





The NMIS is a teacher-influenced tool, designed to provide instructional planning support at the programmatic level for districts and instructional level for teachers. Its foundation stems from the vision and mission of the PED and came into existence to assure that students in NM will be engaged in a culturally and linguistically responsive educational system that meets the social, emotional, and academic needs of ALL students. This is also rooted in the belief that all students must have access to on-grade-level standards, focusing on acceleration. The purpose of this tool is to help educators understand each of the grade level standards and how those standards connect to the students' overall preparation for college and career readiness.

Standards are defined as the most critical prerequisite skills and knowledge. This document is color-coded to reflect both anchor and priority standards. Though previous emphasis was placed on priority standards to address lost learning due to COVID-19, New Mexico teachers should note that moving forward, while priority standards allow for acceleration of learning, **all** standards should be addressed in instruction throughout the school year.


In this guide you will find:


- A [breakdown](#) of each of the grade level standards within the cluster, including:
 - Standards of Mathematical Practice
 - Common Misconceptions
 - Identification of Priority Standards, as identified by NMPED.
 - Level of Rigor Identification
- Sample aligned [assessment](#) items
- Suggested Student Discourse Guide (**only provided for clusters with Conceptual Understanding standards**)
- [A multilayered system of supports \(MLSS\) and culturally and linguistically responsive instruction \(CLR\) guide](#)


Key		
	<i>Priority Standard</i>	Priority standards, as identified by NMPED, are denoted with red highlighting. Priority standards are the most critical prerequisite skills and knowledge a student needs. This does not mean that these are only standards required to be taught, just these are the standards that will allow for the acceleration the students of New Mexico need during this time.
	<i>Conceptual Understanding</i>	Conceptual Understanding standards help students build a deep understanding of the how and why of mathematics.
	<i>Application</i>	Application standards help students identify the appropriate concepts and skills to tackle novel real-world problems .
	<i>Procedural Skill and Fluency</i>	Procedural standards help students develop efficiency and accuracy in computations.

Standards Breakdown

- Reason with shapes and their attributes.
 - [2.G.A.1](#)
 - [2.G.A.2](#)
 - [2.G.A.3](#)

Grade	CCSS Domain	CCSS Cluster
2	Geometry	Reason with shapes and their attributes
 Cluster Standard: 2.G.A.1		
Standard		Standards for Mathematical Practice
<p>Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.</p>		<ul style="list-style-type: none"> ● SMP 4: Model with mathematics. ● SMP 6: Attend to precision.
Clarification Statement		Students Who Demonstrate Understanding Can...
<ul style="list-style-type: none"> ● Students build understandings of two- and three-dimensional shapes and their properties and compose and decompose shapes. They develop connections among spatial structures. 		<ul style="list-style-type: none"> ● Classify shapes (Two-dimensional shapes as flat or plane shapes. Three-dimensional shapes are solid shapes.) ● Identify attributes that define shapes include angles, faces, and sides. ● Recognize that two- and three-dimensional shapes can be described and classified by their attributes. ● Recognize shapes with specified attributes. ● Draw shapes to represent given attributes. ● Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
DOK		Blooms
1		Understand

<i>Grade</i>	<i>CCSS Domain</i>	<i>CCSS Cluster</i>
2	Geometry	Reason with shapes and their attributes.
 Cluster Standard: 2.G.A.2		
Standard		Standards for Mathematical Practice
Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.		<ul style="list-style-type: none"> ● SMP 4: Model with mathematics. ● SMP 6: Attend to precision.
Clarification Statement		Students Who Demonstrate Understanding Can...
<ul style="list-style-type: none"> ● Students build understandings of two- and three-dimensional shapes and their properties and compose and decompose shapes. They develop connections among spatial structures. 		<ul style="list-style-type: none"> ● Explain how rectangles can be divided into rows and columns. ● Understand how to explore geometric relationships ● Understand how shapes can be used to explain parts of a whole or totals. ● Divide a rectangle into equal rows and columns to create an array. ● Determine the number of shapes in an array
DOK		Blooms
1		Understand and Apply

Grade	CCSS Domain	CCSS Cluster
2	Geometry	Reason with shapes and their attributes.
 Cluster Standard: 2.G.A.3		
Standard	Standards for Mathematical Practice	
Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical whole shapes need not have the same shape.	<ul style="list-style-type: none"> ● SMP 4: Model with mathematics. ● SMP 6: Attend to precision. 	
Clarification Statement	Students Who Demonstrate Understanding Can...	
<ul style="list-style-type: none"> ● Students build understandings of two- and three-dimensional shapes and their properties and compose and decompose shapes. They develop connections among spatial structures. 	<ul style="list-style-type: none"> ● Know that equal shares are made by dividing a shape evenly into multiple parts. ● Understand that exploring geometric relationships relates to reasoning skills. Shapes can be used to explain parts of a whole or totals. ● Partition circles into equal shares of two, three, or four. ● Identify equal shares using different terms. ● Explain how equal shares can have different shapes. 	
DOK	Blooms	
1-2	Understand and Apply	















Common Misconceptions

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| <ul style="list-style-type: none"> ● Students may assume a shape with a changed orientation is no longer the same shape. ● Some students may fail to recognize a partitioned shape as a total of equal shares and think of the | <ul style="list-style-type: none"> ● Students may not be familiar with the vocabulary of halves, thirds, etc. |
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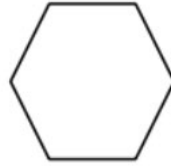
partition only as part of the whole.

ASSESSMENT GUIDE

- Reason with shapes and their attributes.

Grade	CCSS Domain	CCSS Strand																										
2	Geometry	Reason with shapes and their attributes.																										
Sample Task #1 (Constructed Response)																												
<p>Complete the chart. Use the word bank below to identify the name of each shape. Not all the names will be used.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 25%;">a.</th> <th style="width: 25%;">b.</th> <th style="width: 25%;">c.</th> <th style="width: 25%;">d.</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>_____ sides</td> <td>_____ sides</td> <td>_____ sides</td> <td>_____ sides</td> </tr> <tr> <td>_____ angles</td> <td>_____ angles</td> <td>_____ angles</td> <td>_____ angles</td> </tr> <tr> <td>Name of shape:</td> <td>Name of shape:</td> <td>Name of shape:</td> <td>Name of shape:</td> </tr> </tbody> </table> <p style="text-align: center; margin-top: 10px;">Word Bank</p> <table style="width: 100%; text-align: center;"> <tr> <td>hexagon</td> <td>cube</td> <td>square</td> <td>triangle</td> <td>pentagon</td> <td>quadrilateral</td> </tr> </table> <p style="margin-top: 10px;">e. Sarah and Henry were asked to draw a hexagon. Sarah believes that only her drawing is correct. Explain why both shapes are hexagons.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Sarah's Hexagon</p> </div> <div style="text-align: center;">  <p>Henry's Hexagon</p> </div> </div> <p>_____</p> <p>_____</p>			a.	b.	c.	d.					_____ sides	_____ sides	_____ sides	_____ sides	_____ angles	_____ angles	_____ angles	_____ angles	Name of shape:	Name of shape:	Name of shape:	Name of shape:	hexagon	cube	square	triangle	pentagon	quadrilateral
a.	b.	c.	d.																									
																												
_____ sides	_____ sides	_____ sides	_____ sides																									
_____ angles	_____ angles	_____ angles	_____ angles																									
Name of shape:	Name of shape:	Name of shape:	Name of shape:																									
hexagon	cube	square	triangle	pentagon	quadrilateral																							
Sample Task #2 (Multiple Choice)																												

Name the pattern block used to cover 1 third of the hexagon. _____
Sketch the 3 pattern blocks used to cover thirds of the hexagon.



MLSS AND CLR GUIDE

- Reason with shapes and their attributes.

CCSS Domain		CCSS Cluster	
Geometry		Reason with shapes and their attributes	
Culturally and Linguistically Responsive Instruction			
Relevance to Families and Communities	During a unit focused on reasoning with shapes and their attributes, consider options for learning from your families and communities the cultural and linguistic ways this mathematics exists outside of school to create stronger home to school connections for students, for example, learning about the different structures for the shape names across the languages in your classroom can lead to a more robust understanding of shapes for all students by making connections to the different structures of shape-names in other languages.		
Cross-Curricular Connections	Science: Students can describe and classify different kinds of materials by their observable properties.		
Validate/Affirm/Build/Bridge	<ul style="list-style-type: none"> How can you design your mathematics classroom to intentionally and purposefully legitimize the home culture and languages of students and reverse the negative stereotypes regarding the mathematical abilities of students of 	<ul style="list-style-type: none"> Task: The type of mathematical tasks and instruction students receive provides the foundation for students' mathematical learning and their mathematical identity. Tasks and instruction that provide greater access to mathematics and convey the creativity of mathematics by allowing for multiple solution strategies and development of the standards for mathematical practice lead to more students viewing themselves mathematically successful capable mathematicians than tasks and instruction 	

	<p><i>marginalized cultures and languages?</i></p> <ul style="list-style-type: none"> • <i>How can you create connections between the cultural and linguistic behaviors of your students' home culture and language, the culture and language of school mathematics to support students in creating mathematical identities as capable mathematicians that can use mathematics within school and society?</i> 	<p>which define success as memorizing and repeating a procedure demonstrated by the teacher. For example, when studying reasoning with shapes and their attributes the types of mathematical tasks are critical because learners from a variety of cultural backgrounds may identify a variety of strategies and visual representations of the shapes and their attributes through spatial reasoning, mathematical knowledge, and artistic aptitudes.</p>
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Planning for Multi-layered System of Supports

Vertical Alignment

<i>Previous Learning</i>	<i>Current Learning</i>	<i>Future Learning</i>
<ul style="list-style-type: none"> • In first grade, students reasoned about shapes. They described and classified shapes, including drawings, manipulatives and real-world objects, in terms of their geometric attributes (1.G.1). Within that standard, students also distinguished between defining attributes (sides, vertices) versus non-defining attributes (color, size, orientation). 	<ul style="list-style-type: none"> • Connect to their previous knowledge of addition from earlier in 2nd grade (2.OA.4) to find the total number of objects arranged in rectangular arrays. 	<ul style="list-style-type: none"> • Connect to their work with rectangular arrays to the concept of equal groups as multiplication (3.OA.1). • Connect to shape categories to help form relationships among categories and subcategories (3.G.1). • Connect to understanding of fractions to name equal parts using written fraction notation (3.NF.1, 3.G.2).

Suggested Instructional Strategies

Pre-Teach

<i>Level of Intensity</i>	<i>Essential Question</i>	<i>Examples</i>
Targeted	<i>What pre-teaching will prepare students to</i>	Some learners may benefit from targeted pre-teaching that uses images/resources (especially those being used

	<i>productively struggle with the mathematics for this cluster within your HQIM?</i>	the first time) when studying reasoning with shapes and their attributes because some learners may have difficulty with the names of shapes based on the attributes of the number of angles or the number of equal faces. There are additional shapes added in this grade level from previous grades, and students may need multiple exposures to the attributes and names using images/resources.
Intensive	<i>What critical understandings will prepare students to access the mathematics for this cluster?</i>	Some learners may benefit from targeted pre-teaching that uses images/resources (especially those being used the first time) when studying reasoning with shapes and their attributes because some learners may have difficulty with the names of shapes based on the attributes of the number of angles or the number of equal faces. There are additional shapes added in this grade level from previous grades, and students may need multiple exposures to the attributes and names using images/resources.
Re-Teach		
Level of Intensity	Essential Question	Examples
Targeted	What formative assessment data (e.g., tasks, exit tickets, observations) will help identify content needing to be revisited during a unit?	If students exhibit one more of these misconceptions, consider addressing the misconception. Students may benefit from re-engaging with content during a unit on reasoning with shapes and their attributes, by clarifying mathematical ideas and/or concepts through a short mini-lesson because students will need to gain mastery of the attributes of shapes to be successful in following grades.
Intensive	What assessment data will help identify content needing to be revisited for intensive interventions?	Examine assessments for evidence of students still developing the underlying ideas. Some students may benefit from intensive extra time during and after a unit on reasoning with shapes and their attributes by offering opportunities to understand and explore different strategies because students may visualize shapes differently. When offered opportunities to understand and explore different strategies (composing and decomposing shapes, manipulatives that can be used to create shapes, etc.) students gain a better understanding of reasoning with shapes and their attributes.

Extension	
<i>Essential Question</i>	<i>Examples</i>
<p>What type of extension will offer additional challenges to 'broaden' your student's knowledge of the mathematics developed within your HQIM?</p>	<p>Some learners may benefit from an extension such as open-ended tasks linking multiple disciplines when studying reasoning with shapes and their attributes because "students learn to combine their composition and decomposition competencies to build and operate on composite units (units of units), intentionally substituting arrangements or composites of smaller shapes or substituting several larger shapes for many smaller shapes, using geometric knowledge and spatial reasoning to develop foundations for area, fraction, and proportion. They recognize that the hexagonal faces of these constructions have equal area, that each trapezoid has half of that area, and each rhombus has a third of that area."</p>