PLANNED INSTRUCTION

A PLANNED COURSE FOR:

5th Grade Math

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Grade Level: 5

Date of Board Approval: 2024

Course Weighting:

Chapter Level Tests	**40%**
Lesson Level Quizzes	**25%**
Performance Tasks	**15%**
Math Facts	**10%**
Homework/Participation	**10%**
Total	**100%**

Curriculum Map

Overview:

This course of study will cover all fifth-grade math standards, assessment anchors, and eligible content set forth by the Commonwealth of Pennsylvania. Course content will include Numbers and Operations in Base Ten (Whole Numbers, Decimals and Fractions), Operations and Algebraic Thinking, Geometry, Measurement, Geometric Measurement and Data Analysis. Time will also be dedicated to building foundational skills for sixth grade mathematics.
It is not necessary to complete all Core Activities for each Objective, as multiple Core Activities are provided.

Goals:

1. **Marking Period One: Over a 45-day period of time, students will aim to understand:**
   Unit 0: Foundations for 5th Grade Math - 3 days
   - Understanding Place Value
   - Multiplying Whole Numbers (2x1; 3x1; 4x1)
   - Dividing Whole Numbers (single-digit divisors)

   Unit 1: Numbers and Operations in Base Ten (Whole Numbers) - 22 days
   - Place Value Concepts of Whole Numbers
   - Comparing and Ordering Whole Numbers
   - Multiplying & Dividing Whole Numbers

   Unit 2: Numbers and Operations in Base Ten (Decimals) - 20 days
   - Place Value Concepts of Decimals
   - Adding & Subtracting Decimals
   - Multiplying & Dividing Decimals

2. **Marking Period Two: Over a 45-day period of time, students will aim to understand:**
   Unit 2: Numbers and Operations in Base Ten (Decimals) - 7 days
   - Place Value Concepts of Decimals
   - Adding & Subtracting Decimals
   - Multiplying & Dividing Decimals

   Unit 3: Numbers and Operations (Fractions) - 38 days
   - Adding and Subtracting Fractions
   - Multiplying and Dividing Fractions

3. Marking Period Three: Over a 45-day period of time, students will aim to understand:

Unit 4: Operations and Algebraic Thinking - 20 days

- Properties
- Order of Operations
- Patterns and Sequences

Unit 5 - Geometry - 20 days

- Coordinate Plane
- Two-Dimensional Figures

Unit 6 - Geometric Measurement - 5 days

- Perimeter
- Area
- Volume

4. Marking Period Four: Over a 42-day period of time, students will aim to understand:

Unit 6 - Geometric Measurement - 2 days

- Perimeter
- Area
- Volume

Unit 7 - Measurement - 10 days

- Customary Conversions
- Metric Conversions

Unit 8 - Data Analysis - 9 days

- Interpret Data
- Represent Data

Unit 9 - Getting Ready for Grade 6 - 21 days

- Fractions, Decimals & Percents
- Ratios
- Integers & Inequalities
- Geometry & Data

Big Ideas:

Big Idea #1: Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.

Big Idea #2: Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.

Big Idea #3: Data can be modeled and used to make inferences.

Big Idea #4: Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization.

Big Idea #5: Mathematical relationships and functions can be modeled through multiple representations and analyzed to raise and answer questions.

Big Idea #6: Mathematical relationships among numbers can be represented, compared, and communicated.

Big Idea #7: Measurement attributes can be quantified and estimated using customary and non-customary units of measure.

Big Idea #8: Patterns exhibit relationships that can be extended, described, and generalized.

Textbook and Supplemental Resources:

Name of Textbook: HMH Go Math!
Textbook ISBN#: Volume 1 - 978-0-358-69488-5; Volume 2 - 978-0-358-69489-2
Textbook Publisher & Year of Publication: Houghton Mifflin Harcourt, 2023
Supplemental Resources: IXL; Khan Academy

Curriculum Plan

Unit 0: Foundations for 5th Grade Mat Time Range in Days: approximately 3 days

Standard(s): PA Academic Standards for Mathematics

2.1.5.B.1
2.1.5.B.2

Anchor(s):

M05.A-T.1
M05.A-T.2

Eligible Content:

M05.A-T.1.1.1 Demonstrate an understanding that in a multi-digit number, a digit in one place represents 1/10 of what it represents in the place to its left. Example: Recognize that in the number 770, the 7 in the tens place is 1/10 the 7 in the hundreds place.
M05.A-T.1.1.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10 and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. Example 1: $4 \times 102 = 400$ Example 2: $0.05 \div 103 = 0.00005$
M05.A-T.1.1.3 Read and write decimals to thousandths using base-ten numerals, word form, and expanded form. Example: $347.392 = 300 + 40 + 7 + 0.3 + 0.09 + 0.002 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (0.1) + 9 \times (0.01) + 2 \times (0.001)$
M05.A-T.1.1.4 Compare two decimals to thousandths based on meanings of the digits in each place using >, =, and < symbols.
M05.A-T.1.1.5 Round decimals to any place (limit rounding to ones, tenths, hundredths, or thousandths place).
M05.A-T.2.1.1 Multiply multi-digit whole numbers (not to exceed three-digit by three-digit).
M05.A-T.2.1.2 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.

Objectives:

Students will be able to:

1. Identify place value of digits within a number. (DOK 1)
2. Conduct basic mathematical calculations (multiplication - 2x1; 3x1; 4x1) (DOK 1)

3. Conduct basic mathematical calculations (long division with a single-digit divisor - traditional algorithm) (DOK 1)

Core Activities and Corresponding Instructional Methods:

1. Watch Khan Academy videos that relate to place value:
    a. https://www.khanacademy.org/math/cc-fourth-grade-math/imp-place-value-and-rounding-2/imp-intro-to-place-value/v/place-value-1
    b. Complete the following IXL Lessons and Skills that relate to place value:
        i. Y7Q; WLP
2. Watch Khan Academy videos that relate to multiplication (2x1; 3x1; 4x1):
    a. https://www.khanacademy.org/math/arithmetic-home/multiply-divide/multi-digit-mult/v/2-digit-times-1-digit-example-no-carrying
    b. Complete the following IXL Lessons and Skills that relate to multiplication:
        i. GDW; PPM
3. Watch Khan Academy videos that relate to long division with a single-digit divisor:
    a. https://www.khanacademy.org/math/arithmetic-home/multiply-divide/mult-digit-div-2/v/division-2
    b. Complete the following IXL Lessons and Skills that relate to long division with a single-digit divisor:
        i. 4T7; XHZ

Assessments:

Diagnostic:

- HMH Growth Measure
- IXL Diagnostic Arena
- STAR Math (see yearly District Assessment Plan)

Formative:

- Teacher Observations and Questions
- Group Activities
- Exit Tickets

Summative:

- Common Assessment Unit 0

Extensions:

1. Grade 4 GoMath! Chapter 3, Lesson 5 Enrichment Worksheet (Multiply with Regrouping)
2. Grade 4 GoMath! Chapter 6, Lesson 5 Enrichment Worksheet (Divide by 1-Digit Numbers)
3. Grade 4 GoMath! Chapter 1, Lesson 1 Enrichment Worksheet (Model Place Value Relationships)
4. HMH Waggle

Correctives:

1. Grade 4 GoMath! Chapter 3, Lesson 5 Reteach Worksheet (Multiply with Regrouping)
2. Grade 4 GoMath! Chapter 6, Lesson 5 Reteach Worksheet (Divide by 1-Digit Numbers)
3. Grade 4 GoMath! Chapter 1, Lesson 1 Enrichment Worksheet (Model Place Value Relationships)
4. HMH Waggle

Unit 1: Numbers and Operations in Base Ten (Whole Numbers)
Time Range in Days: approximately 22 days

Standard(s): PA Academic Standards for Mathematics
2.1.5.B.1
2.1.5.B.2

Anchor(s):
M05.A-T.1
M05.A-T.2

Eligible Content:
M05.A-T.1.1.1 Demonstrate an understanding that in a multi-digit number, a digit in one place represents 1/10 of what it represents in the place to its left. Example: Recognize that in the number 770, the 7 in the tens place is 1/10 the 7 in the hundreds place.
M05.A-T.1.1.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10 and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. Example 1: $4 \times 10^2 = 400$ Example 2: $0.05 \div 10^3 = 0.00005$
M05.A-T.2.1.1 Multiply multi-digit whole numbers (not to exceed three-digit by three-digit).
M05.A-T.2.1.2 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.

Objectives:
Students will be able to:
1. Describe the relationship between two whole number place value positions. (DOK 2)
2. Read, write and represent whole numbers through hundred millions in word form, standard form, expanded form. (DOK 1)
3. Apply properties of operations to solve problems. (DOK 2)
4. Use an exponent to show powers of ten. (DOK 1)
5. Use a basic fact and a power of ten to multiply by a 2-digit number. (DOK 1)
6. Multiply by multi-digit whole numbers. (DOK 2)
7. Use compatible numbers to estimate quotients. (DOK 3)
8. Divide whole numbers by 2-digit divisors. (DOK 2)
9. Interpret the remainder when solving division word problems. (DOK 3)
10. Draw a diagram to solve word problems. (DOK 3)
11. Model and solve multi-step multiplication and division equations. (DOK 3)

Core Activities and Corresponding Instructional Methods:
1. Describe the relationship between two place value positions

a. Grade 5 GoMath! Chapter 1, Lesson 1 (Place Value and Patterns)
b. Complete the following IXL Lessons and Skills that relate to Place Value and Patterns:
    i. ESA

2. Read, write and represent whole numbers through hundred millions in word form, standard form, expanded form
    a. Grade 5 GoMath! Chapter 1, Lesson 2 (Place Value and Patterns)
    b. Complete the following IXL Lessons and Skills that relate to Place Value of Whole Numbers:
        i. DZS; HU7; FHT
3. Apply properties of operations to solve problems
    a. Grade 5 GoMath! Chapter 1, Lesson 3 (Properties)
    b. Complete the following IXL Lessons and Skills that relate to Properties:
        i. LFE; RZR; LUW; 6PN
4. Use an exponent to show powers of ten
    a. Grade 5 GoMath! Chapter 1, Lesson 4 (Properties)
    b. Complete the following IXL Lessons and Skills that relate to Powers of Ten:
        i. XTY; KGQ; 92K; 8HS
5. Use a basic fact and a power of ten to multiply by a 2-digit number. (DOK 1)
    a. Grade 5 GoMath! Chapter 1, Lesson 5 (Multiplication Patterns)
    b. Complete the following IXL Lessons and Skills that relate to Multiplication Patterns:
        i. 5NB; M5R; 7E2
6. Multiply by multi-digit whole numbers
    a. Grade 5 GoMath! Chapter 2, Lesson 1 (Multiply by Multi-Digit Numbers)
    b. Complete the following IXL Lessons and Skills that relate to Multiplying by Multi-Digit Numbers:
        i. 9VQ; NSP; J95
7. Use compatible numbers to estimate quotients
    a. Grade 5 GoMath! Chapter 2, Lesson 4 (Estimate with 2-Digit Divisors)
    b. Complete the following IXL Lessons and Skills that relate to Estimating Quotients with 2-Digit Divisors:
        i. EFW
8. Divide whole numbers by 2-digit divisors
    a. Grade 5 GoMath! Chapter 3, Lesson 1 (Divide by 2-Digit Divisors)
    b. Complete the following IXL Lessons and Skills that relate to Dividing by 2-Digit Divisors:
        i. WUW
9. Interpret the remainder when solving division word problems
    a. Grade 5 GoMath! Chapter 3, Lesson 2 (Interpret the Remainder)
    b. Complete the following IXL Lessons and Skills that relate to Interpreting the Remainder:

i. 87G; BGF

10. Draw a diagram to solve word problems
    a. Grade 5 GoMath! Chapter 3, Lesson 4 (Draw to Solve Division Problems)
    b. Complete the following IXL Lessons and Skills that relate to Drawing a Model to Solve Division Problems:
        i. V59
11. Model and solve multi-step multiplication and division equations
    a. Grade 5 GoMath! Chapter 3, Lesson 5 (Model Multiplication and Division Equations)
    b. Complete the following IXL Lessons and Skills that relate to Modelling Multiplication and Division Equations:
        i. GHK
    c. Grade 5 GoMath! Chapter 3, Lesson 6 (Represent and Solve Multi-Step Problems with Bar Models
    d. Complete the following IXL Lessons and Skills that relate to Representing and Solving Multi-Step Problems with Bar Models:
        i. 7BU; GDB

Assessments:

Diagnostic:

- IXL Diagnostic Arena
- STAR Math (see yearly District Assessment Plan)

Formative:

- Teacher Observations and Questions
- Group Activities
- Exit Tickets
- Teacher-made Quizzes

Summative:

- Common Chapter 1 Assessment
- Performance Task #1
- Common Chapter 2 Assessment
- Performance Task #2
- Common Chapter 3 Assessment
- Performance Task #3

Extensions:

1. IXL Takeoff
2. HMH Waggle
3. Student-specific IXL Recommendations (based on IXL Diagnostic)
4. Generation Genius (see Generation Genius PA Math Standards Alignment List)

Correctives:

1. Grade 5 GoMath! Chapter 2, Lesson 2 (Represent Division with 2-Digit Divisors)
2. Grade 5 GoMath! Chapter 2, Lesson 3 (Partial Quotients)
3. HMH Waggle
4. Student-specific IXL Recommendations (based on IXL Diagnostic)
5. Generation Genius (see Generation Genius PA Math Standards Alignment List)

Unit 2: Numbers and Operations in Base Ten (Decimals)
Time Range in Days: approximately 27 days

Standard(s): PA Academic Standards for Mathematics
2.1.5.B.1
2.1.5.B.2

Anchor(s):
M05.A-T.1
M05.A-T.2

Eligible Content:
M05.A-T.1.1.3 Read and write decimals to thousandths using base-ten numerals, word form, and expanded form. Example: 347.392 = 300 + 40 + 7 + 0.3 + 0.09 + 0.002 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (0.1) + 9 × (0.01) + 2 × (0.001)
M05.A-T.1.1.4 Compare two decimals to thousandths based on meanings of the digits in each place using >, =, and < symbols.
M05.A-T.1.1.5 Round decimals to any place (limit rounding to ones, tenths, hundredths, or thousandths place).
M05.A-T.2.1.3 Add, subtract, multiply, and divide decimals to hundredths (no divisors with decimals).

Objectives:
Students will be able to:
1. Describe the relationship between two decimal place value positions. (DOK 2)
2. Read, write, and represent decimals through thousandths. (DOK 1)
3. Compose and decompose multi-digit numbers with decimals. (DOK 2)
4. Compare and order decimals. (DOK 1)
5. Round decimals to a given place. (DOK 2)
6. Solve real-world problems using decimal addition. (DOK 2)
7. Solve real-world problems using decimal subtraction. (DOK 2)
8. Use addition or subtraction to describe a pattern or create a sequence with decimals. (DOK 2)
9. Solve multi-step real-world problems involving addition and subtraction of money using decimal notation. (DOK 2)
10. Use patterns to help place the decimal point in a product (DOK 2)
11. Use properties to multiply decimals. (DOK 2)
12. Draw a diagram to solve decimal multiplication word problems. (DOK 2)
13. Use a model to represent multiplication of decimals. (DOK 1)

14. Use place value strategies to place the decimal point when multiplying. (DOK 2)
15. Multiply decimals with zeros in the product. (DOK 1)
16. Use patterns to help place the decimal point in a quotient. (DOK 2)
17. Estimate decimals quotients using compatible numbers. (DOK 2)
18. Divide decimals by whole numbers. (DOK 2)
19. Write zeros in the dividend. (DOK 1)
20. Work backwards to solve multi-step decimal problems. (DOK 3)

Core Activities and Corresponding Instructional Methods:

1. Describe the relationship between two decimal place value positions.
    a. Grade 5 GoMath! Chapter 4, Lesson 1 (Understand Thousandths)
    b. Complete the following IXL Lessons and Skills that relate to place value and patterns:
        i. CTP; X8U; DVM
2. Read, write, and represent decimals through thousandths.
    a. Grade 5 GoMath! Chapter 4, Lesson 2 (Read and Write Decimals Through Thousandths)
    b. Complete the following IXL Lessons and Skills that relate to reading and writing decimals through thousandths:
        i. F9G; BLQ
3. Compose and decompose multi-digit numbers with decimals.
    a. Grade 5 GoMath! Chapter 4, Lesson 3 (Compose and Decompose Decimals)
    b. Complete the following IXL Lessons and Skills that relate to composing and decomposing decimals:
        i. 4U7; 7U9
4. Compare and order decimals.
    a. Grade 5 GoMath! Chapter 4, Lesson 4 (Compare and Order Decimals)
    b. Complete the following IXL Lessons and Skills that relate to comparing and ordering decimals:
        i. B2M; NSG; YUX
5. Round decimals to a given place.
    a. Grade 5 GoMath! Chapter 4, Lesson 5 (Round Decimals)
    b. Complete the following IXL Lessons and Skills that relate to rounding decimals:
        i. MPB; 2MV
6. Solve real-world problems using decimal addition.
    a. Grade 5 GoMath! Chapter 5, Lesson 3 (Add Decimals)
    b. Complete the following IXL Lessons and Skills that relate to adding decimals:
        i. BDX
7. Solve real-world problems using decimal subtraction.
    a. Grade 5 GoMath! Chapter 5, Lesson 4 (Subtract Decimals)
    b. Complete the following IXL Lessons and Skills that relate to subtracting decimals:
        i. SC8; VMT
8. Use addition or subtraction to describe a pattern or create a sequence with decimals.

a. Grade 5, GoMath! Chapter 5, Lesson 5 (Solve a Decimal Sequence)
b. Complete the following IXL Lessons and Skills that relate to patterns and sequences with decimals:
    i. H73

9. Solve multi-step real-world problems involving addition and subtraction of money using decimal notation.
    a. Grade 5, GoMath! Chapter 5, Lesson 7 (Add and Subtract Money)
    b. Complete the following IXL Lessons and Skills that relate to adding and subtracting money:
        i. A8R: MCG
10. Use patterns to help place the decimal point in a product.
    a. Grade 5, GoMath! Chapter 6, Lesson 1 (Understand Decimal Multiplication Patterns)
    b. Complete the following IXL Lessons and Skills that relate to decimal multiplication patterns:
        i. DN2; 85W
11. Use properties to multiply decimals.
    a. Grade 5, GoMath! Chapter 6, Lesson 3 (Multiplication with Decimals and Whole Numbers
    b. Complete the following IXL Lessons and Skills that relate to multiplication of decimals and whole numbers:
        i. 9BA; XNY
12. Draw a diagram to solve decimal multiplication word problems.
    a. Grade 5, GoMath! Chapter 6, Lesson 5 (Multiply Money)
    b. Complete the following IXL Lessons and Skills that relate to multiplying money:
        i. H8K; U5L; THS
13. Use a model to represent multiplication of decimals.
    a. Grade 5, GoMath! Chapter 7, Lesson 1 (Represent Decimal Multiplication)
    b. Complete the following IXL Lessons and Skills that relate to representing decimal multiplication:
        i. R92; 66Z
14. Use place value strategies to place the decimal point when multiplying.
    a. Grade 5, GoMath! Chapter 7, Lesson 2 (Multiply Decimals)
    b. Complete the following IXL Lessons and Skills that relate to multiplying decimals:
        i. 6FA; TDG
15. Multiply decimals with zeros in the product.
    a. Grade 5, GoMath! Chapter 7, Lesson 3 (Multiply Decimals with Zeros in the Product)
16. Use patterns to help place the decimal point in a quotient.
    a. Grade 5, GoMath! Chapter 8, Lesson 1 (Understand Decimal Division Patterns)
    b. Complete the following IXL Lessons and Skills that relate to understanding decimal division patterns:
        i. H2N; V83
17. Estimate decimals quotients using compatible numbers.

a. Grade 5, GoMath! Chapter 8, Lesson 3 (Estimate Quotients)
b. Complete the following IXL Lessons and Skills that relate to understanding estimating decimal quotients:
    i. CZ9

18. Divide decimals by whole numbers
    a. Grade 5, GoMath! Chapter 8, Lesson 4 (Divide Decimals by Whole Numbers)
    b. Complete the following IXL Lessons and Skills that relate to dividing decimals by whole numbers:
        i. MTQ; 8HB
19. Divide decimals by whole numbers.
    a. Complete the following IXL Lessons and Skills that relate to writing zeros in the dividend:
        i. J9Z
20. Work backwards to solve multi-step decimal problems.
    a. Grade 5, GoMath! Chapter 8, Lesson 7 (Solve Multi-Step Decimal Problems)
    b. Complete the following IXL Lessons and Skills that relate to solving multi-step decimal problems:
        i. 7SX

Assessments:

Diagnostic:

- IXL Diagnostic Arena
- STAR Math (see yearly District Assessment Plan)

Formative:

- Teacher Observations and Questions
- Group Activities
- Exit Tickets
- Teacher-made Quizzes

Summative:

- Common Chapter 4 Assessment
- Performance Task #4
- Common Chapter 5 Assessment
- Performance Task #5
- Common Chapter 6 Assessment
- Performance Task #6
- Common Chapter 7 Assessment
- Performance Task #7
- Common Chapter 8 Assessment
- Performance Task #8

Extensions:

1. IXL Takeoff
2. HMH Waggle
3. Student-specific IXL Recommendations (based on IXL Diagnostic)
4. Generation Genius (see Generation Genius PA Math Standards Alignment List)
5. Grade 5 GoMath! Chapter 5, Lesson 6 (Add and Subtract Decimals through Thousandths)
6. Grade 5 GoMath! Chapter 7, Lesson 4 (Apply Properties of Multiplication to Decimals)

Correctives:

1. HMH Waggle
2. Student-specific IXL Recommendations (based on IXL Diagnostic)
3. Generation Genius (see Generation Genius PA Math Standards Alignment List)
4. Grade 5 GoMath! Chapter 5, Lesson 1 (Decimal Addition)
5. Grade 5 GoMath! Chapter 5, Lesson 2 (Decimal Subtraction)
6. Grade 5 GoMath! Chapter 6, Lesson 2 (Represent Multiplication with Decimals and Whole Numbers)
7. Grade 5 GoMath! Chapter 6, Lesson 4 (Multiply Using Expanded Form)
8. Grade 5 GoMath! Chapter 8, Lesson 2 (Represent DIvision of Decimals by Whole Numbers)

Unit 3: Numbers and Operations (Fractions)
Time Range in Days: approximately 38 days

Standard(s): PA Academic Standards for Mathematics
2.1.5.C.1
2.1.5.C.2

Anchor(s):
M05.A-F.1
M05.A-F.2

Eligible Content:
M05.A-F.1.1.1 Add and subtract fractions (including mixed numbers) with unlike denominators. (May include multiple methods and representations.) Example: 2/3 + 5/4 = 8/12 + 15/12 = 23/12)
M05.A-F.2.1.1 Solve word problems involving division of whole numbers leading to answers in the form of fractions (including mixed numbers).
M05.A-F.2.1.2 Multiply a fraction (including mixed numbers) by a fraction.
M05.A-F.2.1.3 Demonstrate an understanding of multiplication as scaling (resizing).

Example 1: Comparing the size of a product to the size of one factor on the basis of the size of the other factor without performing the indicated multiplication.

Example 2: Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number.

M05.A-F.2.1.4 Divide unit fractions by whole numbers and whole numbers by unit fractions.

Objectives:
Students will be able to:

1. Make reasonable estimates of fractional sums and differences. (DOK 1)
2. Write equivalent fractions with common denominators. (DOK 2)
3. Add and subtract fractions with unlike denominators. (DOK 2)
4. Add and subtract mixed numbers with unlike denominators. (DOK 2)
5. Use renaming to find the difference of two mixed numbers (DOK 2)
6. Use addition or subtraction to describe a pattern or create a sequence with fractions. (DOK 2)
7. Use properties to help add fractions with unlike denominators. (DOK 1)
8. Use the strategy work backward to help solve a problem with fractions that involves addition and subtraction. (DOK 2)
9. Find part of a group by multiplying a whole number by a fraction. (DOK 1)

10. Use models to multiply fractions by whole numbers or whole numbers by fractions. (DOK 2)
11. Solve real-world problems that multiply a fraction by a whole number or a whole number by a fraction. (DOK 2)
12. Use visual models to show the product of two fractions. (DOK 2)
13. Compare the size of a product to the size of one factor when multiplying fractions. (DOK 2)
14. Compare the size of a product to the size of one factor when multiplying fractions greater than one. (DOK 2)
15. Divide a whole number by a fraction and divide a fraction by a whole number. (DOK 1)
16. Use diagrams and multiplication to solve fraction division problems. (DOK 2)
17. Interpret fractions as division. (DOK 2)
18. Divide fractions by solving a related multiplication equation. (DOK 2)
19. Use diagrams, equations, and story problems to represent division. (DOK 2)

Core Activities and Corresponding Instructional Methods:

1. Make reasonable estimates of fractional sums and differences.
    a. Grade 5 GoMath! Chapter 9, Lesson 3 (Estimate Fraction Sums and Differences)
    b. Complete the following IXL Lessons and Skills that relate to estimating fractional sums or differences:
        i. 9JR
2. Write equivalent fractions with common denominators.
    a. Grade 5 GoMath! Chapter 9, Lesson 4 (Rewrite Fractions with Common Denominators)
    b. Complete the following IXL Lessons and Skills that relate to rewriting fractions with common denominators:
        i. MKA; R7P
3. Add and subtract fractions with unlike denominators.
    a. Grade 5 GoMath! Chapter 9, Lesson 5 (Add and Subtract Fractions with Unlike Denominators)
    b. Complete the following IXL Lessons and Skills that relate to adding and subtracting fractions with denominators:
        i. D9N; VSP; TCD
4. Add and subtract mixed numbers with unlike denominators.
    a. Grade 5 GoMath! Chapter 10, Lesson 1 (Add and Subtract Mixed Numbers with Unlike Denominators)
    b. Complete the following IXL Lessons and Skills that relate to adding and subtracting mixed numbers with denominators:
        i. FHD; VXG
5. Rename mixed numbers to subtract.
    a. Grade 5 GoMath! Chapter 10, Lesson 2 (Rename Mixed Numbers to Subtract)
    b. Complete the following IXL Lessons and Skills that relate to subtracting mixed numbers with unlike denominators:

        i. FAA
6. Use addition or subtraction to describe a pattern or create a sequence with fractions.
    a. Grade 5 GoMath! Chapter 10, Lesson 3 (Solve a Fraction Sequence)
    b. Complete the following IXL Lessons and Skills that relate to addition and subtraction patterns with fractions:
        i. MMR
7. Use properties to help add fractions with unlike denominators.
    a. Grade 5 GoMath! Chapter 10, Lesson 4 (Apply Properties of Addition)
    b. Complete the following IXL Lessons and Skills that relate to adding three fractions or mixed numbers using properties of addition:
        i. NQY
8. Use the strategy work backward to help solve a problem with fractions that involves addition and subtraction.
    a. Grade 5 GoMath! Chapter 10, Lesson 5 (Practice Addition and Subtraction Using Equations)
    b. Complete the following IXL Lessons and Skills that relate to using equations to practice addition and subtraction of fractions:
        i. TCD; 48E; W9K
9. Find part of a group by multiplying a whole number by a fraction.
    a. Grade 5 GoMath! Chapter 11, Lesson 1 (Find Part of a Group)
    b. Complete the following IXL Lessons and Skills that relate to finding part of a group:
        i. RB9; RHE
10. Use models to multiply fractions by whole numbers or whole numbers by fractions.
    a. Grade 5 GoMath! Chapter 11, Lesson 2 (Multiply Fractions and Whole Numbers)
    b. Complete the following IXL Lessons and Skills that relate to multiplying fractions by whole numbers:
        i. NKU; VXF
11. Solve real-world problems that multiply a fraction by a whole number or a whole number by a fraction.
    a. Grade 5 GoMath! Chapter 11, Lesson 3 (Fraction and Whole Number Multiplication)
    b. Complete the following IXL Lessons and Skills that relate to fraction and whole number multiplication:
        i. QFQ; 69L; U2V
12. Use visual models to show the product of two fractions.
    a. Grade 5 GoMath! Chapter 11, Lesson 4 (Multiply Fractions)
    b. Complete the following IXL Lessons and Skills that relate to multiplying fractions
        i. UAY
13. Compare the size of a product to the size of one factor when multiplying fractions.
    a. Grade 5 GoMath! Chapter 11, Lesson 5 (Compare Relative Size of Products to Fraction Factors)
    b. Complete the following IXL Lessons and Skills that relate to comparing relative size of products to fraction factors

        i. Q7M; QH2; 9RF
14. Compare the size of a product to the size of one factor when multiplying fractions greater than one.
    a. Grade 5 GoMath! Chapter 11, Lesson 7 (Compare Relative Size of Products to Mixed Number Factors)
    b. Complete the following IXL Lessons and Skills that relate to comparing relative size of products to mixed number factors
        i. S6V; SNW
15. Divide a whole number by a fraction and divide a fraction by a whole number.
    a. Grade 5 GoMath! Chapter 12, Lesson 1 (Divide Whole Numbers and Unit Fractions)
    b. Complete the following IXL Lessons and Skills that relate dividing whole number and unit fractions:
        i. XML; VDU; SPB
16. Use diagrams and multiplication to solve fraction division problems.
    a. Grade 5 GoMath! Chapter 12, Lesson 2 (Relate Multiplication and Division of Fractions)
    b. Complete the following IXL Lessons and Skills that relate to relating multiplication and division of fractions:
        i. A7W
17. Interpret fractions as division.
    a. Grade 5 GoMath! Chapter 12, Lesson 3 (Interpret Fractions as Division)
    b. Complete the following IXL Lessons and Skills that relate to interpreting fractions as division:
        i. D86; CTD
18. Divide fractions by solving a related multiplication equation.
    a. Grade 5 GoMath! Chapter 12, Lesson 4 (Fraction and Whole Number Division)
    b. Complete the following IXL Lessons and Skills that relate to fraction and whole number division:
        i. SPB
19. Use diagrams, equations, and story problems to represent division.
    a. Grade 5 GoMath! Chapter 12, Lesson 5 (Use Visual Models and Equations to Represent Division with Fractions)
    b. Complete the following IXL Lessons and Skills that relate to using visual models and equations to represent division with fractions:
        i. G2N

Assessments:

Diagnostic:

- IXL Diagnostic Arena
- STAR Math (see yearly District Assessment Plan)

Formative:

- Teacher Observations and Questions

- Group Activities
- Exit Tickets
- Teacher-made Quizzes

Summative:

- Common Chapter 9 Assessment
- Performance Task #9
- Common Chapter 10 Assessment
- Performance Task #10
- Common Chapter 11 Assessment
- Performance Task #11
- Common Chapter 12 Assessment
- Performance Task #12

Extensions:

1. IXL Takeoff
2. HMH Waggle
3. Student-specific IXL Recommendations (based on IXL Diagnostic)
4. Generation Genius (see Generation Genius PA Math Standards Alignment List)

Correctives:

1. HMH Waggle
2. Student-specific IXL Recommendations (based on IXL Diagnostic)
3. Generation Genius (see Generation Genius PA Math Standards Alignment List)
4. Grade 5 GoMath! Chapter 9, Lesson 1 (Represent Adding Addition with Unlike Denominators)
5. Grade 5 GoMath! Chapter 9, Lesson 2 (Represent Adding Subtraction with Unlike Denominators)

Unit 4: Operations and Algebraic Thinking
Time Range in Days: approximately 20 days

Standard(s): PA Academic Standards for Mathematics
2.2.5.A.1
2.2.5.A.4

Anchor(s):
M05.B-O.1
M05.B-O.2

Eligible Content:
M05.B-O.1.1.1 Use multiple grouping symbols (parentheses, brackets, or braces) in numerical expressions and evaluate expressions containing these symbols.
M05.B-O.1.1.2 Write simple expressions that model calculations with numbers and interpret numerical expressions without evaluating them.

Example 1: Express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7).
Example 2: Recognize that 3 × (18,932 + 921) is three times as large as 18,932 + 921 without having to calculate the indicated sum or product.

M05.B-O.2.1.1 Generate two numerical patterns using two given rules.

Example: Given the rule "add 3" and the starting number 0 and given the rule "add 6" and the starting number 0, generate terms in the resulting sequences.

M05.B-O.2.1.2 Identify apparent relationships between corresponding terms of two patterns with the same starting numbers that follow different rules.

Example: Given two patterns in which the first pattern follows the rule "add 8" and the second pattern follows the rule "add 2," observe that the terms in the first pattern are 4 times the size of the terms in the second pattern.

Objectives:
Students will be able to:

1. Write a numerical expression to describe a situation. (DOK 1)
2. Apply the order of operations to evaluate expressions. (DOK 2)
3. Evaluate numerical expressions with parentheses, brackets and braces. (DOK 2)

Core Activities and Corresponding Instructional Methods:
1. Write a numerical expression to describe a situation
    a. Grade 5 GoMath! Chapter 13, Lesson 1 (Write a Numerical Expression)
    b. Complete the following IXL Lessons and Skills that relate to writing numerical expressions:
        i. NF5
2. Apply the order of operations to evaluate expressions

a. Grade 5 GoMath! Chapter 13, Lesson 2 (Evaluate Numerical Expressions)
b. Complete the following IXL Lessons and Skills that relate to evaluating numerical expressions:
    i. Z5N

3. Evaluate numerical expressions with parentheses, brackets and braces
    a. Grade 5 GoMath! Chapter 13, Lesson 3 (Evaluate Expressions with Grouping Symbols)
    b. Complete the following IXL Lessons and Skills that relate to evaluating expressions with grouping symbols:
        i. HGW; TVY

Assessments:

Diagnostic:

- IXL Diagnostic Arena
- STAR Math (see yearly District Assessment Plan)

Formative:

- Teacher Observations and Questions
- Group Activities
- Exit Tickets
- Teacher-made Quizzes

Summative:

- Common Chapter13 Assessment
- Performance Task #13

Extensions:

1. IXL Takeoff
2. HMH Waggle
3. Student-specific IXL Recommendations (based on IXL Diagnostic)
4. Generation Genius (see Generation Genius PA Math Standards Alignment List)

Correctives:

1. HMH Waggle
2. Student-specific IXL Recommendations (based on IXL Diagnostic)
3. Generation Genius (see Generation Genius PA Math Standards Alignment List)

Unit 5: Geometry
Time Range in Days: approximately 20 days

Standard(s): PA Academic Standards for Mathematics
2.3.5.A.1
2.3.5.A.2

Anchor(s):
M05.C-G.1
M05.C-G.2

Eligible Content:
M05.C-G.1.1.1 Identify parts of the coordinate plane (x-axis, y-axis, and the origin) and the ordered pair (x-coordinate and y-coordinate). Limit the coordinate plane to quadrant I.
M05.C-G.1.1.2 Represent real-world and mathematical problems by plotting points in quadrant I of the coordinate plane and interpret coordinate values of points in the context of the situation.
M05.C-G.2.1.1 Classify two-dimensional figures in a hierarchy based on properties.

Example 1: All polygons have at least three sides, and pentagons are polygons, so all pentagons have at least three sides.

Example 2: A rectangle is a parallelogram, which is a quadrilateral, which is a polygon; so, a rectangle can be classified as a parallelogram, as a quadrilateral, and as a polygon.

Objectives:
Students will be able to:

1. Identify and plot points on the coordinate plane - Quadrant I only. (DOK 1)
2. Identify, classify and compare triangles. (DOK 1; DOK 2)
3. Identify, classify and compare quadrilaterals. (DOK 1; DOK 2)

Core Activities and Corresponding Instructional Methods:
1. Identify and plot points on the coordinate plane - Quadrant I only.
    a. Grade 5 GoMath! Chapter 18, Lesson 5 (Understand Ordered Pairs)
    b. Complete the following IXL Lessons and Skills that relate to understanding ordered pairs:
        i. NTR; ZBD; AST
2. Identify, classify and compare triangles
    a. Grade 5 GoMath! Chapter 15, Lesson 1 AND Lesson 2 (Identify and Classify Two-Dimensional Figures AND Classify Triangles) → ***FOCUS ONLY ON TRIANGLES***
    b. Complete the following IXL Lessons and Skills that relate to identifying classifying triangles:
        i. R94; N77; C64

3. Identify, classify and compare quadrilaterals
    a. Grade 5 GoMath! Chapter 15, Lesson 1 AND Lesson 3 (Identify and Classify Two-Dimensional Figures AND Classify Quadrilaterals) → ***FOCUS ONLY ON QUADRILATERALS***
    b. Complete the following IXL Lessons and Skills that relate to identifying classifying quadrilaterals:
        i. 6ZQ; KCG; SZT; E97

Assessments:

Diagnostic:

- IXL Diagnostic Arena
- STAR Math (see yearly District Assessment Plan)

Formative:

- Teacher Observations and Questions
- Group Activities
- Exit Tickets
- Teacher-made Quizzes

Summative:

- Common Chapter 15 Assessment
- Performance Task #15

Extensions:

1. IXL Takeoff
2. HMH Waggle
3. Student-specific IXL Recommendations (based on IXL Diagnostic)
4. Generation Genius (see Generation Genius PA Math Standards Alignment List)

Correctives:

1. HMH Waggle
2. Student-specific IXL Recommendations (based on IXL Diagnostic)
3. Generation Genius (see Generation Genius PA Math Standards Alignment List)

Unit 6: Geometric Measurement Time Range in Days: approximately 7 days

Standard(s): PA Academic Standards for Mathematics

2.4.5.A.5

Anchor(s):

M05.D-M.3

Eligible Content:

M05.D-M.3.1.1 Apply the formulas V = l × w × h and V = B × h for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real-world and mathematical problems. (Formulas will be provided.)
M05.D-M.3.1.2 Find volumes of solid figures composed of two non-overlapping right rectangular prisms.

Objectives:

Students will be able to:

1. Use formulas to find the area and perimeter of shapes with decimal side lengths. (DOK 2)
2. Use formulas to find the area and perimeter of shapes with fractional side lengths. (DOK 2)
3. Use unit cubes to find the volume of a rectangular prism. (DOK 2)
4. Find the volume of a rectangular prism. (DOK 2)
5. Use a formula to find the volume of a rectangular prism. (DOK 2)
6. Find the volume of rectangular prisms that are combined. (DOK 3)

Core Activities and Corresponding Instructional Methods:

1. Use formulas to find the area and perimeter of shapes with decimal side lengths → ***USE CALCULATOR FOR COMPUTATION***
    a. Grade 5 GoMath! Chapter 14, Lesson 1 (Find Perimeter and Area of Rectangles with Decimal Side Lengths)
    b. Complete the following IXL Lessons and Skills that relate to finding perimeter and area of rectangles with decimal side lengths:
        i. BGV
2. Use formulas to find the area and perimeter of shapes with fractional side lengths → ***USE CALCULATOR FOR COMPUTATION***
    a. Grade 5 GoMath! Chapter 14, Lesson 2 (Find Perimeter and Area of Rectangles with Fractional Side Lengths)

b. Complete the following IXL Lessons and Skills that relate to finding perimeter and area of rectangles with fractional side lengths:
    i. WQU; 64E

3. Use unit cubes to find the volume of a rectangular prism
    a. Grade 5 GoMath! Chapter 16, Lesson 2 (Understand Volume)
    b. Complete the following IXL Lessons and Skills that relate to understanding volume:
        i. WG8; QMA
4. Find the volume of a rectangular prism
    a. Grade 5 GoMath! Chapter 16, Lesson 4 (Volume of Rectangular Prisms)
    b. Complete the following IXL Lessons and Skills that relate to volume of rectangular prisms:
        i. JP6
5. Use a formula to find the volume of a rectangular prism
    a. Grade 5 GoMath! Chapter 16, Lesson 5 (Apply Volume Formulas)
    b. Complete the following IXL Lessons and Skills that relate to applying volume formulas:
        i. TFL; NR6
6. Find the volume of rectangular prisms that are combined
    a. Grade 5 GoMath! Chapter 16, Lesson 6 (Find Volume of Composed Figures)
    b. Complete the following IXL Lessons and Skills that relate to finding the volume of composed figures:
        i. J83
    c. Watch Khan Academy videos that relates to composite volume:
        i. https://www.khanacademy.org/math/cc-fifth-grade-math/5th-volume/decompose-figures-to-find-volume/v/volume-in-unit-cubes-by-decomposing-shape

Assessments:

Diagnostic:

- IXL Diagnostic Arena
- STAR Math (see yearly District Assessment Plan)

Formative:

- Teacher Observations and Questions
- Group Activities
- Exit Tickets
- Teacher-made Quizzes

Summative:

- Common Chapter 16 Assessment
- Performance Task #16

Extensions:

1. IXL Takeoff
2. HMH Waggle
3. Student-specific IXL Recommendations (based on IXL Diagnostic)
4. Generation Genius (see Generation Genius PA Math Standards Alignment List)

Correctives:

1. HMH Waggle
2. Student-specific IXL Recommendations (based on IXL Diagnostic)
3. Generation Genius (see Generation Genius PA Math Standards Alignment List)
4. Grade 5 GoMath! Chapter 16, Lesson 1 (Unit Cubes and Three-Dimensional Figures)

Unit 7: Measurement Time Range in Days: approximately 10 days

Standard(s): PA Academic Standards for Mathematics

2.4.5.A.1

Anchor(s):

M05.D-M.1

Eligible Content:

M05.D-M.1.1.1 Convert between different-sized measurement units within a given measurement system. A table of equivalencies will be provided.

Example: Convert 5 cm to meters.

Objectives:

Students will be able to:

1. Convert customary units of measurement (DOK 2)
2. Solve multi-step problems involving customary conversions (DOK 3)
3. Convert metric units of measurement (DOK 2)
4. Solve multi-step problems involving metric conversions (DOK 3)
5. Solve problems involving units of time (DOK 3)

Core Activities and Corresponding Instructional Methods:

1. Convert customary units of measurement
    a. Complete the following IXL Lessons and Skills that relate to converting customary units of measurement:
        i. Length: 7E8
        ii. Capacity/Volume: 96B
        iii. Weight: SXT
2. Solve multi-step problems involving customary conversions
    a. Grade 5 GoMath! Chapter 17, Lesson 1 (Solve Multi-Step Customary Measurement Problems)
    b. Complete the following IXL Lessons and Skills that relate to solving multi-step customary measurement problems:
        i. MJ9; 7HU; WCM
3. Convert metric units of measurement
    a. Complete the following IXL Lessons and Skills that relate to converting metric units of measurement:
        i. Length: 8MX
        ii. Capacity/Volume: 27C
        iii. Weight: TMN

4. Solve multi-step problems involving metric conversions
    a. Grade 5 GoMath! Chapter 17, Lesson 2 (Solve Multi-Step Customary Measurement Problems)
    b. Complete the following IXL Lessons and Skills that relate to solving multi-step metric measurement problems:
        i. 6WR; X5T
5. Solve problems involving units of time
    a. Complete the following IXL Lessons and Skills that relate to elapsed time:
        i. CXF; QD7; N8A; NX7

Assessments:

Diagnostic:

- IXL Diagnostic Arena
- STAR Math (see yearly District Assessment Plan)

Formative:

- Teacher Observations and Questions
- Group Activities
- Exit Tickets
- Teacher-made Quizzes

Summative:

- Common Chapter 17 Assessment
- Performance Task #17

Extensions:

1. IXL Takeoff
2. HMH Waggle
3. Student-specific IXL Recommendations (based on IXL Diagnostic)
4. Generation Genius (see Generation Genius PA Math Standards Alignment List)
5. IXL Lesson - Solve Multi-Step Measurement Problems (ST6)

Correctives:

1. HMH Waggle
2. Student-specific IXL Recommendations (based on IXL Diagnostic)
3. Generation Genius (see Generation Genius PA Math Standards Alignment List)

Unit 8: Data Analysis **Time Range in Days: approximately 9 days**

Standard(s): PA Academic Standards for Mathematics

2.4.5.A.2
2.4.5.A.4

Anchor(s):

M05.D-M.2

Eligible Content:

M05.D-M.2.1.1 Solve problems involving computation of fractions by using information presented in line plots.
M05.D-M.2.1.2 Display and interpret data shown in tallies, tables, charts, pictographs, bar graphs, and line graphs, and use a title, appropriate scale, and labels. A grid will be provided to display data on bar graphs or line graphs.

Objectives:

Students will be able to:

1. Generate a number pattern. (DOK 2)
2. Write a rule to describe a pattern. (DOK 1)
3. Write a rule for a number pattern given in a graph. (DOK2)
4. Graph a number pattern. (DOK 2)
5. Write and graph ordered pairs on a coordinate grid using two numerical patterns. (DOK 3)
6. Collect and organize data. (DOK 1)
7. Represent and interpret line plots. (DOK 3)
8. Represent and interpret line graphs. (DOK 2)

Core Activities and Corresponding Instructional Methods:

1. Generate a number pattern
    a. Grade 5 GoMath! Chapter 18, Lesson 1 (Record Inputs and Outputs in a Two-Column Table)
    b. Complete the following IXL Lessons and Skills that relate to recording inputs and outputs in a two-column table:
        i. NEK
2. Write a rule to describe a pattern
    a. Grade 5 GoMath! Chapter 18, Lesson 2 (Write a Rule for Number Patterns in Tables)
    b. Complete the following IXL Lessons and Skills that relate to writing a rule for number patterns in tables:

i. GX2

3. Write a rule for a number pattern given in a graph
    a. Grade 5 GoMath! Chapter 18, Lesson 3 (Write a Rule for Number Patterns in Graphs)
    b. Complete the following IXL Lessons and Skills that relate to writing a rule for number patterns in graphs:
        i. 2WL; TH9
4. Graph a number pattern
    a. Grade 5 GoMath! Chapter 18, Lesson 4 (Graph a Number Pattern)
    b. Complete the following IXL Lessons and Skills that relate to graphing a number pattern:
        i. N9B; PN2
5. Write and graph ordered pairs on a coordinate grid using two numerical patterns
    a. Grade 5 GoMath! Chapter 18, Lesson 7 (Graph and Analyze Relationships)
    b. Complete the following IXL Lessons and Skills that relate to graphing and analyzing relationships:
        i. QEH
6. Collect and organize data
    a. Grade 5 GoMath! Chapter 19, Lesson 1 (Collect and Organize Data)
    b. Complete the following IXL Lessons and Skills that relate to collecting and organizing data:
        i. UEK
7. Represent and interpret line plots
    a. Complete the following IXL Lessons and Skills that relate to representing and interpreting line plots:
        i. With Whole Numbers: 79C; ZBV
        ii. With Fractions: SHS; XBS
8. Represent and interpret line graphs
    a. Grade 5 GoMath! Chapter 19, Lesson 3 (Represent and Interpret Line Graphs)
    b. Complete the following IXL Lessons and Skills that relate to representing and interpreting line graphs:
        i. UFX; KFZ

Assessments:

Diagnostic:

- IXL Diagnostic Arena
- STAR Math (see yearly District Assessment Plan)

Formative:

- Teacher Observations and Questions
- Group Activities
- Exit Tickets
- Teacher-made Quizzes

Summative:

- Common Chapter 19 Assessment
- Performance Task #19

Extensions:

1. IXL Takeoff
2. HMH Waggle
3. Student-specific IXL Recommendations (based on IXL Diagnostic)
4. Generation Genius (see Generation Genius PA Math Standards Alignment List)
5. Grade 5 GoMath! Chapter 18, Lesson 6 (Graph and Display Data Collected in an Experiment)

Correctives:

1. HMH Waggle
2. Student-specific IXL Recommendations (based on IXL Diagnostic)
3. Generation Genius (see Generation Genius PA Math Standards Alignment List)

Unit 9: Getting Ready for 6th Grade Time Range in Days: approximately 21 days

Standard(s): PA Academic Standards for Mathematics

2.1.6.E.1
2.1.6.E.4
2.1.6.E.4
2.1.6.D.1
2.2.6.B.1
2.2.6.B.2
2.4.6.B.1

Anchor(s):

M06.A-N.1
M06.A-N.3
M06.A-N.3
M06.A-R.1
M06.B-E.1
M06.B-E.2
M06.D-S.1

Eligible Content:

M06.A-N.1.1.1 Interpret and compute quotients of fractions (including mixed numbers), and solve word problems involving division of fractions by fractions.

Example 1: Given a story context for (2/3) ÷ (3/4), explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = (a/b) × (d/c) = ad/bc.)

Example 2: How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?

Example 3: How many 2 1/4-foot pieces can be cut from a 15 1/2-foot board?

M06.A-N.3.1.1 Represent quantities in real-world contexts using positive and negative numbers, explaining the meaning of 0 in each situation (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge).

M06.A-N.3.1.3 Locate and plot integers and other rational numbers on a horizontal or vertical number line; locate and plot pairs of integers and other rational numbers on a coordinate plane.

M06.A-N.3.2.1 Write, interpret, and explain statements of order for rational numbers in real-world contexts.

Example: Write – 3°C > – 7°C to express the fact that – 3°C is warmer than – 7°C.

M06.A-N.3.2.3 Solve real-world and mathematical problems by plotting points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

M06.A-R.1.1.1 Use ratio language and notation (such as 3 to 4, 3:4, 3/4) to describe a ratio relationship between two quantities.

Example 1: “The ratio of girls to boys in a math class is 2:3 because for every 2 girls there are 3 boys.”

Example 2: “For every five votes candidate A received, candidate B received four votes.”

M06.B-E.1.1.1 Write and evaluate numerical expressions involving whole-number exponents.

M06.B-E.1.1.2 Write algebraic expressions from verbal descriptions.

Example: Express the description “five less than twice a number” as 2y – 5.

M06.B-E.2.1.2 Write algebraic expressions to represent real-world or mathematical problems.

M06.D-S.1.1.1 Display numerical data in plots on a number line, including line plots, histograms, and box-and-whisker plots.

M06.D-S.1.1.2 Determine quantitative measures of center (e.g., median, mean, mode) and variability (e.g., range, interquartile range, mean absolute deviation).

Objectives:

Students will be able to:

1. Compare decimals, fractions, and mixed numbers on a number line. (DOK 1)
2. Order decimals, fractions and mixed numbers on a number line. (DOK 1)
3. Factor numbers using a factor tree. (DOK 1)
4. Express real-world quantities as percents and use them to solve problems. (DOK 2)
5. Express decimals as percents and percents as decimals. (DOK 1)
6. Convert between fractions, decimals and percents. (DOK 2)
7. Divide a fraction by a whole number. (DOK 1)
8. Express real-world quantities as ratios. (DOK 1)
9. Determine if two ratios are equivalent. (DOK 2)
10. Find rates and unit rates. (DOK 1)
11. Solve problems involving distance, rate and time. (DOK 2)
12. Understand positive and negative numbers and use them to represent real-world quantities. (DOK 2)
13. Write and evaluate expressions. (DOK 2)
14. Understand inequalities and use them to solve problems. (DOK 2)
15. Plot polygons and a coordinate grid. (DOK 2)
16. Find the area of parallelograms. (DOK 3)
17. Summarize a data set by using median and mode. (DOK 2)
18. Find the average of a group of values. (DOK 2)
19. Make a histogram to organize data. (DOK 3)
20. Analyze data in a histogram. (DOK 3)

Core Activities and Corresponding Instructional Methods:

1. Compare decimals, fractions, and mixed numbers on a number line
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Compare Fractions and Decimals)
    b. Complete the following IXL Lessons and Skills that relate to comparing decimals, fractions and mixed numbers:
        i. ZEH

2. Order decimals, fractions, and mixed numbers on a number line
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Order Fractions and Decimals)
    b. Complete the following IXL game that relates to ordering decimals, fractions and mixed numbers:
        i. Pecking Order
3. Factor numbers using a factor tree
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Factor Trees)
    b. Complete the following IXL Lessons and Skills that relate to factor trees:
        i. BGJ
4. Express real-world quantities as percents and use them to solve problems
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Model Percent)
    b. Complete the following IXL Lessons and Skills that relate to modeling percents:
        i. RHG
5. Express decimals as percents and percents as decimals
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Relate Decimals and Percents)
    b. Complete the following IXL Lessons and Skills that relate to relating decimals and percents:
        i. 8N4
6. Convert between fractions, decimals and percents
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Fractions, Decimals and Percents)
    b. Complete the following IXL Lessons and Skills that relate to converting fractions, decimals and percents:
        i. 6PB
7. Divide a fraction by a whole number
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Dividing Fractions by a Whole Number)
    b. Complete the following IXL Lessons and Skills that relate to dividing a fraction by a whole number:
        i. GXY
8. Express real-world quantities as ratios
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Ratios)
    b. Complete the following IXL Lessons and Skills that relate to ratios:
        i. 83K
9. Determine if two ratios are equivalent
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Equivalent Ratios)
    b. Complete the following IXL Lessons and Skills that relate to equivalent ratios:
        i. 2LM; RLZ
10. Find rates and unit rates
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Rates)
    b. Complete the following IXL Lessons and Skills that relate to finding rates and unit rates:
        i. JSZ
11. Solve problems involving distance, rate and time
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Distance, Rate and Time)

    b. Complete the following IXL Lessons and Skills that relate to distance, rate and time:
        i. 59F
12. Understand positive and negative numbers and use them to represent real-world quantities.
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Understand Integers)
    b. Complete the following IXL Lessons and Skills that relate to understanding integers:
        i. 8EP
13. Write and evaluate expressions
    a. Grade 5 GoMath! Getting Ready for Grade 6 (UAlgebra: Write and Evaluate Expressions)
    b. Complete the following IXL Lessons and Skills that relate to writing and evaluating expressions:
        i. F5B; K6R
14. Understand inequalities and use them to solve problems
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Algebra: Understand Inequalities)
    b. Complete the following IXL Lessons and Skills that relate to writing and understanding inequalities:
        i. P9N
15. Plot polygons and a coordinate grid
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Polygons on a Coordinate Grid)
    b. Complete the following IXL Lessons and Skills that relate to plotting polygons on a coordinate grid:
        i. AST
16. Find the area of parallelograms
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Area of Parallelogram)
    b. Complete the following IXL Lessons and Skills that relate to finding the area of a parallelogram:
        i. QMU
17. Summarize a data set by using median and mode
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Median and Mode)
    b. Complete the following IXL Lessons and Skills that relate to median and mode:
        i. JJ2
18. Find the average of a group of values
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Finding the Average)
    b. Complete the following IXL Lessons and Skills that relate to finding the average:
        i. JJ3
19. Make a histogram to organize data
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Histograms)
    b. Complete the following IXL Lessons and Skills that relate to histograms:
        i. CBF
20. Analyze data in a histogram
    a. Grade 5 GoMath! Getting Ready for Grade 6 (Analyze Histograms)

b. Complete the following IXL Lessons and Skills that relate to analyzing histograms:
    i. 7NG

Assessments:

Diagnostic:

- IXL Diagnostic Arena
- STAR Math (see yearly District Assessment Plan)

Formative:

- Teacher Observations and Questions
- Group Activities
- Exit Tickets
- Teacher-made Quizzes

Summative:

- Common Assessment - Getting Reading for Grade 6 Test #1 (Lessons 1-11)
- Performance Task #20
- Common Assessment - Getting Reading for Grade 6 Test #2 (Lessons 12-20)
- Performance Task #21

Extensions:

1. IXL Takeoff
2. HMH Waggle
3. Student-specific IXL Recommendations (based on IXL Diagnostic)
4. Generation Genius (see Generation Genius PA Math Standards Alignment List)

Correctives:

1. HMH Waggle
2. Student-specific IXL Recommendations (based on IXL Diagnostic)
3. Generation Ge. nius (see Generation Genius PA Math Standards Alignment List