OCSD Fifth Grade Planning Guide for Math Expressions: Common Core © 2013

Notes:
• Please note: many lessons are intended for multiple days to provide depth and reinforcement.
• Many math activity suggestions are posted on the OCSD website. These activities are optional supplements to be used in addition to the core lessons from Math Expressions: Common Core. Teachers can choose activities based on student instructional needs and available time.
• Pacing guidance for 2018-19 (Google Doc)

MATH EXPRESSIONS RESOURCES FOR ALL UNITS:
• Differentiation Cards
• Challenge Easel (spiral bound easel with 4 challenge problems for each unit)
• Assessment Guide (Math Expressions book)
  o Quick Quiz for each Big Idea
• District Assessments (OCSD Website)
• Response to Intervention Tier 1 and Tier 2/3 (Math Expressions book)
• Homework and Remembering (Math Expressions book and available by unit through the IMC on OCSD Website)
• MegaMath Games (OCSD Website)
• Interactive Whiteboard Lessons and other resources (www.thinkcentral.com)

Grade 5 Math Priority Content

Priority Targets (approximately 75% of the SBAC Claim 1 CAT items):
E. Use equivalent fractions as a strategy to add and subtract fractions. (Unit 1)
D. Perform operations with multi-digit whole numbers and with decimals to hundredths. (Units 2, 4, 5, and 6)
C. Understand the place value system. (Units 2, 4, and 5)
F. Apply and extend previous understandings of multiplication and division to multiply and divide fractions. (Units 3 and 6)
I. Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. (Unit 8 lessons 8-13)

Supporting Targets (approximately 25% of the SBAC Claim 1 CAT items):
J. Graph points on the coordinate plane to solve real-world and mathematical problems. (Unit 7)
K. Classify two-dimensional figures into categories based on their properties. (Unit 8 lessons 14-16)
A. Write and interpret numerical expressions. (Unit 7 lessons 1-3)
B. Analyze patterns and relationships. (Unit 7 lessons 4-6)
G. Convert like measurement units within a given measurement system. (Unit 8 lessons 1-6)
H. Represent and interpret data. (Unit 8 lesson 7)

Bottom Line: Focus on Units 1-6, consider introducing volume (Unit 8 lessons 8-13) before testing, but save Units 7 and 8 for last.
### Unit 1: Addition and Subtraction with Fractions

**MONTH:** September  
Pacing Recommendation: 20 days (ending in early October)  
Note: 1 day = 60 minute Core lesson (including differentiation)

<table>
<thead>
<tr>
<th>OCSD ADOPTED CURRICULUM (required):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Math Expressions: Common Core Unit 1 (Addition and Subtraction with Fractions)</td>
<td></td>
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<tr>
<td>o Big Idea 1: Equivalent Fractions (Lessons 1-5; 2 and 4 may take 2 days)</td>
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<tr>
<td>QUICK QUIZ 1 (Quick Quizzes follow each Big Idea)</td>
<td></td>
</tr>
<tr>
<td>o Big Idea 2: Addition and Subtraction with Fractions (Lessons 6-13)</td>
<td></td>
</tr>
<tr>
<td>QUICK QUIZ 2 (Quick Quizzes follow each Big Idea)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Suggested Assessments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add and subtract fractions with unlike denominators including mixed numbers</td>
</tr>
<tr>
<td>Unit 1 Quick Quiz 2 (Page 17 of Assessment Guide)</td>
</tr>
<tr>
<td>Unit 1 Test (Pages 18-21 of Assessment Guide)</td>
</tr>
<tr>
<td>Unit 1 Activity: Plan a Hiking Trip (Page 27 of Assessment Guide)</td>
</tr>
<tr>
<td>PS Tasks: Candy Hearts, Homework Time, Fish Tank</td>
</tr>
</tbody>
</table>

**Bold codes are OCSD Priority Standards, chosen 4/13/15.**

Add and subtract fractions with unlike denominators including mixed numbers  
(SBAC TARGET E, DOK 1,2)

5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)

5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.

5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.  
(SBAC TARGET H, DOK 2)

**Fraction Standards Videos to share with students and parents:**
**SBAC Vocabulary:**

**Target E:** equivalent fractions, denominators, numerators, mixed numbers

**Target H:** line plot, table, measurement, data set, interval, unit fraction, mixed number

**Sentence frames:**
I know the fraction ___ is equivalent to ___ because ____.

**SUPPLEMENTAL RESOURCES (optional):**
- Bridges Supplement (A2) – Primes, Composites, & Common Factors (OCSD Website)
- Bridges Supplement (A6) – Fraction Concepts (LCM, GCF, etc.) (OCSD Website)
- Bridges Supplement (A9) – Adding & Subtracting Mixed Numbers (OCSD Website)
- Digging Into Math © 2014 (Blue): Unit C2, Lessons 1-8, 12
- Marcy Cook “View a Fraction” Tiles
- RTI Tier 2/3 Book Lessons 49-62
- RTI Tier 1 Book Lessons 52-61
- Math Literature Library: Polar Bear Math
- Number Worlds (ERC): Level G, Unit 3 (Multiplication)
- Intervention Lessons: http://www.learnnc.org/search?phrase=fractions

**SUB-SKILLS:**
- Identify prime & composite numbers
- Using a hundreds grid to represent equivalent fractions & decimals
- Memorizing common fraction/decimal equivalents (1/2, 1/3, 4/10, etc.)
- Generate equivalent fractions / simplify fractions
- Compare & order fractions & decimals
- Convert improper fractions to mixed numbers
- Add & subtract fractions with unlike denominators, including mixed numbers
- Use benchmark fractions to estimate fraction sums & differences

**INSTRUCTIONAL NOTES:**
- Students need many experiences with fractions on a number line, including fractions greater than 1.
- Connect the “multiplier” to the “big one” of fractions. For example, multiplying by the fraction 2/2 is the same as multiplying the fraction value by 1, which does not change its value.
- Consider ELA Connections to Reach For Reading Unit 1: Crossing Between Cultures
## Unit 2: Addition and Subtraction with Decimals

**MONTH:** October  
Pacing Recommendation: 17 days  
Note: 1 day = 60 minute Core lesson (including differentiation)

**Standards:**
Read, write, compare and perform addition and subtraction with decimals to the hundredths  
(SBAC TARGET D, DOK 1, 2)

**5.NBT.3** Read, write, and compare decimals to thousandths.  
a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).

b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.

**5.NBT.7** Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

5.NBT.4 Use place value understanding to round decimals to any place.  
(SBAC TARGET C, DOK 1, 2)

**OCSD ADOPTED CURRICULUM (required):**
- Math Expressions: Common Core Unit 2 (Addition and Subtraction with Decimals)
  - Big Idea 1: Read and Write Whole Numbers and Decimals (Lessons 1-3; 2 may take 2 days)
  - Big Idea 2: Addition and Subtraction (Lessons 4-7; 4 may take 2 days)
  - Big Idea 3: Round and Estimate with Decimals (Lessons 8-10)

**Suggested Assessments:**
Read, write, compare and perform addition and subtraction with decimals to the hundredths  
Unit 2 Quick Quiz 1 (Page 29 of Assessment Guide)  
Unit 2 Quick Quiz 2 (Page 30 of Assessment Guide)  
Unit 2 Quick Quiz 3 (Page 31 of Assessment Guide)  
Unit 2 Test (Pages 32-35 of Assessment Guide)  
Unit 2 Activity: Fish Tales (Page 41 of Assessment Guide)  
**PS Task:** Bike Ride
### SBAC Vocabulary:

**Target C:** round, digit, value, greater than, less than, equal to, equivalent, expression, expanded form, hundredths, tenths, thousandths, word form  
**Target D:** array, area model, equation, quotient, product, factor, divisor, dividend, remainder

### Sentence frame:
The value of the digit is ___.
To subtract the numbers, I ungrouped/didn’t ungroup ___ because ___. Next, I ___.

### SUB-SKILLS:
- Read, write & compare decimals 
- Use decimal models (i.e. hundreds grid) to represent decimals 
- Use place value models / expanded notation with decimals 
- Explain why you align the decimal when adding & subtracting 
- Estimate with decimals, including rounding

### SUPPLEMENTAL RESOURCES (optional):
- Digging Into Math © 2014 (Blue): Unit C1, Lessons 4-10
- RTI Tier 2/3 Book Lessons 1-18, 71-79
- RTI Tier 1 Book Lessons 7-16
- Math Literature Library: Sold!
- Number Worlds (ERC): Level G, Unit 3 (Multiplication)
- Intervention Lessons: http://www.cpalms.org/Public/PreviewResourceLesson/Preview/28336

### INSTRUCTIONAL NOTES:
- Connect decimal representations of numbers to fraction forms to build on the skills from unit 1 and continue to build mastery of fraction concepts.
- Consider ELA Connections to Reach For Reading Unit 2: Catching the Light
## Unit 3: Multiplication and Division with Fractions

### Standards:

- **Apply and extend previous understandings of multiplication and division to multiply and divide fractions** (SBAC TARGET F, DOK 1, 2)

  - **5.NF.3** Interpret a fraction as division of the numerator by the denominator \((a/b = a \div b)\). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. *For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?*

- **5.NF.6** Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

- **5.NF.7** Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. (Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.)
  
  a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for \((1/3) \div 4\), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that \((1/3) \div 4 = 1/12\) because \((1/12) \times 4 = 1/3.\)

  b. Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for \(4 \div (1/5)\), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that \(4 \div (1/5) = 20\) because \(20 \times (1/5) = 4.\)

  c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 1/3-cup servings are in 2 cups of raisins?*

### MONTH: November-December

- **Pacing Recommendation:** 23 days
- **Note:** 1 day = 60 minute Core lesson (including differentiation)

### OCSD ADOPTED CURRICULUM (required):

- Math Expressions: Common Core
  - Unit 3 (Multiplication and Division with Fractions)
    - Big Idea 1: Multiplication with Fractions (Lessons 1-6; 1 and 4 may take 2 days)
    - Big Idea 2: Multiplication Links (Lessons 7-9)
    - Big Idea 3: Division with Fractions (Lessons 10-14; 10 and 12 may take 2 days)
Supporting Standards:

5.NF.4  Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

a. Interpret the product \((a/b) \times q\) as \(a\) parts of a partition of \(q\) into \(b\) equal parts; equivalently, as the result of a sequence of operations \(a \times q \div b\).  For example, use a visual fraction model to show \((2/3) \times 4 = 8/3\), and create a story context for this equation. Do the same with \((2/3) \times (4/5) = 8/15\). (In general, \((a/b) \times (c/d) = ac/bd\).)

b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.

5.NF.5  Interpret multiplication as scaling (resizing), by:

a. 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.

b. 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; and relating the principle of fraction equivalence \(a/b = (n \times a)/(n \times b)\) to the effect of multiplying \(a/b\) by 1.

Suggested Assessments:

Apply and extend previous understandings of multiplication and division to multiply and divide fractions

Unit 3 Quick Quiz 1 (Page 43 of Assessment Guide)
Unit 3 Quick Quiz 2 (Page 44 of Assessment Guide)
Unit 3 Quick Quiz 3 (Page 45 of Assessment Guide)
Unit 3 Test (Pages 46-49 of Assessment Guide)
Unit 3 Activity: How Many Nuts? (Page 55 of Assessment Guide)

SBAC Vocabulary:

Target F: fraction, equivalent, denominator, numerator, sum, difference, product, mixed number

Sentence frames:
To calculate, ___, first ___ using ___, then ___ …

SUB-SKILLS:

- Equivalent fractions
- Simplifying fractions
- Fluency with multiplication and division facts

Consider ELA Connections to Reach For Reading Unit 3: Nature’s Work

SUPPLEMENTAL RESOURCES (optional):

- Digging into Math © 2014 (Blue): Unit C2, Lessons 9-11
- RTI Tier 2/3 Books Lessons 1-18, 71-79
- RTI Tier 1 Book Lessons 62-77
- Math Literature Library: Go, Fractions!
- Number Worlds (ERC): Level G, Unit 4 (Division)

INSTRUCTIONAL NOTES:

- The point of this unit is conceptual development; procedural fluency with multiplication and division is the focus in 6th grade.
- Multiplication of fractions should be modeled with both the area model and as fractional intervals on the number line (using 2 colors can help).
### Unit 4: Multiplication with Whole Numbers and Decimals

#### Standards:
Perform multi-digit multiplication with whole numbers and decimals to hundredths  
(SBAC TARGET D, DOK 1,2)

5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

5.NBT.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.

#### OCSD ADOPTED CURRICULUM (required):
- Math Expressions: Common Core Unit 4  
  (Multiplication with Whole Numbers and Decimals)
  - Big Idea 1: Multiplication with Whole Numbers  
    (Lessons 1-5; 1 may take 2 days)
  - Big Idea 2: Multiplication with Decimal Numbers  
    (Lessons 6-12; 7 may take 2 days)

#### Suggested Assessments:
Perform multi-digit multiplication with whole numbers and decimals to hundredths  
- Unit 4 Quick Quiz 1 (Page 57 of Assessment Guide)
- Unit 4 Quick Quiz 2 (Page 58 of Assessment Guide)
- Unit 4 Test (Pages 59-62 of Assessment Guide)
- Unit 4 Activity: How Much Does it Cost? (Page 68 of Assessment Guide)

#### SBAC Vocabulary:
**Target D:** array, area model, equation, quotient, product, factor, divisor, dividend, remainder

#### Sentence frames:
In the division problem ____, the divisor is __, the dividend is __, and the quotient is __.

#### SUPPLEMENTAL RESOURCES (optional):
- Digging Into Math © 2014 (Blue): Unit C1
- RTI Tier 2/3 Books Lessons 19-33, 80-82
- RTI Tier 1 Book Lessons 17-19, 38-50
- Math Literature Library: The Amazing Impossible Erie Canal
- Number Worlds (ERC): Level G, Unit 4 (Division)
### SUB-SKILLS:
- Read, write & compare decimals
- Use decimal models (i.e. hundreds grid) to represent decimals
- Use place value models / expanded notation with decimals
- Estimate with decimals, including rounding

### INSTRUCTIONAL NOTES:
- Consider ELA Connections to Reach For Reading Unit 4: Justice
Unit 5: Division with Whole Numbers and Decimals

**MONTH:** February  
Pacing Recommendation: 16 days  
Note: 1 day = 60 minute Core lesson (including differentiation)

**OCSD ADOPTED CURRICULUM (required):**
- Math Expressions: Common Core Unit 5 (Division with Whole Numbers and Decimals)  
  - Big Idea 1: Division with Whole Numbers (Lessons 1-5)  
  - Big Idea 2: Division with Decimal Numbers (Lessons 6-11; 7 may take 2 days)

**Standards:**
- Perform multi-digit division with whole numbers and decimals to hundredths  
  (SBAC TARGET D, DOK 1, 2)
  5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
  5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.
  5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.
  5.NBT.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.  
  (SBAC TARGET C, DOK 1, 2)
  5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-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.

**SBAC Vocabulary:**  
**Target C:** round, digit, value, greater than, less than, equal to, equivalent, expression, expanded form, hundredths, tenths, thousandths, word form  
**Target D:** array, area model, equation, quotient, product, factor, divisor, dividend, remainder  
**Sentence frames:**  
I rounded to ___ because ___. This makes my answer an over/under estimate.

**Suggested Assessments:**
- Perform multi-digit division with whole numbers and decimals to hundredths  
  Unit 5 Quick Quiz 1 (Page 70 of Assessment Guide)  
  Unit 5 Quick Quiz 2 (Page 71 of Assessment Guide)  
  Unit 5 Test (Pages 72-75 of Assessment Guide)  
  Unit 5 Activity: Test Your Memory! (Page 81 of Assessment Guide)

**PS Tasks:** Swimming Pool, Apple Crates

**SUPPLEMENTAL RESOURCES (optional):**
- Digging Into Math © 2014 (Blue): Unit C1, Lessons 1-3  
- RTI Tier 2/3 Books Lessons 34-45, 83-87  
- RTI Tier 1 Book Lessons 20-29, 45-51  
- Number Worlds (ERC): Level G, Unit 2 (Number Patterns & Relationships (Algebra))  
- Math Literature Library: A Remainder of One
<table>
<thead>
<tr>
<th>SUB-SKILLS:</th>
<th>INSTRUCTIONAL NOTES:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Use extension facts (e.g. 42,000 ÷ 600 = 70) to multiply and divide</td>
<td>• “Extension facts” with place value are a critical foundational skill.</td>
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<tr>
<td>• Use place value and expanded notation to estimate division mentally (e.g. 42 ÷ 3 can be thought of as 30 ÷ 3 and 12 ÷ 3)</td>
<td>• It is acceptable for students to be fluent with a non-standard algorithm, but must understand others’ notation of the standard division algorithm. Fluency with the standard division algorithm (long division) is a 6th grade standard.</td>
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<td>• Estimate using compatible numbers (e.g. 4,365 ÷ 7 = 4,200 ÷ 7)</td>
<td>• Interpreting the remainder can only be taught through word problems.</td>
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<tr>
<td>• Determine how to express the remainder (round up, round down, or include it as a fraction).</td>
<td>• Teachers should introduce estimation with compatible numbers.</td>
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<td>• Express remainders as a fraction (e.g. express 3 r.1 as 3 ( \frac{1}{6} ))</td>
<td>• Consider ELA connections to Reach for Reading Unit 5: Every Drop</td>
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<tr>
<td>• Fluency with a division algorithm (traditional or partial quotients)</td>
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</tbody>
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**Unit 6: Operations and Problem Solving**

Write and interpret numerical expressions, including order of operations  
(SBAC TARGET A, DOK 1)

5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product

Supporting Standard:  
5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

**MONTH:** March  
Pacing Recommendation: 18 days  
Note: 1 day = 60 minute Core lesson (including differentiation)

**OCSD ADOPTED CURRICULUM (required):**
- Math Expressions: Common Core Unit 6 (Operations and Problem Solving)
  - Big Idea 1: Equations and Problem Solving (Lessons 1-4)
  - Big Idea 2: Comparison Word Problems (Lessons 5-7; 7 may take 2 days)
  - Big Idea 3: Problems with More Than One Step (Lessons 8-11; 8 may take 2 days)
- REQUIRED (before, during, or after Unit 6): Hands on Equations – Book 1 (Webinar: [https://goo.gl/akHzDS](https://goo.gl/akHzDS))

**Suggested Assessments:**
- Write and interpret numerical expressions, including order of operations  
  - Unit 6 Quick Quiz 1 (Page 83 of Assessment Guide)  
  - Unit 6 Quick Quiz 2 (Page 84 of Assessment Guide)  
  - Unit 6 Quick Quiz 3 (Page 85 of Assessment Guide)  
  - Unit 6 Test (Pages 86-89 of Assessment Guide)  
  - Unit 6 Activity: Making Berry Equations (Page 95 of Assessment Guide)

**SBAC Vocabulary:**
- Target A: sum, quotient, factor, dividend, divisor

**SUPPLEMENTAL RESOURCES (optional):**
- See resources at LearnZillion.com  
- Digging Into Math © 2014 (Blue): Unit C1, Lesson 11  
- RTI Tier 2/3 Books Lessons 46-48  
- RTI Tier 1 Book Lessons 1-3  
- Math Literature Library: O, Say Can You See?  
- Number Worlds (ERC): Level G, Unit 2 (Number Patterns & Relationships (Algebra))
### SUB-SKILLS:
- Identifying numerical patterns

### INSTRUCTIONAL NOTES:
- Emphasize grouping symbols, not just parentheses are used to identify expressions that are calculated first. Sometimes, these are implied.
- Fluency with multiplying multi-digit numbers using the standard algorithm can be assessed through observations, student interviews, and student journaling on the steps.
- Consider NGSS connections to 5-ESS1 Earth’s Place in the Universe and 5-PS1 Matter and its Interactions (powers of 10)
- Consider ELA connections to Reach for Reading Unit 6: The Wild West
### Unit 8: Measurement and Data

**Big Idea 2: Area and Volume**

#### Standards:
- Understand and apply concepts of volume in problem situations  
  (SBAC TARGET I, DOK 1, 2)
- **5.MD.5** Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
  - a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.
  - b. Apply the formulas \( V = l \times w \times h \) and \( V = b \times h \) 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.
  - c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.
- **5.MD.3** Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
  - a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.
  - b. A solid figure which can be packed without gaps or overlaps using \( n \) unit cubes is said to have a volume of \( n \) cubic units.
  
- **5.MD.4** Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.

#### OCSD ADOPTED CURRICULUM (required):
- Math Expressions: Common Core Unit 8 (Measurement and Data)
  - Big Idea 2: Area and Volume (Lessons 8-13; 9 may take 2 days)

#### Suggested Assessments:
- Understand and apply concepts of volume in problem situations
  - Unit 8 Quick Quiz 2 (Page 111 of Assessment Guide)
  - Unit 8 Test #13-15, 20-21 (Pages 112-115 of Assessment Guide)
  - Unit 8 Activity: Planting Flowers (Page 122 of Assessment Guide)

#### SBAC Vocabulary:
- **Target I:** area array, right rectangular prism, associative property, cube, volume, length, width

#### SUB-SKILLS:
- Understanding Area and Perimeter

#### INSTRUCTIONAL NOTES:
- Students need concrete experiences with geometry and measurement to build conceptual understanding and comfort with mathematical vocabulary.
### Unit 7: Algebra, Patterns, and Coordinate Graphs

**Standards:**
- Graph points on the coordinate plane to analyze patterns and solve problems (SBAC TARGET J, DOK 1)
  - 5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

- Write and interpret numerical expressions, including order of operations (SBAC TARGET A, DOK 1)
  - 5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.

**Supporting Standards:**
- 5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
- 5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For 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, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.
  - 5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).

### MONTH: April – May

Pacing Recommendation: 12 days

Note: 1 day = 60 minute Core lesson (including differentiation)

### OCSD ADOPTED CURRICULUM (required):
- Math Expressions: Common Core Unit 7 (Algebra, Patterns, and Coordinate Graphs)
  - Big Idea 1: Algebraic Reasoning and Expressions (Lessons 1-3)
  - Big Idea 2: Patterns and Graphs (Lessons 4-7; 4 may take 2 days)

### Suggested Assessments:
- Graph points on the coordinate plane to analyze patterns and solve problems
  - Unit 7 Quick Quiz 2 (Page 98 of Assessment Guide)
  - Unit 7 Test #1-2, 18-20 (Pages 99-102 of Assessment Guide)
  - Unit 7 Activity: How Far Is It? #1 (Page 108 of Assessment Guide)

- Write and interpret numerical expressions, including order of operations
  - Unit 7 Quick Quiz 1 (Page 97 of Assessment Guide)
  - Unit 7 Test #3-17 (Pages 99-102 of Assessment Guide)
  - Unit 7 Activity: How Far Is It? #2-3 (Page 108 of Assessment Guide)
### SBAC Vocabulary:

**Target A:** sum, quotient, factor, dividend, divisor  
**Target B:** coordinates, ordered pairs, pattern, sequence  
**Target J:** origin, coordinate plane, coordinate system, coordinate pair, x-coordinate, y-coordinate, first quadrant, point, x-axis, y-axis, ordered pair

### Sentence Frames:

Each term in the ___ pattern is _____ the corresponding term in the ___ pattern.

In the table, the ___ value is ____ the ___ value.

On the graph, the point (___,___) means ____.

### SUPPLEMENTAL RESOURCES (optional):

- Coordinate Graphing / Polygon Review (OCSD Website)
- See OCSD website for Coordinate Grid Games
- See resources at LearnZillion.com
- Digging Into Math © 2014 (Blue): Unit C1, Lessons 12-14
- RTI Tier 2/3 Books Lessons 113-114
- RTI Tier 1 Book Lessons 4-6, 94-96
- Math Literature Library: The Fly on the Ceiling
- Number Worlds (ERC): Level G, Unit 5 (Geometry & Measurement) AND Level G, Unit 6, Week 1 (Graphing)
- Intervention Lessons: http://www.cpalms.org/Public/PreviewResourceLesson/Preview/44987

### SUB-SKILLS:

- Identify & plot coordinate pairs in Quadrant 1
- Describe paths (lengths) between coordinate pairs
- Apply exponents & correctly use order of operations
- Prime factorization
- Evaluate expressions given the value of a variable

Represent a pattern/function as an expression with a variable and as a line on a graph

### INSTRUCTIONAL NOTES:

- Each elementary building has two Hands on Equation kits.
- Teachers should introduce graphing in all four quadrants of the coordinate grid to prepare for 6th grade.
- Consider NGSS connections to 5-ESS1 Earth’s Place in the Universe, 5-ESS2 Earth’s Systems (graphing), and 3-5-ETS1 Engineering Design
- Consider ELA Connections to Reach For Reading Unit 7: Talking about Trash
## Unit 8: Measurement and Data

| Standards: |
|------------------|--------------------------|
| **5.MD.1** Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (SBAC TARGET G, DOK 1) |
| **5.G.4** Classify two-dimensional figures in a hierarchy based on properties. (SBAC TARGET K, DOK 2) |
| **5.MD.2** Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.* |
| **5.G.3** Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. *For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.* |

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<thead>
<tr>
<th>OCSD ADOPTED CURRICULUM (required):</th>
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</thead>
<tbody>
<tr>
<td>- Math Expressions: Common Core Unit 8 (Measurement and Data)</td>
</tr>
<tr>
<td>- Big Idea 1: Measurements and Data (Lessons 1-7)</td>
</tr>
<tr>
<td>- Big Idea 3: Classify Geometric Figures (Lessons 14-17; 14, 15, and 16 may take 2 days)</td>
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<tr>
<th>Suggested Assessments:</th>
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<tbody>
<tr>
<td>Understand and apply concepts of volume in problem situations</td>
</tr>
<tr>
<td>Unit 8 Quick Quiz 2 (Page 111 of Assessment Guide)</td>
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<tr>
<td>Unit 8 Test #13-15, 20-21 (Pages 112-115 of Assessment Guide)</td>
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<tr>
<td>Unit 8 Activity: Planting Flowers (Page 122 of Assessment Guide)</td>
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<tbody>
<tr>
<td><strong>Target G:</strong> mass, weight, length, time, kilometer, meter, centimeter, kilogram, gram, liter, milliliter, inch, foot, yard, mile, ounce, pound, cup, pint, quart, gallon, hour, minute, second</td>
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<tr>
<td><strong>Target K:</strong> right, acute, obtuse, line segments, parallel, perpendicular, symmetrical, line of symmetry</td>
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<tr>
<td>- Digging Into Math © 2014 (Blue): Unit C3, Lessons 1-8</td>
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<tr>
<td>- Bridges Supplement (C1) - Classifying Triangles &amp; Quadrilaterals</td>
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<tr>
<td>- Bridges Supplement (D3) - Area of Triangles &amp; Parallelograms</td>
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<tr>
<td>- RTI Tier 2/3 Books Lessons 88-114</td>
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<tr>
<td>- RTI Tier 1 Book Lessons 78-93, 97-100</td>
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<tr>
<td>- Math Literature Library: The Math Chef</td>
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<tr>
<td>- Number Worlds (ERC): Level G, Unit 5 (Geometry &amp; Measurement) AND Level G, Unit 6, Week 1 (Graphing)</td>
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MONTH: May – June
Pacing Recommendation: 26 days
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<tr>
<th>SUB-SKILLS:</th>
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<tr>
<td>• Telling Time</td>
<td>• Students need concrete experiences with geometry and measurement to build conceptual understanding and comfort with mathematical vocabulary.</td>
</tr>
<tr>
<td>• Converting Units</td>
<td>• Consider NGSS Connections to 5-LS1 From Molecules to Organisms: Structures and Processes and 5-PS1 Matter and its Interactions</td>
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<tr>
<td>• Understanding Area, Perimeter, Volume,</td>
<td>• Consider ELA Connections to Reach For Reading Unit 8</td>
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<td>and Surface Area</td>
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<td>• Classifying Angles</td>
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