# Mathematics
# Unit 2: Computation

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| **Essential Understandings** | ▪ Computation can be used to solve problems.<br>▪ Operations create relationships between numbers. |
| **Essential Questions** | ▪ Why does one need to add?<br>▪ Why does one need to subtract?<br>▪ How can knowing addition and subtraction facts help one solve problems?<br>▪ What is the relationship between addition and subtraction?<br>▪ How can finding patterns help with computation?<br>▪ What number or symbol is needed to make number sentences true? |
| **Essential Knowledge** | ▪ Addition means putting things together.<br>▪ A sum is the answer when one adds.<br>▪ Subtraction means separating things.<br>▪ A difference is the answer when one subtracts.<br>▪ A fact family shows the relationship between addition and subtraction.<br>▪ Knowing basic addition and subtraction facts allows one to work flexibly, efficiently, and accurately.<br>▪ Estimation is used to determine the reasonableness of results.<br>▪ Patterns exist in related fact families.<br>▪ There is a relationship between addition and subtraction.<br>▪ Order matters in subtraction but not addition. |
| **Vocabulary** | ▪ <u>Terms</u>:<br>○ related facts, estimation, vertical, horizontal, numerals, place value, equal, difference |

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| **Essential Skills** | ▪ Draw, record, and explain mathematical thinking through manipulatives and/or thinking. (R)<br>▪ Combine and separate sets. (A)<br>▪ Read and write number sentences using the symbols +, -, and = with numbers ≤25. (I, R, A)<br>▪ Identify, explain and use the terms: sum and difference. (I, R)<br>▪ Write fact families using numbers to 10 and the related subtraction fact. (R, A)<br>▪ Use estimation to determine the reasonableness of an answer. (I, R)<br>▪ Solve number sentences in vertical and horizontal form with sums ≤25 and their related subtraction facts without regrouping. (I, R, A)<br>▪ Distinguish between important and unimportant information when solving one-step story problems. (I, R)<br>▪ Determine which operation (addition or subtraction) is necessary to solve a one-step story problem and explain why. (I, R)<br>▪ Solve one-step story problems using addition and subtraction to 10. (I, R, A)<br>▪ Write and solve number sentences for a story problem that involve sums and differences to 10. (I, R, A)<br>▪ Create a story problem for a given number sentence using numerals ≤ 10. (I, R)<br>▪ Identify and write the missing addition or subtraction sign when given incomplete number sentences with sums ≤ 10 and the related subtraction fact. (I, R, A)<br>▪ Identify sums and differences to 10 with automaticity. (I, R, A)<br>▪ Compute sums of three one digit numbers with sums to 10. (I, R, A) |

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| **Related Maine Learning Results** | A. Number<br>Whole Number<br>A1.Students understand and use number notation and place value to 1000 in numerals.<br>c. Compare and order one-digit, two-digit, and three-digit numbers.<br>A2.Students understand and use procedures to add and subtract whole numbers with one and two digits.<br>a. Use and explain multiple strategies for computation.<br>b. Use an operation appropriate to a given situation.<br>D. Algebra<br>Symbols and Expressions<br>D1.Students understand how to represent quantities as simple Expressions using addition and subtraction.<br>c. Know that addition and subtraction are inverse operations and apply this understanding in computation and problem solving.<br>Equations and Inequalities<br>D2.Students understand that the equal sign means, "is the same as."<br>b. Describe what makes number sentences true or false and apply this knowledge.<br>c. Find solutions for unknowns in simple open number sentences such as 12 = 4 + [ ]. |