



HSA-Alt Teacher Resource Guide

Grade 4 Mathematics Classroom Embedded Assessment

The Value of a Number (CCSS 4.NBT.A.2)

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)				
CCSS.Math.4.NBT.A.2: Read and write multi-digit whole numbers using base 10 numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.				
Essence Statement				
Identify or compare numbers expressed as visuals, number names, base 10 numerals, or numbers in expanded form.				
Skill Levels				
Prerequisite Skill	Well Below PLD ¹	Approaches PLD	Meets PLD	Exceeds PLD
Recognize that ten 1s are equal to one 10 (decompose two-digit number into how many 10s and how many 1s).	Identify the place value for a single digit within a two-digit number. Suggested scaffolds base 10 blocks or a place value chart.	Identify the place value for a single digit within a three-digit number. Suggested scaffolds base 10 blocks or a place value chart.	Compare two numbers (up to three-digits) using the symbols $>$, $<$, $=$ or the words that represent these symbols, greater than, less than, equals. Suggested scaffolds base 10 blocks, place value chart, or expanded form representation.	Compare two multi-digit numbers using the symbols $>$, $<$, $=$ or match number names to numeric or visual representation. Suggested scaffolds base 10 blocks, place value chart, or expanded form representation.

1. PLD: Performance Level Descriptor

Standard Core Concept

The student can identify a number written in different ways (with digits, words, or expanded form), and can compare two numbers to say which one is greater or less than the other.

Associated Below Grade-Level Standards

3.NBT.A.1 Use place value understanding to round whole numbers to the nearest 10 or 100.

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:

- Base-ten blocks (4 rods and 13 unit cubes)
- Paper, writing instruments (e.g., whiteboard and erasable markers)
- Place value chart with tens and ones only
- Answer options: two tens, four tens

Graphics:

- Place value chart with tens and ones only
- Answer options: two tens, four tens

Well Below Level: Materials List and Graphics

Materials List:

- Place value chart with tens and ones
- Base-ten blocks (rods and unit cubes)
- Paper and writing instruments for writing numerals
- Crayons
- Multiple copies of the coloring graphic (at least 3; more for additional practice)
- Graphic of base-ten blocks showing 83
- Answer option graphics for performance-based task (3 rods, 3 unit cubes)

Graphics:

- Place value chart with tens and ones
- Multiple copies of the coloring graphic (at least 3; more for additional practice)
- Graphic of base-ten blocks showing 83
- Answer option graphics for performance-based task (3 rods, 3 unit cubes)

Approaches Level: Materials List and Graphics

Materials List:

- Base-ten blocks (5 flats that represent 100, 5 rods that represent 10, 5 unit cubes that represent 1)
- Blank place value chart
- Coloring sheet with base-ten blocks (9 hundreds, 9 tens, 9 ones)
- Place value chart with the number 365
- Answer options: 70, 7

Graphics:

- Blank place value chart with hundreds, tens, and ones
- Coloring sheet with base-ten blocks
- Place value chart with the number 365
- Answer options: 70, 7

Meets Level: Materials List and Graphics

Materials List:

- Alligator symbols (“greater than” and “less than” symbols)
- Base-ten blocks (rods and unit cubes)
- Performance-based task graphics for 25 and 73
- Answer options: $25 < 73$, $25 = 73$, $25 > 73$

Graphics:

- Alligator symbols (“greater than” and “less than” symbols)
- Performance-based task graphics for 25 and 73
- Answer options: $25 < 73$, $25 = 73$, $25 > 73$

Exceeds Level: Materials List and Graphics

Materials List:

- Printout of engagement activity, including 8 number cards
- Paired place value charts for comparing multi-digit numbers (4)
- Paper and writing instrument
- Optional: Alligator symbols (greater than/less than symbol)
- Four inequalities with missing symbols: $438 \underline{\hspace{1cm}} 472$; $954 \underline{\hspace{1cm}} 668$; $847 \underline{\hspace{1cm}} 853$; $512 \underline{\hspace{1cm}} 297$
- Answer options: $512 < 297$, $512 = 297$, $512 > 297$

Graphics:

- Printout of engagement activity, including 8 number cards
- Paired place value charts for comparing multi-digit numbers (4)
- Optional: Alligator symbols (greater than/less than symbol)
- Four inequalities with missing symbols: $438 \underline{\hspace{1cm}} 472$; $954 \underline{\hspace{1cm}} 668$; $847 \underline{\hspace{1cm}} 853$; $512 \underline{\hspace{1cm}} 297$
- Answer options: $512 < 297$, $512 = 297$, $512 > 297$

Academic Vocabulary Used in This Testlet

compare. To determine whether a number is smaller, greater, or equal to another number

digit. A single number used to represent a value

two-digit number/three-digit number/multi-digit number. Numbers that have two/three/multiple digits

equal to (=). One number has the same value as another number

greater than (>). One number is bigger than another number

less than (<). One number is smaller than another number

place value. The value of each digit in a number

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 *The Value of a Number* 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 base-ten blocks (rods and unit cubes). Use sticky yarn or sorting containers for the place value chart. 	<ul style="list-style-type: none"> Use sticky yarn or sorting containers for the place value chart. Answer options: Use base-ten blocks (3 rods and 7 unit cubes).
Well Below	<ul style="list-style-type: none"> Use sticky yarn or sorting containers for the place value chart. For numbers, use base-ten blocks (rods and unit cubes). Coloring sheet (or, have the student select the correct number of base-ten blocks if coloring is difficult). 	<ul style="list-style-type: none"> For the model of 26, use base-ten blocks (2 rods and 6 unit cubes). Answer options: 2 unit cubes, 2 rods
Approaches	<ul style="list-style-type: none"> Use sticky yarn or sorting containers for the place value chart. Use base-ten blocks (flats, rods, and unit cubes). Coloring sheet (or, have the student select the correct number of base-ten blocks if coloring is difficult). Provide numbers 70 and 7 in base-ten blocks or another format that is familiar to the student. 	<ul style="list-style-type: none"> Use base-ten blocks to model the number 576. Answer options: Provide numbers in a format that is familiar to the student.
Meets	<ul style="list-style-type: none"> For greater than and less than alligator symbols, use math manipulatives. If needed, add texture to the manipulatives. Use rods and unit cubes for numbers to be compared. Place one textured symbol (<, =, or >) between base-ten blocks for 25 and 73 for each answer option. 	<ul style="list-style-type: none"> Use base-ten blocks to model the numbers 29 and 34. Place one textured symbol (<, =, or >) between base-ten blocks for 29 and 34 for each answer option.
Exceeds	<ul style="list-style-type: none"> Provide numbers, symbols, equations, and inequalities in a format that is familiar to the student. Enlarge place value chart if base-ten blocks are used. Use sticky yarn or sorting containers for the place value chart. 	<ul style="list-style-type: none"> Provide numbers and symbols in a format that is most familiar to the student. If using base-ten blocks, place one textured symbol (<, =, or >) between 154 and 136 for each answer option.

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:

- Place value charts
- Mathematics symbols (+, <, >, =)

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

Physical Activity

The student may benefit from incorporating movement into learning activities. Optional activities that may help the student learn to identify or compare multi-digit whole numbers include the following:

- Have the student use arms (outstretched, closed, or parallel) to show greater than or less than. Place multi-digit number pairs in the room and ask the student to use their arms to show the correct symbol.
- Place base-ten blocks in a bag. Have the student select one, two, or three objects from the bag and write a number to represent the set of base-ten blocks.
- Have the student use symbols for greater than, less than, and equals to compare numbers in real-world contexts. For example:
 - Measure the length of two ribbons and write an equation or inequality.
 - Count the number of objects in two containers and write an equation or inequality.
 - Count the number of students in two groups or classrooms and write an equation or inequality.

The student may benefit from exploring materials (pictures, objects) 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 “tens” and “ones,” while a student at the Exceeds level might use terms like “digit” and “expanded form.” 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