

Common Core Math—A Slick Solution: Cleaning an Oil Spill

Engineering is Elementary units are designed primarily to teach engineering skills and habits of mind. In doing so, all units also reinforce and link to other content areas. The math practices and standards addressed by this unit are listed below.

Math Practices Embedded Throughout the Unit:

1. Make sense of problems and persevere in solving them.
2. Reasons abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.

Grade	Lesson #	Common Core Math Cluster or Practice	Common Core Math Standard
1	4	Operations and Algebraic Thinking 1.OA: <ul style="list-style-type: none"> • Add and subtract within 20. • Work with addition and subtraction equations. 	1.OA.6: Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$). 1.OA.8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.
1	4	Number and Operations in Base Ten 1.NBT <ul style="list-style-type: none"> • Extend the counting sequence • Use place value understanding and properties of operations to add and subtract. 	1.NBT.1: Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral. 1.NBT.4: Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or

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			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. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.
1	2, 4	Measurement and Data 1.MC: <ul style="list-style-type: none"> Represent and interpret data. 	1.MD.4: Organize, represent, and interpret data with up to three categories: ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
2	4	Operations and Algebraic Thinking 2.OA: <ul style="list-style-type: none"> Represent and solve problems involving addition and subtraction. 	2.OA.1: Use addition and subtraction within 100 to solve one- and two- step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
2	4	Measurement and Data 2.MD: <ul style="list-style-type: none"> Measure and estimate lengths in standard units. 	2.MD.1: Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. 2.MD.4: Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.
3	4	Measurement and Data 3.MD <ul style="list-style-type: none"> Geometric measurement: understand concepts of area and relate area to multiplication and to addition. 	3.MD.6: Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
4	4	Number and Operations in Base Ten 4.NBT <ul style="list-style-type: none"> Generalize place value understanding for multi-digit whole numbers. 	4.NBT.2: Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of

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			the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.