

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.

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
- 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

- Draw and identify lines and angles, and classify shapes by properties of their lines and angles.
 - [4.G.A.1](#)
 - [4.G.A.2](#)
 - [4.G.A.3](#)

Grade	CCSS Domain	CCSS Cluster
4	Geometry	Draw and identify lines and angles, and classify by properties of their lines and angles.
 Cluster Standard: 4.G.A.1		
Standard		Standards for Mathematical Practice
<p>Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two dimensional figures.</p>		<ul style="list-style-type: none"> ● SMP 3: Construct viable arguments and critique the reasoning of others. ● SMP 6: Attend to precision.
Clarification Statement		Students Who Demonstrate Understanding Can...
<ul style="list-style-type: none"> ● Points, lines, segments, rays, and angles are the building blocks of the geometry. Point and line are undefined terms because they do not have definitions. We can understand these terms by thinking of examples of what a point and line might look like. A point can be a tip of a pencil; it has position but no dimension. Euclid described a line by saying that through any two points there is always a line and every line contains at least two points. Line segment is part of a line and it contains two endpoints meaning it has a beginning and endpoints. A line contains an infinite number of points and has no endpoints and goes on and on forever. A ray is part of a line that has one endpoint and extends forever in only one direction. Parallel lines are lines that never cross and are the same distance apart. Perpendicular lines intersect to form right angles. Essential vocabulary for this standard includes: point, line, line segment, ray, parallel lines, perpendicular lines, intersecting lines, and endpoint. 		<ul style="list-style-type: none"> ● Draw/identify points, lines, line segments. ● Draw/identify rays. ● Draw/identify angles (right, acute, obtuse). ● Draw/identify perpendicular lines. ● Draw/identify parallel lines.
DOK		Blooms

1-2	Apply, Understand
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Grade	CCSS Domain	CCSS Cluster
4	Geometry	Draw and identify lines and angles, and classify by properties of their lines and angles.
 Cluster Standard: 4.G.A.2		
Standard		Standards for Mathematical Practice
Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.		<ul style="list-style-type: none"> ● SMP 3: Construct viable arguments and critique the reasoning of others. ● SMP 5: Use appropriate tools strategically.
Clarification Statement		Students Who Demonstrate Understanding Can...
<ul style="list-style-type: none"> ● This standard requires students to describe parallel and perpendicular lines. Students need to classify 2D figures based on parallel and/or perpendicular line segments as well as classify them by their angles. Students need to be able to classify triangles by their angles and by their side lengths. Essential vocabulary for this standard includes: parallel, perpendicular, acute, obtuse, right, right triangle, isosceles, scalene, equilateral, and equiangular. 		<ul style="list-style-type: none"> ● Classify 2D figures with parallel lines. ● Classify 2D figures with perpendicular lines. ● Recognize 2D figures based on angle size. ● Recognize and identify right triangles.
DOK		Blooms
1-2		Understand

Grade	CCSS Domain	CCSS Cluster
4	Geometry	Draw and identify lines and angles, and classify by properties of their lines and angles.
 Cluster Standard: 4.G.A.3		
Standard		Standards for Mathematical Practice
Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line symmetric figures and draw lines of symmetry.		<ul style="list-style-type: none"> ● SMP 3: Construct viable arguments and critique the reasoning of others. ● SMP 6: Attend to precision.
Clarification Statement		Students Who Demonstrate Understanding Can...
<ul style="list-style-type: none"> ● This standard requires students to recognize a line of symmetry. A line of symmetry divides a figure into two congruent mirrored parts. A figure may have multiple lines of symmetry. The folded line is called a line of symmetry. A figure is symmetrical if it has a line of symmetry. This standard also requires students to identify figures with line symmetry. Students are required to draw lines of symmetry within figures. Essential vocabulary for this standard includes symmetrical, symmetry, and line of symmetry. 		<ul style="list-style-type: none"> ● Recognize line symmetry in 2D figures as a folded line creating two matching parts. ● Identify 2D figures with line symmetry. ● Draw lines of symmetry in 2D figures. ● Identify that 2D shapes can consist of more than one line of symmetry.
DOK		Blooms
1-2		Understand

Common Misconceptions

- Students may confuse lines, line segments, and

- Students may confuse the types of triangles.

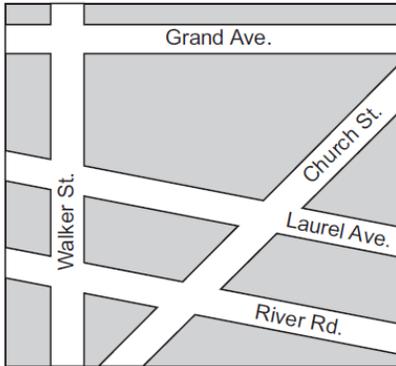
<p>rays.</p> <ul style="list-style-type: none"> • Students may confuse acute and obtuse angles. • Students may confuse perpendicular and parallel lines. 	<ul style="list-style-type: none"> • Students may confuse matching parts that are created by halving then rotating a part of the 2D figure. Halves must fold over to match. No other movement is allowed to create a line of symmetry. • Students may think figures can only have one line of symmetry; some figures have more than one line of symmetry. Some figures do not have any lines of symmetry.
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ASSESSMENT GUIDE

- Draw and identify lines and angles, and classify shapes by properties of their lines and angles

<i>Grade</i>	<i>CCSS Domain</i>	<i>CCSS Strand</i>
4	Geometry	Draw and identify lines and angles, and classify shapes by properties of their lines and angles
	Sample Task #1 (Constructed Response)	
	<p>Draw three points on your grid paper so that, when connected, they form a triangle. Use your straightedge to connect the three points to form a triangle. Switch papers with your partner. Determine how the triangle your partner constructed can be classified: right, acute, obtuse, equilateral, isosceles, or scalene.</p> <ol style="list-style-type: none"> How can you classify your partner's triangle? What attributes did you look at to classify the triangle? What tools did you use to help draw your triangle and classify your partner's triangle? 	
	Sample Task #2 (Multiple Choice)	

. A map of streets is shown.



Which two streets are parallel?

- Ⓐ Grand Ave. and Walker St.
- Ⓑ Grand Ave. and Church St.
- Ⓒ Laurel Ave. and Grand Ave.
- Ⓓ Laurel Ave. and River Rd.

MLSS AND CLR GUIDE

- Draw and identify lines and angles, and classify shapes by properties of their lines and angles

CCSS Domain

CCSS Cluster

Geometry

Draw and identify lines and angles, and classify shapes by properties of their lines and angles

Culturally and Linguistically Responsive Instruction

Relevance to Families and Communities

During a unit focused on drawing and identifying lines and angles, and classifying shapes by properties of their lines and angles, 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 ways we use lines, angles and shapes within different careers (construction, farming, engineering). This could also be extended to shapes found in different cultural aspects (pottery, ceremonial dress, etc.)

Cross-Curricular Connections

Science: In fourth grade the NGSS recommends students will study waves and their application in technology for transfer. Students will identify rays and angles in drawings of wave propagation. The NGSS also recommends students recognize symmetry, or lack of symmetry, in the internal and external structures of plants and animals.

<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 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> 	<ul style="list-style-type: none"> • Equity Based Practice (Using and Connecting Mathematical Representations): The standard for mathematical practice, use appropriate tools strategically, provides a strong foundation to validate and bridge for students. Mathematical representations are mathematical tools. The linguistic and cultural experiences of students provide different and varied types of representations for solving mathematical problems. By explicitly encouraging students to use multiple mathematical representations students can draw on their “mathematical, social, and cultural competence”. By valuing these representations and discussing them we can connect student representations to the representations of school mathematics and build a bridge for students to position them as competent and capable mathematicians. For example, when studying drawing and identifying lines and angles, and classifying shapes by properties of their lines and angles the use of mathematical representations within the classroom is critical because students can draw on their own knowledge based on cognates, and can express their knowledge, questions, and reasoning using multiple representations. For example, a student might make the connection between parallel and paralela, and be able to represent parallel lines with the symbol \parallel.
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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 attributes of quadrilaterals, including parallel lines and right angles. (3.G.1) • Connect to identifying and distinguishing between attributes and non-attributes of trapezoids, squares, rectangles, circles, hexagons, rhombuses and parallelograms and had to build and draw shapes that possess 	<ul style="list-style-type: none"> • Connect to recognizing angles as geometric figures that form wherever two rays share a common endpoint, and understand concepts of angle measurement. (4.MD.5) 	<ul style="list-style-type: none"> • Connect to understanding attributes belonging to a category of two-dimensional figures belonging to subcategories of that category. (5.G.3) • Connect to classifying two-dimensional figures based on properties. (5.G.4) • Connect to understanding reflection, rotation, and

<p>these attributes. (2.G.1)</p> <ul style="list-style-type: none"> • Connect to partitioning shapes into halves. (2.G.3, 2.G.3) 		<p>translation. (8.G.2)</p>
Suggested Instructional Strategies		
Pre-Teach		
Level of Intensity	Essential Question	Examples
<p>Targeted</p>	<p><i>What pre-teaching will prepare students to productively struggle with the mathematics for this cluster within your HQIM?</i></p>	<p>For example, some learners may benefit from targeted pre-teaching that rehearses new mathematical language when studying drawing and identifying lines and angles, and classifying shapes by properties of their lines and angles because this is the first time that students are exposed to rays, angles, and perpendicular and parallel lines, and these are the building blocks of geometry, so a strong foundational understanding is crucial. This cluster has vocabulary that is cluster specific. Many of these vocabulary words are new, but some are reviewed from previous grade levels. Students need practice in using and interacting with mathematical language and embedding vocabulary for this cluster.</p>
<p>Intensive</p>	<p><i>What critical understandings will prepare students to access the mathematics for this cluster?</i></p>	<p>2.G.A.1: This standard provides a foundation for work with drawing and identifying lines and angles, and classifying shapes by properties of their lines and angles because this is where students are introduced to recognizing that different figures have different attributes, including angles and lines. 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.</p>
Re-Teach		
Level of Intensity	Essential Question	Examples
<p>Targeted</p>	<p>What formative assessment data (e.g., tasks, exit tickets, observations) will help identify content needing to be revisited during a unit?</p>	<p>For example, students may benefit from re-engaging with content during a unit on drawing and identifying lines and angles, and classifying shapes by properties of their lines and angles by clarifying mathematical ideas and/or concepts through a short mini-lesson because students develop explicit awareness of and vocabulary for many</p>

		<p>concepts they have been developing, including points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines, and clarifying these terms will help students form richer concept images connected to verbal definitions.</p>
Intensive	<p>What assessment data will help identify content needing to be revisited for intensive interventions?</p>	<p>For example, some students may benefit from intensive extra time during and after a unit drawing and identifying lines and angles, and classifying shapes by properties of their lines and angles by confronting student misconceptions because general misunderstandings regarding specific attributes exist when student are not exposed to multiple opportunities to see shapes visually.</p>
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>For example, some learners may benefit from an extension such as open ended tasks linking multiple disciplines when studying drawing and identifying lines and angles, and classifying shapes by properties of their lines and angles because it is important for students to link such an abstract concept into concrete situations. Students can use their knowledge of shapes and attributes to design a room/building/city, use their knowledge of lines and engineer a road system for a town, etc.</p>