****



SUGGESTED

**INSTRUCTIONAL**

**PLANNING GUIDE**

*for the Mississippi College- and Career-Readiness Standards*

**q Mathematics**

|  |
| --- |
| **Grade 3** |

The Mississippi State Board of Education, the Mississippi Department of Education, the Mississippi School for the Arts, the Mississippi School for the Blind, the Mississippi School for the Deaf, and the Mississippi School for Mathematics and Science do not discriminate on the basis of race, sex, color, religion, national origin, age, or disability in the provision of educational programs and services or employment opportunities and benefits. The following office has been designated to handle inquiries and complaints regarding the non‑discrimination policies of the above mentioned entities: Director, Office of Human Resources, Mississippi Department of Education, 359 North West Street, P.O. Box 771, Jackson, MS  39205‑0771,  (601)359-3513.

**Mississippi Department of Education**359 North West Street

P. O. Box 771

Jackson, Mississippi 39205-0771

(601) 359-3513

[www.mdek12.org](http://www.mdek12.org)

|  |
| --- |
| **MISSISSIPPI DEPARTMENT OF EDUCATION**  |
| **Carey M. Wright, Ed.D.**State Superintendent of Education |
| **Nathan Oakley, Ph.D.**Chief Academic Officer |
| **Wendy Clemons** Executive Director, Office of Secondary Education/Dropout Prevention & Professional Development | **Tenette Smith, Ed.D.** Executive Director, Office of Elementary Education and Reading |
| **Marla Davis, Ph.D.**State Director of Curriculum and Instruction | **Elise Brown** Director of Online Professional Development  Mathematics Professional Development Coordinator (6-12) |
| **Tommisha Johnson**K-12 Mathematics Content Director | **Amy Pinkerton**Mathematics Professional Development Coordinator (K-5) |

**Special Acknowledgements**

Bailey Education Group

The Kirkland Group

**INTRODUCTION**

The unprecedented, nationwide school closures in the spring of 2020 due to the COVID-19 pandemic have created a shift in how districts plan for school re-entry. Instead of the traditional brick-and-mortar planning, administrators are now identifying models that will support a variety of instructional delivery scenarios as they plan for school reopening. The traditional methods of planning and delivery are nearly impossible to implement as a stand-alone model; instead, innovative educators are developing and identifying strategies and resources to support a variety of distance learning scenarios as part of their plans. When using new models of delivery, it is important to recognize that the traditional approach to remediation—providing work better suited for earlier grades—may be insufficient. Instead, the conventional approach to remediation will likely compound the problem educators are trying to correct. According to a 2018 study, [The Opportunity Myth[[1]](#footnote-2)](https://tntp.org/assets/documents/TNTP_The-Opportunity-Myth_Web.pdf), the approach of “meeting students where they are”, while often well-intended, only widens the achievement gap. Instead of remediation, teachers and administrators are encouraged to look toward acceleration methods to support student growth and close the gaps.

**PURPOSE**

The purpose of the *Suggested Mississippi College- and Career-Readiness Standards Instructional Planning Guides* is to provide a *SUGGESTED* guide to assist teachers in planning rigorous, coherent lessons that focus on the critical content of each grade level. Providing curriculum guidance through intentional standard grouping and consideration for the time needed to address different objectives, should encourage consistent instruction that fully aligns to the Mississippi College- and Career-Readiness Standards. The use of this guide can also foster collaborative planning across schools and districts throughout the state.

**DEVELOPMENT**

The following planning and subsequent grouping of standards were determined through a collaborative process among state-level content specialists. By connecting standards through common conceptual understandings and relationships, the expectation is that conceptual connections will promote a cohesive process and avoid the teaching of standards in isolation. Additionally, it promotes a deeper understanding and a more authentic acquisition of mathematical knowledge and skills. The Standards for Mathematical Practices (SMPs) presented are those suggested to be highlighted within the respective standard; however, this does not exclude the inclusion of other SMPs. The standards determined as “**priority**” have been bolded and are standards identified as critical to the mastery of other standards. A standard’s “**priority**” status does *NOT* have a direct correlation with test item frequency. Additionally, some standards may appear multiple times throughout the course with a portion of the standard highlighted to depict that only that portion of the standard is to be taught within that unit.

**RESOURCES FOR CONSIDERATION**

The resources listed below may be referenced to support classroom teachers in the development of lesson plans and instruction at the local level. This list is not meant to be exhaustive, rather it represents consultative resources that align with the Units/Themes provided in the Instructional Planning Guides. Educators are encouraged to use these resources in addition to those curriculum materials that meet the needs of the students they serve.

| High-Quality Instructional Materials (HQIM) | Instruction and Planning Resources | Standards for Mathematical Practices (SMPs) | AssessmentResources | Professional Development |
| --- | --- | --- | --- | --- |
| * [MS HQIM Defined](https://mdek12.org/HQIM)
* [MS Adopted HQIM (Textbooks)](https://www.mdek12.org/caravan2019)
* [enVision Mathematics 2020 Correlation to the MS CCRS K-5](https://assets.savvas.com/correlations/MS_2016_enVMS2020_K-5.pdf?_ga=2.245827716.1280125487.1593455317-1093477658.1593035292)
* [MHE My Math Learning Solution](https://s3.amazonaws.com/ecommerce-prod.mheducation.com/unitas/school/explore/sites/mymath/mcgraw-hill-my-math-learning-solution.pdf)
* [Great Minds (Eureka Math) Teacher Resource Pack](https://eurekamath.greatminds.org/teacher-resource-pack) [Great Minds Alignment to MSCCRS](https://greatminds.org/resources/products/mississippi-standards-alignment-study)
 | * [Achieve the Core Coherence Map-3](https://achievethecore.org/coherence-map/3)[rd](https://achievethecore.org/coherence-map/3) [Grade Math](https://achievethecore.org/coherence-map/3)
* [Standards Dependency and Flow View](http://jeffbaumes.github.io/standards/)
* *Scaffolding Instruction for ELLs*
* [Achieve the Core CCR Shifts in Mathematics](https://achievethecore.org/content/upload/SAP_ShiftsAtAGlance_02.pdf)
* [Standards Progressions for Mathematics Progression Documents](http://ime.math.arizona.edu/progressions/)
* [SFUSD Manipulatives List](http://www.sfusdmath.org/manipulatives.html)
* [Printable Manipulatives](https://www.mathematicalpractices.com/mp1e/content/printable-manipulatives/)
* [SFUSD Manipulatives List](http://www.sfusdmath.org/manipulatives.html)
* [Printable Manipulatives](https://www.mathematicalpractices.com/mp1e/content/printable-manipulatives/)
* [Achieve the Core Instructional Practice Guide K-8](https://achievethecore.org/category/1155/printable-versions)
* [Mississippi Exemplar Units and Lesson Plans-Grade 3 Math](https://www.mdek12.org/sites/default/files/documents/OAE/OEER/Exemplar%20Units/math/3rd-Grade-Exemplar-Unit.pdf)
* [Mississippi CCRS Exemplar Lesson Plans](https://mdek12.org/ESE/math/lesson-plans)
* [HCPSS Family Mathematics Support Center-Grade 3](https://hcpss.instructure.com/courses/34429/pages/grade-3-star-mathematics-overview)
* [MS CCRS Scaffolding Documents](https://mdek12.org/ese/ccr)
* [Access for All Guidance](https://mdek12.org/sites/default/files/documents/OAE/OAE/2019-access-for-all-guide.pdf)
* [MDE Family Guides for Student Success](https://mdek12.org/OAE/OEER/FamilyGuidesEnglish)\*

(Alternative Language: [Spanish](https://mdek12.org/OAE/OEER/FamilyGuidesSpanish))*\*This resource can be used for standards reinforcement of previous grades.* | * [Illustrative Mathematics Understanding the Standards for Mathematical Practices (SMPs)](http://tasks.illustrativemathematics.org/practice-standards/)
* [Inside Mathematics Mathematical Practice Standards](https://www.insidemathematics.org/common-core-resources/mathematical-practice-standards)
* [Inside Mathematics Mentors of Mathematical Practice](https://www.insidemathematics.org/common-core-resources/mentors-of-mathematical-practice)
 | * [MS MAAP Program](https://mdek12.org/OSA/MAAP)
* [MS MAAP-A Program](https://mdek12.org/OSA/SP/MAAP-A)
* [MS MAAP Mathematics Resources](https://districtaccess.mde.k12.ms.us/studentassessment/Public%20Access/Forms/AllItems.aspx?RootFolder=%2Fstudentassessment%2FPublic%20Access%2FStatewide%5FAssessment%5FPrograms%2FMAAP%2DMississippi%20Academic%20Assessment%20Program%2FMath%5FGuidance)
* [Inside Mathematics Performance Tasks 2-HS](https://www.insidemathematics.org/performance-assessment-tasks)
* [Illustrative Mathematics Grade 3 Tasks](http://tasks.illustrativemathematics.org/content-standards/3)
* [Goalbook Pathways Grade 3](https://goalbookapp.com/pathways/?ref=topic" \l "!/browse-topics/math/3)
* [Khan Academy Grade 3](https://www.khanacademy.org/math/cc-third-grade-math)
 | * [MDE Professional Development Resources](https://www.mdek12.org/OPD/home)
* [MARS Prototype Professional Development Modules](https://www.map.mathshell.org/pd.php)
* [NCTM Professional Development Resources](https://www.nctm.org/Conferences-and-Professional-Development/Professional-Development-Resources/)
* [Inside Mathematics Classroom Videos](https://www.insidemathematics.org/classroom-videos)
* [NCTM Math Forum](https://www.nctm.org/tmf/mathed/mathed.research.new.html)
* [Great Minds (Eureka) Webinars](https://eurekamath.greatminds.org/webinar-library)
* [Using Manipulatives in the Classroom](https://www.teachervision.com/professional-development/using-manipulatives)
 |
| Applets, Demos, Interactives, and Virtual Manipulatives |
| * [CPM Tiles](https://technology.cpm.org/general/tiles/)
* [Didax Virtual Manipulatives](https://www.didax.com/math/virtual-manipulatives.html)
* [Didax Free Activity Guides for Virtual Manipulatives](https://www.didax.com/virtual-manipulatives-activities)
* [GeoGebra Virtual Manipulatives](https://www.geogebra.org/m/NPDu3rCm)
* [Houghton Mifflin and Harcourt iTools](https://www-k6.thinkcentral.com/content/hsp/math/hspmath/na/common/itools_int_9780547584997_/main.html)
* [Math Playground Math Manipulatives](https://www.mathplayground.com/math_manipulatives.html)
* [McGraw Hill (Glencoe) Virtual Manipulatives](http://www.glencoe.com/sites/common_assets/mathematics/ebook_assets/vmf/VMF-Interface.html)
* [The Math Learning Center Math Apps](https://www.mathlearningcenter.org/apps)
* [Toy Theatre Virtual Manipulatives](https://toytheater.com/category/teacher-tools/virtual-manipulatives/)
* [Visnos Mathematical Demonstrations](https://www.visnos.com/demos)
 |

| **TERM 1****UNIT OF STUDY**(REAL-WORLD APPLICATION)**q** | **MS CCR STANDARDSq** | **STANDARDS FOR MATHEMATICAL PRACTICE (SMPs)q** | CORE ACADEMIC **VOCABULARY TERMSq** |
| --- | --- | --- | --- |
| **Unit 1: Using Place Value and the Estimation of Values** (Students build on knowledge from grades K-2 of understanding the values of numbers based on place value of the digits. Using this understanding, students learn to round, which develops the skill of estimation.) | 3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100. | * **SMP 5** Use appropriate tools strategically.
* **SMP 7** Look for and make use of structure.
* **SMP 8** Look for and express regularity in repeated reasoning.
 | HundredsNearestOnesPlace valueRoundTensThousands |
| **Unit 2: Addition and Subtraction within 1000** (Beyond grade K-2, students should have a grasp on the concept of addition and subtraction. They should be fluently adding and subtracting within 1000 using multiple strategies, including the standard algorithms using various strategies based on their understanding of properties of the operations. Addition and Subtraction are the foundation of all complex Math.) | 3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. \*\*\*\* | * **SMP 2** Reason abstractly and quantitatively.
* **SMP 7** Look for and make use of structure.
* **SMP 8** Look for and express regularity in repeated reasoning.
 | AddAddendsAdditionAlgorithmDifference HundredsOnesPlace valueRegroupSubtractSubtraction SumTensThousands |
| **Unit 3: Using Data to Represent Problem Solutions** (Students learn to model their solutions to problems in organized data charts. This skill is foundational for statistics. It also translates to science as students collect and organize data when following the scientific method while conducting observations.) | 3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets*. | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 4** Model with Mathematics.
* **SMP 6** Attend to precision.
* **SMP 7** Look for and make use of structure.
 | Data SetLine PlotScaleScaled Bar GraphScaled Picture Graph |
| **Unit 4: Telling Time**(Building on knowledge from grades 1-2, Students in third grade should be able to extend their knowledge of telling time and measure elapsed time both in and out of context using clocks and number lines.) | **3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 4** Model with Mathematics.
* **SMP 6** Attend to precision.
 | Elapsed TimeEstimate MinutesTimeTime Interval |

| **TERM 2****UNIT OF STUDY**(REAL-WORLD APPLICATION)**q** | **MS CCR STANDARDSq** | **STANDARDS FOR MATHEMATICAL PRACTICE (SMPs)q** | CORE ACADEMIC **VOCABULARY TERMSq** |
| --- | --- | --- | --- |
| **Unit 5: Intro to Multiplication** (As an introduction to Multiplication, students develop the concept to determine the total number of objects when there are a specific number of groups with the same number of objects in each group. An extension of skip counting, multiplication requires students to visualize groups of things rather than individual things.) | **3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7*.** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 4** Model with Mathematics.
* **SMP 7** Look for and make use of structure.
 | Equal Groups FactorGroupMultipleMultiplicationProduct |
|  | **3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 ×? = 48, 5 = \_ ÷ 3, 6 × 6 =?** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 2** Reason abstractly and quantitatively.
* **SMP 6** Attend to precision.
* **SMP 7** Look for and make use of structure.
 | EquationFactorMultipleProductTrue SentenceUnknown Number Whole Number |
|  | **3.OA.5 Apply properties of operations as strategies to multiply and divide. \*\******Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)*** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 4** Model with Mathematics.

 **• SMP 7** Look for and make use of structure.* **SMP 8** Look for and express regularity in repeated reasoning.
 | Associative PropertyCommutative PropertyDistributive PropertyEquation MultipleNumber PropertyUnknown Value |
|  | **3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.** | * **SMP 2** Reason abstractly and quantitatively.
* **SMP 7** Look for and make use of structure.
* **SMP 8** Look for and express regularity in repeated reasoning.
 | FactorFluentlyMultipleProduct |
| **Unit 6: Building Fluency with Patterns** (Student use the visual representations of an addition table and a multiplication table to understand the patterns of multiplication facts. This skill allows students to mentally recall multiplication facts based on an understanding of number properties, place value, and number patterns.) | **3.OA.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table) and explain them using properties of operations. *For example, observe that 4 times a number is always even and explain why 4 times a number can be decomposed into two equal addends.*** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 2** Reason abstractly and quantitatively
* **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.
 | Addition TableArithmetic PatternMultiplication TableSkip Counting |
|  | 3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. \*\*\*\* | * **SMP 2** Reason abstractly and quantitatively
* **SMP 7** Look for and make use of structure.
* **SMP 8** Look for and express regularity in repeated reasoning.
 | FactorMultiple Product |
| **Unit 7: Understanding Division***(Using arrays, groups, number patterns, properties, and place value, students make the connection of division being the opposite operation of multiplication.)* | **3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8*.** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 4** Model with Mathematics.
* **SMP 7** Look for and make use of structure.
 | DividendDivision DivisorPartitioned EquallyQuotientShare |
|  | **3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 ×? = 48, 5 = \_ ÷ 3, 6 × 6 =?** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 2** Reason abstractly and quantitatively.
* **SMP 6** Attend to precision.
* **SMP 7** Look for and make use of structure.
 | DividendDivisionDivisorFactorOpposite OperationProductQuotientUnknown FactorWhole Number |
|  | **3.OA.5 Apply properties of operations as strategies to multiply and divide. \*\******Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 ×5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)*** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 4** Model with Mathematics.

 **• SMP 7** Look for and make use of structure.* **SMP 8** Look for and express regularity in repeated reasoning.
 | Associative PropertyCommutative PropertyDistributive PropertyEquation Number PropertyUnknown Value |
|  | **3.OA.6 Understand division as an unknown-factor problem. For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 7** Look for and make use of structure.
 | DividendDivisionDivisorQuotientOpposite OperationUnknown Factor |
|  | **3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers; and fully understand the concept when a remainder does not exist under division.** | * **SMP 2** Reason abstractly and quantitatively.
* **SMP 7** Look for and make use of structure.
* **SMP 8** Look for and express regularity in repeated reasoning.
 | DividendDivisorFactorFluentlyNumber PropertyProductQuotient |
| **Unit 8: Solving Word Problems Using the Four Operations** (After building an understanding of addition, subtraction, multiplication, and division students relate their computational skills to solving word problems where they apply the computation to its appropriate context. This is foundational for relating mathematics concepts to real-world context to solve problems.) | **3.OA.3** **Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. \*** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 4** Model with Mathematics.
* **SMP 7** Look for and make use of structure.
 | ArraysDivisionEqual GroupsEquationMultiplicationUnknown Number |
|  | **3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. \*\*\*** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 2** Reason abstractly and quantitatively
* **SMP 4** Model with Mathematics.
* **SMP 5** Use appropriate tools strategically.
 | AdditionDivisionEquationEstimation Mental MathMultiplicationRoundingSubtractionUnknown Quantity |
| **Unit 9: Measuring Volume and Mass** (Measuring using standard units is a life skill that will translate into many daily activities such as, but not limited to, dosages of medicine, preparing drink mixes, adding milk to a cake recipe, or aquarium management.) | **3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). \*\*\*\*\*\*** **Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. \*\*\*\*\*\*\*** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 2** Reason abstractly and quantitatively.
* **SMP 4** Model with Mathematics.
* **SMP 5** Use appropriate tools strategically.
* **SMP 6** Attend to precision
 | BeakerGramKilogramLiterMass Volume  |

| **TERM 3****UNIT OF STUDY**(REAL-WORLD APPLICATION)**q** | **MS CCR STANDARDSq** | **STANDARDS FOR MATHEMATICAL PRACTICE (SMPs)q** | CORE ACADEMIC **VOCABULARY TERMSq** |
| --- | --- | --- | --- |
| **Unit 10: Fractions**(In grades K-2, students learned to partition shapes. This is the introduction of the term “fraction”. Students learn to express fractions as fair sharing, parts of a whole, and parts of a set using various contexts. This skill is a life skill that will translate into multiple mathematics concepts relating to working with ratios, division, partitioning, proportions, etc.) | **3.NF.1 Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b*. \*\*\*\*\*** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 4** Model with Mathematics.
* **SMP 7** Look for and make use of structure.
 | ComparisonDenominatorEqual Distance Equal PartsEqual To (=)Equivalence Equivalent Fraction Greater Than (>)IntervalsJustifyLess Than (<)NumeratorPartitionPartitioned |
|  | **3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape*.** | * **SMP 2** Reason abstractly and quantitatively
* **SMP 4** Model with Mathematics.
* **SMP 5** Use appropriate tools strategically
 | CircleEqual PartFourthsHalfHalvesQuarterPartPartitionRectangleShareThird |
| **Unit 11: Fractions on the Number Line** (Students transfer their understanding of parts of a whole to partition a number line into equal parts. This lays the foundation for measuring with a Ruler and will later be important in students ordering and comparing the values of rational numbers.) | **3.NF.2 Understand a fraction as a number on the number line; represent fractions on a number line diagram. \*\*\*\*\*****3.NF.2a Represent a fraction 1/*b* on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into *b* equal parts. Recognize that each part has size 1/*b* and that the endpoint of the part based at 0 locates the number 1/*b* on the number line.****3.NF.2b Represent a fraction *a*/*b* on a number line diagram by marking off a lengths 1/*b* from 0. Recognize that the resulting interval has size *a*/*b* and that its endpoint locates the number *a*/*b* on the number line.** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 4** Model with Mathematics.
* **SMP 7** Look for and make use of structure.
 | DenominatorEndpointIntervalNumber LineNumber Line DiagramNumeratorPartition |
| **Unit 12: Fractions, Rulers and Line Plots** (As an extension of partitioning a number line, students begin to translate this knowledge to measuring length with standard units on a ruler.Measuring using standard units, is a life skill that will translate into many daily activities dealing with spatial reasoning.) | **3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 4** Model with Mathematics.
* **SMP 6** Attend to precision.
 | Equal PartFourthsHalfHalvesLine PlotQuarterPartPartitionRuler |
| **Unit 13: Equivalent Fractions** (As an introduction to comparing rational numbers, students build a foundation for the skill by developing this skill visually.) | **3.NF.3 Explain equivalence of fractions in special cases and compare fractions by reasoning about their size. \*\*\*\*\*****3.NF.3a Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.****3.NF.3b Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4; 4/6 = 2/3. Explain why the fractions are equivalent, e.g., by using a visual fraction model.****3.NF.3c Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form 3 = 3/1  ; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram*.****3.NF.3d Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.** | * **SMP 2** Reason abstractly and quantitatively.
* **SMP 3** Construct viable arguments and critique the reasoning of others.
* **SMP 4** Model with Mathematics.
* **SMP 6** Attend to precision
* **SMP 7** Look for and make use of structure.
* **SMP 8** Look for and express regularity in repeated reasoning
 | CompareDenominatorEqualEqual To (=)EquivalentEquivalent FractionGreater Than (>)Less Than (<)NumeratorVisual Fraction Model |

| **TERM 4****UNIT OF STUDY**(REAL-WORLD APPLICATION)**q** | **MS CCR STANDARDSq** | **STANDARDS FOR MATHEMATICAL PRACTICE (SMPs)q** | CORE ACADEMIC **VOCABULARY TERMSq** |
| --- | --- | --- | --- |
| **Unit 14: Shapes and Their Attributes**(As a foundational skill to Geometry, students recognize what classifies a given shape as a quadrilateral or not, based on its attributes. Students should be encouraged to use proper vocabulary when describing the properties of quadrilaterals.) | **3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.** | * **SMP 5** Use appropriate tools strategically.
* **SMP 6** Attend to precision.
* **SMP 7** Look for and make use of structure.
 | Attributes Closed Figure FeaturesOpen FigurePolygonQuadrilateral Rhombus Subcategories Two-Dimensional |
| **Unit 15: Polygons and Perimeter**(Students develop an understanding of the concept of perimeter. They find the perimeter of objects and recognize the patterns that exist when finding the sum of the lengths and widths of rectangles. This skill is used in architecture, carpentry, and other mathematical and engineering fields.) | **3.MD.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 4** Model with Mathematics.
* **SMP 7** Look for and make sense of structure.
 | PerimeterPolygonSideSide Length |
| **Unit 16: Understanding Area**(As an extension of perimeter and multiplication, students learn how to relate an array of units to the area of a figure. They also begin to make the connection of multiplying the length and width to get the same answer. This skill is used in architecture, carpentry, and other mathematical and engineering fields.) | **3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.****3.MD.5a A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.****3.MD.5b A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units.** | * **SMP 2** Reason abstractly and quantitatively.
* **SMP 4** Model with Mathematics.
* **SMP 5** Use appropriate tools strategically.
* **SMP 6** Attend to precision
 | AreaAttributeDecomposeGapOverlapPlane FigureSide LengthSquare Cm.Square Ft.Square In.Square M.Square UnitTilingUnit Square |
|  | **3.MD.6 Measure areas by counting unit squares (square cm., square m., square in., square ft., and improvised units).** | * **SMP 5** Use appropriate tools strategically.
* **SMP 6** Attend to precision
 | Square Cm.Square Ft.Square In.Square M.Square Unit |
|  | **3.MD.7 Relate area to the operations of multiplication and addition.****3.MD.7a Find the area of a rectangle with whole-number side lengths by tiling it and show that the area is the same as would be found by multiplying the side lengths.****3.MD.7b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems and represent whole-number products as rectangular areas in mathematical reasoning.****3.MD.7c Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths *a* and *b* + *c* is the sum of *a* × *b* and *a* × *c*. Use area models to represent the distributive property in mathematical reasoning.****3.MD.7d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 2** Reason abstractly and quantitatively.
* **SMP 4** Model with Mathematics.
* **SMP 5** Use appropriate tools strategically.
* **SMP 6** Attend to precision
 | AreaFactorLengthProductSideTileUnit SquareWidth |
|  | **3.MD.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.** | * **SMP 1** Make sense of problems and persevere in solving them.
* **SMP 4** Model with Mathematics.
* **SMP 7** Look for and make sense of structure.
 | AreaPerimeterPolygonSideSide Length |

 ***\* See*** [**Glossary, Table 2**](http://www.corestandards.org/Math/Content/mathematics-glossary/Table-2/)***.***

***\*\* Students need not use formal terms for these properties.***

***\*\*\* This standard is limited to problems posed with whole numbers and having whole-number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order (Order of Operations).***

***\*\*\*\* A range of algorithms may be used.***

***\*\*\*\*\* Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.***

***\*\*\*\*\*\* Excludes compound units such as cm3 and finding the geometric volume of a container.***

***\*\*\*\*\*\*\* Excludes multiplicative comparison problems (problems involving notions of “times as much”; see*** [**Glossary, Table 2**](http://www.corestandards.org/Math/Content/mathematics-glossary/Table-2/)***)***

1. *https://tntp.org/assets/documents/TNTP\_The-Opportunity-Myth\_Web.pdf* [↑](#footnote-ref-2)