Alternate Eligible Content: Essentialization Samples

Math

Pennsylvania Training and Technical Assistance Network

Questions during the webinar

For Content :

AlternateAssessment@pattan.net

- Reference : 12/16/2015
- Questions and answers will be posted as an FAQ with the recorded webinar following this presentation

For Tech Support:

support@pattan.net

Learner Outcomes

Participants will:

- Identify the steps of essentialization to make the content accessible
- Identify examples of statements and ‘look fors’ that demonstrate alignment to the alternate eligible content at various levels of complexity within math content

Alternate Eligible Content

What it is

- Academic content appropriate for students who are eligible for PASA (Pennsylvania Alternate System of Assessment)
- Aligns to grade-level PA Core Standards
- Modifies targets relative to the PSSA Eligible Content by reducing depth and breadth

What it is

- Number of pieces of Alternate Eligible Content varies by grade and PA Core Standard
- NOT a one-to-one match for every PA Core Standard and/or every piece of PSSA Eligible Content
- Alternate Eligible Content represents the **highest** level of achievement for students taking PASA
- Content can be adjusted through essentialization to ensure appropriateness for the variety of students eligible for PASA

Who it is for: Eligibility and Content PASA vs PSSA

PASA

- **Alternate** Eligible Content
- Students with **Significant Cognitive Disabilities**
  Eligible for PASA - Determined by the IEP team

PSSA
Keystone Exams

- **PSSA/Keystone** Eligible Content
- **All Students** including students with disabilities **NOT eligible for the PASA**

Today's Focus

- Examining essentialization samples in Math

Alternate Eligible Content

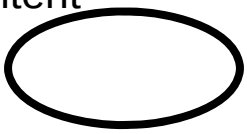
Essentialization:
The Process

Essentialization

- Code
- Determine intent
- Determine whether or not to reduce complexity further
- Generate meaningful and attainable targets

Essentialization Coding

- Select a piece of Alternate Eligible Content
- Refer to the PA ELA/Math glossaries to understand terms and intent



Circle WHAT students need to **KNOW**

Box what they need to **DO** with the 'what'

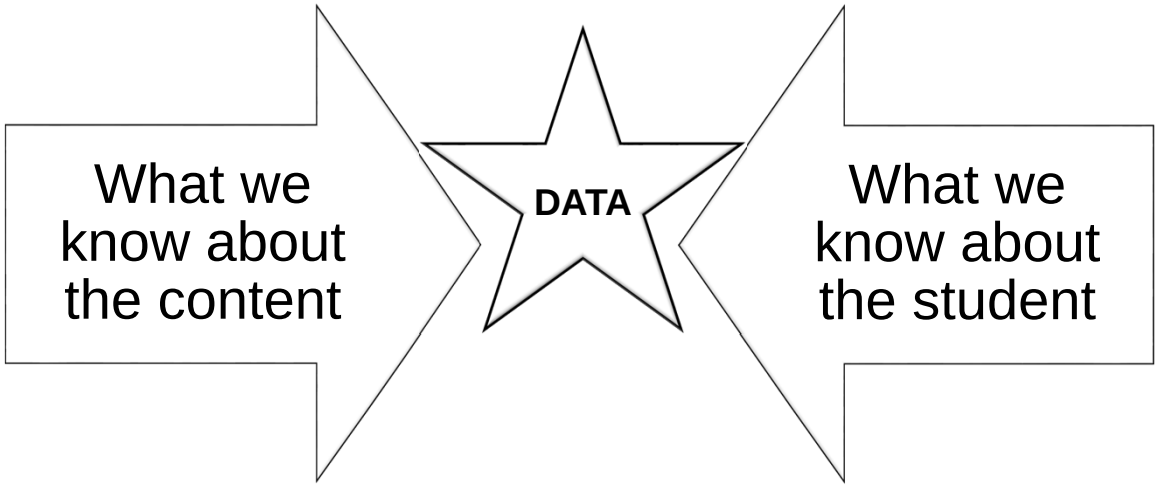
Underline the **CONTEXT** of what they need to know and do

Essentialization: Determining the Intent

- How are the alternate eligible content, eligible content, assessment anchor and standard connected?
- What is the common thread?
- What is the conceptual learning?
- When considering different scenarios, does it remain aligned?
- Is it broad enough to meet the needs of the range of students eligible for PASA?

Determining whether or not to essentialize

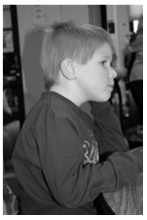
Essentialization: Making the Decision



Essentialization: Generating Meaningful Targets

Instructional targets should be written at different levels of complexity to reflect:

- Challenge
- Meaningfulness
- Alignment
- An **INCREASE** of performance from a student's **CURRENT** level of performance



Essentialization: Generating Meaningful Targets

Targets that reflect Alternate Eligible Content:

- as written, at its fullest complexity
- at a mid-level of complexity, yet still aligned to the intent
- at the least complex level, yet still aligned to the intent

- There is a continuum of targets that can be written

Alternate Eligible Content

Essentialization
Math Considerations

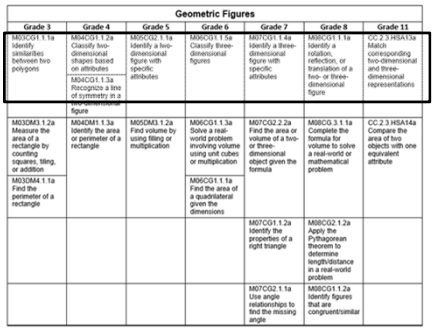
Essentialization: Math Considerations

- Use of universal design to demonstrate understanding of mathematical concepts
- Consider pairing concrete objects and representation with digits to teach and have students demonstrate understanding
- Reduce vocabulary to reflect language familiar to the student
- Utilize PSSA Math Vocabulary Glossary as needed
- Refer to the across the grades view

Alternate Eligible Content

Essentialization
Math Samples
Grades 5, 7, 8, 11

Math Across the Grades
Geometry - Grade 5



Geometric Figures						
Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
M03CG1.1.1a Identify similarities between two polygons	M04CG1.1.2a Classify two-dimensional shapes based on attributes M04CG1.1.3a Recognize a line of symmetry in a two-dimensional figure	M05CG2.1.1a Identify a two-dimensional figure with specific attributes	M06CG1.1.5a Classify three-dimensional figures	M07CG1.1.4a Identify a three-dimensional figure with specific attributes	M08CG1.1.1a Identify a rotation, reflection, or translation of a two- or three-dimensional figure	CC.2.3.HSA13a Match corresponding two-dimensional and three-dimensional representations
M03DM3.1.2a Measure the area of a rectangle by counting squares, tiling, or addition M03DM4.1.1a Find the perimeter of a rectangle	M04DM1.1.3a Identify the area or perimeter of a rectangle	M05DM3.1.2a Find volume by using filling or multiplication	M06CG1.1.3a Solve a real-world problem involving volume using unit cubes or multiplication M06CG1.1.1a Find the area of a quadrilateral given the dimensions	M07CG2.2.2a Find the area or volume of a two- or three-dimensional object given the formula	M08CG.3.1.1a Complete the formula for volume to solve a real-world or mathematical problem	CC.2.3.HSA14a Compare the area of two objects with one equivalent attribute
				M07CG1.1.2a Identify the properties of a right triangle	M08CG2.1.2a Apply the Pythagorean theorem to determine length/distance in a real-world problem	
				M07CG2.1.1a Use angle relationships to find the missing angle	M08CG1.1.2a Identify figures that are congruent/similar	

Geometric Figures						
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Vocabulary/Language Considerations Across the Grades

- Polygon
- Attribute
- Two dimensional figure
- Three dimensional figure
- Rotation
- Reflection
- Translation
- Corresponding

Essentialization: Grade 5 Math

M05CG2.1.1a Identify a two-dimensional figure with specific attributes

Essentialization: Grade 5 Math

Step 1: Code

M05CG2.1.1a Identify a two-dimensional figure with specific attributes

Essentialization: Grade 5 Math

Step 2: Determine the intent

PA Reporting Category: M05.C-G Geometry

PA Core Standards:
CC.2.3.5.A.2 Classify two-dimensional figures into categories based on an understanding of their properties.

Assessment Anchor
M05.C-G.2 Classify two-dimensional figures into categories based on their properties.

DESCRIPTOR	ELIGIBLE CONTENT	Alternate Eligible Content Code	ALTERNATE ELIGIBLE CONTENT
M05.C-G.2.1 **Use basic properties to classify two-dimensional figures.**	**M05.C-G.2.1.1** **Classify two-dimensional figures in a hierarchy based on properties. Example 1: All polygons have at least three sides, and pentagons are polygons, so all pentagons have at least three sides. Example 2: A rectangle is a parallelogram, which is a quadrilateral, which is a polygon; so, a rectangle can be classified as a parallelogram, as a quadrilateral, and as a polygon.**	**M05CG2.1.1a**	**Identify a two-dimensional figure with specific attributes**

Essentialization: Grade 5 Math

Step 2: Determine the intent

M05CG2.1.1a Identify a two-dimensional figure with specific attributes

To recognize/name a two-dimensional figure?

OR

To be able to use basic attributes to identify two-dimensional figures?

Essentialization: Grade 5 Math

Step 3: Whether or not to essentialize (reduce complexity further)

M05CG2.1.1a Identify a two-dimensional figure with specific attributes

Questions about student data:

- What is the input of receptive language and modes of expressive language?
- Do they demonstrate imitation skills?
- What is the familiar, frequent vocabulary of the student?
- Do they interact with two-dimensional figures?
- Which two-dimensional figures?
- Can they recognize two-dimensional figures when given a picture?
- Can they draw two-dimensional figures when given a verbal command?

M05CG2.1.1a Identify a two-dimensional figure with specific attributes

Essentialization: Grade 5 Math

Step 4: Determine targets based on student's instructional level

Most Complex

Identify a two-dimensional figure with specific attributes – compare multiple attributes, some attributes the same.

Middle Complexity

Identify a two-dimensional figure with specific attributes – by comparison of dissimilar choices

Least Complex

Identify a two-dimensional figure with specific attributes – basic attribute recognition.

M05CG2.1.1a Identify a two-dimensional figure with specific attributes

Essentialization: Grade 5 Math

Most Complex

Identify a two-dimensional figure with specific attributes – compare multiple attributes, some attributes the same.

Sample student data that might lead to determining the target:

- Identifies simple two-dimensional figures
- Counts to 4 with one-to-one correspondence
- Demonstrates understanding of concepts of same and different
- Recognizes a line of symmetry in a two-dimensional figure
- Sorts two-dimensional figures based on similarities

Essentialization: Grade 5 Math

M05CG2.1.1a Identify a two-dimensional figure with specific attributes

Most Complex

Identify a two-dimensional figure with specific attributes – compare multiple attributes, some attributes the same.

Instructional ideas:

- Teach specific attributes of two-dimensional figures such as sides and/or angles (points where lines connect)
- Use two-dimensional figures that are familiar to/mastered by the student
- Teach the student to draw the two-dimensional figure with a verbal cue after they have demonstrated mastery of identifying it with the visual present. (model first, cue in to the attributes)
- Utilize instructional strategies such as errorless learning, shaping and error correction to engage students and scaffold understanding.

Essentialization: Grade 5 Math

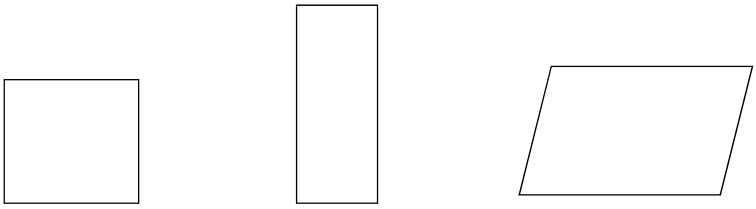
M05CG2.1.1a Identify a two-dimensional figure with specific attributes

Most Complex

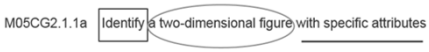
Math example – Most Complex

Identify a two-dimensional figure with specific attributes – compare multiple attributes, some attributes the same.

Which of these has four sides that are equal or exactly the same?



Essentialization: Grade 5 Math



Middle complexity

Identify a two-dimensional figure with specific attributes – by comparison of dissimilar choice

Sample student data that might lead to determining the target:

- Identifies simple two-dimensional figures when the figure is present
- Matches two-dimensional figures
- Sorts two-dimensional figures with distinct differences
- Demonstrates understanding of concept of different when differences are very distinct

Essentialization: Grade 5 Math

Middle Complex

Identify a two-dimensional figure with specific attributes – by comparison of dissimilar choice

Instructional ideas:

- Teach specific two-dimensional figure attributes such as sides
- Use two-dimensional figures that are familiar/mastered by the student
- Have the student trace a two-dimensional figure with a verbal cue after they have demonstrated mastery of identifying it with the visual present. (model first, cue in to the attributes)
- Have students overlay/match figures that are similar
- Create a T-chart and have students sort figures that have similar/dissimilar attributes
- Utilize instructional strategies such as errorless learning, shaping and error correction to engage students and scaffold understanding.

Essentialization: Grade 5 Math

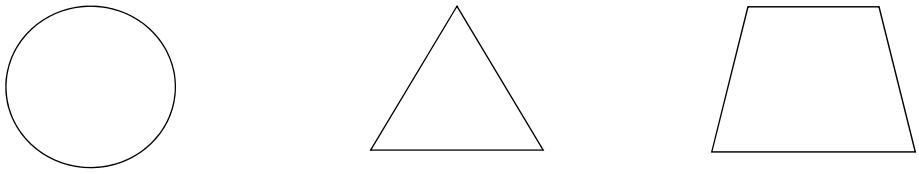
M05CG2.1.1a Identify a two-dimensional figure with specific attributes

Middle Complex

Math example – Middle Complexity

Identify a two-dimensional figure with specific attributes – by comparison of dissimilar choice

Which of these has four sides?



Essentialization: Grade 5 Math

M05CG2.1.1a Identify a two-dimensional figure with specific attributes

Least complex

Identify a two-dimensional figure with specific attributes – basic attribute recognition

Sample student data that might lead to determining the target:

- Matches simple two-dimensional shapes with visual cue (template) and other conditions such a color
- Imitates matching two-dimensional shapes
- Emerging imitation skills

Essentialization: Grade 5 Math

E03AC2.1.1a Identify who is telling the story

Least Complex

Identify a two-dimensional figure with specific attributes – basic attribute recognition

Instructional ideas:

- Explicitly teach specific two-dimensional figure attributes such as straight/round
- Explicitly teach the vocabulary of the attributes considering core familiar words
- Have the student finger trace with/without support a two-dimensional figure using raised texture to support attention to the attribute is sides, round (model first, cue in to the attributes)
- Have students overlay/match figures that are similar
- Create a physical area to use as students sort two-dimensional shapes (acknowledge attributes)
- Utilize instructional strategies such as errorless learning, shaping and error correction to engage students and scaffold understanding.

Essentialization: Grade 5 Math

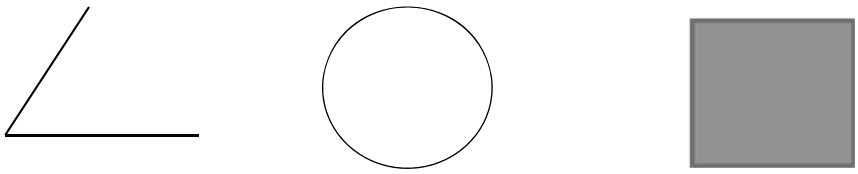
M05CG2.1.1a Identify a two-dimensional figure with specific attributes

Middle Complex

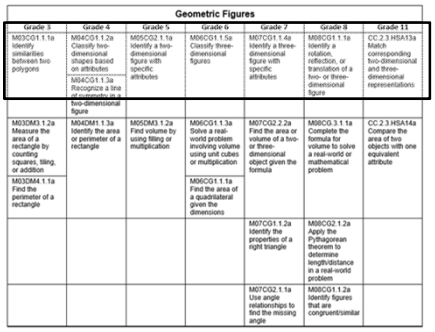
Math example – Least Complex

Identify a two-dimensional figure with specific attributes – basic attribute recognition

Which of these is round?



Math Across the Grades Geometry Grade 7



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Essentialization: Grade 7 Math

M07CG1.1.4a Identify a three-dimensional figure with specific attributes

Essentialization: Grade 7 Math

Step 1: Code

M07CG1.1.4a Identify a three-dimensional figure with specific attributes

Essentialization: Grade 7 Math

Step 2: Determine the intent

PA Reporting Category: M07.C-G Geometry

PA Core Standards:
CC.2.3.7.A.2 Visualize and represent geometric figures and describe the relationships between them.

Assessment Anchor
M07.C-G.1 Demonstrate an understanding of geometric figures and their properties.

DESCRIPTOR	ELIGIBLE CONTENT	Alternate Eligible Content Code	DRAFT ALTERNATE ELIGIBLE CONTENT
M07.C-G.1.1 **Describe and apply properties of geometric figures.**	**M07.C-G.1.1.1** **Solve problems involving scale drawings of geometric figures, including finding length and area.**	**M07CG1.1.1a**	**Solve a 1-step real-world problem related to scaling**
	M07.C-G.1.1.2 **Identify or describe the properties of all types of triangles based on angle and side measures.**	**M07CG1.1.2a**	**Identify the properties of a right triangle**
	M07.C-G.1.1.3 **Use and apply the triangle inequality theorem.**		
	M07.C-G.1.1.4 **Describe the two-dimensional figures that result from slicing three-dimensional figures.** **Example: Describe plane sections of right rectangular prisms and right rectangular pyramids.**	**M07CG1.1.4a**	**Identify a three-dimensional figure with specific attributes**

Essentialization: Grade 7 Math

Step 2: Determine the intent

M07CG1.1.4a Identify a three-dimensional figure with specific attributes

Is it recognizing/naming a three-dimensional figure?

OR

Is it using specific characteristics to identify three-dimensional figures?

Essentialization: Grade 7 Math

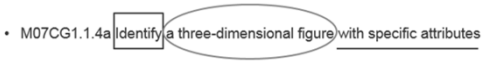
Step 3: Whether or not to essentialize (reduce complexity further)

M07CG1.1.4a Identify a three-dimensional figure with specific attributes

Questions about student data:

- What is the input of receptive language and modes of expressive language?
- Do they demonstrate imitation skills?
- What is the familiar, frequent vocabulary of the student?
- Do they interact with three-dimensional figures?
- Which three-dimensional figures?
- Can they recognize three-dimensional figures when given a picture?
- Can they identify a three-dimensional figure in real life?

Essentialization: Grade 7 Math



Step 4: Determine targets based on student's instructional level

Most Complex

Identify a three-dimensional figure with specific attributes – compare multiple attributes, some attributes the same.

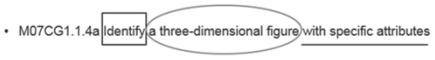
Middle Complexity

Identify a three-dimensional figure with specific attributes – by comparison of dissimilar choices

Least Complex

Identify a three-dimensional figure with specific attributes – basic attribute recognition.

Essentialization: Grade 7 Math



Most Complex

Identify a three-dimensional figure with specific attributes – compare multiple attributes, some attributes the same.

Sample student data that might lead to determining the target:

- Identifies common three-dimensional figures when the figure is present
- Counts to 6 with one-to-one correspondence
- Identifies two-dimensional figures by specific attributes
- Demonstrates understanding of concepts of same and different

Essentialization: Grade 7 Math

• M07CG1.1.4a identify a three-dimensional figure with specific attributes

Most Complex

Identify a three-dimensional figure with specific attributes – compare multiple attributes, some attributes the same.

Instructional ideas:

- Teach specific three-dimensional figure attributes such as surface and edges. (where surfaces come together)
- Use three-dimensional figures that are familiar/mastered by the student
- Build understanding by using the knowledge of two-dimensional figures to show common attributes (build on background knowledge)
- Utilize instructional strategies such as errorless learning, shaping and error correction to engage students and scaffold understanding.

Essentialization: Grade 7 Math

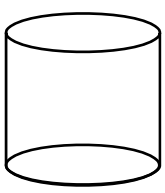
• M07CG1.1.4a identify a three-dimensional figure with specific attributes

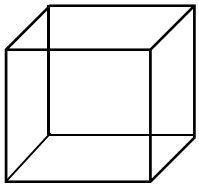
Most Complex

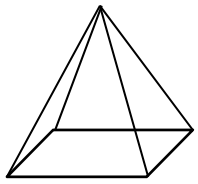
Math example – Most Complex

Identify a three-dimensional figure with specific attributes – compare multiple attributes, some attributes the same.

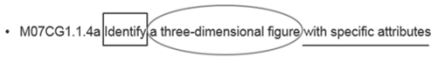
Which of these has only square surfaces or
Which one is made up of squares?







Essentialization: Grade 7 Math



Middle Complexity

Identify a three-dimensional figure with specific attributes – by comparison of dissimilar choices

Sample student data that might lead to determining the target:

- Identifies common three-dimensional figures when the figure is present
- Counts to 4 with one-to one-correspondence
- Demonstrates understanding of concepts of same and different
- Matches to same
- Identifies common familiar two-dimensional figures (shapes)

Essentialization: Grade 7 Math

Middle Complexity

Identify a three-dimensional figure with specific attributes – by comparison of dissimilar choices

Instructional ideas:

- Teach specific three-dimensional figure attributes such surfaces (flat sides) and edges (sides that come together)
- Use three-dimensional figures that are familiar to the student
- Have students match figures that are similar
- Build on background knowledge of known two-dimensional objects
- Have students sort figures that have similar/dissimilar attributes
- Utilize instructional strategies such as errorless learning, shaping and error correction to engage students and scaffold understanding.

Essentialization: Grade 7 Math

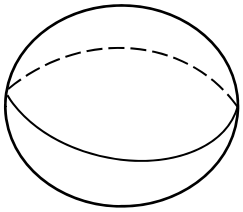
• M07CG1.1.4a Identify a three-dimensional figure with specific attributes

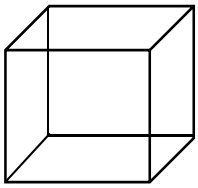
Middle Complexity

Math example – Middle Complexity

Identify a three-dimensional figure with specific attributes – by comparison of dissimilar choices

Which of these has (flat) sides that meet at points or
Which of these has (flat) sides that come together?





Essentialization: Grade 7 Math

• M07CG1.1.4a Identify a three-dimensional figure with specific attributes

Least Complex

Identify a three-dimensional figure with specific attributes – basic attribute recognition.

Sample student data that might lead to determining the target:

- Matches one common three-dimensional shape with visual cue (template) and other conditions such a color
- Identifies one two-dimensional figure with mastery
- Imitates matching three-dimensional shapes
- Imitates matching two-dimensional figures
- Emerging imitation skills

Essentialization: Grade 7 Math

• M07CG1.1.4a Identify a three-dimensional figure with specific attributes

Least Complex

Least Complex

Identify a three-dimensional figure with specific attributes – basic attribute recognition.

Instructional ideas:

- Explicitly teach specific three-dimensional figure attributes such as sides/round
- Explicitly teach the vocabulary of the attributes considering core, familiar words
- Use three-dimensional figures/real life objects that are familiar to the student
- Create a physical area to use as students sort three-dimensional shapes (acknowledge attributes)
- Build from background knowledge of two-dimensional figures
- Utilize instructional strategies such as errorless learning, shaping and error correction to engage students and scaffold understanding.

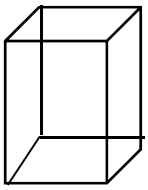
Essentialization: Grade 7 Math

• M07CG1.1.4a Identify a three-dimensional figure with specific attributes

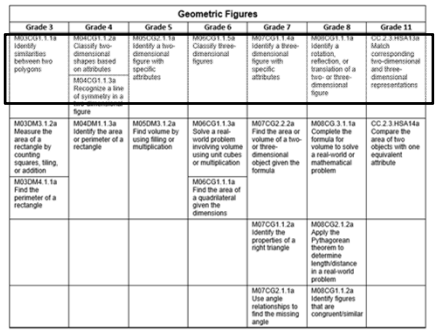
Least Complexity

Math example – Least Complex

Identify a three-dimensional figure with specific attributes – basic attribute recognition.

Which object is this shape,  ?

Math Across the Grades- Geometry Grade 8



Geometric Figures						
Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
M03CG1.1.1a Identify similarities between two polygons	M04CG1.1.2a Classify two-dimensional shapes based on attributes M04CG1.1.3a Recognize a line of symmetry in a two-dimensional figure	M05CG2.1.1a Identify a two-dimensional figure with specific attributes	M06CG1.1.5a Classify three-dimensional figures	M07CG1.1.4a Identify a three-dimensional figure with specific attributes	M08CG1.1.1a Identify a rotation, reflection, or translation of a two- or three-dimensional figure	CC.2.3.HSA13a Match corresponding two-dimensional and three-dimensional representations
M03DM3.1.2a Measure the area of a rectangle by counting squares, tiling, or addition M03DM4.1.1a Find the perimeter of a rectangle	M04DM1.1.3a Identify the area or perimeter of a rectangle	M05DM3.1.2a Find volume by using filling or multiplication	M06CG1.1.3a Solve a real-world problem involving volume using unit cubes or multiplication M06CG1.1.1a Find the area of a quadrilateral given the dimensions	M07CG2.2.2a Find the area or volume of a two- or three-dimensional object given the formula	M08CG.3.1.1a Complete the formula for volume to solve a real-world or mathematical problem	CC.2.3.HSA14a Compare the area of two objects with one equivalent attribute
				M07CG1.1.2a Identify the properties of a right triangle	M08CG2.1.2a Apply the Pythagorean theorem to determine length/distance in a real-world problem	
				M07CG2.1.1a Use angle relationships to find the missing angle	M08CG1.1.2a Identify figures that are congruent/similar	

Geometric Figures						
Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
M03CG1.1.1a Identify similarities between two polygons	M04CG1.1.2a Classify two-dimensional shapes based on attributes M04CG1.1.3a Recognize a line of symmetry in a two-dimensional figure	M05CG2.1.1a Identify a two-dimensional figure with specific attributes	M06CG1.1.5a Classify three-dimensional figures	M07CG1.1.4a Identify a three-dimensional figure with specific attributes	M08CG1.1.1a Identify a rotation, reflection, or translation of a two- or three-dimensional figure	CC.2.3.HSA13a Match corresponding two-dimensional and three-dimensional representations

Essentialization: Grade 8 Math

M08CG1.1.1a Identify a rotation, reflection, or translation of a two- or three-dimensional figure

Essentialization: Grade 8 Math

M08CG1.1.1a Identify a rotation, reflection, or translation of a two- or three-dimensional figure

Essentialization: Grade 8 Math

Step 2: Determine the intent

PA Reporting Category: M08.C-G Geometry

PA Core Standards:
CC.2.3.8.A.2 Understand and apply congruence, similarity, and geometric transformations using various tools.

Assessment Anchor
M08.C-G.1 Demonstrate an understanding of geometric transformations.

DESCRIPTOR	ELIGIBLE CONTENT	Alternate Eligible Content Code	ALTERNATE ELIGIBLE CONTENT
M08.C-G.1.1 Apply properties of geometric transformations to verify congruence or similarity.	**M08.C-G.1.1.1 Identify and apply properties of rotations, reflections, and translations. Example: Angle measures are preserved in rotations, reflections, and translations.**	M08CG1.1.1a	Identify a rotation, reflection, or translation of a two- or three-dimensional figure
	M08.C-G.1.1.2 Given two congruent figures, describe a sequence of transformations that exhibits the congruence between them.	**M08CG1.1.2a**	**Identify figures that are congruent/similar**
	M08.C-G.1.1.3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.		
	M08.C-G.1.1.4 Given two similar two-dimensional figures, describe a sequence of transformations that exhibits the similarity between them.		

Essentialization: Grade 8 Math

Step 2: Determine the intent

M08CG1.1.1a Identify a rotation, reflection, or translation of a two- or three-dimensional figure

To recognize and name objects regardless of position

OR

To be able to manipulate various shapes and objects and recognize they are still the original object

Essentialization: Grade 8 Math

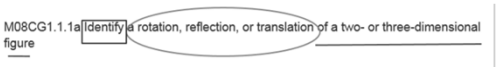
Step 3 Whether or not to essentialize (reduce complexity further)

M08CG1.1.1a Identify a rotation, reflection, or translation of a two- or three-dimensional figure

Questions about student data:

- What is the input of receptive language and modes of expressive language?
- Do they demonstrate imitation skills?
- What is the familiar frequent vocabulary of the student?
- Do they interact with two and/or three dimensional figures?
- What two and/or three dimensional figures?
- Can they recognize them when given a picture?

Essentialization: Grade 8 Math



Step 4: Determine targets based on student's instructional level

Most Complex

Identify a rotation, reflection, or translation of a figure – compare transformations of the same shape.

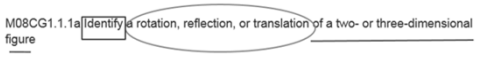
Middle Complexity

Identify a rotation, reflection, or translation of a figure – by comparison of dissimilar choices

Least Complex

Identify a translation of a figure – basic recognition.

Essentialization: Grade 8 Math



Most Complex

Identify a rotation, reflection, or translation of a figure – compare transformations of the same shape

Sample student data that might lead to determining the target:

- Identifies common two- and three-dimensional figures when the figure is present and not present
- Demonstrates understanding of concepts of same and different
- Identifies familiar two- and three-dimensional figures specific attributes

Essentialization: Grade 8 Math

M08CG1.1.1a Identify a rotation, reflection, or translation of a two- or three-dimensional figure

Most Complex

Identify a rotation, reflection, or translation of a figure – compare transformations of the same shape

Instructional ideas:

- Teach specific vocabulary of rotation, reflection and translation, having the student manipulative objects or draw to demonstrate understand. Reduce vocabulary to include language familiar and core to the student. (Rotation-turn around; reflection-flip; translation-slide, push, pull) Use multiple trials.
- Use two- and three-dimensional figures that are familiar/mastered by the student
- Utilize instructional strategies such as errorless learning, shaping and error correction to engage students and scaffold understanding.

Essentialization: Grade 8 Math

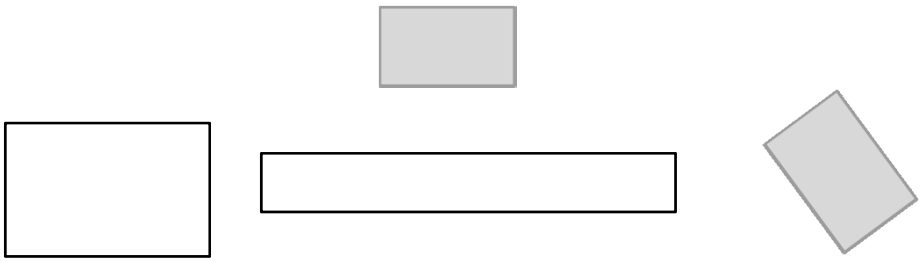
M08CG1.1.1a Identify a rotation, reflection, or translation of a two- or three-dimensional figure

Most Complex

Math example – Most Complex

Identify a rotation, reflection, or translation of a figure – compare transformations of the same shape.

Which of these is a rotation (turn around) of this figure ?



Essentialization: Grade 8 Math

M08CG1.1.1a Identify a rotation, reflection, or translation of a two- or three-dimensional figure

Middle Complexity
Identify a rotation, reflection, or translation of a figure – by comparison of dissimilar choices

Sample student data that might lead to determining the target:

- Identifies common two- and three-dimensional figures when the figure is present
- Demonstrates understanding of concepts of same and different
- Matches to same
- Identifies a two-dimensional figures by specific attributes

Essentialization: Grade 8 Math

M08CG1.1.1a Identify a rotation, reflection, or translation of a two- or three-dimensional figure

Middle Complexity

Instructional ideas:

- Teach specific vocabulary (rotation-turn around, reflection-flip, translation-slide, push, pull) that has been reduced in complexity to common familiar words used by the student.
- Use two- and three- dimensional figures that are familiar/mastered by the student
- Have students match figures that are similar
- Use manipulatives for the students to demonstrate examples of the selected vocabulary (slide, push, flip, turn)
- Utilize instructional strategies such as errorless learning, shaping and error correction to engage students and scaffold understanding.

Essentialization: Grade 8 Math

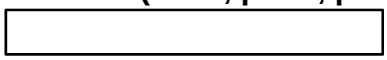
M08CG1.1.1a Identify a rotation, reflection, or translation of a two- or three-dimensional figure

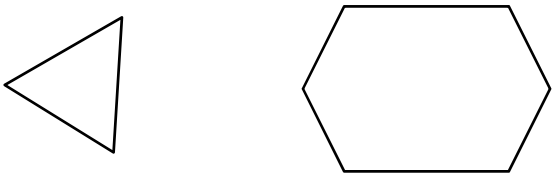
Middle Complexity

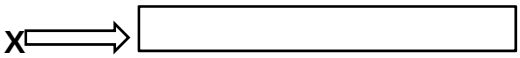
Math example – Middle Complexity

Identify a rotation, reflection, or translation of a figure – by comparison of dissimilar figures

Which of these is a translation (slide, push, pull) of this figure?







OR Show me a slide,(push, pull) of this figure **Present the student with the figure**

Essentialization: Grade 8 Math

M08CG1.1.1a Identify a rotation, reflection, or translation of a two- or three-dimensional figure

Least Complex

Identify a translation of a figure – basic recognition.

Sample student data that might lead to determining the target:

- Matches one common two- or three-dimensional shapes with visual cue (template) and other conditions such a color independently
- Imitates matching two- or three-dimensional shapes
- Emerging imitation skills

Essentialization: Grade 8 Math

M08CG1.1.1a Identify a rotation, reflection, or translation of a two- or three-dimensional figure

Least Complex

Identify a translation of a figure – basic recognition.

Instructional ideas:

- Explicitly teach specific two- and/or three-dimensional figures: use real life objects and manipulatives
- Explicitly teach the vocabulary of translation using familiar core words specific to the student (slide, push, pull)
- Use a figure that is familiar to the student
- Utilize instructional strategies such as errorless learning, shaping and error correction to engage students and scaffold understanding.

Essentialization: Grade 8 Math

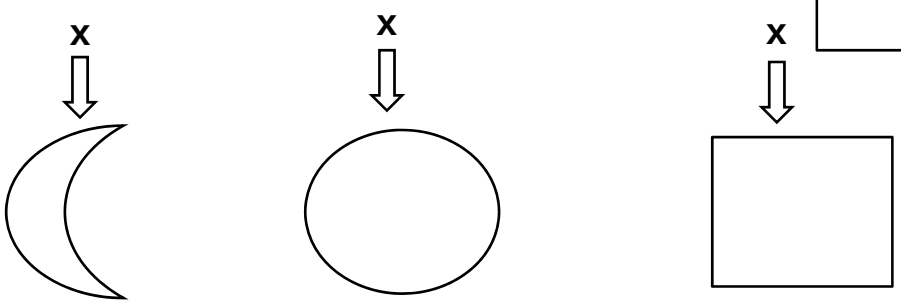
M08CG1.1.1a Identify a rotation, reflection, or translation of a two- or three-dimensional figure

Least Complex

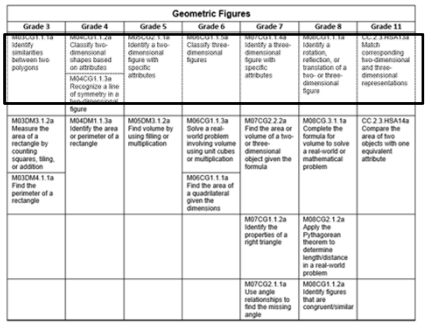
Math example – Least Complex

Identify a translation of a figure – basic recognition.

Which of these shows a slide (push, pull) of  **?**



Math Across the Grades - Geometry Grade 11



Geometric Figures						
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M03DM3.1.2a Measure the area of a rectangle by counting squares, tiling, or addition M03DM4.1.1a Find the perimeter of a rectangle	M04DM1.1.3a Identify the area or perimeter of a rectangle	M05DM3.1.2a Find volume by using filling or multiplication	M06CG1.1.3a Solve a real-world problem involving volume using unit cubes or multiplication M06CG1.1.1a Find the area of a quadrilateral given the dimensions	M07CG2.2.2a Find the area or volume of a two- or three-dimensional object given the formula	M08CG.3.1.1a Complete the formula for volume to solve a real-world or mathematical problem	CC.2.3.HSA14a Compare the area of two objects with one equivalent attribute
				M07CG1.1.2a Identify the properties of a right triangle	M08CG2.1.2a Apply the Pythagorean theorem to determine length/distance in a real-world problem	
				M07CG2.1.1a Use angle relationships to find the missing angle	M08CG1.1.2a Identify figures that are congruent/similar	

Geometric Figures						
Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
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Essentialization: Grade 11 Math

CC.2.3.HSA13a

Match corresponding two-dimensional and three-dimensional representations

Essentialization: Grade11 Math

CC.2.3.HSA13a

Match corresponding two-dimensional and three-dimensional representations

Essentialization: Grade11 Math

Step 2: Determine the intent

PA Core Standards:
CC.2.3.HS.A.11: Apply coordinate geometry to prove simple geometric theorems algebraically.

Alternate Eligible Content Code	ALTERNATE ELIGIBLE CONTENT

PA Core Standards:
CC.2.3.HS.A.12: Explain volume formulas and use them to solve problems.

Alternate Eligible Content Code	ALTERNATE ELIGIBLE CONTENT

PA Core Standards:
CC.2.3.HS.A.13: Analyze relationships between two-dimensional and three dimensional objects.

Alternate Eligible Content Code	ALTERNATE ELIGIBLE CONTENT
CC.2.3.HS.A.13.a	Match corresponding two-dimensional and three-dimensional representations

PA Core Standards:
CC.2.3.HS.A.14: Apply geometric concepts to model and solve real world problems.

Alternate Eligible Content Code	ALTERNATE ELIGIBLE CONTENT
CC.2.3.HS.A.14.a	Compare the area of two objects with one equivalent attribute

Essentialization: Grade 11 Math

Step 2: Determine the intent

CC.2.3.HSA13a

Match corresponding two-dimensional and three-dimensional representations

To know and identify shapes

To be able to connect various shapes and objects in both two and three dimensions

Essentialization: Grade 11 Math

Step 3 Whether or not to essentialize (reduce complexity further)

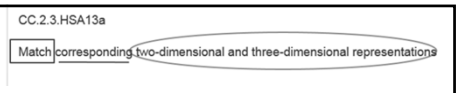
CC.2.3.HSA13a

Match corresponding two-dimensional and three-dimensional representations

Questions about student data:

- What is the input of receptive language and modes of expressive language?
- Do they demonstrate imitation skills?
- What is the familiar frequent vocabulary of the student?
- Do they interact with two- and/or three-dimensional figures?
- What two- and/or three-dimensional figures?
- Can they recognize the figures when given a picture?

Essentialization: Grade 11 Math



Step 4: Determine targets based on student's instructional level

Most Complex

Identify a three-dimensional figure given specific attributes on two-dimensional model – some attributes the same.

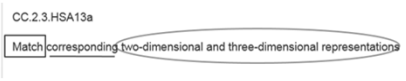
Middle Complexity

Identify a three-dimensional figure given specific attributes on two-dimensional model – comparison of dissimilar choices.

Least Complex

Match a two-dimensional representation to a three-dimensional figure – basic attribute recognition.

Essentialization: Grade 11 Math



Most Complex

Identify a three-dimensional figure given specific attributes on two-dimensional model – some attributes the same.

Sample student data that might lead to determining the target:

- Identifies common two- and three-dimensional figures when the figure is present
- Demonstrates understanding of concepts of same and different
- Identifies familiar two- and three-dimensional figures by specific attributes
- Identifies translation, reflection and rotation of common two- and three-dimensional figures

Essentialization: Grade 11 Math

CC.2.3.HSA13a

Match corresponding two-dimensional and three-dimensional representations

Most Complex

Identify a three-dimensional figure given specific attributes on two-dimensional model – some attributes the same.

Instructional ideas:

- Teach specific attributes such as surfaces (flat sides) and edges (where flat sides come together) for three-dimensional figures and sides and/or angles (where side connect or come together) for two-dimensional figures, having the student sort examples and non examples
- Use two- and three-dimensional figures that are familiar/mastered by the student
- Use magazines, pictures online or other common visuals to make connections between two- and three-dimensional figures
- Utilize instructional strategies such as errorless learning, shaping and error correction to engage students and scaffold understanding.

Essentialization: Grade 11 Math

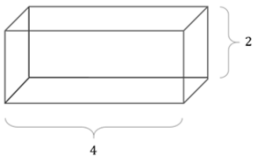
CC.2.3.HSA13a

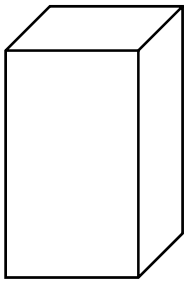
Match corresponding two-dimensional and three-dimensional representations

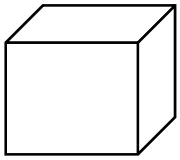
Most Complex

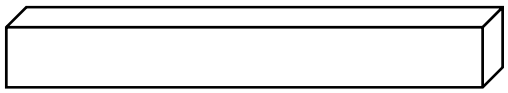
Math example – Most Complex

Identify a three-dimensional figure given specific attributes on two-dimensional model – some attributes the same.

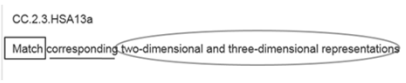
Which object is pictured here  **?**







Essentialization: Grade 11 Math



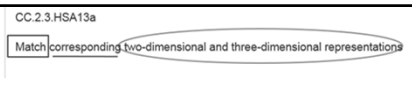
Middle Complexity

Identify a three-dimensional figure given specific attributes on two-dimensional model – comparison of dissimilar choices.

Sample student data that might lead to determining the target:

- Identifies common three-dimensional figures when the figure is present
- Counts to 4 with one-to-one correspondence
- Demonstrates understanding of concepts of same and different
- Matches to same
- Student demonstrates ability to translate (push, pull or slide) an object
- Student identifies a two-dimensional figure with specific attributes and a three-dimensional figure with specific attributes

Essentialization: Grade 11 Math



Middle Complexity

Identify a three-dimensional figure given specific attributes on two-dimensional model – comparison of dissimilar choices.

Instructional ideas:

- Teach specific three-dimensional figure attributes such surfaces (flat sides), edges (where flat sides come together) and two-dimensional attributes such as sides and round, having the student sort examples and non examples
- Use two- and three-dimensional figures that are familiar/mastered by the student
- Have students match figures that are similar
- Have students sort figures that have similar/dissimilar attributes
- Build background knowledge of familiar two-dimensional figure to teach its connection to a three-dimensional figure using manipulatives and not drawings.
- Utilize instructional strategies such as errorless learning, shaping and error correction to engage students and scaffold understanding.

Essentialization: Grade 11 Math

CC.2.3.HSA13a

Match corresponding two-dimensional and three-dimensional representations

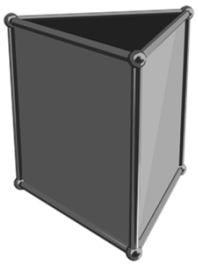
Middle Complexity

Math example – Middle Complexity

Identify a three-dimensional figure given specific attributes on two-dimensional model – comparison of dissimilar choices.

Provide the student a piece of square cut paper (8x8) 

Which figure will the paper fit based on its shape?



Essentialization: Grade 11 Math

CC.2.3.HSA13a

Match corresponding two-dimensional and three-dimensional representations

Least Complex

Match a two-dimensional representation to a three-dimensional figure – basic attribute recognition.

Sample student data that might lead to determining the target:

- Matches one common three-dimensional shapes with visual cue (template) and other conditions such a color
- Identifies a two-dimensional figure when the figure is present
- Imitates matching three-dimensional and/or two-dimensional shapes
- Emerging imitation skills

Essentialization: Grade 11 Math

CC.2.3.HSA13a

Match corresponding two-dimensional and three-dimensional representations

Least Complex

Match a two-dimensional representation to a three-dimensional figure – basic attribute recognition.

Instructional ideas:

- Explicitly teach specific three-dimensional figure attributes such as surface or edge and two dimensional attributes such as sides/round
- Explicitly teach the vocabulary of the attributes considering core familiar words
- Use two- and three-dimensional figures that are familiar to the student
- Create a physical area to use as students sort two- and three-dimensional shapes (acknowledge attributes)
- Utilize instructional strategies such as errorless learning, shaping and error correction to engage students and scaffold understanding.

Essentialization: Grade 11 Math

CC.2.3.HSA13a

Match corresponding two-dimensional and three-dimensional representations

Least Complex

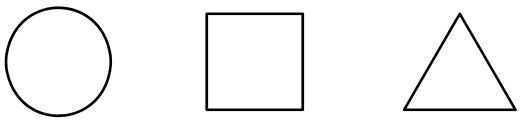
Math example – Least Complex

Match a two-dimensional representation to a three-dimensional figure – basic attribute recognition.

Hand the student a square box of tissues.

Provide the student with three shapes

Match to the shape of the box.



Resources to Support Use of the Alternate Eligible Content for Instruction

Pennsylvania Training and Technical Assistance Network

Webinars to support Alternate Eligible Content

Available on the PaTTAN website:

Introduction

- **November 5, 2014**: What's New: PA Alternate Eligible Content, Assessment and Instruction

Winter Series

- **December 17, 2014**: Using the Alternate Eligible Content to Write Standards Aligned IEPs
- **January 14, 2015**: Instructing Math and Reading/ELA Using the Alternate Eligible Content: Getting Started

Webinars to support Alternate Eligible Content, continued

Spring Series

- **February 25, 2015:** Increasing Academic Expectations with the Alternate Eligible Content: Increasing Communication/Language Expectations
- **March 25, 2015:** Increasing Academic Expectations with the Alternate Eligible Content: A Closer Look at Math
- **April 22, 2015:** Increasing Academic Expectations with the Alternate Eligible Content: A Closer Look at ELA/Reading
- **May 20, 2015**: Increasing Academic Expectations with the Alternate Eligible Content: Creating Lessons

Webinars to support Alternate Eligible Content, continued

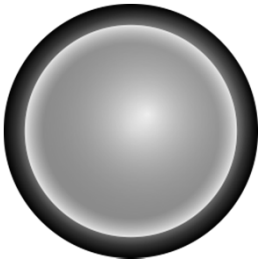
Fall/Winter Series 2015-16

- **October 21, 2015 3:30pm-4:30pm**: Alternate Eligible Content: A View Across the Grades
- **November 17, 2015 3:30pm-4:30pm:** Alternate Eligible Content: Sample Essentialization: ELA/Reading

Upcoming Webinars Fall/Winter 2015-2016

- **December 16, 2016 3:30pm-4:30pm:** Alternate Eligible Content- Sample Essentialization: Math (will be available following Dec. 16, 2015)
- **January 20, 2016 3:30pm-4:30pm:** Alternate Eligible Content: Defining Expectations and Intent

Communication: The Most Up to Date Information and Volunteer Opportunities



- Listserv for teachers administering the PASA and others
- Opportunities to participate with design of instructional resources to support the Alternate Eligible Content
- **Sign up on PaTTAN website under Students with Significant Cognitive Disabilities - Listserv/Volunteer**

Learner Outcomes

Participants will:

- Identify the steps of essentialization to make the content accessible
- Identify examples of statements and 'look fors' that demonstrate alignment to the alternate eligible content at various levels of complexity within math content

Contact Information

Dr. John Machella
412-851-0413
jmachella@pa.gov

Sharon Leonard
slleonard@pattan.net

Audrey Kappel
akappel@pattan.net

www.pattan.net

pennsylvania
DEPARTMENT OF EDUCATION
Bureau of Special Education
Pennsylvania Training and Technical Assistance Network

Commonwealth of Pennsylvania

Tom Wolf, Governor