

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

- Identify and describe shapes.
 - [K.G.A.1](#)
 - [K.G.A.2](#)
 - [K.G.A.3](#)
- Analyze, compare, create, and compose shapes.
 - [K.G.B.4](#)
 - [K.G.B.5](#)
 - [K.G.B.6](#)

Grade	CCSS Domain	CCSS Cluster
K	Geometry	Identify and create shapes.
 Cluster Standard: K.G.A.1		
Standard		Standards for Mathematical Practice
Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as <i>above</i> , <i>below</i> , <i>beside</i> , <i>in front of</i> , <i>behind</i> , and <i>next to</i> .		<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 refine their informal language by learning mathematical concepts and vocabulary so as to increasingly describe their physical world from geometric perspectives, e.g., shape, orientation, spatial relations (MP4). They increase their knowledge of a variety of shapes, including circles, triangles, squares, rectangles, and special cases of other shapes such as regular hexagons, and trapezoids with unequal bases and non-parallel sides of equal length. Students also begin to name and describe three-dimensional shapes with mathematical vocabulary, such as “sphere,” “cube,” “cylinder,” and “cone.” Finally, in the domain of spatial reasoning, students discuss not only shape and orientation, but also the relative positions of objects, using terms such as “above,” “below,” “next to,” “behind,” “in front of,” and “beside.” 		<ul style="list-style-type: none"> ● Describe the position of objects as above, below, beside, in front of, and next to. ● Identify shapes in my environment regardless of their orientation or overall size (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).
DOK		Blooms
1-2		Remember and Analyze

Grade	CCSS Domain	CCSS Cluster
K	Geometry	Identify and create shapes.
 Cluster Standard: K.G.A.2		
Standard		Standards for Mathematical Practice
Correctly name shapes regardless of their orientations or overall size.		<ul style="list-style-type: none"> ● SMP 6: Attend to precision. ● SMP 7: Look for and make use of structure.
Clarification Statement		Students Who Demonstrate Understanding Can...
<ul style="list-style-type: none"> ● Students learn to name shapes such as circles, triangles, and squares, whose names occur in everyday language, and distinguish them from nonexamples of these categories, often based initially on visual prototypes. 		<ul style="list-style-type: none"> ● Identify shapes regardless of their orientation or overall size (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres). ● Identify shapes correctly even when their size and orientation is unusual or different.
DOK		Blooms
1		Remember

Grade	CCSS Domain	CCSS Cluster
K	Geometry	Identify and create shapes.
 Cluster Standard: K.G.A.3		
Standard		Standards for Mathematical Practice
Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").		<ul style="list-style-type: none"> ● SMP 3: Construct viable arguments and critique the reasoning of others. ● SMP 6: Attend to precision.

	<ul style="list-style-type: none"> ● SMP 7: Look for and make use of structure.
Clarification Statement	Students Who Demonstrate Understanding Can...
<ul style="list-style-type: none"> ● In the domain of shape, students learn to match two-dimensional shapes even when the shapes have different orientations. The need to explain their decisions about shape names or classifications prompts students to attend to and describe certain features of the shapes. That is, concept images and names they have learned for the shapes are the raw material from which they can abstract common features. They identify faces of three-dimensional shapes as two-dimensional geometric figures and explicitly identify shapes as two-dimensional ("flat" or lying in a plane) or three-dimensional ("solid"). 	<ul style="list-style-type: none"> ● Define two-dimensional as being flat. ● Define three-dimensional as being solid. ● Identify two-dimensional shapes. ● Identify three-dimensional shapes.
DOK	Blooms
1	Remember

Common Misconceptions

<ul style="list-style-type: none"> ● Using informal names for shapes. ● Incorrectly identifying figures that visually "resemble" shapes but don't possess all the needed attributes as that shape (such as an upside-down heart as a triangle). 	<ul style="list-style-type: none"> ● Not recognizing inverted or upside-down shapes as being that shape (especially upside-down triangles). ● Mixing up the terminology for two- and three-dimensional shapes (such as calling a cube a square).
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<i>Grade</i>	<i>CCSS Domain</i>	<i>CCSS Cluster</i>
K	Geometry	Analyze, compare, create, and compose shapes
 Cluster Standard: K.G.B.4		
Standard		Standards for Mathematical Practice
Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).		<ul style="list-style-type: none"> ● SMP 3: Construct viable arguments and critique the reasoning of others. ● SMP 7: Look for and make use of structure.
Clarification Statement		Students Who Demonstrate Understanding Can...
		<ul style="list-style-type: none"> ● Describe a shape by telling things like the number of sides, number of vertices (corners), and other special qualities. ● Describe two-dimensional shapes (circles, triangles, rectangles, and squares) by the number of sides and corners. ● Compare two-dimensional shapes and describe their similarities and differences. ● Compare three-dimensional shapes and describe their similarities and differences.
DOK		Blooms
1-2		Understand and Analyze

Grade	CCSS Domain	CCSS Cluster
K	Geometry	Analyze, compare, create, and compose shapes
 Cluster Standard: K.G.B.5		
Standard		Standards for Mathematical Practice
Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.		<ul style="list-style-type: none"> ● SMP 4: Model with mathematics. ● SMP 7: Look for and make use of structure.
Clarification Statement		Students Who Demonstrate Understanding Can...
		<ul style="list-style-type: none"> ● Build shapes from materials in their environment. ● Draw shapes in their environment.
DOK		Blooms
2-3		Analyze and Create

Grade	CCSS Domain	CCSS Cluster
K	Geometry	Analyze, compare, create, and compose shapes
 Cluster Standard: K.G.B.6		
Standard		Standards for Mathematical Practice
Compose simple shapes to form larger shapes. <i>For example, "Can you join these two triangles with full sides touching to make a rectangle?"</i>		<ul style="list-style-type: none"> ● SMP 1: Make sense of problems and persevere in solving them. ● SMP 6: Attend to precision.
Clarification Statement		Students Who Demonstrate Understanding Can...

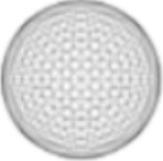
	<ul style="list-style-type: none"> Put shapes together to make new shapes (compose shapes). Name the new shape that results from composing two simple shapes. Decide which piece will fit into a space in a puzzle.
DOK	Blooms
2-3	Analyze and Create

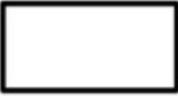
Common Misconceptions

<ul style="list-style-type: none"> Not realizing that triangles can be inverted or rotated. Not considering the properties of two-dimensional shapes (such as identifying all quadrilaterals as rectangles). 	<ul style="list-style-type: none"> Mixing up the terminology for two- and three-dimensional shapes (such as calling a cube a square). Not being able to see shapes from different perspectives and struggling to “move” shapes through slides, flips and turns.
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ASSESSMENT GUIDE

- [Identify and describe shapes.](#)
- [Analyze, compare, create, and compose shapes.](#)

<i>Grade</i>	<i>CCSS Domain</i>	<i>CCSS Strand</i>
K	Geometry	Identify and describe shapes.
Sample Task #1 (Constructed Response)		
<p>Draw a line from the flat shape to the object that has a face with that flat shape.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div>		
Sample Task #2		
<p>Find things in your house or in a magazine that look like the solid pictured here. Draw the solids or cut out and paste the pictures from the magazine.</p> <div style="text-align: center; margin-top: 20px;">  </div>		

Grade	CCSS Domain	CCSS Strand
K	Geometry	Analyze, compare, create, and compose shapes
Sample Task #1 (Constructed Response)		
<p>Carlos drew 2 lines on his square. You can see his square before he cut it. Circle the shapes Carlos had after he cut.</p>   <p>India drew 2 lines on her rectangle. You can see her rectangle before she cut it. Circle the shapes India had after she cut.</p>  		
Sample Task #2		
<p>Draw 2 shapes that can be used to build the rectangle.</p>  <p>Draw 2 shapes that can be used to build the house.</p> 		

MLSS AND CLR GUIDE

- [Identify and describe shapes](#)
- [Analyze, compare, create, and compose shapes](#)

CCSS Domain		CCSS Cluster	
Geometry		Identify and describe shapes	
Culturally and Linguistically Responsive Instruction			
Relevance to Families and Communities	During a unit focused on identifying and describing shapes, 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 the different names for shapes in other languages could bring interest and awareness to student cultures and families.		
Cross-Curricular Connections	Science: In Kindergarten, the NGSS state students should “develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.” Consider providing a connection for students to identify the shapes of the objects and whether they are two- or three-dimensional. Language Arts: Literature can offer connections about shapes such as: <i>Shape by Shape</i> by Suze MacDonald and <i>Perfect Square</i> by Michael Hall.		
Validate/Affirm/Build/Bridge	<ul style="list-style-type: none"> • <i>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 marginalized cultures and languages?</i> • <i>How can you create connections between the cultural and linguistic behaviors of your students’ home culture</i> 	<ul style="list-style-type: none"> • Building Procedural Fluency from Conceptual Understanding: Instruction should build from conceptual understanding to allow students opportunities to make meaning of mathematics before focusing on procedures. When new learning begins with procedures it privileges those with strong prior familiarity with school mathematics procedures for solving problems and does not allow learning to build for more methods for solving tasks that occur outside of school mathematics. For example, when studying Identifying and describing shapes, the types of mathematical tasks are critical because although rote practice increases fluency it usually does not engage children for long because they are based on students’ recall or memorization of facts. When students are placed in situations in which recall speed determines success, they may infer that being 	

	<p><i>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>	<p>“smart” in mathematics means getting the correct answer quickly instead of valuing the process of thinking.</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"> Connect to recognizing circle, triangle, and rectangle which includes squares. Connect to recognizing that a shape remains the same shape when it changes position. Connect to demonstrating and beginning to use the language of the relative position of objects in the environment and play situations, such as up, down, over, under, top, bottom, inside, outside, in front, behind, between, next to. Connect to comparing length and other attributes of objects, using the terms bigger, longer, and taller. Connect to arranging objects in order according to characteristics or attributes, such as height. 	<ul style="list-style-type: none"> Connect to sorting by attributes to investigate measurement and data. (K.MD.1-3) 	<ul style="list-style-type: none"> Connect to reason with shapes and their defining attributes. (1.G.1) Connect to identification of additional shapes (trapezoids, half-circles, quarter-circles) and combining three-dimensional shapes to create larger shapes. (1.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 productively struggle with the mathematics for this cluster within your HQIM?</i>	For example, some learners may benefit from targeted pre-teaching that uses images/resources (especially those being used the first time) when studying shapes (describing/identifying) because this is the first time that they have seen the shape or the concept of a shape. A visual representation is the best option.
Intensive	<i>What critical understandings will prepare students to access the mathematics for this cluster?</i>	Identify and Describe Shapes (Squares, Circles, Triangles, Rectangles, Hexagons, Cubes, Cones, Cylinders, And Spheres). This standard provides a foundation for work with shapes (identifying and describing because it is the starting point for shapes. If students have unfinished learning within this standard, based on assessment data, consider ways to provide intensive pre-teaching support prior to the start of the unit to ensure students are ready to access grade level instruction and assignments.
Re-Teach		
<i>Level of Intensity</i>	<i>Essential Question</i>	<i>Examples</i>
Targeted	What formative assessment data (e.g., tasks, exit tickets, observations) will help identify content needing to be revisited during a unit?	Examine assessments for evidence of lingering misconceptions (see common misconceptions). If students exhibit one more of these misconceptions, consider addressing the misconception by ...For example, students may benefit from re-engaging with content during a unit on shapes (identifying and describing) by providing specific feedback to students on their work through a short mini-lesson because seeing mistakes or good work will help the student analyze their thinking.
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 For example, some students may benefit from intensive extra time during and after a unit Identify And Describe Shapes by <helping students move from specific answers to generalizations for certain types of problems because <students will begin to understand about the attributes that makes a shape as a general, for example what makes a rectangle a rectangle, or a triangle a triangle.
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>To extend students' learning about, for example, some learners may benefit from an extension such as the application of and development of abstract thinking skills when studying shapes (describing and identifying) because they might need deeper thinking in order to better understand the topic.</p>
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<div style="display: flex; justify-content: space-between;"> CCSS Domain CCSS Cluster </div>	
<p style="text-align: center;">Geometry</p>	<p style="text-align: center;">Analyze, compare, create, and compose shapes</p>
<p>Culturally and Linguistically Responsive Instruction</p>	
<p>Relevance to Families and Communities</p>	<p>During a unit focused on analyzing, comparing, creating, and composing shapes, 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, by asking the students or send a letter home to ask parents to talk about students on how shapes (analyzing, comparing, creating, and composing) are utilized in their work or around the house/family life.</p>
<p>Cross-Curricular Connections</p>	<p>Social Studies: Students should "recognize and name symbols and activities of the United States, New Mexico, and tribes." Consider providing a connection for students to model these symbols and pictures related to the activities in terms of shapes.</p> <p>Language Arts: Literature can offer connections about composing and decomposing shapes such as: <i>Changes, Changes</i> by Pat Hutchins.</p>
<p>Validate/Affirm/Build/Bridge</p>	<ul style="list-style-type: none"> ● <i>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 marginalized cultures and languages?</i> ● <i>How can you create connections between the cultural and linguistic</i> <ul style="list-style-type: none"> ● Tasks: The type of mathematical tasks and instruction students receive provides the foundation for students' mathematical learning and their mathematical identity. Tasks and instructions 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 leads to more students viewing themselves mathematically successful capable mathematicians than tasks and instruction which define success as memorizing and repeating a procedure demonstrated by the teacher. For example, when studying shapes (analyzing, comparing, creating, and composing shapes) the types of mathematical tasks are critical because tasks

	<p><i>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>	<p>should have many entry points, and should be open ended so our students can and will make sense of the problems according to the background knowledge they bring. Tasks should be wide, then slowly tasks should start getting narrow into what the goal of the cluster is. In other words, refining the learning so our students can meet the cluster.</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"> ● Connect to building and describing two-dimensional shapes, such as making circles and triangles with blocks and play dough. ● Connect to sorting and matching objects with the same shape and size, and lay an object of the same shape and size on top of another to show they are the same. ● Connect to making a picture by combining shapes. ● Connect to comparing length and other attributes of objects, using the terms bigger, longer, and taller. ● Connect to arranging objects in order according to characteristics or attributes, such as height. 	<ul style="list-style-type: none"> ● Connect to building upon students' knowledge of identifying and describing shapes. (K.G.1-3) ● Connect to students using their knowledge of sorting by attributes to investigate measurement and data. (K.MD.1-3) 	<ul style="list-style-type: none"> ● Connect to reason with shapes and their defining attributes. (1.G.1) ● Connect to identification of additional shapes (trapezoids, half-circles, quarter-circles) and combining three-dimensional shapes to create larger shapes. (1.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 productively struggle with the mathematics for this cluster within your HQIM?</i>	For example, some learners may benefit from targeted pre-teaching that uses images/resources (especially those being used the first time) when studying to analyze, compare, create, and compose shapes because the students were previously taught the names and some attributes of the different 2-dimensional as well as 3-dimensional shapes, for example if the window and the door are compared students can see that both are rectangles but one is bigger than the other.
Intensive	<i>What critical understandings will prepare students to access the mathematics for this cluster?</i>	These standards provide a foundation for work with the analyzing, comparing, creating, and the composition of shapes because students need to be able to identify and describe the shapes in order for them to analyze, compare, create, and/or compose shapes. If students have unfinished learning within this standard, based on assessment data, consider ways to provide intensive pre-teaching support prior to the start of the unit to ensure students are ready to access grade level instruction and assignments.
Re-Teach		
<i>Level of Intensity</i>	<i>Essential Question</i>	<i>Examples</i>
Targeted	What formative assessment data (e.g., tasks, exit tickets, observations) will help identify content needing to be revisited during a unit?	Examine assessments for evidence of lingering misconceptions (see common misconceptions). If students exhibit one more of these misconceptions, consider addressing the misconception by: For example, students may benefit from re-engaging with content during a unit on analyzing, comparing, creating, and composing shapes by clarifying mathematical ideas and/or concepts through a short mini-lesson because if students are struggling with the names, and their attributes they will also struggle when they are required to analyze and compare shapes.
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 For example, some students may benefit from intensive extra time during and after a unit analyzing, comparing, creating, and composing shapes by offering opportunities to understand and explore different strategies because by using different strategies the students might get to the

		conceptual understanding for example by overlapping some shapes and finding how they are different the students might start to see the attributes of the different shapes.
Extension		
<i>Essential Question</i>	<i>Examples</i>	
What type of extension will offer additional challenges to 'broaden' your student's knowledge of the mathematics developed within your HQIM?	To extend students' learning about analyzing, comparing, creating, and composing shapes, some learners may benefit from an extension such as the application of and development of abstract thinking skills when studying analyze, compare, create, and compose shapes because by asking questions like what would you need to do to this square to make it a rectangle, and or can you decompose a shape into different shapes?	