



HSA-Alt Teacher Resource Guide

Grade 7 Mathematics Classroom Embedded Assessment

One- and Two-Step Problems (CCSS 7.EE.B.3)

Introduction

The HSA-Alt Classroom Embedded Assessments (CEAs) are non-mandatory assessment options available to HSA-Alt-identified students. The CEAs are designed for students who have an established communication system. Although non-responsive students are allowed to take the CEAs, the assessment is ideally suited for students who are able to attend to stimuli, engage in activities, and demonstrate understanding through actions, gestures, symbols, signs/signing, a communication device, or speech.

The CEAs offer a model of standards-based instruction and supports, leading to progress toward year-end targets for learning found in the [HSA-Alt Range Performance Level Descriptors](#) (PLDs). Each CEA testlet is aligned to a single standard and features scripted instructional activities and assessment items at five levels of performance: Prerequisite, Well Below, Approaches, Meets, and Exceeds.

CEA testlets include teaching activities, performance tasks, and independent items. Teaching activities and performance tasks are available to download in the General Resources section in the Test Information Distribution Engine (TIDE). It is recommended that teachers download the testlets and read them with the accompanying Teacher Resource Guides.

As classroom assessments, the CEAs offer greater flexibility than a summative assessment. The CEAs may be individualized in the following ways:

- Teachers may select the most appropriate performance level for administration of each CEA for each student by reviewing CEA testlets, HSA-Alt PLDs, and the student's instructional level.
- Teachers have up to five opportunities to administer each subject-area CEA during the testing window, which runs from October to July. The performance level of each administration may be the same as, higher than, or lower than previous administrations. Please see the Important Dates page at <https://alohahsap.org> for the exact dates for each year's testing window.
- It is recommended that teachers provide the same accommodations on the CEAs as are used during classroom instruction. The scripted language and materials in the CEAs may be adapted to support student comprehension.
- An individual administration of each CEA testlet is recommended for most students to best meet their individual needs. A small number of students may be able to participate in the CEA teaching activities and performance tasks in small groups using PDF testlets. PDF testlets are available at www.hitide.org in the General Resources section.

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Selected Hawaii Common Core State Standard and CEA Targets

Common Core State Standard (CCSS)				
<p>CCSS.Math.7.EE.B.3: Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. For example, if a woman making \$25 an hour gets a 10% raise, she will make an additional $\frac{1}{10}$ of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.</p>				
Essence Statement				
<p>Solve one- and two-step problems involving integers or positive rational numbers. Prioritized focus: decimal numbers. Suggested scaffolds: concrete objects, visuals (number line), or real-world context (money).</p>				
Skill Levels				
Prerequisite Skill	Well Below PLD ¹	Approaches PLD	Meets PLD	Exceeds PLD
<p>Recognize operation symbols (+, −, ×, ÷). Identify whether the solution will be larger or smaller than the given values.</p>	<p>Solve one-step problems involving whole numbers or positive rational numbers. Prioritized focus: decimal numbers. Suggested scaffolds: concrete objects, visuals (number line), or real-world context (money).</p>	<p>Solve one-step problems involving integers or positive rational numbers. Prioritized focus: decimal numbers. Suggested scaffolds: concrete objects, visuals (number line), or real-world context (money).</p>	<p>Solve one or two-step problems involving integers or positive rational numbers. Prioritized focus: decimal numbers. Suggested scaffolds: concrete objects, visuals (number line), or real-world context (money).</p>	<p>Solve multi-step real-world problems involving integers or rational numbers. Prioritized focus: decimal numbers. Suggested scaffolds: concrete objects, visuals (number line), real-world context (money), or numeric expression/equation.</p>

1. PLD: Performance Level Descriptor

Standard Core Concept

The student will be able to use integers and positive rational numbers (with decimals) to solve one or two step problems.

Associated Below Grade-Level Standards

6.NS.B.3: Add, subtract, and multiply decimals.

Performance-Level Materials and Supports

Please note: All graphics listed in this section of the guide are available to download from the General Resources folder in TIDE (www.hitide.org).

Prerequisite Level: Materials List and Graphics

Materials List:

- Printout of basic math symbols (+, −)
- Real objects: if blocks are not easy to find or appropriate for the student, replace blocks with different objects
- Blank paper/whiteboard
- Pencil/dry erase marker
- Answer options: $5 + 4 = 1$, $5 - 4 = 1$

Graphics:

- Basic math symbols (+, −)
- Equations: $5 + 4 = 1$, $5 - 4 = 1$

Well Below Level: Materials List and Graphics

Materials List:

- Pencil/paper or other writing instruments
- Printout of pet store items and prices for the well below level
- Optional: scaffolding tools, such as a calculator or number line
- Answer options: \$8.00, \$9.00

Graphics:

- Pet store items and prices
- Answer options: \$8.00, \$9.00

Approaches Level: Materials List and Graphics

Materials List:

- Paper/pencil or other writing instruments
- Pet store items with prices
- Optional: use a calculator, number line, or graphic organizer, etc. to meet the needs of the student
- Answer options: \$8.25, \$3.75

Graphics:

- Pet store items with prices
- Answer options: \$8.25, \$3.75

Meets Level: Materials List and Graphics

Materials List:

- Paper/pencil or other writing instruments
- Printout of pet store items with prices
- Optional: scaffolding tools such as calculator, number line, or graphic organizer
- Answer options: \$10.25, \$11.05, \$11.25

Graphics:

- Printout of pet store items with prices
- Answer options: \$10.25, \$11.05, \$11.25

Exceeds Level: Materials List and Graphics

Materials List:

- Optional: scaffolding tools, such as calculator, number line, or graphic organizer
- Pencil/paper or other writing instruments
- Printout of pet store items with prices
- Answer options: \$3.75, \$4.25, \$6.25

Graphics:

- Printout of pet store items with prices
- Answer options: \$3.75, \$4.25, \$6.25

Academic Vocabulary Used in This Testlet

addition/add (+). To combine two or more numbers to make a new total

decimal/decimal point. Numbers made up of a whole and part of a whole, with a decimal point

dollar symbol. A symbol used to represent a dollar

subtraction/subtract (-). To take away one number from another

Accommodating Individual Student Needs on the CEA

It is recommended that teachers provide the same accommodations on CEAs as are used during classroom instruction. Accommodations in presentation, response, setting, and timing are allowable on the CEAs.

Presentation

The presentation of testlets is flexible and may be adapted to the needs and preferences of each student. Presentation considerations include the following:

- All parts of the testlet are designed to be read aloud or signed. Scripting is provided for ease of administration and may be adapted to support student comprehension.
- An enlarged version of the testlet may be provided by presenting the online version of the testlet on any type of screen, such as a whiteboard. The magnification tool may be used for students with low vision. The toolbar in the testing engine includes Zoom In and Zoom Out icons and four levels of magnification.
- Several color-contrast options are available in the testing engine. This feature may be helpful to students with various visual impairments.
- The entire testlet may be administered in a PDF format, which is available at www.hitide.org in the General Resources section.

Graphics

Graphics, pictures, tables, charts, and other visuals are used throughout all of the testlets. Graphics may be presented in a wide variety of ways, depending on student need. The following are examples of how graphics may be presented:

- All pictures, diagrams, tables, and other figures are embedded in teaching activities and may be printed for the student. This presentation option allows the student to sort, write on, color, or in some other way manipulate the testing materials.
- Graphics may not be accessible to all students. They may be described verbally, replaced with objects or manipulatives, or augmented with textures or tactile graphics.

Objects and Manipulatives

Objects and manipulatives may be provided for all parts of the CEAs to aid student understanding, engagement, and ability to focus on the concepts in this testlet. When selecting objects, consider the student's needs, preferences, and safety. Suggested objects and manipulatives for *One- and Two-Step Problems* are shown in the table on the following page.

Level	Suggested Objects for Teaching Activity	Suggested Objects for Independent Item
Prerequisite	<ul style="list-style-type: none"> Use math manipulatives, objects, or tactiles for numbers, math symbols, and equations. 	<ul style="list-style-type: none"> Use math manipulatives, objects, or tactiles for equations.
Well Below	<ul style="list-style-type: none"> Use real objects or models/toys for pet store items. Use math manipulatives, objects, or tactiles for numbers. Provide the student with any needed scaffolding tool (e.g., calculator, number line, or graphic organizer) for calculating cost. 	<ul style="list-style-type: none"> Use real objects or models/toys for pet store items. Answer options: Use math manipulatives, objects, or tactiles for numbers.
Approaches		
Meets		
Exceeds		

Tactile Materials, Including Tactile Graphics and Tactilely Enhanced Objects

Students with visual impairments who use tactile graphics during instruction should also be provided with tactile graphics for this testlet. The type of tactile graphic provided should be comparable to what the student uses during instruction. Examples include embossed graphics, printouts of graphics with added texture, textures added to manipulatives, and sticky yarn that can be molded to form different shapes. Graphics in this testlet that may be presented in tactile form include the following:

- Addition and subtraction symbols
- Pet store objects (can of dog food, ball, rope, dish, leash, collar)

Response

Students may interact with and respond to testlet activities using a preferred response mode, including the following:

- Verbal response
- Selecting a response card
- Use of gestures, signs, or pointing
- Assistive technology (AT)
- Augmentative and alternative communication (AAC)

Teachers may use prompting (hand-under-hand assistance, modeling, verbal and/or visual prompting) to facilitate student responses on CEA performance-based tasks and should record the student’s level of independence with these tasks on the second rubric for each level on **Rubric 2: Teacher Evaluation of Level of Student Independence**.

Setting

The CEAs may be administered in a location in the school that allows the student to focus and do their best work. Factors to consider include optimal lighting, temperature, ambient noise, positioning of the student, and ease of access to needed communication devices.

Due to the wide range of learner characteristics and the individualized nature of the assessment, most students taking the CEAs will require an individual administration. If you are planning to administer the CEAs in a small group, ensure that all students will have the support they need to show their best performance on the CEAs.

Timing

The CEAs are untimed assessments. Teachers may stop and restart testing as needed and may administer the CEAs up to five times during the testing window. Factors to consider include student alertness, fatigue, hunger, and the potential impact of medications. When scheduling the CEA administration, make sure to account for needed wait time for the student to think about and execute a response.

Recommended Strategies

Optional activities that may help the student learn to solve one- and two-step addition and subtraction problems with decimals include the following:

Physical Activity and Games

- The student may benefit from incorporating movement and games into learning activities. For example, students may play a game where they move forward when they see a plus symbol, backward when they see a subtraction symbol, and stay still when they see an equality symbol.

Calculator Use

- The student may benefit from opportunities to use a calculator during daily activities. For example, the student could use a calculator to add the cost of two items at a store.

Number Line

- The student may benefit from opportunities to use a number line during daily activities. For example, place a large number line with the numbers 0 – 20 on the floor. To find the sum of two crayons plus seven crayons, have the student start at the number two and move forward seven spaces. The student may use pointing or eye gaze if they are not able to move independently.

Students may benefit from exploring materials (pictures, objects, tools) assembled for the teaching activity before the testlet is administered.

Pre-Teaching Vocabulary

All testlets incorporate academic vocabulary. The difficulty of academic vocabulary increases as the testlet level progresses, so a student working at the Prerequisite level may use the words “plus” and “minus,” while a student at the Exceeds level might use “total cost,” and “money left over.” The knowledge of academic vocabulary is critical to understanding concepts in mathematics. Pre-teaching academic vocabulary at the student’s level will promote academic progress.

The scripted language and materials in the CEAs may be adapted to support student comprehension.

Strategies for Pre-Teaching Academic Vocabulary

Strategies for pre-teaching academic vocabulary include the following:

- Introduce vocabulary words with pictures.
- Use simpler words with academic vocabulary to aid comprehension.
- Post vocabulary words with pictures in a place that is convenient for student viewing. Consider making a word wall for students to look at throughout the day.
- Introduce a small number of new words in one session; just one word may be enough.
- Provide opportunities throughout the day for the student to use the vocabulary. Use the vocabulary in different settings.
- Include vocabulary in play and movement when possible.

Resources

Burnes, J. J., & Clark, A. K. (2021). *Characteristics of students who take Dynamic Learning Maps® alternate assessments: 2018–2019* [Technical Report No. 20-01]. University of Kansas, Accessible Teaching, Learning, and Assessment Systems (ATLAS).

https://dynamiclearningmaps.org/sites/default/files/documents/publication/Characteristics_of_Students_Who_Take_DLM_AAs.pdf

Hawaii TIDE site: <https://www.hitide.org>

- HSA-Alt CEA resources are available in General Resources > Download Forms at the bottom of the page.

HSA-Alt Participation Guidelines: <https://hsa-alt.alohahsap.org/resources/resources-2023-2024/hsa-alt-participation-guidelines-2023-2024>

Universal Design for Learning Instructional Units. (August 25, 2014). In *NCSC Wiki*.

https://wiki.ncscpartners.org/index.php/UDL_Instructional_Units