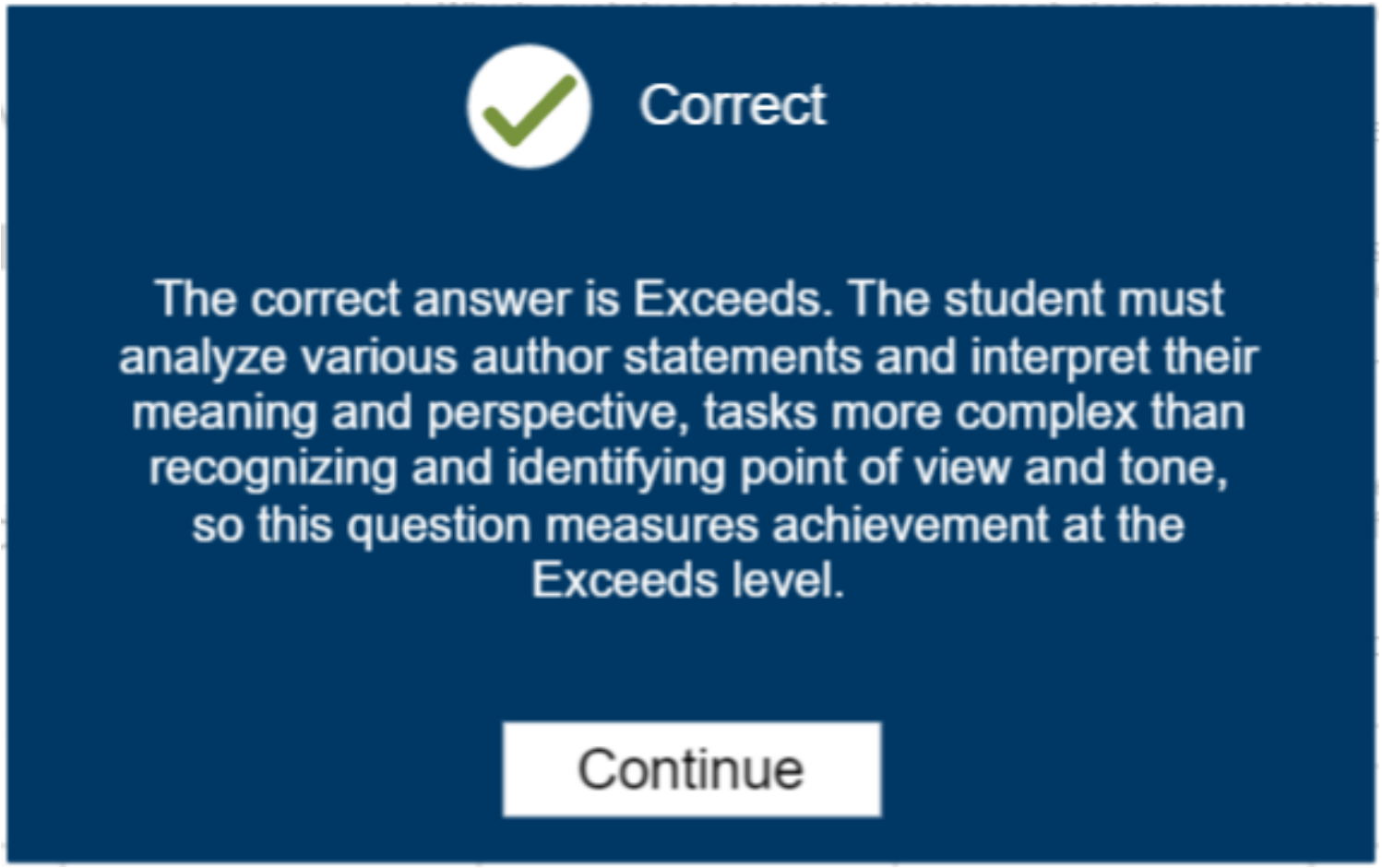
Which quotations from the letter most clearly reveal the letter writer's point of view about volunteering?

Select the two appropriate quotations that most clearly reveal the letter writer's point of view about volunteering.

- ☐ "During this campaign, individuals are encouraged to seek out productive, imaginative ways to serve their communities." (paragraph 1)
- ☐ "Besides profiting your community, your volunteer work also benefits you personally in unexpected ways." (paragraph 3)
- ☐ "Researchers at the London School of Economics studied how volunteering affected the happiness of a large group of American adults." (paragraph 4)
- ☐ "Let this special day be the beginning of your lifelong commitment to serve others." (paragraph 7)

	Does Not Meet	Partially Meets	Meets	Exceeds
Informational Text 6.5.6.6 **Determine an author's point-of-view or purpose in a text and explain how it is conveyed in the text.**	Author's Perspective: Recognize author's point of view.	Author's Perspective: Identify author's point of view.	Author's Perspective: Identify author's use of perspective (personal point of view) and tone (attitude toward subject of writing).	Author's Perspective: Analyze how author's message is shaped by perspective.

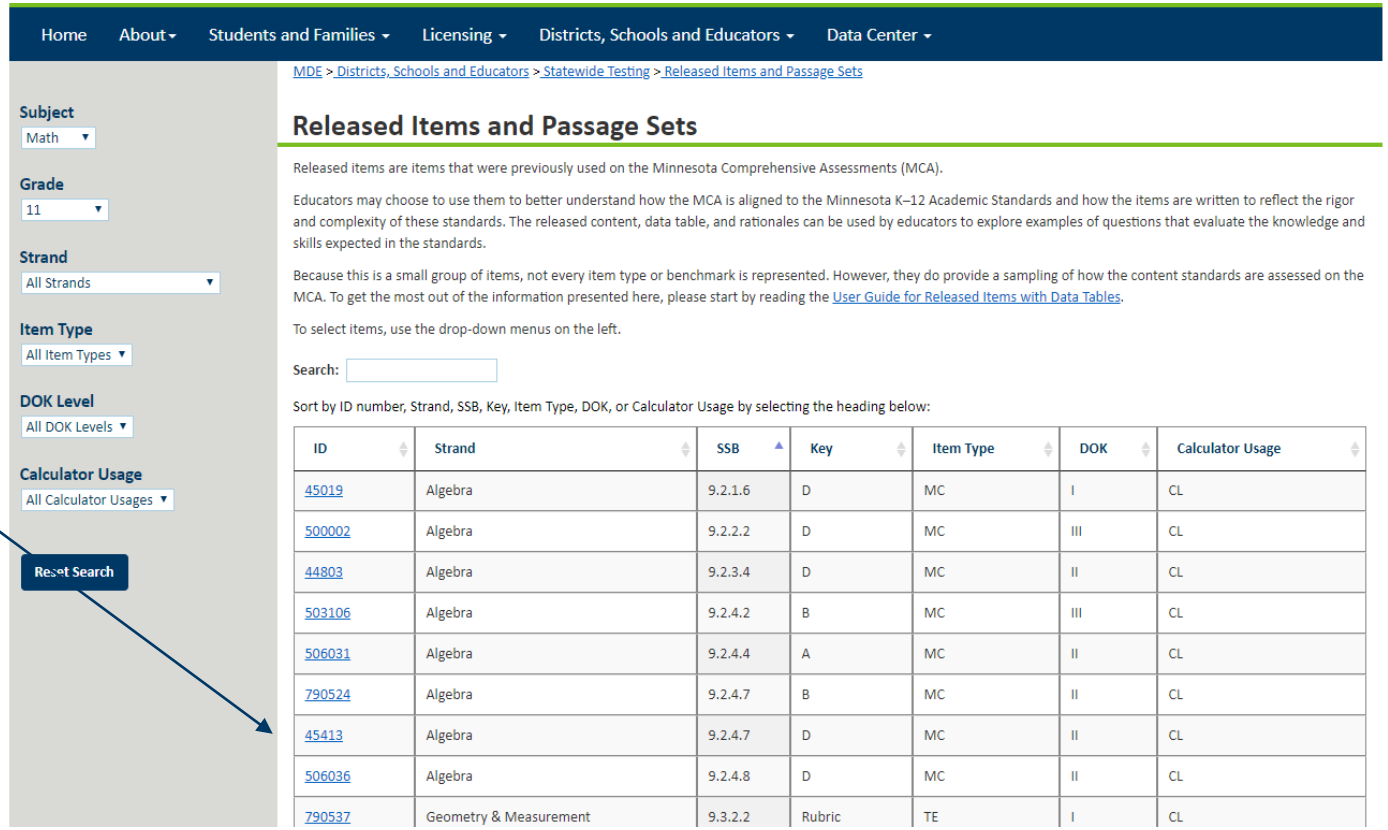
Review Correct Answer and Rationale



Released Math and Reading Items

You can search for benchmark in Released Items:

[Released Items and Passage Sets]
(testing123 > Plan and Teach > Released MCA Questions)



New Resource- Coming February 2021

- Principles of Writing Multiple Choice – Asynchronous Learning Opportunity
- Dive deeper into how to improve traditional summative assessments
- Principles can be applied for virtual or in-person traditional classroom assessments

Teacher Newsletter

- If you would like to receive updates about information relevant to educators, please use the following QR code to enter your information.
- You can also sign up on the Testing 1, 2, 3 site (testing123 > Get Involved > Testing 123 Newsletter).

Resources

- DOK Resources on Testing 1, 2, 3 - MDE site for teachers about using assessment and data
- Achievement Level Descriptors (testing123.education.mn.gov > Plan and Teach > Success Criteria)
- Released Items and Passage Sets (testing123.education.mn.gov > Plan and Teach > Released MCA Questions)
- Cognitive Rigor- Karen Hess website and resources
- Classroom Assessment Learning Modules - Evans, C. M. & Thompson, J. (2020), *Center for Assessment*
- Classroom Assessment Principles to Support Teaching and Learning - Shepard, L.A., Diaz-Bilello, E., Penuel, W.R, & Marion, S. F. (2020)
- Matching Instructional Uses with Assessment Designs – Brian Gong, presented at *RILS Conference on Improving the Selection, Use and Evaluation of interim Assessments.* September 26-27, 2019
- Beyond Basic Skills: The Role of Performance Assessment in Achieving 21st Century Standards of Learning - Darling-Hammond, L. & Adamson, F. (2010) Stanford University, Stanford Center for Opportunity Policy in Education.
- A New Era for Educational Assessment - Conley, D.T. 2014. Students at the Center: Deeper Learning Research Series. Boston, MA
- The Role of Assessment in a Learning Culture - Lorrie A. Shepard, *Educational Researcher*, Vol. 29, No. 7. (Oct., 2000).

Closing

- What is one takeaway from this session that will help you improve the quality of your classroom assessments?
- Type it in the Mentimeter Poll!

https://www.menti.com
voting code **83 32 06 3**

- Please Take the Survey about this session – We want your feedback!

https://forms.gle/4vdFSjnjxVMHs9Ej9

Thank you!

Kendra Olsen
Kendra.Olsen@state.mn.us
651-582-8542