

THE IMPORTANCE OF MATH FLUENCY

ADDITION AND SUBTRACTION

Numbers are Flexible

You can break numbers into parts that you know to help with facts that you don't know

If you need to add $5 + 7$, you could think of **5** as $1 + 4$ or $2 + 3$.

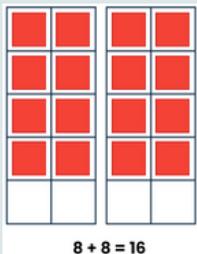
So, to find $5 + 7$ you could think $2 + \underline{3} + 7$ because you can make a 10.

OR you could think of **7** as $6 + 1$ or $5 + 2$ or $4 + 3$.

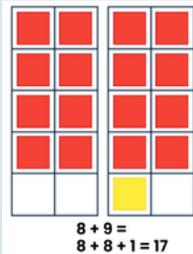
So, to find $5 + 7$ you could think $\underline{5} + 5 + 2$ because you know the double of 5

ADDITION AND SUBTRACTION REPRESENTATIONS

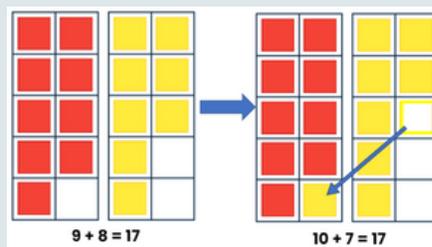
doubles



near doubles



compensation



think addition for subtraction

$$17 - 8 = \underline{\quad}$$

Think

$$8 + \underline{\quad} = 17$$

inverse relationships

$$9 + 8 = 17$$

$$8 + 9 = 17$$

$$17 - 9 = 8$$

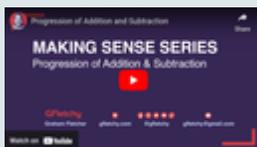
$$17 - 8 = 9$$

FLUENCY WITH ADDITION AND SUBTRACTION

Computational fluency refers to having flexible, efficient, and accurate methods for computing. Students exhibit computational fluency when they demonstrate strategic thinking and flexibility and can explain and produce accurate answers efficiently. By studying patterns, relationships, and strategies students build a foundation for fluency for addition and subtraction.

THE PROGRESSION OF ADDITION AND SUBTRACTION

This [video](#) illustrates the progression of addition and subtraction from Kindergarten to the end of 4th grade.



RESOURCES

[Fluency Without Fear](#), Stanford University

[Math Flips](#), flashcards with visual models

[Making 10/Addition Facts Family Resource](#)