

W.A.L.K.: We Add Like Kinds, Always

1. Whole number addition

Procedure: We line up whole numbers right-justified to add, keeping columns neat.

W.A.L.K.: We add ones together, tens together, hundreds together, and so on. When adding ones together produces new tens, the new tens are added to the given tens.

2. Arithmetic word problems

Procedure: We add pigs to pigs and cows to cows.

W.A.L.K.: We can add pigs to cows when they have a common name (animals).

3. Common fraction addition

Procedure: We add fractions having like denominators.

W.A.L.K.: Fractions with unlike denominators are given common denominators before addition is attempted.

4. Multiplication genesis

Procedure: We add groups of equal size: $7 + 7 + 7 = 3 \bullet 7$

W.A.L.K.: $7 + 7 + 7 + 5 + 5 = 3 \bullet 7 + 2 \bullet 5$

5. Decimal fraction addition

Procedure: We write numbers aligned at the decimal point, keeping columns neat.

W.A.L.K.: We add whole numbers together, tenths to tenths, hundredths together, and so on. When adding tenths produces new ones, the new ones are added to given ones, etc.

6. Radicals

Procedure: We add $\sqrt{2} + \sqrt{2} + \sqrt{2} = 3\sqrt{2}$

W.A.L.K.: $2\sqrt{3} + 4\sqrt{5} + 3\sqrt{5} + 8\sqrt{3} = 10\sqrt{3} + 7\sqrt{5}$

7. Similar terms

Procedure: We add $x^2 + x^2 + x^2 = 3x^2$

$$\text{W.A.L.K.: } \left\{ \begin{array}{l} x^2 + x^2 + x^2 + x + x + x + 4x + x^3 + x^3 \\ = 3x^2 + 7x + 2x^3 \end{array} \right.$$