# | **STUDENT LEARNING OBJECTIVES** | **NJSLS** | **Resources**
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1 | Fluently add and subtract multi-digit whole numbers using the standard algorithm. | 4.NBT.B.4* | 
2 | Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers; represent and explain calculations using equations, rectangular arrays, and area models. | 4.NBT.B.5 | 
3 | Divide a whole number of up to four-digits by a one-digit divisor; represent and explain the calculation using equations, rectangular arrays, and area models. | 4.NBT.B.6 | 
4 | Write and solve each equation (including any of the four operations) in order to solve multi-step word problems, using a letter to represent the unknown; interpret remainders in context and assess the reasonableness of answers using mental computation with estimation strategies. | 4.OA.A.3* | 
5 | Solve real world problems with whole numbers by finding the area and perimeter of rectangles using formulas. | 4.MD.A.3 | 
6 | Recognize and generate equivalent fractions and explain why they are equivalent using visual fraction models. | 4.NF.A.1 | 
7 | Compare two fractions with different numerators or different denominators, recording comparison with >, =, or <, and justifying the conclusion using visual fraction models. | 4.NF.A.2 |
**Mathematics Pacing**

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<th>UNIT: # 2</th>
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**8**
- Decompose a fraction into a sum of fractions with the same denominator in more than one way and record the decomposition as an equation; justify the decomposition with a visual fraction model.
  - 4.NF.B.3a, 3b
  - IFL – Part 1
  - “Building Non-Unit Fractions.”

**9**
- Add and subtract mixed numbers with like denominators by replacing each mixed number with an equivalent fraction or improper fraction.
  - 4.NF.B.3c

**10**
- Solve word problems involving addition and subtraction of fractions having like denominators using visual fraction models and equations to represent the problem.
  - 4.NF.B.3d
  - IFL – Part 1
  - “Building Non-Unit Fractions.”

Key: Major Cluster | Supporting | Additional Cluster | *Benchmark Standard

### Code # | New Jersey Student Learning Standards
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4.NBT.B.4* | Fluently add and subtract multi-digit whole numbers using the standard algorithm. *[Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.]* *(benchmarked)*

4.NBT.B.5 | Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. *[Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.]*

4.NBT.B.6 | Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. *[Grade 4 expectations*
### 4.OA.A.3 *
Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. 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.

*(benchmarked)*

### 4.MD.A.3
Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.

### 4.NF.A.1
Explain why a fraction \( \frac{a}{b} \) is equivalent to a fraction \( (n \times a)/(n \times b) \) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. [Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.]

### 4.NF.A.2
Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as \( \frac{1}{2} \). Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols \( >, =, \) or \( < \), and justify the conclusions, e.g., by using a visual fraction model. [Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.]

### 4.NF.B.3
Understand a fraction \( \frac{a}{b} \) with \( a > 1 \) as a sum of fractions \( \frac{1}{b} \).

a) Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

b) Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording
### Mathematics Pacing

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|          | Assessment: 1/22/19 – 1/25/19 | 8/13/2018 each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples:* $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$; $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$; $2\frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$.

 c) Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.

d) Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.

[Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.]