**Decision One: Curriculum Map**

**Topic:** Geometry

**Grade:** 3

### Key Learning(s):

- Reason with shapes and their attributes

### Unit Essential Question(s):

- How can you reason with shapes and their attributes?

### Optional Instructional Tools:

- Ruler, 2 pipe cleaners and 1 paper fastener (per group), dot paper, 1-inch grid paper

### Concept:

**Two-Dimensional Shapes and Their Attributes**

3.G.1

### Lesson Essential Questions:

1. How can you identify, compare, & classify two-dimensional geometric shapes and their attributes? E
2. How can you combine & separate shapes to create a different shape?

### Vocabulary:

**Imperative to use “exact” vocabulary:**
- Point, line, line segment, intersecting lines, ray, angle, vertex, right angle, perpendicular, acute angle, obtuse angle, polygon, side, vertex of a polygon, diagonal, triangle, quadrilateral, pentagon, hexagon, octagon, decagon, equilateral triangle, isosceles triangle, scalene triangle, right triangle, acute triangle, obtuse triangle, trapezoid, parallelogram, rectangle, rhombus, square

**Imperative to use “exact” vocabulary:**
- Sphere, cube, cylinder, cone, pyramid, rectangular prism
**Unit Essential Question(s):**

1. How do you represent and interpret data?
2. How do we solve problems with measurement and estimation for; time, liquid volume, mass, length, perimeter and area?

**Concept:**

- **Time**
  - 3.MD.1

**Lesson Essential Questions:**

1. How can you tell time to the nearest minute? E
2. How can you find elapsed time to the nearest minute? E
3. How can you change from one unit to another unit when measuring time? E
4. How can you use addition & subtraction of time intervals to solve word problems? E

**Concept:**

- **Perimeter**
  - 3.MD.8

**Lesson Essential Questions:**

1. How do you find the distance around a shape? E
2. How can you use a tool and unit to measure the perimeter of a shape? E
3. How can you find the perimeter of common shapes when not all the lengths are given? E
4. How can you make a shape when you know the perimeter? E

**Concept:**

- **Area**

**Lesson Essential Questions:**

1. How can you measure the number of squares needed to cover a shape? E
2. How can you use units to describe an area? E
3. How can you measure the area of a shape using standard units? E
4. How can you measure the area of a shape using computations? E
5. How can you break apart a rectangle to represent addition or multiplication? E
6. How can you find the area of an irregular figure? E
7. How can you find the same areas of rectangles that have different perimeters? E

**Concept:**

- **Liquid Volume and Mass**
  - 3.MD.2

**Lesson Essential Questions:**

1. How do you use different units to find how much a container holds? E
2. How do you measure the mass of an object? E

**Optional Instructional Tools:**

- Clocks, calendar, rulers, yardstick, centimeter grid paper, straws, shapes to trace, 1 inch grid paper, index cards, scissors, cup pint, quart, and gallon containers, water, rice, sand, liter water bottle, 4 liter container, container less than ½ liter, dollar bill, pan balance, quarters
8. How can area help you to find if a shape is divided into equal parts, and can you use the same fraction to describe each part?

<table>
<thead>
<tr>
<th>Concept: Data</th>
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<tr>
<td>3.MD.3</td>
<td>3.A.3</td>
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**Lesson Essential Questions:**

1. How do you record results/data on a number line? E
2. How do you use a ruler to measure to the nearest ¼ inch or centimeter?
3. How do you make a line plot to organize and represent data you have collected? E
4. How can you read data in graphs that use pictures? E
5. How do you determine how much a symbol in a pictograph represents? E
6. How can you choose a scale to make a bar graph? E

**Vocabulary:**

Imperative to use “exact” vocabulary

line plot, pictograph, key, bar graph, scale

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**Vocabulary:**
Decision One: Curriculum Map

Key Learning(s):
- Represent and solve problems involving multiplication and division.
- Understand properties of multiplication and the relationship between multiplication and division.
- Solve problems involving the four operations and identify and explain patterns in arithmetic.

Unit Essential Question(s):
How can the relationship between multiplication and division, including their properties, help me to solve problems?

Instructional Tools:
Counters, two-color tiles

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| Meanings of Multiplication
3.OA.1
3.OA.3
3.OA.5 | Multiplication Facts: Use Patterns
3.OA.3
3.OA.9
3.NBT.3 | Multiplication Facts: Use Known Facts
3.OA.3
3.OA.5 | Meanings of Division
3.OA.2
3.OA.3
3.OA.4
3.OA.6 |

Lesson Essential Questions:

1. How can you find the total number of objects in equal groups? E
2. What are arrays, and how do they show multiplication? E
3. What happens when you multiply two numbers and then switch the order of the factors? E
4. How can you write a story to describe a multiplication fact? E

1. How can you use patterns to multiply to by 2 and 5? E
2. How can patterns be used to find 9s facts? E
3. What are the patterns in multiples of 1 and 0? E
4. What patterns can help you remember multiplication facts for 2s, 5s, and 10s? E
5. How can basic facts help us when we multiply a single-digit number by a multiple of 10? E

1. Why can you break apart an array into smaller arrays? E
2. How can you break apart arrays, and use known facts, to multiply by different factors? E
3. How can you multiply three factors? E
4. How can you use strategies to multiply? E
5. How can you find all of the possible combinations of objects from sets? E

Lesson Essential Question:
1. How can you think of division as sharing? I
2. How can you think of division as repeated subtraction? I
3. How can you use a multiplication table to solve division problems? I
4. How can you write & solve division stories? I

Vocabulary:
Other Information:

enVision resources - 2s and 5s Factors (Tool 36), 9 as Factor (Tool 37), multiplying with 0 and 1 (Tool 38), hundred chart (Tool 7), 10 as a Factor (Tool 39), two color counters (Tool 17), two color tiles (Tool 16), division boxes (Tool 41), index cards with division sentences with dividends less than 30.

By the end of third grade students should be able to fluently multiply and divide within 100 and know all products of two one-digit numbers.

Additional information for all maps: refer to the problem solving map that identifies when to teach each problem solving strategy lesson with this topic.

Always reference and use the Math Practice Standards which accompany each lesson.
Key Learning(s):

Represent and solve problems involving multiplication and division.

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

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

Unit Essential Question(s):

How can the relationship between multiplication and division, including their properties, help me to solve problems?

Concept:

Division Facts
3.OA.3
3.OA.4
3.OA.7

Lesson Essential Questions:

1. How are multiplication and division facts related? I
2. How can you use multiplication to help you solve division problems? I
3. How can a pan balance help you think about multiplication and division equations? I
4. How do you divide with 0 and 1? I
5. How can you use multiplication and division facts to solve problems? I

Vocabulary: dividend, divisor, quotient

Optional Instructional Tools:

Counters, two-color tiles
Strong problem-solving and reasoning abilities are essential in developing conceptual understanding.

What strategies enable us to solve problems?

Two-color counter, two-color tiles, centimeter grid paper, clock, colored chalk

Lesson Essential Questions:
1. (1-8) How can you solve problems by making a list? I
2. (2-9) How can you use reasonableness to justify an answer? E

Lesson Essential Questions:
1. (3-5, 3-10, 8-9, 10-9, 15-5) How can you solve problems by drawing a picture and writing a number sentence? E
2. (7-6) How can you use objects and draw pictures to solve a problem? E

Lesson Essential Questions:
1. (4-5) How do you write a good mathematical explanation? E

Other Information:
Problem solving recording sheet (Tool 1), Use Objects and Draw a Picture (Tool 42), two-color counters (Tool 17), two-color tiles (Tool 16), centimeter grid paper (Tool 11), clock face (Tool 25), Sandwich Survey (Tool 30)

Additional information for all maps: refer to the problem solving map that identifies when to teach each problem solving strategy lesson with this topic.

Always reference and use the Math Practice Standards which accompany each lesson.
Strong problem-solving and reasoning abilities are essential in developing conceptual understanding.

**What strategies enable us to solve problems?**

**Concept:**
- Multiple Step Problems 3.OA.3
- Choose an appropriate equation 3.OA.4
- Make a table and look for a pattern 3.OA.3 3.MD.3
- Solve simple problems 3.G.2 3.MD.6

**Lesson Essential Questions:**
1. (5-7) How can you tell when you need to answer more than one question to solve a problem? E
2. (6-9) How can you figure out what question needs to be figured out first in a multi-step problem? E
3. (8-5) How can you solve problems that involve more than one step? I

**Vocabulary:**
- na

**Other Information:**
Problem solving recording sheet (Tool 1), Use Objects and Draw a Picture (Tool 42), two color counters (Tool 17), two color tiles (Tool 16), centimeter grid paper (Tool 11), clock face (Tool 25), Sandwich Survey (Tool 30)

Additional information for all maps: refer to the problem solving map that identifies when to teach each problem solving strategy lesson with this topic.

**Always reference and use the Math Practice Standards which accompany each lesson.**
**Optional Instructional Tools:**
Two-color counter, two-color tiles, centimeter grid paper, clock, colored chalk

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<td>Work backward</td>
<td>Try, check and revise</td>
<td>Selecting appropriate measurement units and tools</td>
<td>Make and test generalizations</td>
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<tr>
<td>3.MD.1</td>
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<td>1. (13-5) How can you use the strategy try, check and revise to solve problems?</td>
<td>1. (14-10) How can you select appropriate measurement units and tools?</td>
<td>1. (11-9) What generalization can be made from a group of polygons?</td>
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**Other Information:**
Envision Tools: Problem solving recording sheet (Tool 1), Use Objects and Draw a Picture (Tool 42), two-color counters (Tool 17), two-color tiles (Tool 16), centimeter grid paper (Tool 11), clock face (Tool 25), Sandwich Survey (Tool 30)

Additional information for all maps: refer to the problem solving map that identifies when to teach each problem solving strategy lesson with this topic.

**Always reference and use the Math Practice Standards which accompany each lesson.**
**Decision One: Curriculum Map**

**Topic:** Numbers and Operations/ Base Ten

**Grade:** 3

**Key Learning(s):**
Use place value understanding and properties of operations to perform multi-digit arithmetic.

**Unit Essential Question(s):**
How do we use place value and the properties of operations to perform multi-digit arithmetic?

**Optional Instructional Tools:**
Place value blocks, Two color counters,

**Concept:**

**Numeration**
3.NBT.1
3.NBT.2

**Number Sense: Addition and Subtraction**
3.NBT.1
3.NBT.2

**Using Place Value to Add and Subtract**
3.NBT.1
3.NBT.2
3.OA.8

**Lesson Essential Questions:**
1. How can you read and write 3-digit numbers? E
2. How can you name the same number in different ways? E
3. How can you read and write greater numbers? E
4. How can you locate and write numbers on a number line? I
5. How can you complete the pattern on a number line? E
6. How can place value help you compare the whole numbers? E
7. How can you order numbers? E

**Imperative to use “exact” vocabulary:**
- Vocabulary: digits, place value, standard form, expanded form, word form, period, compare, order

**Concept:**

1. How can you break a large addition problem into smaller ones? E
2. How can you add 3-digit numbers? E
3. How can you use addition to solve problems? E
4. How can you break a large subtraction problem into smaller simpler ones? E
5. How can you use models to subtract 3-digit numbers with regrouping? E
6. How can you subtract 3-digit numbers using paper and pencil? E
7. How can you subtract from a 3-digit number with zeros? E

**Vocabulary:**
- Vocabulary: addends, sum, Commutative (Order) Property of Addition, Identity (Zero) Property of Addition, difference, fact family, round, estimate, compatible numbers, equation
Other Information:

**enVision resources** - Place value (Tools 18 and 19), Number lines (Tool 10), Ordering Numbers (Tool 31), Addition Meaning and Properties (Tool 17), Rounding (Tool 32), Estimate sums (Tool 33), Adding 3 or more numbers (Tool 34), subtract 3-digit (Tool 35)

**Always reference and use the Math Practice Standards which accompany each lesson.**

Additional information for all maps: Refer to the Problem Solving Map that identifies when to teach each problem solving strategy lesson with this topic
**Key Learning(s):**

Develop understanding of fractions as numbers.

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**Unit Essential Question(s):**

How do you develop an understanding of fractions as numbers?

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**Concept:**

Understanding Fractions

3.NF.1
3.NF.2a
3.NF.2.b
3.OA.3

**Concept:**

Fraction Comparison and Equivalence

3.NF.2
3.NF.3.a
3.NF.3.c
3.NF.3.d

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**Lesson Essential Questions:**

1. How can you divide a region into two equal parts and name the parts? **E**
2. How can you write a fraction to name part of a whole? **E**
3. How can you write a fraction to name part of a set? **E**
4. How can you find how many items are in a fractional part of a set? **E**
5. How can you find & write fractions on a number line? **I**
6. How do you use fractions to estimate parts of a whole? **E**
7. How can you write a fraction to name part of a length? **E**

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**Optional Instructional Tools:**

Centimeter grid paper, Two –color counters, 8 ½ inch X 1 inch paper strips (2 per student), number lines, fraction strips
Imperative to use “exact” vocabulary:

**Vocabulary:** Halves, thirds, fourths, fifths, sixths, eighths, tenths, twelfths, fraction, unit fraction, numerator, denominator, mixed numbers, benchmark fractions

Imperative to use “exact” vocabulary:

**Vocabulary:** equivalent fractions, simplest form
## Decision One: Curriculum Map

### Topic: Step Up to Fourth Grade

### Grade: 3

#### Key Learning(s):

Students preview important content from fourth grade to prepare for the next school year.

#### Unit Essential Question(s):

**What can you do to prepare for fourth grade math?**

#### Concept:

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<td>4.OA.4</td>
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<td>4. How can you multiply by 10 and 100? <strong>C</strong></td>
<td>5. How can you use arrays to find products? <strong>C</strong></td>
<td>6. How can you record multiplication? <strong>C</strong></td>
<td>7. What is a common way to record multiplication? <strong>C</strong></td>
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#### Vocabulary:

- Imperative to use "exact" vocabulary
- partial products

### Decision One: Curriculum Map

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