



HSA-Alt Teacher Resource Guide—Grade 8 Mathematics Classroom Embedded Assessment

The HSA-Alt Classroom Embedded Assessment (CEA) is a non-mandatory assessment option available to HSA-Alt-identified students. The CEA is designed for students who have an established communication system. Although non-responsive students are allowed to take the assessment, 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 CEA offers a model of standards-based instruction and supports, leading to progress toward year-end targets for learning found in the [HSA-Alt Range PLDs](#). Each CEA testlet is aligned to a single standard and features scripted instructional activities and assessment items at five performance levels in prerequisite, well-below, approaching, meets, and exceeds level of performance for students.

CEA testlets include teaching activities and performance tasks, which are available to download in the General Resources section in TIDE. It is recommended that teachers download the testlets and read them with the accompanying Teacher Resource Guides.

As a classroom assessment, the CEA offers greater flexibility than a summative assessment. The CEA may be individualized in the following ways to meet student needs:

- Teachers may select the most appropriate performance level for administration of each CEA for each student. Teachers can administer one or more levels for each session based on the student’s instructional level.
- Teachers have up to five opportunities to administer each subject area CEA during the testing window (October 3, 2022–July 21, 2023). The complexity level of each administration may be the same or higher than the previous administration.
- It is recommended that teachers provide the same accommodations on the CEA as are utilized during classroom instruction. The scripted language and materials in the CEA may be modified to support student comprehension.
- For some students, an individually administered assessment may not be necessary. Teachers may administer the CEA to these students in small groups using PDF testlets, which include teaching activities and performance task items. PDF testlets are available at www.hitide.org.

Table of Contents

HSA-Alt Teacher Resource Guide—Grade 8 Mathematics Classroom Embedded Assessment	1
Selected Hawaii Common Core Standard and CEA Targets.....	3
Performance Level Materials and Supports.....	3
<i>Prerequisite Level: Materials List</i>	3
<i>Well Below Level: Materials List</i>	4
<i>Approaches Level: Materials List</i>	4
<i>Meets Level: Materials List</i>	4
<i>Exceeds Level: Materials List</i>	4
Academic Vocabulary Used in This Testlet	4
Standard Core Concept	5
Associated Below Grade-Level Standards.....	5
Accommodating Individual Student Needs on the CEA.....	5
Strategies	6
Resources	7

Selected Hawaii Common Core Standard and CEA Targets

Common Core State Standards				
CCSS 8.G.A.5 Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.				
Essence Statement				
Recognize that the sum of the angles in triangles is 180° and that vertical angles are congruent.				
Skill Levels				
Prerequisite Skill	Well Below PLD ¹	Approaches PLD	Meets PLD	Exceeds PLD
Identify 45-, 90-, and 180-degree angles.	Identify if an angle pair is complementary or supplementary. Suggested scaffold: provide definition of complementary or supplementary or use the language square corner or line.	Given adjacent angles that are complementary and one of the angle measures, find the measure of the missing angle. Prioritized focus: angle measure multiples of 5 or 10 degrees.	Recognize that the sum of the angles in triangles is 180° . Find the measure of an angle in a linear pair, given one of the angle measures. Find the measure of a vertical angle when provided with the measure of the angle opposite. Prioritized focus: (for linear angle pairs) angle measure multiples of 5 or 10 degrees.	Find the missing angle in a triangle, given the two other angle measures. Prioritized focus: angle measure multiples of 10.

1. PLD: Performance Level Descriptor

Performance Level Materials and Supports

All graphics and printouts in the Materials Lists below are available to download as PDF posters from the Hawaii TIDE site (<https://www.hitide.org>) in the General Resources > Download Forms section.

Prerequisite Level: Materials List

Materials List:

- Pencil and paper or other marking tools
- Book (for demonstration of a ninety-degree angle)
- Two round, flat (non-basket) coffee filters
- Geometric shape manipulatives (shape tiles or cut-outs)
- Printout of 3 angles for performance-based task
- Optional: tablet

Well Below Level: Materials List

Materials List:

- Pencil and paper
- Calculator
- Graphic of angle pairs with the following measures: a 70- and 20-degree angle pair, a 50- and 40-degree angle pair, and a 30- and 20-degree angle pair
- Performance-based task graphic with two angle pairs: a 40- and 20-degree angle pair, and an 80- and 10-degree angle pair
- Optional: tablet

Approaches Level: Materials List

Materials List:

- Pencil and paper
- A piece of colored cardstock or book to identify a 90-degree angle
- Cut-outs of seven angles with angle measures clearly labeled: 10-, 20-, 30-, 50-, 60-, 70-, and 80-degree angles
- Cut-out of a simplified protractor
- Performance-based task graphic
- Calculator

Meets Level: Materials List

Materials List:

- Pencil and paper
- Graphic of a simplified protractor
- Calculator
- Graphic of Triangle A
- Graphic of Triangle B
- Graphic of Triangle C
- Performance-based task graphic

Exceeds Level: Materials List

Materials List:

- Pencil and paper
- Cut-out of simplified protractor with increments of 10
- Calculator
- Printout of Triangle ABC
- Print-out of two triangles with missing angles
- Optional: linear angle pair graphic for enrichment activity
- Performance-based task graphic

Academic Vocabulary Used in This Testlet

angle. The amount of turn between two lines around their common point (the vertex)

arc (of a protractor). The curved top edge of a protractor that forms a half circle

baseline (of a protractor). The horizontal bottom edge of a protractor

complementary angle pair. Two angles that add up to 90 degrees

equilateral triangle. A triangle with all three sides of equal length

linear angle pair. A pair of angles that are adjacent (next to) each other. Formed when 2 lines intersect with each other

ninety-degree angle. An angle with a measure of 90 degrees, also known as a right angle

one hundred eighty-degree angle. An angle with a measure of 180 degrees, also known as a straight angle

protractor. A tool used to measure and draw angles

strategy. A plan to reach a goal

*See strategies for finding missing angles in triangles in the Strategies section below

sum. The result of adding two or more numbers

triangle. A 3-sided flat shape with straight sides

vertex. A point where two or more line segments meet; a corner

Standard Core Concept

Student will know all three angles in any triangle add up to 180 degrees and be able to identify vertical angles in a graphic and know that they have the same measure.

Associated Below Grade-Level Standards

7.G.B.5 Work with angle pairs and angle pair relationships. Recognize complementary and supplementary angles.

Accommodating Individual Student Needs on the CEA

It is highly recommended that students receive the same accommodations on the CEA as they receive during classroom instruction.

Manipulatives

Manipulatives may aid student understanding, engagement, and ability to focus on the concepts in this testlet. Objects such as shape tiles, craft sticks glued together to form angles, angles and triangles made of heavy cardstock, or other objects with angles found in the classroom can be used to demonstrate this standard. An open book lying flat on a table with one page open at a 30-degree angle may be used to represent a linear angle. Encourage the student to explore and react to different kinds of angles using materials of interest. Manipulatives may also be used to represent answer options

Physical Action

Encourage the student to interact with instruction and make choices using a preferred mode of communication. If the student is not able to interact with the instruction verbally or physically (e.g., manipulating or pointing to objects or graphics), consider other ways that the student could indicate a choice. Always make sure to provide enough wait time for the student to respond.

Picture Symbols, Sign Language, Augmentative and Alternative Communication (AAC) Devices

Ensure that the student is able to use a preferred mode of communication (verbalizing, pointing, gesturing, selecting picture symbols, using sign language or an AAC device) when interacting with the testlet. Pre-teach key vocabulary using the following strategies:

1. Introduce key vocabulary with associated graphics (illustrations or picture symbols).
2. Post the graphics in a place that is convenient for student viewing.
3. Repeat the vocabulary on a regular basis, using verbal cues.
4. Provide the student with opportunities to practice using the vocabulary.

Tactile Materials, Including Tactile Graphics and Tactilely Enhanced Objects

Tactile materials may be used to represent geometry concepts for students with visual impairments or other students who use them during instruction. Angles and triangles can be represented with embossed graphics, standard graphics with added texture, textures added to manipulatives such as craft sticks, and sticky yarn that can be molded into various angles. Texture may be added to graphics in the stimulus, items, and answer options.

Strategies

1. Add and Count Up (or Count On)

Find the two angles that are measured.

Add the angles.

Circle the sum.

Start at the sum and count by tens to 180.

You can use a stamp or a tally mark for each ten when counting up.

Multiply the tally marks by 10. This is the measure of the missing angle.

2. Use a number line.

Use a number line that shows tens (0–180).

Find the number for the largest given angle on the number line.

Add the other given angle on the number line by counting by tens and making “swoops” to the right.

Count up by tens on the number line to find the missing angle.

3. Find the missing addend.

Use a calculator to add the two given angles.

Write a number sentence: [sum of the given angles] + _____ = 180

4. Subtract each given angle from 180.

$180 - [\text{one angle measure}] = \underline{\quad}$; $180 - [\text{the other angle measure}] = \underline{\quad}$.

Add the differences: $\underline{\quad} + \underline{\quad} = \underline{\quad}$

Solve $180 - [\text{the sum of the differences}] = \text{the missing angle}$.

Resources

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-2022-2023/hsa-alt-participation-guidelines-2022-2023>

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

Universal design for Learning Instructional Units, NCSC's ELA and mathematics instructional units for students with significant cognitive disabilities.

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