

Common Core Math— Just Passing Through: Designing Model Membranes

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. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
5. Use appropriate tools strategically.
6. Attend to precision.

Grade	Lesson #	Common Core Math Cluster or Practice	Common Core Math Standard
3	3	Operations and Algebraic Thinking 3.OA: <ul style="list-style-type: none">• Multiply and divide within 100.• Solve problems involving the four operations, and identify and explain patterns in arithmetic.	3.OA7: Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. 3.OA8: Solve two-step word problems using the four operations. 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.
3	3	Measurement and Data 3.MD: <ul style="list-style-type: none">• Solve problems involving measurement and estimation.	3.MD2: Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). ¹ Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.

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Grade	Lesson #	Common Core Math Cluster or Practice	Common Core Math Standard
3	3	Geometry 3.G: <ul style="list-style-type: none"><li data-bbox="514 414 1024 446">• Reason with shapes and their attributes.	3.G2: Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.