

3rd Grade Pacing Guide

Green: Major Clusters

Blue: Supporting Clusters

Yellow: Additional Clusters

[Instructional Content Nav - Mathematics: Focus by Grade Level](#)

[Math Grades 3-4](#)

Trimester 1

(Ends December 15th)

Chapter 1

Addition and Subtraction Within 1,000

- **Lesson 1.1: DELETE**
- **Lesson 1.2: Split into three lessons**
 - **Rounding to the nearest ten**
 - **Rounding to the nearest hundred**
 - **Rounding to the nearest ten and hundred**
 - **Use place value, estimation, and number lines to teach rounding, instead of procedures or rules (i.e 83 is between 80 and 90 on a numberline, but closer to 80).**
 - **IXL Skills:**
 - **P.1: Rounding - nearest ten or hundred only**
- **Lesson 1.3: Modify (Don't introduce compatible numbers to estimate)**
 - **IXL Skills:**
 - **P.5: Estimate sums up to 1,000**
- **Lesson 1.4: DELETE**
- **Lesson 1.5: As is**
 - **IXL Skills:**
 - **N.3: Properties of addition**
 - **N.4: Complete the equation using properties of addition**
- **Lesson 1.6: As is**
- **Lesson 1.7: As is**
 - **Use the correct math vocabulary when adding numbers (i.e. regrouping, decompose, compose, place value, etc.)**
 - **Allow students to use tangible base ten blocks to show the regrouping.**
 - **Ensure students understand that they may have to compose 10 ones into a ten and group it to the tens place. They may also have to compose 10 tens into a hundred and regroup it into the hundreds place.**
 - **IXL Skills:**
 - **C.1: Add two numbers up to three digits**
 - **C.3: Add two numbers up to three digits: word problems**
 - **C.4: Complete the addition sentence: up to three digits**
 - **C.6: Add three numbers up to three digits each**

- **C.7: Add three numbers up to three digits each: word problems**
- **Add a lesson on identifying patterns on an addition table**
- **Lesson 1.8: Modify (Don't introduce compatible numbers to estimate)**
 - **IXL Skills:**
 - **P.8: Estimate differences up to 1,000**
- **Lesson 1.9: DELETE**
- **Lesson 1.10: As is**
 - **Use the correct math vocabulary when subtracting numbers (i.e. regrouping, decompose, compose, place value, etc.)**
 - **Allow students to use tangible base ten blocks to show the regrouping.**
 - **Ensure students understand that they may have to decompose a ten into ten ones and regroup into the ones place. They may also have to decompose a hundred into 10 tens and regroup them to the tens place.**
 - **IXL Skills:**
 - **D.1: Subtract numbers up to three digits**
 - **D.3: Subtract numbers up to three digits: word problems**
 - **D.4: Complete the subtraction sentence: up to three digits**
- **Lesson 1.11: As is (Add more practice with subtraction and regrouping)**
 - **Show students how to check the difference of subtraction problems by using addition.**
 - **IXL Skills:**
 - **D.1: Subtract numbers up to three digits**
 - **D.3: Subtract numbers up to three digits: word problems**
- **Lesson 1.12: As is (Add more practice with two-step word problems)**
- **Assessment on Chapter 1**
- **Lesson 11.1: As is**
 - **Use geoboards and rubber bands to create polygons to find the perimeter.**
- **Lesson 11.2: As is**
 - **IXL Skills:**
 - **DD.1: Perimeter of rectangles**
 - **DD.2: Perimeter of rectilinear shapes**
 - **DD.3: Perimeter of polygons**
- **Lesson 11.3: Modify**
 - **At this point, only use examples like the “Unlock the Problem” question on page 637. In these examples, you are given the perimeter and all of the side lengths except one.**
 - **IXL Skills:**
 - **DD.4: Perimeter: find the missing side length**
 - **DD.5: Perimeter: word problems**
- **Add a lesson on real-world problems involving perimeter of polygons.**

- **Mini-assessment on Perimeter**

Chapter 1 Rules of Thumb

- Do NOT introduce rounding strategies that are procedural. Make sure that rounding strategies are always based on place value (i.e. 76 is between 70 and 80 but closer to 80). Use number lines to help students round numbers.
- Highlight the connection between the standard algorithm and place value when adding and subtracting. Make sure to use the correct vocabulary (i.e. regroup, decompose, compose, addend, sum, difference, digit, value, etc.)
- Estimation is extremely important in the development of number sense. Do not skip!!!
- Incorporate error analysis and multi-select questions into your everyday lessons.

Chapter 2

Represent and Interpret Data

SKIP Chapter 2 for now!

***Incorporate graphing into your morning meeting, if possible.**

Chapter 3

Understand Multiplication

- **Lesson 3.1: As is**
 - **Ensure students understand that the concept of multiplication is as follows:**
$$\text{TOTAL} = \# \text{ of groups } \times \# \text{ of objects in each group}$$
 - **IXL Skills:**
 - **E.1: Count equal groups**
- **Lesson 3.2: As is**
 - **Introduce vocabulary (i.e. factor, product, multiply, equation, etc.).**
 - **IXL Skills:**
 - **E.2: Identify multiplication expressions for equal groups**
 - **E.3: Write multiplication sentences for equal groups**
 - **E.4: Relate addition and multiplication for equal groups**
 - **N.10: Relate addition and multiplication**
- **Lesson 3.3: As is**

- Ensure students can relate multiplication with equal groups, repeated addition, and skip counting on a number line.
- IXL Skills:
 - E.8: Write multiplication sentences for number lines
- Lesson 3.4: As is
 - Add more examples of multiplying using bar models (tape diagrams).
- Lesson 3.5: As is
 - Add the following lesson from EngageNY in addition to the Go Math book:
 - Multiplication And The Array Model
 - Ensure students can relate multiplication with arrays, equal groups, repeated addition, and skip counting on a number line.
 - IXL Skills:
 - E.5: Identify multiplication expressions for arrays
 - E.6: Write multiplication sentences for arrays
 - E.7: Make arrays to model multiplication
- Lesson 3.6: As is
- Lesson 3.7: As is
 - Make sure to incorporate the Commutative Property for multiplication facts 0 and 1.
 - IXL Skills:
 - F.1: Multiply by 0
 - F.2: Multiply by 1
- Add a lesson on using multiplication strategies to solve one-step word problems.
 - Ensure students can identify and label each number in a multiplication equation (i.e. $5 \times 7 = 35$ ----> 5 (shelves) \times 7 (books in each shelf) = 35 (total number of books)).

Chapter 3 Rules of Thumb

- Make sure students understand the meaning of each factor. (Example: 5×7 is the total number of objects in 5 groups of 7 objects each.)

- Incorporate error analysis and multi-select questions into your everyday lessons.

- Multiplication strategies include equal groups, multiplication arrays, repeated addition, skip counting on a number line, bar models (tape diagrams), commutative property, etc. Students must be proficient in all strategies.

Chapter 4

Multiplication Facts and Strategies

- **Lesson 4.1: As is**
 - Incorporate multiplication strategies, the commutative property, and word problems into the lesson.
 - IXL Skills:
 - F.3: Multiply by 2
 - F.5: Multiply by 4
- **Lesson 4.2: As is**
 - Incorporate multiplication strategies, the commutative property, and word problems into the lesson.
 - NIX THE TRICK of adding a zero to the end of a number when multiplying by 10. Instead, have students use multiplication strategies to multiply by 10.
 - IXL Skills:
 - F.6: Multiply by 5
 - F.11: Multiply by 10
- **Lesson 4.3: As is**
 - Add the following lessons from EngageNY in addition to Go Math:
 - Multiplication Facts: Adding And Subtracting Equal Groups
 - Incorporate multiplication strategies, the commutative property, and word problems into the lesson.
 - IXL Skills:
 - F.4: Multiply by 3
 - F.7: Multiply by 6
 - G.1: Multiplication tables for 2, 3, 4, 5, and 10
 - G.2: Multiplication facts for 2, 3, 4, 5, and 10: true or false?
 - G.3: Multiplication facts for 2, 3, 4, 5, and 10: sorting
- **Lesson 4.4: As is**
 - Add the following lessons from EngageNY in addition to Go Math:
 - The Distributive Property
 - This is an extremely important lesson. You may have to spend a few days on this lesson to ensure mastery.
 - IXL Skills:
 - N.7: Distributive property: find the missing factor
- **Lesson 4.5: As is**
 - Incorporate multiplication strategies, the commutative property, the distributive property, and word problems into the lesson.
 - IXL Skills:
 - F.8: Multiply by 7
- **Lesson 4.6: As is**

- IXL Skills:
 - N.6: Properties of multiplication
 - N.9: Solve using properties of multiplication
- Lesson 4.7: As is
- Lesson 4.8: As is
 - Incorporate multiplication strategies, the commutative property, the distributive property, and word problems into the lesson.
 - IXL Skills:
 - F.9: Multiply by 8
- Lesson 4.9: As is
 - Incorporate multiplication strategies, the commutative property, the distributive property, and word problems into the lesson.
 - IXL Skills:
 - F.10: Multiply by 9
 - G.5: Multiplication tables for 6, 7, 8, and 9
 - G.6: Multiplication facts for 6, 7, 8, and 9: true or false?
 - G.7: Multiplication facts for 6, 7, 8, and 9: sorting
 - G.9: Multiplication tables up to 10
 - G.10: Multiplication facts up to 10: true or false?
 - G.11: Multiplication facts up to 10: sorting
- Lesson 4.10: Don't use the table. Provide more practice with two-step problems
 - Use equations with variables for unknown numbers (i.e. $4 \times 5 = n$)
 - IXL Skills:
 - H.6: Multiplication word problems
 - H.7: Multiplication word problems: find the missing factor

Chapter 4 Rules of Thumb

- Encourage students to use the facts they know for the distributive property rather than just the one that is shown.
- Use properties and vocabulary throughout the chapter.
- Incorporate error analysis and multi-select questions into the daily lessons. Add more two-step word problems and multi-part problems.

Chapter 5

Use Multiplication Facts

- Lesson 5.1: As is
 - IXL Skills:
 - H.4: Multiplication input/output tables
 - H.5: Multiplication input/output tables: find the rule
- Lesson 5.2: As is
 - Ensure students can determine the unknown number by relating three numbers to each other (i.e. $8 \times n = 48$, $15 = n \times 3$, $6 \times 6 = n$)
 - IXL Skills:
 - G.4: Multiplication facts for 2, 3, 4, 5, and 10: find the missing factor
 - G.8: Multiplication facts for 6, 7, 8, and 9: find the missing factor
 - G.12: Multiplication facts up to 10: find the missing factor
- Lesson 5.3: As is
 - IXL Skills:
 - N.8: Multiply using the distributive property
- Lesson 5.4: As is
 - NIX THE TRICK of adding a zero when multiplying by 10. Instead, have students use multiplication strategies to multiply by 10 and see if they notice a pattern.
 - IXL Skills:
 - H.1: Multiply by a multiple of ten
- Lesson 5.5: As is
 - Show multiplication by 10 using models and regrouping (i.e. $9 \times 50 = 45 \text{ tens} = 4 \text{ hundreds and } 5 \text{ tens} = 450$).
 - IXL Skills:
 - H.1: Multiply by a multiple of ten
- Assessment on Chapter 5

***DO NOT introduce the area formula until Lesson 11.6. Students in third grade are first required to find the area of a rectangle by tiling it and adding the square units. Once that is mastered, they then can show the area by multiplying the side lengths.**

- Lesson 11.4: As is
 - Use color tiles to find the area. Ensure there are not gaps or overlaps when students are tiling the plane figures.
- Lesson 11.5: As is
- Lesson 11.6: As is
 - Relate the addition of unit square when tiling a rectangle to the multiplication of the side lengths. These different strategies to find areas should provide the students with the same number.
- Add a lesson on calculating the area of rectangle in real-world context (word problems).

- **Lesson 11.7: DELETE**
 - Use these lessons from EngageNY and Learn Zillion instead of Go Math:
 - Interpret Area Models To Form Rectangular Arrays
 - Splitting rectangles to solve for area
- **Lesson 11.8: As is**
 - Add the following lesson from EngageNY in addition to Go Math:
 - Add the areas of rectangles within a rectilinear figure
 - Use the distributive property and area models to find the area of rectangles.
 - Be sure to use the vocabulary words decompose and compose when recognizing that area is additive.
- **Lesson 11.9: As is**
- **Lesson 11.10: As is**
 - Add the following lesson from EngageNY in addition to Go Math:
 - Solve Word Problems Involving Area And Perimeter With Four Operations
- **Mini-assessment on Area**

Chapter 5 Rules of Thumb

- Vertically aligned problems do not imply that students need to use the standard algorithm to solve them. Instead, use various multiplication strategies that have been introduced in previous chapters.
- Incorporate error analysis and multi-select questions into the daily lessons. Add more two-step word problems and multi-part problems.

Trimester 2

(Ends March 14th)

Chapter 6

Understand Division

- **Lesson 6.1: As is**
 - To act out and model division, you can use counters and paper plates to partition a collection of counters into equal groups.
 - Use the vocabulary words partition, equal groups, equal shares, and decompose. Use equal groups and equal shares interchangeably the entire chapter.
 - Use factor equations instead of division notation (use $___ \times 8 = 56$ or $8 \times ___ = 56$ in this lesson instead of $56 \div 8 = ___$).
 - IXL Skills:
 - I.1: Divide by counting equal groups
- **Lesson 6.2: As is**
 - Introduce the vocabulary word “divide” in this lesson.

- Ensure students understand that in this lesson the total amount of objects can be partitioned (divided) into equal groups to find out how many objects belong in each group/share.
- Total # of objects \div # of groups = # of objects per group
- You are calculating “How many objects per group?” in this lesson.
 - Example: $56 \div 8 = 7$ (56 students are partitioned into equally into 8 groups with 7 students per group)
 - Use factor equations instead of division notation (use $8 \times \underline{\quad} = 56$ in this lesson instead of $56 \div 8 = \underline{\quad}$).
 - IXL Skills:
 - **I.1: Divide by counting equal groups**
- Lesson 6.3: As is
 - Ensure students understand that in this lesson the total amount of objects can be partitioned (divided) into the same number of objects per group to find the number of equal groups.
 - Total # of objects \div # of objects per group = # of groups
 - You are calculating “How many equal groups?” in this lesson.
 - Example: $56 \div 8 = 7$ (56 students are partitioned into equally 8 students per group with 7 equal groups)
 - Use factor equations instead of division notation (use $\underline{\quad} \times 8 = 56$ in this lesson instead of $56 \div 8 = \underline{\quad}$).
 - IXL Skills:
 - **I.1: Divide by counting equal groups**
- Add a lesson that combines both concepts of division (How many per group? AND How many in each group?). Be sure to include more word problems.
- Lesson 6.4: As is
 - Do NOT skip the bar modeling division strategy!
 - Introduce math vocabulary dividend, divisor, and quotient **AND** use division notation for equations instead of factor equations (You can finally use $56 \div 8 = \underline{\quad}$ instead of $8 \times \underline{\quad} = 56$).
 - IXL Skills:
 - **I.2: Write division sentences for groups**
- Lesson 6.5: As is
- Lesson 6.6: As is
 - Use color tiles or counters to model division using arrays.
 - IXL Skills:
 - **I.4: Write division sentences for arrays**
- Lesson 6.7: As is (Don't spend too much time on this lesson.)

- IXL Skills:
 - **I.5: Relate multiplication and division for arrays**
- **Lesson 6.8: As is**
 - **Be careful with the math vocabulary used in this lesson. Although all three numbers are part of a fact family, it is important that the students understand the relationship between multiplication and division.**
 - IXL Skills:
 - **N.11: Relate multiplication and division**
- **Lesson 6.9: As is**
 - IXL Skills:
 - **J.1: Divide by 1**

Chapter 6 Rules of Thumb

- In lessons 6.1, 6.2, and 6.3 , students should write missing factor equations to represent their work. (i.e. Use $8 \times \underline{\quad} = 56$ or $\underline{\quad} \times 8 = 56$ instead of using $56 \div 8 = \underline{\quad}$). Start using division notation in Lesson 6.4 and beyond.

- Quotient is the number of objects in each share when the total number of objects is partitioned into equal shares **OR** Quotient is the number of shares when the total number of objects are partitioned into the same number of objects in each share.

- Division strategies include modeling equal groups, bar models (tape diagrams), repeated subtraction, division with arrays, relating multiplication and division, and writing related facts.

- Stress to students that Commutative Property does NOT apply to division.

- Incorporate error analysis, multi-select, and multi-part questions into your daily lessons.

Chapter 7

Division Facts and Strategies

- **Lesson 7.1 and 7.5: Combine lessons to mirror multiplication fact work.**
 - **Ensure students understand that dividing by 2 sometimes means partitioning a group in half.**
 - **Ensure students understand that dividing by 4 sometimes means partitioning a group in half and then in half again.**
 - **Add more word problems to each lesson and use math vocabulary consistently.**
 - IXL Skills:

- J.2: Divide by 2
 - J.4: Divide by 4
- Lesson 7.2 and 7.3: Combine lessons to mirror multiplication fact work.
 - NIX THE TRICK of removing a zero when dividing by 10. Instead, students should use one of the division strategies to show division of 10.
 - Add more word problems to each lesson and use math vocabulary consistently.
 - IXL Skills:
 - J.10: Divide by 10
 - J.5: Divide by 5
- Lesson 7.4 and 7.6: Combine lessons to mirror multiplication fact work.
 - Add more word problems to each lesson and use math vocabulary consistently.
 - IXL Skills:
 - J.3: Divide by 3
 - J.6: Divide by 6
 - K.1: Division facts for 2, 3, 4, 5, and 10
 - K.2: Division facts for 2, 3, 4, 5, and 10: true or false?
 - K.3: Division facts for 2, 3, 4, 5, and 10: sorting
- Lesson 7.7: As is
 - Add more word problems to each lesson and use math vocabulary consistently.
 - IXL Skills:
 - J.7: Divide by 7
- Lesson 7.8: As is
 - Add more word problems to each lesson and use math vocabulary consistently.
 - IXL Skills:
 - J.8: Divide by 8
- Lesson 7.9: As is
 - Add the following lessons from Learn Zillion in addition to Go Math:
 - Use multiplication and division to solve word problems
 - Solving two-step word problems using a variable representing an unknown quantity
 - IXL Skills:
 - J.9: Divide by 9
 - K.4: Division facts for 6, 7, 8, and 9
 - K.5: Division facts for 6, 7, 8, and 9: true or false?
 - K.6: Division facts for 6, 7, 8, and 9: sorting
 - K.7: Division facts up to 10
 - K.8: Division facts up to 10: true or false?
 - K.9: Division facts up to 10: sorting

- **Lesson 7.10: As is**
 - **Add more two-step word problems in this lesson and use math vocabulary consistently.**
 - **Ensure students can identify what the quotient represents for each word problem.**
 - **IXL Skills:**
 - **M.12: Addition, subtraction, multiplication, and division word problems**
 - **M.16: Two-step mixed operation word problems**
- **Lesson 7.11: DELETE**

Chapter 7 Rules of Thumb

- Don't provide students with a specific strategy or model to solve division problems. The goal is fluency, so students should be building on facts they know and may use different strategies to develop fluency.

- Division strategies include modeling equal groups, bar models (tape diagrams), repeated subtraction, division with arrays, relating multiplication and division, and writing related facts.

- Students must be able to identify what each number represents in a division word problem (i.e. 36 pencils ÷ 4 pencils per student = 9 students in the classroom).

- Stress to students that Commutative Property does NOT apply to division.

- Incorporate error analysis, multi-select, and multi-part questions into your daily lessons.

Chapter 8

Understand Fractions

***It's understood that you may have to add some of your own content to the chapter. However, the lessons listed below must still be completed. Also, please make sure all grade level teachers are using the SAME additional resources to provide consistency between the classes.**

- **Prior to the start of the chapter, do the following lessons from EngageNY:**
 - **Partition paper strips and liquid volume into equal parts (Part 1)**
 - **Partition paper strips into equal parts (Part 2)**
 - **Length model: Use paper strips to provide a visual representation of a fraction.**
 - **Make connections to first and second grade where students partitioned shapes into smaller parts.**
- **Add a lesson on equal parts vs. unequal parts prior to Lesson 8.1.**
 - **IXL Skills:**

- V.1: Identify equal parts
- Lesson 8.1: As is
 - IXL Skills:
 - V.1: Identify equal parts
- Lesson 8.2: DELETE
 - Use the following lesson from Learn Zillion instead of Go Math:
 - Partition wholes and locate unit fractions
- Lesson 8.3: As is
 - Introduce unit fractions and ensure students understand that the fraction $\frac{1}{b}$ is formed by counting 1 part when a whole is partitioned into “b” equal parts.
 - This is the first lesson students will see fractions as a symbol.
 - Top number tells how many equal parts are being counted. The bottom number tells how many equal parts in the whole or group.
 - IXL Skills:
 - V.10: Match unit fractions to models
 - V.20: Unit fractions: modeling word problems
 - V.21: Unit fractions: word problems
- Lesson 8.4: As is
 - Area model: Use shapes to provide a visual representation of a fraction.
 - Use fraction tiles to show how to compose fractions from unit fractions.
 - Make a connection back to the whole number
 - 1 apple + 1 apple = 2 apples -----> 1 third + 1 third = 2 thirds ($\frac{2}{3}$ is two $\frac{1}{3}$)
 - Introduce the vocabulary numerator and denominator. Don't stress that the numerator is the top number and the denominator is the bottom number. However, you must stress that the numerator tells how many parts are being counted and the denominator tells how many equal parts are in the whole.
 - Ensure that students understand that a fraction is a sum of unit fractions (i.e. $\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$)
 - IXL Skills:
 - V.5: Understand fractions: fraction bars
 - V.6: Understand fractions: area models
 - V.7: Show fractions: fraction bars
 - V.8: Show fractions: area models
 - V.9: Match fractions to models: halves, thirds, and fourths
 - V.11: Match fractions to models
 - V.22: Fractions of a whole: modeling word problems
 - V.23: Fractions of a whole: word problems
- Add the following lesson from EngageNY after Lesson 8.4:

- Represent fractions using number bonds
- Add a lesson where students have to partition and shade in the shapes themselves to show a given fraction.
- Add a lesson on fractions of a group (i.e. set model: use objects in a set like $\frac{1}{4}$ is 1 out of 4 students are boys)
 - IXL Skills:
 - V.24: Fractions of a group: word problems
- Prior to Lesson 8.5, use the following lesson from EngageNY:
 - Relating paper strips to fractions on a number line
 - Relating number bonds to fractions on a number line
- Lesson 8.5: As is
 - IXL Skills:
 - V.12: Fractions of number lines: unit fractions
 - V.14: Fractions of number lines
 - V.15: Identify unit fractions on number lines
 - V.16: Identify fractions on number lines
 - V.17: Graph unit fractions on number lines
 - V.18: IXL | Graph fractions on number lines
- Lesson 8.6: As is
 - IXL Skills:
 - W.8: Graph fractions equivalent to 1 on number lines
 - W.9: Select fractions equivalent to whole numbers using area models
 - W.10: Find fractions equivalent to whole numbers
- Add the following lessons from EngageNY for fractions greater than one:
 - Whole Number Fractions And Fractions Between Whole Numbers
 - Placing Various Fractions On The Number Line
 - Use for additional practice:
 - Illustrative Mathematics: Locating Fractions Greater than 1 on a Number Line
- Add a lesson on fractions greater than one using the area models (shapes)
 - Ensure students can count by fractions (i.e. $\frac{1}{3}$, $\frac{2}{3}$, 1, $\frac{4}{3}$, $\frac{5}{3}$, 2...). Students should be able to recognize that $\frac{3}{3}$ is equivalent to 1.
 - Ensure that students understand that a fraction greater than 1 is a sum of unit fractions (i.e. $\frac{5}{3} = \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$)
- Add a lesson on fraction word problems.
- Lesson 8.7: DELETE
- Lesson 8.8: DELETE
- Lesson 8.9: DELETE
- Lesson 12.9: Move this lesson up

- Relate shapes, fractions, and area by partitioning shapes into parts with equal area.
- Express each area as a unit fraction of the whole.

Chapter 8 Rules of Thumb

-Numerator and denominator vocabulary need to be introduced and used consistently within lessons. Don't stress that the numerator is the top number and the denominator is the bottom number. However, you must stress that the numerator tells how many parts are being counted and the denominator tells how many equal parts are in the whole.

- Ensure that students understand that fractions are a sum of unit fractions.

- Students must be proficient in the length model, area model, and set model of fractions.

Chapter 9

Compare Fractions

***It's understood that you may have to add some of your own content to the chapter. However, the lessons listed below must still be completed. Also, please make sure all grade level teachers are using the SAME additional resources to provide consistency between the classes.**

***Please note that students only have to compare fractions with the same numerator OR the same denominator. They DO NOT have to create equivalent fractions in order to compare them. They should be comparing fractions by reasoning about their size.**

***DO NOT complete the lessons on equivalent fractions first. Comparing fractions should come before equivalent fractions.**

***Students in third grade are NOT required to order fractions.**

- Prior to the start of the chapter, students should have the opportunity to play with the fraction tiles provided in the manipulatives tub and create fractions using unit fractions in order to compare them.
- **Lesson 9.1: As is**
 - Use fraction unit tiles to compare fractions like in the Unlock the Problem example on page 507.
 - Add more examples using fraction tiles to compare fractions using a concrete model.
 - **IXL Skills:**
 - **X.7: Compare fractions in recipes**

- Prior to Lesson 9.2, compare fractions with the same denominator using shapes and visual representations.

- IT MUST BE STRESSED THAT THE SIZE OF THE WHOLE MUST BE THE SAME WHEN COMPARING FRACTIONS IN EVERY LESSON!!!



- Lesson 9.2: As is

- Compare the numerators when fractions have the same denominators.
- IXL Skills:

- V.19: Graph smaller or larger fractions on a number line
- X.3: Graph and compare fractions with like denominators on number lines

- Add a lesson on comparing fractions with the same denominator number lines.

- Compare two fractions on the same number line.
- Compare two fractions on double number lines.

- Prior to Lesson 9.3, compare fractions with the same numerator using shapes and visual representations.

- IT MUST BE STRESSED THAT THE SIZE OF THE WHOLE MUST BE THE SAME WHEN COMPARING FRACTIONS IN EVERY LESSON!!!



- Lesson 9.3: As is

- Compare the denominators when fractions have the same numerators.
 - Bigger denominators ----> smaller parts
 - Smaller denominators ----> larger parts

- IXL Skills:

- X.4: Graph and compare fractions with like numerators on number lines

- Lesson 9.4 As is

- IXL Skills:

- X.1: Compare fractions using models
- X.2: Compare fractions using number lines
- X.5: Graph and compare fractions on number lines
- X.6: Compare fractions

- After lesson 9.4, add the following lessons on comparing fractions using number lines:

- Use the following lessons from EngageNY:

- Compare Fractions And Whole Numbers On The Number Line
- Comparing Fractions: Distance And Position On The Number Line
- Add a lesson on comparing fractions using double number lines

- Use for additional practice:
 - **Illustrative Mathematics: Comparing Fractions Game**
- Lesson 9.5: DELETE
- Lesson 9.6: As is
 - Use models and double number lines to model equivalent fractions.
 - When creating equivalent fractions, **THE SIZE OF THE WHOLE DOES NOT CHANGE!!! ONLY THE SIZE OF THE PARTS CHANGE!!!**
 - IXL Skills:
 - W.3: **Identify equivalent fractions on number lines**
 - W.4: **Find equivalent fractions using number lines**
 - W.5: **Graph equivalent fractions on number lines**
- Lesson 9.7: As is
 - IXL Skills:
 - W.1: **Find equivalent fractions using area models: two models**
 - W.6: **Identify equivalent fractions**
 - W.7: **Find equivalent fractions**
- Add the following lessons on creating equivalent fractions at the end of the chapter:
 - Use the following lessons from EngageNY and Learn Zillion:
 - **Generate Equivalent Fractions Using Visual Models And The Number Line**
 - **Generate equivalent fractions**
 - Use for additional practice:
 - **Illustrative Mathematics: Halves, Thirds, and Sixths**

Chapter 9 Rules of Thumb

- Eliminate any representations of fractions of a set.

- Incorporate number line and double number line representations as much as possible. Use multiple number lines drawn and lined up vertically to compare and show equivalency. Show how some of the parts on the number lines are equivalent because they line up with each other perfectly.

- Consistently reinforce the concept that fractions can only be compared when they refer to the same whole.

Trimester 3

(Ends June 24th - Finish major skills by May 2nd for NJSLA Testing)

Chapter 10

Time, Length, Liquid Volume, and Mass

- Prior to Lesson 10.1, review telling time to the nearest hour, half hour, and in intervals of five minutes.
- Lesson 10.1: As is
 - IXL Skills:
 - T.1: Match clocks and times
 - T.3: Read clocks and write times
 - T.5: Write times
- Lesson 10.2: DELETE
 - You can incorporate AM and PM into the other lessons.
 - IXL Skills:
 - T.4: AM or PM
- Lesson 10.3: As is
 - Use a number line to show time jumps to measure intervals of time.
- Lesson 10.4: As is
 - IXL Skills:
 - T.6: Elapsed time: find the end time
- Lesson 10.5: As is
 - IXL Skills:
 - T.8: Elapsed time word problems: find the elapsed time
- Lesson 10.6: Split into two lessons
 - 1) Add more examples of measuring objects to the nearest $\frac{1}{2}$ or $\frac{1}{4}$ inch.
 - 2) Creating line plots when measuring multiple objects to the nearest $\frac{1}{2}$ or $\frac{1}{2}$ inch.
 - IXL Skills:
 - U.11: Create line plots with fractions
 - Z.3: Measure using an inch ruler
- Lesson 10.7: As is
- Lesson 10.8: As is
 - IXL Skills:
 - Z.15: Which metric unit of weight is appropriate?
- Lesson 10.9: As is
 - Add the following lessons from Learn Zillion in addition to Go Math:
 - Add and subtract liquid volumes
 - Multiply and divide to solve measurement word problems

Chapter 10 Rules of Thumb

- Review time to the half hour and skip counting by 5's first before teaching elapsed time.

- There are no standards that include money in third grade. If time permits, you can incorporate lessons on counting money after testing and before the end of the year.

- Incorporate error analysis, multi-select, and multi-part questions into your daily lessons.

Chapter 11

Perimeter and Area

***These lessons were incorporated into other chapters. You can spend a few days reviewing area and perimeter if you choose. If so, please make sure that everyone in the grade level does as well.**

Chapter 2

Represent and Interpret Data

- **Lesson 2.1: DELETE**
- **Lesson 2.2 and 2.3: Combine and place more emphasis on Lesson 2.2**
 - Be sure to use scaled graphs (i.e. ● = 4 students, ■ = 2 games, etc.).
 - Students should recognize that half of the scaled figure is half of the number provided in the key (i.e. ○ = 2 students, ▣ = 1 game, etc.)
 - Students can now use multiplication to find the number of votes per category.
 - **IXL Skills:**
 - **U.12: Interpret pictographs**
 - **U.13: Create pictographs**
- **Lesson 2.4 and 2.5: Combining and place more emphasis on Lesson 2.4**
 - Be sure to include vertical and horizontal bar graphs.
 - **IXL Skills:**
 - **U.6: Interpret bar graphs**
 - **U.8: Create bar graphs**
- **Lesson 2.6: As is**
 - **IXL Skills:**
 - **U.7: Use bar graphs to solve problems**
- **Lesson 2.7: As is**
 - **IXL Skills:**
 - **U.9: Interpret line plots**
 - **U.10: Create line plots**

Chapter 2 Rules of Thumb

- Focus more on answering questions and analyzing a given graph rather than having the students create their own graphs.

- Incorporate error analysis, multi-select, and multi-part questions into your daily lessons.

Chapter 12

Two-Dimensional Shapes

- Lesson 12.1: DELETE
- Lesson 12.2: DELETE
- Prior to starting lesson 12.3, review new vocabulary (open/closed shapes, plane shapes, vertex, line segment, polygon, angles etc.)
 - IXL Skills: (use these to review vocabulary)
 - AA.3: Open and closed shapes
 - AA.5: Lines, line segments, and rays
 - AA.6: Angles greater than, less than, or equal to a right angle
- Lesson 12.3: As is
 - IXL Skills:
 - AA.1: Identify two-dimensional shapes
 - AA.2: Count and compare sides and vertices
 - AA.3: Is it a polygon?
- Lesson 12.4: As is (Don't spend too much time on this lesson.)
 - IXL Skills:
 - AA.7: Parallel, perpendicular, and intersecting lines
- Lesson 12.5: As is
 - IXL Skills:
 - BB.3: Parallel sides in quadrilaterals
 - BB.4: Identify parallelograms
 - BB.5: Identify trapezoids
 - BB.6: Identify rectangles
 - BB.7: Identify rhombuses
 - BB.8: Classify quadrilaterals
- Lesson 12.6: As is
 - IXL Skills:
 - AA.3: Open and closed shapes
- Lesson 12.7: DELETE
- Lesson 12.8: DELETE
- Lesson 12.9: Move up to the end of Chapter 8

Chapter 12 Rules of Thumb

- Students should be able to recognize the differences between shapes that are quadrilaterals and shapes that are not.
- Students should understand that shapes can share the same characteristics/attributes that make it part of a larger category (i.e. quadrilaterals).
- Incorporate error analysis, multi-select, and multi-part questions into your daily lessons.

THIRD GRADE PRIORITY STANDARDS FOR 2020-2021

Considerations for Addressing <u>PRIORITY</u> Grade-Level Content	
The clusters and standards listed in this table name the priority instructional content for grade 3. The right-hand column contains approaches to shifting how time is dedicated to the clusters and standards in the left-hand column.	
Clusters/Standards	Considerations
3.OA.A	No special considerations for curricula well aligned to multiplication and division concepts and problem solving, as detailed in this cluster. Students may need extra support to see row and column structure in arrays of objects. Time spent on instruction and practice should NOT be reduced.
3.OA.B 3.OA.C	<i>Incorporate</i> additional practice with double-digit sums (2.NBT.B.5) to support the grade 3 multiplication work with the properties of operations, especially the distributive property.
3.OA.D.8	No special considerations for curricula well aligned to two-step word problems using the four operations, as detailed in this standard. Time spent on instruction and practice should NOT be reduced.
3.NF.A	<i>Emphasize</i> the concept of unit fraction as the basis for building fractions. <i>Prioritize</i> the number line as a representation to develop students' understanding of fractions as numbers by foregrounding the magnitude, location, and order of fractions among whole numbers (3.NF.A.2)

THIRD GRADE NON-PRIORITY STANDARDS FOR 2020-2021

Considerations for Addressing <u>REMAINING</u> Grade-Level Content	
The clusters and standards listed in this table represent the remainder of grade 3 grade-level content. The right-hand column contains approaches to shifting how time is dedicated to the clusters and standards in the left-hand column.	
Clusters/Standards	Considerations
3.OA.D.9*	<i>Eliminate</i> lessons or problems on arithmetic patterns.

3.NBT.A.1	<i>Combine</i> lessons on rounding in order to reduce the amount of time spent on rounding numbers. <i>Limit</i> the amount of required student practice.
3.NBT.A.2	No special considerations for curricula well aligned to addition and subtraction within 1 000, as detailed in this standard. Time spent on instruction and practice should not exceed what would be spent in a typical year.
3.NBT.A.3	<i>Combine</i> lessons in order to reduce time spent multiplying by multiples of 10. <i>Emphasize</i> the connection to single-digit products and tens units.
3.MD.A*	<i>Combine</i> lessons in order to reduce the amount of time spent on time, volume, and mass. <i>Reduce</i> the amount of required student practice.
3.MD.B.3	<i>Eliminate</i> lessons on creating scaled graphs. <i>Integrate</i> a few problems with scaled graphs only as settings for multiplication word problems (3.OA.A.3) and two-step word problems (3.OA.8).
3.MD.B.4	<i>Eliminate</i> any lessons or problems that do not strongly reinforce the fraction work of this grade (3.NF.A). <i>Incorporate</i> foundational work measuring with rulers (2.MD.A) to support entry into generating fractional measurement data in grade 3.
3.MD.C*	<i>Emphasize</i> enduring concepts of geometric measurement (iterating a unit with no gaps or overlaps) (3.MD.C.5) and students using area models to support their mathematical explanations involving the distributive property for products (3.MD.C.7c). <i>Combine</i> lessons in order to reduce the amount of time spent on measuring area and <i>limit</i> the amount of required student practice.
3.MD.D	<i>Integrate</i> a few problems on perimeter into work on area (3.MD.C).
3.G.A.1	<i>Combine</i> lessons on shapes and their attributes in order to reduce the amount of time spent on this standard.
3.G.A.2	<i>Eliminate</i> separate geometry lessons on partitioning shapes.

**While these clusters are Major Work of the Grade, during the 2020-21 school year, it is recommended that they receive lighter treatment in favor of other priority instructional content.*

THIRD GRADE STANDARD CLUSTERS

Green: Major Clusters

Blue: Supporting Clusters

Yellow: Additional Clusters

MAJOR, SUPPORTING, AND ADDITIONAL CLUSTERS FOR GRADE 3

Emphases are given at the cluster level. Refer to the Common Core State Standards for Mathematics for the specific standards that fall within each cluster.

Key: ■ Major Clusters □ Supporting Clusters ● Additional Clusters

- 3.OA.A | ■ Represent and solve problems involving multiplication and division.
- 3.OA.B | ■ Understand properties of multiplication and the relationship between multiplication and division.
- 3.OA.C | ■ Multiply and divide within 100.
- 3.OA.D | ■ Solve problems involving the four operations, and identify and explain patterns in arithmetic.
- 3.NBT.A | ● Use place value understanding and properties of operations to perform multi-digit arithmetic.
- 3.NF.A | ■ Develop understanding of fractions as numbers.
- 3.MD.A | ■ Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
- 3.MD.B | □ Represent and interpret data.
- 3.MD.C | ■ Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
- 3.MD.D | ● Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.
- 3.G.A | □ Reason with shapes and their attributes.

THIRD GRADE NJ LEARNING STANDARDS

Grade 3 Major Clusters: 3.OA.A, 3.OA.B, 3.OA.C, 3.OA.D, 3.NF.A, 3.MD.A, 3.MD.C, 3.MD.B, 3.G.A

Operations and Algebraic Thinking

3.OA

A. Represent and solve problems involving multiplication and division.

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 and/or represent a context in which a total number of objects can be expressed as 5×7 .*
2. Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ 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 and/or represent a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.*
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.¹
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 $8 \times ? = 48$, $5 = \quad \div 3$, $6 \times 6 = ?$.*

B. Understand properties of multiplication and the relationship between multiplication and division.

5. Apply properties of operations as strategies to multiply and divide.² *Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)*
6. Understand division as an unknown-factor problem. *For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.*

C. Multiply and divide within 100.

7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

D. Solve problems involving the four operations, and identify and explain patterns in arithmetic.

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.³
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.*

A. Use place value understanding and properties of operations to perform multi-digit arithmetic.⁴

1. Use place value understanding to round whole numbers to the nearest 10 or 100.
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.
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.

Number and Operations—Fractions⁵

3.NF

A. Develop understanding of fractions as numbers.

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 $1/b$.
2. Understand a fraction as a number on the number line; represent fractions on a number line diagram.
 - a. 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.
 - b. 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.
3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
 - a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
 - b. 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.
 - c. 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.*
 - d. 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.

Measurement and Data

3.MD

A. Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.

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.
2. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).⁶ 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.⁷

B. Represent and interpret data.

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.*
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.

C. Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

5. Recognize area as an attribute of plane figures and understand concepts of area measurement.
 - a. 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.
 - b. 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.
6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units).
7. Relate area to the operations of multiplication and addition.
 - a. 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.
 - b. 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.
 - c. 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 $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.
 - d. 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.

D. Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

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.

Geometry

3.G

A. Reason with shapes and their attributes.

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.

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 $\frac{1}{4}$ of the area of the shape.*