

Practice this exercise during daily calendar time in the **primary** grades and once a month in the **intermediate** grades. Have students mark their own work. Marks are awarded as follows: →

Mark	Criteria
1	Where any sentence contains the addition operation.
1	Where any sentence contains the subtraction operation.
1	Where any sentence contains the multiplication operation.
1	Where any sentence contains the division operation.
1	Where any sentence contains more than two terms (e.g. $2 + 3 + 5 = 10$).
1	Where any sentence contains more than two operations (e.g. $2 \times 3 + 4 = 10$).
1	Where any sentence contains a number more than the goal number (in this case 10).
1	Where any sentence contains a number substantially greater than the goal number (in this case 50 or 100).
1	Where any group of sentences shows evidence of a pattern (e.g. $1 + 9$, $2 + 8$, $3 + 7$).
1	Where any sentence shows knowledge of the power of zero (e.g. $6 - 6 + 10 = 10$ or $10 + 0 = 10$).
1	Where any sentence uses doubling and halving to generate new questions (e.g. $4 \times 6 = 24$, $2 \times 12 = 24$, $1 \times 24 = 24$).
1	Where any sentence shows knowledge of the power of one (e.g. $6 \div 6 + 9 = 10$ or $10 \times 1 = 10$).
1	Where any sentence shows knowledge of the commutative principle (e.g. $6 + 4 = 10$ and $4 + 6 = 10$).
1	Where any sentence shows knowledge of the standard form of the number . Note: This applies only for numbers greater than 10 , such as 24 . (e.g. $20 + 4 = 24$ and $2 \times 10 + 4 = 24$) In upper intermediate grades, award marks for exponential notation also.
1	Where any sentence contains brackets , such as: $(3 + 2) + (3 + 2) + (3 + 2) + (3 + 2) + 4 = 24$.
1	Where any sentence contains exponents, square roots, factorials, or fractions . Note: there should be no expectation of the demonstration of exponents, square roots or factorials before grade six, but their use should be acknowledged and rewarded where a student chooses to employ such operations in earlier grades.

1. Always remember that specific scores provide far less instructive data regarding acquired number sense than do the strategies and mathematical thinking employed to reach solutions.
2. Where the criteria listed above are a focus of classroom brainstorming sessions or calendar time, students become more conversant with both different mathematical operations and varied mathematical vocabulary. Encourage your students to focus upon a few of the criteria listed above as they complete activity sheets or as they create problems and write related number sentences.

For example, ask students to check if they have employed all four operations in their work, or if they have written any sentences with mixed operations.

3. When all the criteria have been introduced and discussed, distribute the sheet shown above. Ask students to print their names on the sheets before they check off any criteria that they have been able to meet successfully.
4. Schools may wish to collect data from the "How Many Ways to Make..." sheets on an annual basis and to use this data for numerac performance standards.