

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 | |
|---|--|
| <ul style="list-style-type: none"> ● Describe and compare measurable attributes. <ul style="list-style-type: none"> ○ K.MD.A.1 ○ K.MD.A.2 ● Classify objects and count the number of objects in each category. <ul style="list-style-type: none"> ○ K.MD.B.3 | |

| Grade | CCSS Domain | CCSS Cluster |
|---|-----------------------------|---|
| K | Measurement and Data | Describe and compare measurable attributes |
|  Cluster Standard: K.MD.A.1 | | |
| Standard | | Standards for Mathematical Practice |
| Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. | | <ul style="list-style-type: none"> ● SMP 3: Construct viable arguments and critique the reasoning of others. ● 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 often initially hold undifferentiated views of measurable attributes, saying that one object is “bigger” than another whether it is longer, or greater in area, or greater in volume, and so forth. For example, two students might both claim their block building is “the biggest.” Conversations about how they are comparing—one building may be taller (greater in length) and another may have a larger base (greater in area)—help students learn to discriminate and name these measurable attributes. As they discuss these situations and compare objects using different attributes, they learn to distinguish, label, and describe several measurable attributes of a single object. | | <ul style="list-style-type: none"> ● Describe measurable attributes of objects, including length, weight, and size. ● Recognize that a single object has more than one measurable attribute. |
| DOK | | Blooms |
| 2 | | Remember and understand |

| Grade | CCSS Domain | CCSS Cluster |
|--|-----------------------------|---|
| K | Measurement and Data | Describe and compare measurable attributes |
|  Cluster Standard: K.MD.A.2 | | |
| Standard | | Standards for Mathematical Practice |
| <p>Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. <i>For example, directly compare the heights of two children and describe one child as taller/shorter.</i></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"> ● Kindergartners easily directly compare lengths in simple situations, such as comparing people's heights, because standing next to each other automatically aligns one endpoint. However, in other situations they may initially compare only one endpoint of objects to say which is longer. Discussing such situations (e.g., when a child claims that he is "tallest" because he is standing on a chair) can help students resolve and coordinate perceptual and conceptual information when it conflicts. | | <ul style="list-style-type: none"> ● Compare two objects directly by placing them next to one another to determine which is longer or bigger. ● Compare two objects directly by holding one in each hand to determine which is heavier. ● Describe which of two objects has more or less of an attribute using vocabulary such as taller, longer, shorter, heavier and lighter |
| DOK | | Blooms |
| 2-3 | | Understand, Apply, and Analyze |

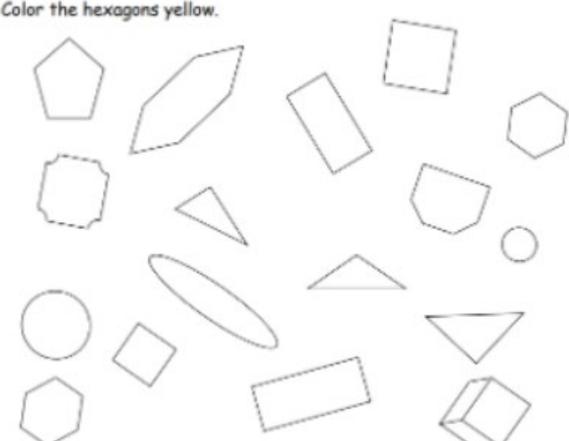
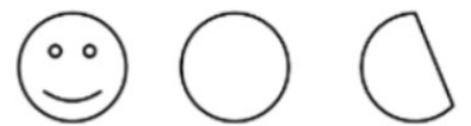
| Grade | CCSS Domain | CCSS Cluster |
|--|-----------------------------|--|
| K | Measurement and Data | Classify objects and count the objects in each category |
|  Cluster Standard: K.MD.B.3 | | |
| Standard | | Standards for Mathematical Practice |
| Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. | | <ul style="list-style-type: none"> ● SMP 2: Reason abstractly and quantitatively. ● SMP 6: Attend to precision. |
| Clarification Statement | | Students Who Demonstrate Understanding Can... |
| <ul style="list-style-type: none"> ● Students in Kindergarten classify objects into categories, initially specified by the teacher and perhaps eventually elicited from students. For example, in a science context, the teacher might ask students in the class to sort pictures of various organisms into two piles: organisms with wings and those without wings. Students can then count the number of specimens in each pile. Students can use these category counts and their understanding of cardinality to say whether there are more specimens with wings or without wings. | | <ul style="list-style-type: none"> ● Identify similarities and differences between objects (e.g., size, color, shape). ● Use identified attributes to sort a collection of objects. ● Count the number of objects in each collection. ● Group the collections by the amount in each one. |
| DOK | | Blooms |
| 1-2 | | Remember, Apply, and Analyze |

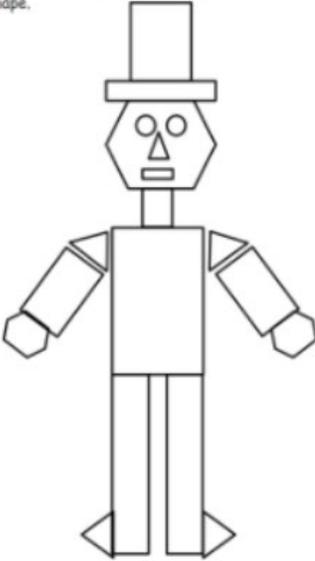
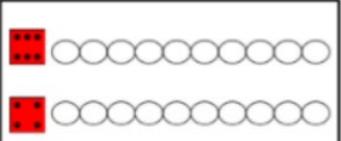
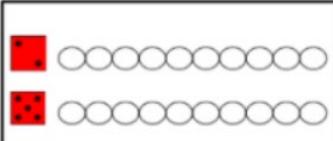
Common Misconceptions

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| <ul style="list-style-type: none"> ● Not yet counting each object in a set once, and only once with one touch per object (one-to-one correspondence). | <ul style="list-style-type: none"> ● Not yet realizing that objects can be sorted into multiple categories. |
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ASSESSMENT GUIDE

- [Describe and compare measurable attributes](#)
- [Classify objects and count the number of objects in each category](#)

| Grade | CCSS Domain | CCSS Strand |
|--|--|--|
| K | Measurement and Data | Describe and compare measurable attributes |
| Sample Task #1 (Constructed Response) | | |
| | <p>Color the triangles blue. Color the rectangles red. Color the circles green. Color the hexagons yellow.</p> <div style="text-align: center;">  </div> <p>On the back of your paper, draw 2 triangles and 1 hexagon. How many shapes did you draw? _____</p> | |
| Sample Task #2 | | |
| | <p>In each row, circle the one that doesn't belong. Explain your choice to a grown-up.</p> <div style="text-align: center; margin: 10px 0;"> <hr style="width: 100%;"/>  <hr style="width: 100%;"/> </div> | |

| Grade | CCSS Domain | CCSS Strand |
|---|-----------------------------|--|
| K | Measurement and Data | Classify objects and count the number of objects in each category |
| Sample Task #1 (Constructed Response) | | |
| <p>Color the shapes. Count how many of each shape is in the shape robot. Write the number next to the shape.</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>Red <input type="text"/></p> <p>Yellow <input type="text"/></p> <p>Green <input type="text"/></p> <p>Orange <input type="text"/></p> </div> <div style="text-align: center;">  </div> </div> | | |
| Sample Task #2 (Multiple Choice) | | |
| <p>Count the dots on the die. Color as many beads as the dots on the die. Circle the longer chain in each pair.</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 45%;">  <p>_____ is more than _____</p> </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>4.</p>  <p>_____ is more than _____</p> </div> </div> | | |

MLSS AND CLR GUIDE

- [Describe and compare measurable attributes](#)
- [Classify objects and count the number of objects in each category](#)

| CCSS Domain | | CCSS Cluster |
|---|---|--|
| Measurement and Data | | Describe and compare measurable attributes |
| Culturally and Linguistically Responsive Instruction | | |
| Relevance to Families and Communities | <p>During a unit focused on describing and comparing measurable 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, students can go on a shape hunt and draw 4 shapes they found at home and orally tell the parents which shapes they found and this interaction will lead to finding more shapes at home in their backyard etc. which in turn will help all students with the language aspect of the shapes but also with their own home language because this activity can be done in any language.</p> | |
| Cross-Curricular Connections | <p>Science: In Kindergarten, the NGSS states students should “make observations (firsthand or from media) to collect data that can be used to make comparisons.” Consider providing a connection for students to make direct comparisons based on length, width or size.</p> <p>Language Arts: Literature can offer connections about measurement such as: <i>The Giant Carrot</i> by Jan Peck and <i>Size</i> by Henry Pluckrose.</p> | |
| 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</i> | <ul style="list-style-type: none"> • When planning with your HQIM, consider how to modify tasks to represent the prior experiences, culture, language and interests of your students to “portray mathematics as useful and important in students’ lives and promote students’ lived experiences as important in mathematics class.” Tasks can also be designed to “promote social justice [to] engage students in using mathematics to understand and eradicate social inequities (Gutstein 2006).” For example, when studying describing and comparing measurable attributes, the types of mathematical tasks are critical because students will have a different understanding of what attributes the teacher is referring to. The vocabulary will be a major key component and modeling will also be crucial for students at this level since they all come with |

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| | <p><i>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>different levels of mathematics. Language could also be a factor to consider, so lots of pictures and actual objects will enhance and will aid in students moving in the learning of the math continuum.</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 comparing length and other attributes of objects, using the terms bigger, longer, and taller. ● Connect to comparing two objects by placing one on top of another and indicating which objects take up more space. ● Connect to arranging objects in order according to characteristics or attributes, such as height. | <ul style="list-style-type: none"> ● Connect to classifying objects into given categories; count the numbers of objects in each category and sort the categories by count (K.MD.3) ● Connect to analyzing, describing, and comparing shapes to investigate measurable attributes (K.G). | <ul style="list-style-type: none"> ● Connect to ordering three objects by length; comparing the lengths of two objects indirectly by using a third object (1.MD.A.1). |

Suggested Instructional Strategies

Pre-Teach

| <i>Level of Intensity</i> | <i>Essential Question</i> | <i>Examples</i> |
|---------------------------|--|---|
| Targeted | <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 uses images/resources (especially those being used the first time) when studying to describe and compare measurable attributes because students at this level need manipulatives and actual objects to explore and use for comparing measurable attributes of objects. Students need to hold and feel the</p> |

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| | | objects. The exposure to objects being used in a lesson will benefit students when describing and comparing measurable attributes. These students will have a chance at feeling the mass of the objects, seeing which ones are shorter and longer, which objects are lighter and which ones are heavier. This will also influence their learning of vocabulary words since the teacher will be sort of front-loading for the actual lesson. |
| Intensive | <i>What critical understandings will prepare students to access the mathematics for this cluster?</i> | Indicator 11.3 of the “New Mexico Early Learning Guidelines, Essential Indicator:” Demonstrates emerging knowledge of measurement: This standard provides a foundation for work with describing and comparing measurable attributes because the student demonstrates an understanding of non-standard units to measure and make comparisons. It is important for students to have the foundation for measurement so they can move on in their learning continuum to describe the comparison of objects and their measurable attributes. 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 describe and compare measurable attributes by providing specific feedback to students on their work through a short mini-lesson because students at this level will have to work in partners or individually on a white board show their work, the teacher can quickly scan the room and see misunderstanding. Teachers can quickly have the child orally explain how they organize and compare the object's attributes. The child's thinking process might be exposed when explaining and the teacher will be able to help the child on the spot or in a small group. Targeted re-engagement can support students as they internalize the content while still maintaining the flow of the unit because they |

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| | | might be missing just a little piece, there must be a misunderstanding but if the rest of the students in the small group start questioning and the teacher providing assistance by providing sentence frames for the students to use this will feel less intrusive. |
| 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 Describe and Compare measurable attributes by confronting student misconceptions because five-year old children have misconceptions of measurement, they see things as smaller and bigger. This is a hard concept to learn for the little ones. Therefore, students will need lots of hands-on activities and experiences with measurement: weight, length and volume to begin to understand measuring. |
| 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 describing and comparing measurable attributes, some learners may benefit from an extension such as the opportunity to explore links between various topics when studying to describe and compare measurable attributes because students will have the opportunity to explore other objects that they can measure specially the object permanence is hard for students to understand. Exploration time with liquids and different size flasks to pour in. |

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|---|--|---|--|
| <i>CCSS Domain</i> | | <i>CCSS Cluster</i> | |
| Measurement and Data | | Classify objects and count the number of objects in each category | |
| Culturally and Linguistically Responsive Instruction | | | |
| Relevance to Families and Communities | | During a unit focused on classifying objects and counting the number of objects in each category, 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, the home school connection activity can be | |

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| | <p>sent home and the objective will be for students to help their mother with pairing up socks. The students will have to categorize white socks, black socks etc., then they would have to pair socks according to size. Once students are done, they will have to put the socks away etc. This will also elicit conversation with parents and other siblings when helping with laundry.</p> | |
| <p>Cross-Curricular Connections</p> | <p>Science: Consider providing opportunities to sort various organisms or animals into two piles, such as organisms with wings and those without wings. Students can then count the number of specimens in each pile. Finally, students can use these category counts and their understanding of cardinality to say whether there are more specimens with wings or without wings.</p> <p>Language Arts: Consider providing opportunities for students to sort words by spelling pattern or word families. Follow up with questions related to category counts and count comparisons.</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 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"> • 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 classifying objects and counting the number of objects in each category the types of mathematical tasks are critical because students at this level will have difficulty remembering number names and understanding new vocabulary for example identifying and classifying and categorizing. Therefore, the tasks associated with this cluster must be ongoing, it should be part of the kindergarten daily routine. |

Planning for Multi-layered System of Supports

| <i>Previous Learning</i> | <i>Current Learning</i> | <i>Future Learning</i> |
|---|--|--|
| <ul style="list-style-type: none"> ● Connect to sorting objects onto a large graph according to one attribute, such as size, shape or color. ● Connect to sorting, classifying, and ordering objects by size and other properties. ● Connect to arranging objects in order according to characteristics or attributes, such as height. | <ul style="list-style-type: none"> ● Connect to using understanding of counting and cardinality to accurately count to tell how many. Connect to recognizing whether the number in a group is greater than, less than, or equal to the number in another group. (K.CC.4, 5, 6) | <ul style="list-style-type: none"> ● Connect to organizing, representing, interpreting, and comparing data with up to three categories. (1.MD.4) |

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 introduces new representations (e.g., number lines) when studying Classify objects and count the number of objects in each category because students might have familiarity with counting on a number line and will need the number line as a point of reference especially if the child is at the count all stage in which the child has to recount everything from one. The number line will help the child classify numbers and determine which number is smaller, or larger than the others for organizing groups of objects when counting. |
| Intensive | <i>What critical understandings will prepare students to access the mathematics for this cluster?</i> | K.CC.C.6: This standard provides a foundation for work with classifying objects and counting the number of objects in each category because comparing numbers is a foundational skill which is critical to learning to classify groups of objects. Students must have previous experience with identifying groups of objects in groups as less than, equal to or greater than a number of objects in another group. Students must have the counting and matching skills. 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, for example, students may benefit from re-engaging with content during a unit on classify objects and count the number of objects in each category by critiquing student approaches/solutions to make connections through a short mini-lesson because in kindergarten is all about kid-watch approach the teacher is everywhere and has ears and eyes everywhere, this means we have to be in constant interaction with the class and actively surveying and checking for understanding. You know when they give you that look or their board is blank you can quickly be responsive to students who are struggling. It might mean the child needs access to a number line, number chart or just needs one more push to get it. You will know once you are roaming the room and seeing what the kids are demonstrating with manipulatives, paper and pencil, etc. |
| Intensive | What assessment data will help identify content needing to be revisited for intensive interventions? | 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 on classifying objects and count the number of objects in each category by addressing conceptual understanding because students must have a foundation in counting and also comparing numbers which one is bigger, smaller or if the numbers are the same. Students will need intensive reteach in the foundational skills in order to support students as they internalize the content. This support will mean maybe going back to counting and cardinality in order to build on the numeracy in order to move on to counting groups of objects and organizing them in order from least to greatest. |
| 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 classifying objects and counting the number of objects in each category, some learners may benefit from an extension such as the opportunity to explore links between various topics when studying classify objects and count the number of objects in each category because the students can count shapes and categorize them, the students can classify the different shapes by color size or sides. Students can make a presentation of their work; they can model their work with pictures.