Louisiana Believes

Using Online Mathematics Assessment Tools

Supervisor Collaboration

January/February 2018

DEPARTMENT of EDUCATION

Objectives and Agenda

Objectives:

1. Participants will understand, use, and be able to communicate the use of
   a. the new graphing calculator for Algebra I and Geometry and
   b. the equation builder for all math tests in the INSIGHT testing platform.

NOTE: Access to the LEAP 2025 OTTs is necessary to participate in this session.

Agenda:

1. LDOE Assessment Vision
2. Calculator for LEAP 2025 Algebra I and Geometry Tests
3. Using the Equation Builder

Why are these tools important for student success?

MP.5 Use appropriate tools strategically.

Mathematically proficient students consider the available tools appropriate for their grade or course and choose from those tools to solve a problem.

MP.6 Attend to precision.

Mathematically proficient students calculate accurately and efficiently and express answers and explanations with a degree of precision appropriate for the problem context.

A **graphing calculator** is the appropriate calculator for accuracy and efficiency in high school math course-level instruction and assessment.

The **equation builder** is a tool students can use to express precise answers and explanations.

Assessment Resources

Resources are available in the Assessment Guidance library.

LEAP 2025 Assessment Guide for Algebra I

LEAP 2025 Assessment Guide for Geometry

www.desmos.com/calculator

LEAP 2025 Equation Builder Guide for Grades 3-5 (Spanish 3-5)

LEAP 2025 Equation Builder Guide for Grades 6-8 (Spanish 6-8)

LEAP 2025 Equation Builder Guide for High School (Spanish HS)

Calculator for LEAP 2025 Algebra I and Geometry Tests

New Online Graphing Calculator

What's **new**:

- Replaces DRC graphing tool
- Fully functional Desmos graphing calculator
- Desmos free online - access outside testing platform

What's **unchanged**:

- Online scientific calculator
- Handheld calculators recommended
- Calculator Policy

Available in all LEAP 2025 and LEAP 360 Algebra I and Geometry tests and resources.

Calculator Policy for Algebra I and Geometry

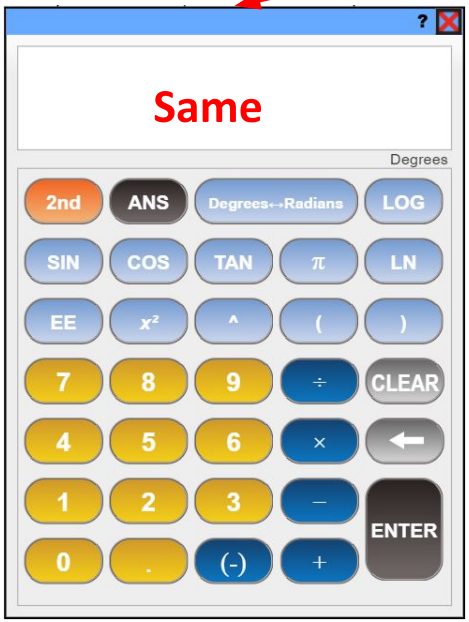
Calculator Guidelines:

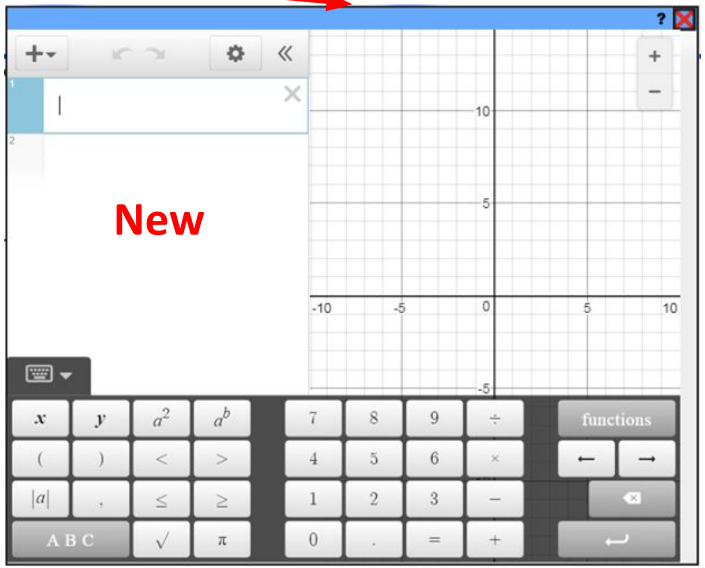
- **Not** permitted:
  - Computer Algebra System (CAS) features
  - "QWERTY" keyboards
  - paper tape
  - talk or make noise, unless specified in IEP/IAP
  - tablet, laptop (or PDA), phone-based, or wristwatch
- **Not** allowed to share within test session
- **Test administrator must confirm**
  - memory cleared on all calculators before and after test sessions
  - personal calculators meet all guidelines

Handheld calculator recommended:

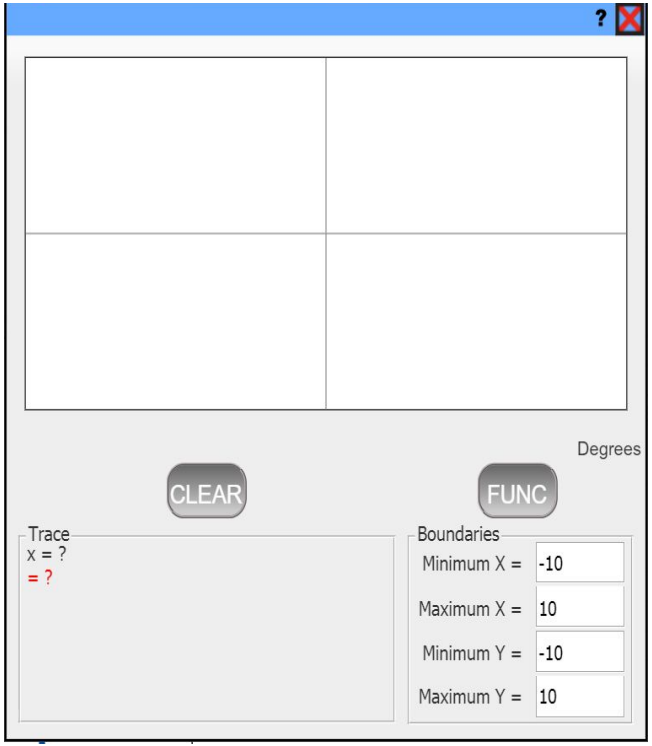
- Scientific calculator allowed
- **Graphing calculator recommended**
- Sessions 1b, 2, and 3 for all testers
- **Must** provide/allow for students with accommodation in session 1a

The Old vs The New





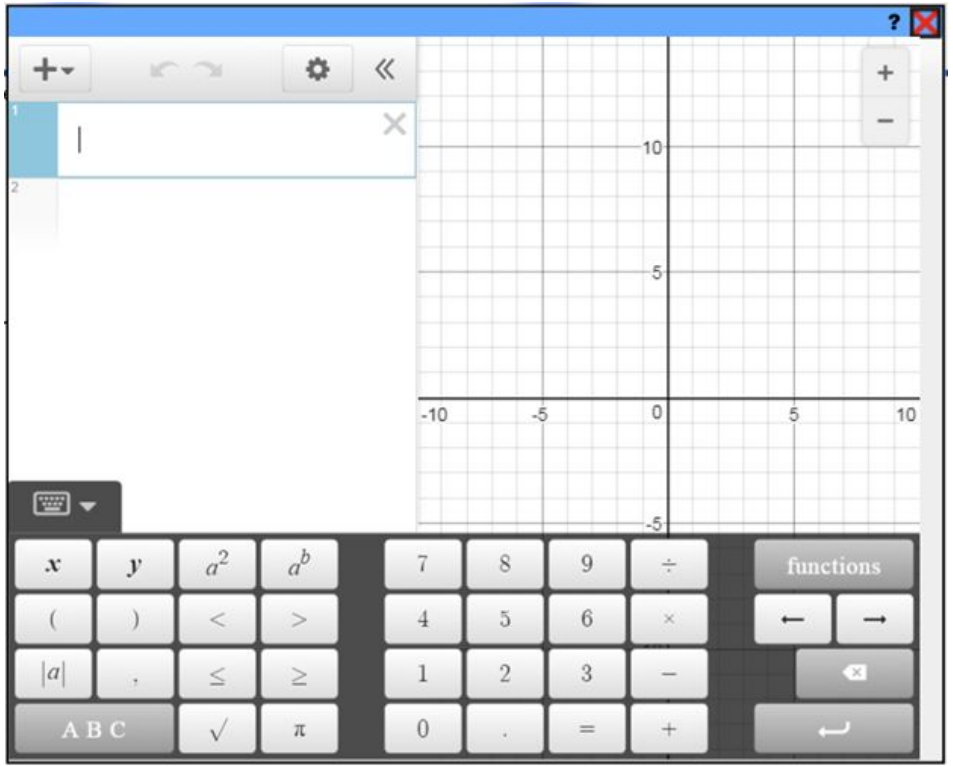
Old Graphing Application



Features:

- Two screens
- Unlined coordinate plane, scale not shown on axes
- Only allows equation/function input
- Not a calculator

New Desmos Graphing Calculator



Features:

- One screen
- Coordinate plane, scale shown on axes
- Allows all inputs of a graphing calculator
- Is a fully functional graphing calculator

Using the Graphing Calculator

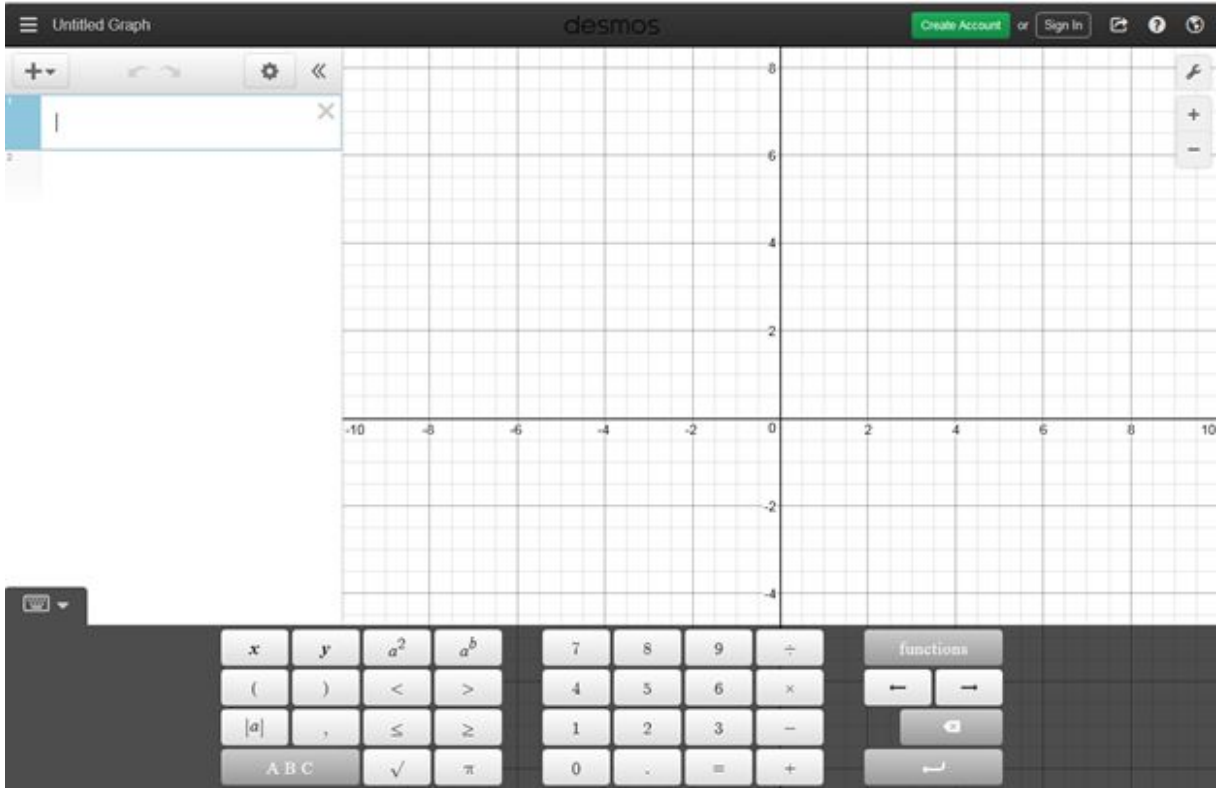
1) Access the LEAP 2025 High School OTT by opening the link https://wbte.drcedirect.com/LA/portals/la in Google Chrome or using the INSIGHT desktop application.
2) Select “Standard Online Tools” and “Mathematics (Algebra I and Geometry)”.
3) Go to any item in the test.
4) Select the graphing calculator icon. 

Practice:

- Input linear equation
  - Identify intercepts
- Input nonlinear equation
  - Identify zeros, vertex, solutions
- Input table values
  - Line of best fit
- Use calculator

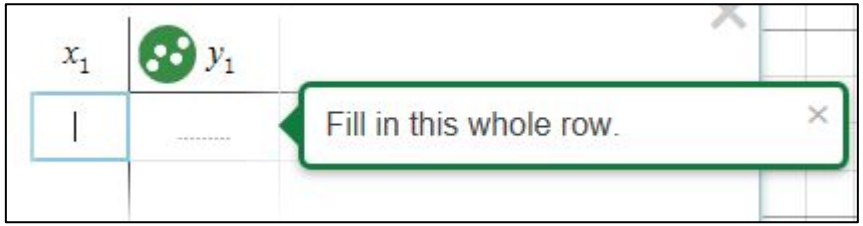
Desmos Online

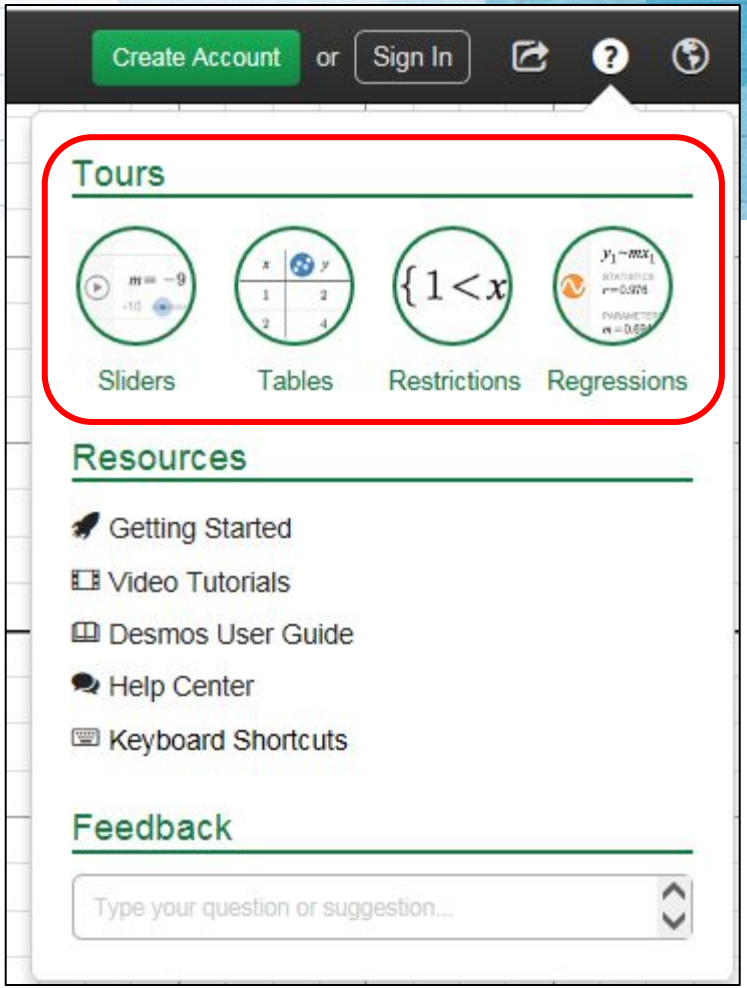
https://www.desmos.com/calculator



Desmos Online Help

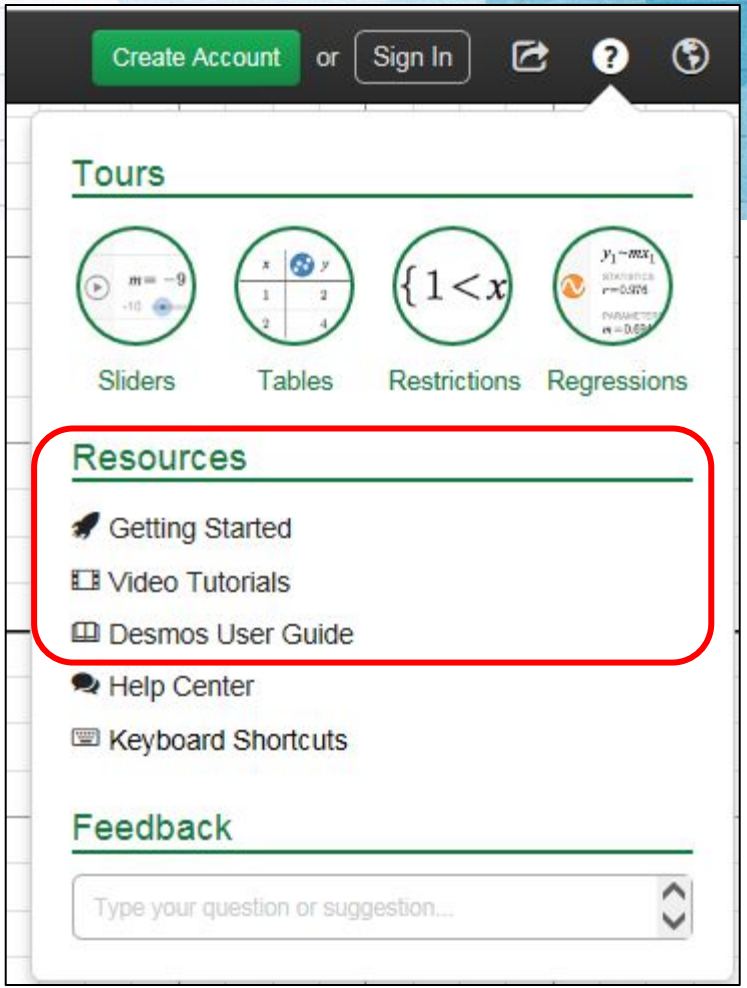
Tours provide interactive instructions on using sliders, tables, restrictions, and regressions.





Desmos Online Help

- Getting Started lets you learn about Desmos and the services provided by Desmos through videos and text. Topics offered: graphing calculator, four function, scientific calculator, geometry (beta), classroom activities, create your own activity, request pd, and pd packs.
- You can access video tutorials directly and search specific topics through Video Tutorials.
- The Desmos User Guide is a text-based guide which offers screenshots and step-by-step instructions to work through the features.



Using the Equation Builder

Big Picture

Short Answer/Fill-in-the-Blank, Keypad Input, and Equation Builder have different functions and purposes.

Equation builder:

- Tool used in **conjunction** with response box
- Use within **student level of comfort**
- Allows **flexibility** in responding

Common Misconceptions:

- Students can't type using the keyboard.
- Students must use the equation builder to show their work.
- It's too complicated for most students to use.

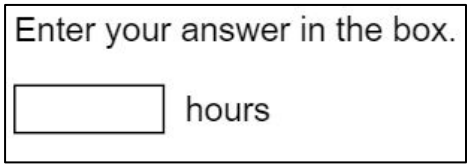
Short Answer/Fill-in-the-Blank

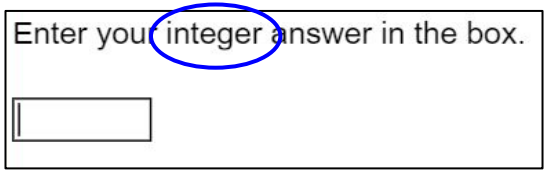
Acceptable Answers (Numerical)

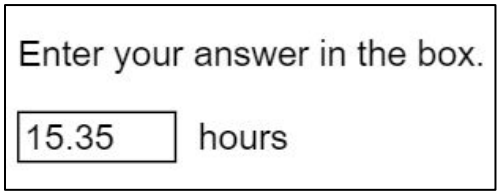
- 3-5: whole numbers and positive decimals
- 6-8: integers and signed decimals

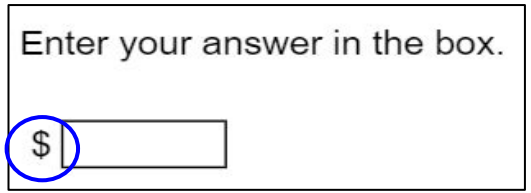
Scoring

- Equivalent forms accepted, unless restricted (rounding, money)
- Multiple answers accepted for special cases (π, 3.14, 22/7)



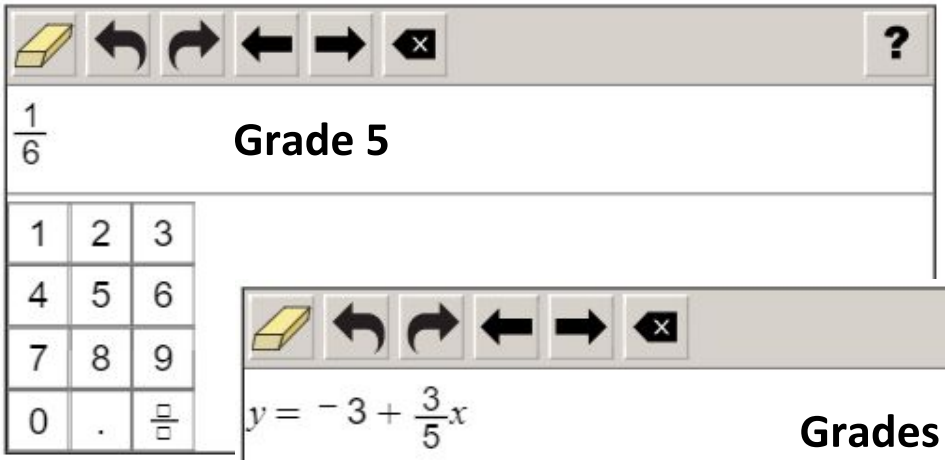


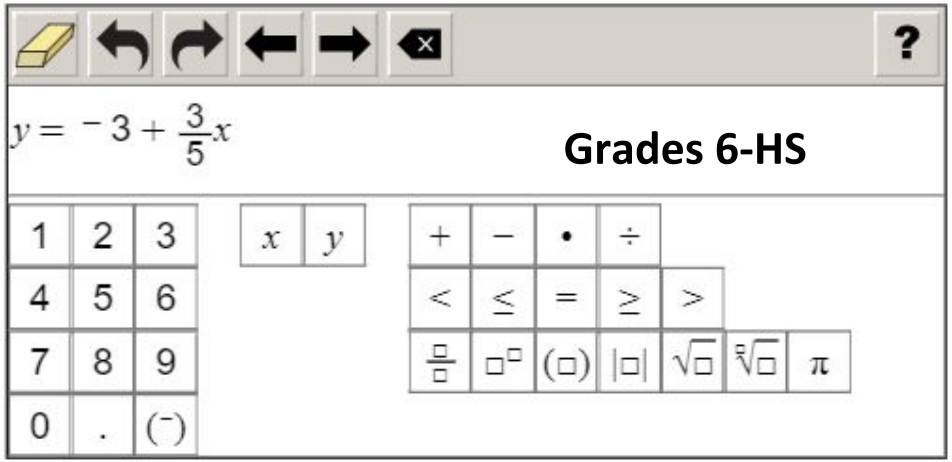




Keypad Input

- Same answers/scoring as short answer +
  - Grade 5-HS: allows fractions and mixed numbers
  - Grades 6-HS: allows algebraic entry
- Keypad tailored to needs of the grade-level and test item
- Cannot use keyboard keys

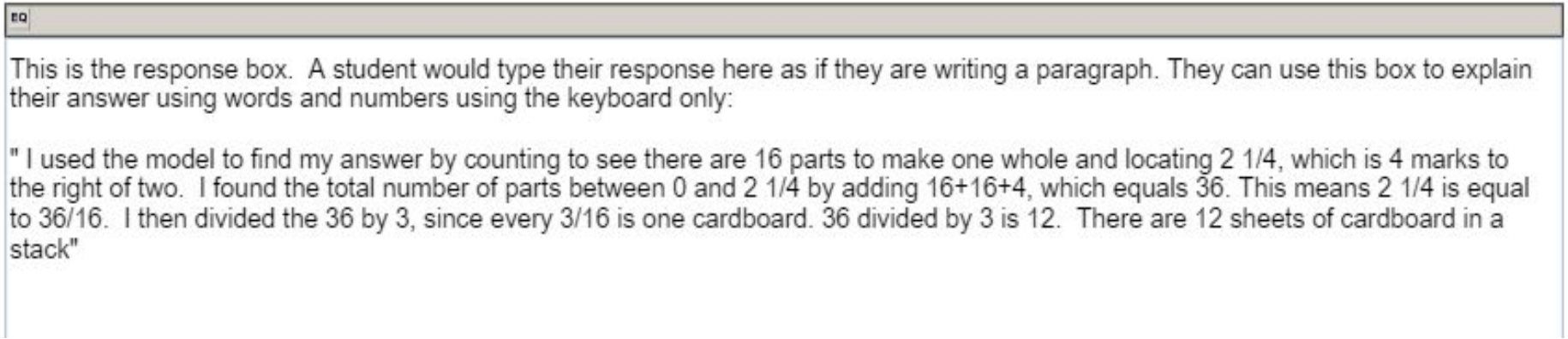




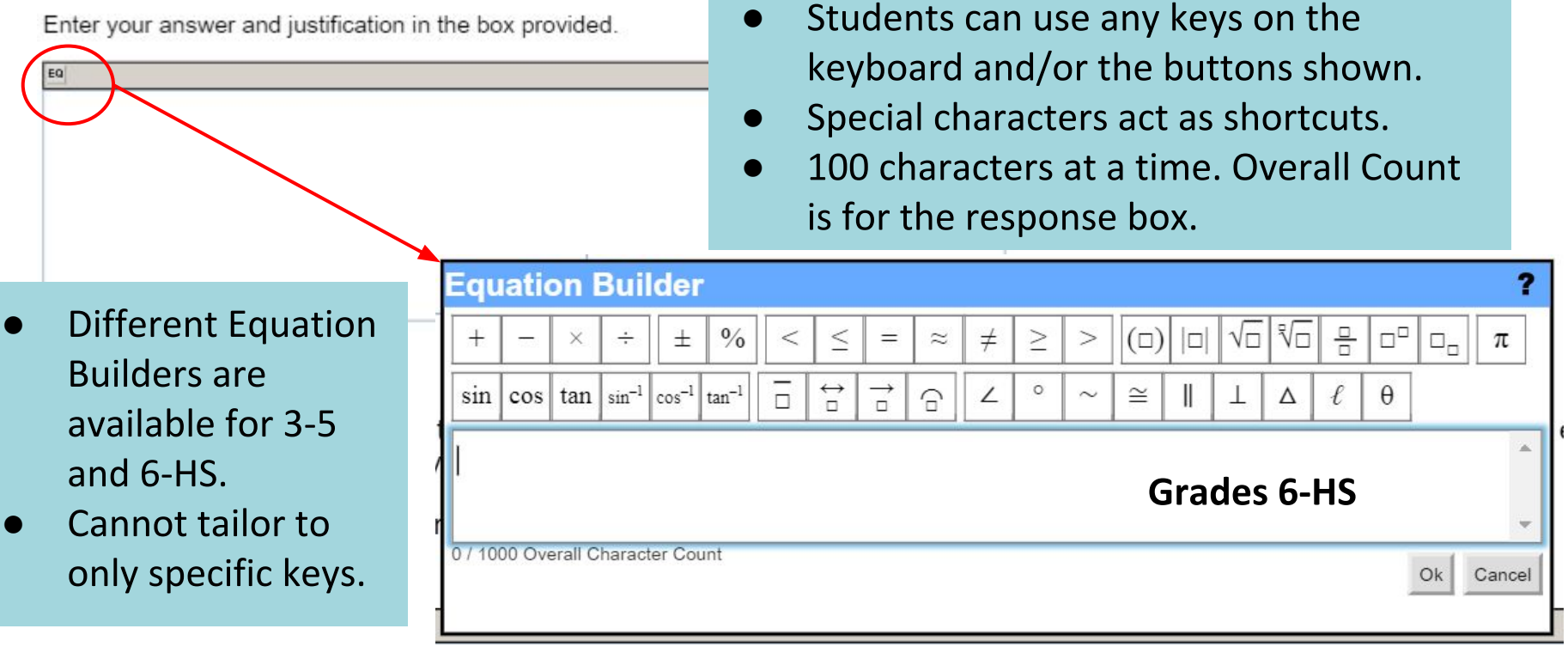
Typing in the Response Box

Students can use any keys on the keyboard

- special characters readily accepted as appropriate to represent mathematical symbols are always appropriate/acceptable
- examples: ^ to show raising a power, ~ to show similarity, and * to show multiplication



Typing with Equation Builder



- Students can use any keys on the keyboard and/or the buttons shown.
- Special characters act as shortcuts.
- 100 characters at a time. Overall Count is for the response box.

- Different Equation Builders are available for 3-5 and 6-HS.
- Cannot tailor to only specific keys.

Using the Graphing Calculator

$$\frac{3}{5} \cdot 9 + 8^2$$

1) Type the expression above in the response box. **Do not use the equation builder tool.**
2) **Using only the keyboard keys**, type the expression in the equation builder and enter it into the response box.
3) **Using a mix of keyboard keys and buttons in the equation builder**, type the expression in the equation builder and the response box.

- Access any math OTT with the link https://wbte.drcedirect.com/LA/portals/la in Google Chrome or using the INSIGHT desktop application.
- Go to any CR item in the test.

Typing with Equation Builder

EQ

keyboard only, not using equation builder
3/5 x 9 + 8^2 or 3/5 * 9 + 8^2

keyboard only, using equation builder
$\frac{3}{5} \bullet 9 + 8^2$ or $\frac{3}{5} x 9 + 8^2$

mix keyboard and buttons, using equation builder
$\frac{3}{5} \times 9 + 8^2$ or $\frac{3}{5} \times$ 9+8^2

Flexibility and Comfort:

- All of these responses are correct
- Many variations would also be correct.
- Students can type using the keyboard.
- Students are not required to use the equation builder.

Typing with Equation Builder

" The expression that can be written is $2\frac{1}{4} \div \frac{3}{16} = 12$. It relates to the model because we are separating (dividing) a stack of 2 1/4 inches into sheets that are 3/16 inch thick. It will take 12 sheets that are 3/16 inch to make a stack that is 2 1/4 inches tall.

How does the response above compare to the response below?

The expression that can be written is $2\frac{1}{4} \div \frac{3}{16} = 12$. *It relates to the model because we are separating or dividing a stack of* $2\frac{1}{4}$ *inches into sheets that are* $\frac{3}{16}$ *inch thick. It will take 12 sheets that are* $\frac{3}{16}$ *inch thick to make a stack that is* $2\frac{1}{4}$ *inches tall.*

Next Steps

Next Steps

- Access the assessment resources shared in this session.
- Plan time to have teachers dive into online mathematics testing tools.
- Have teachers plan to incorporate tools into classroom lessons.
- Email assessment@la.gov if you have additional questions.

Assessment Resources

Resources are available in the Assessment Guidance library.

LEAP 2025 Assessment Guide for Algebra I

LEAP 2025 Assessment Guide for Geometry

www.desmos.com/calculator

LEAP 2025 Equation Builder Guide for Grades 3-5 (Spanish 3-5)

LEAP 2025 Equation Builder Guide for Grades 6-8 (Spanish 6-8)

LEAP 2025 Equation Builder Guide for High School (Spanish HS)