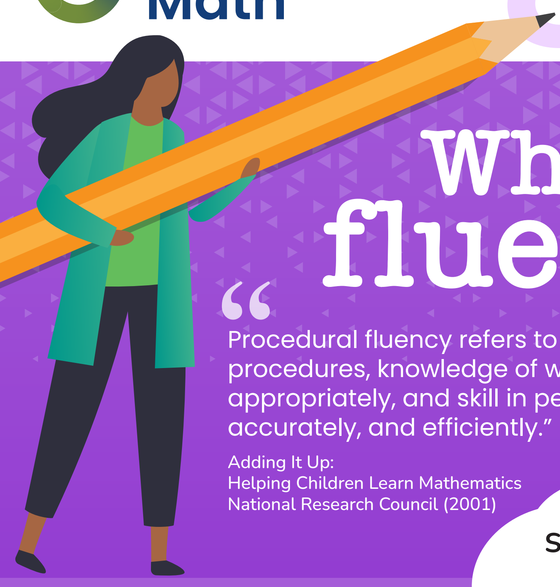
IM® K–5 Math & Fluency

# What is fluency?



"Procedural fluency refers to knowledge of procedures, knowledge of when and how to use them appropriately, and skill in performing them flexibly, accurately, and efficiently."

Adding It Up:
Helping Children Learn Mathematics
National Research Council (2001)

Since I know that
10 + 5 is 15,
then I also know that
9 + 6 is 15.

# How do students demonstrate fluency?

They can perform calculations with flexibility, accuracy, and efficiency.

**flexibility**
Students should have a conceptual understanding of how they arrived at the math facts but also know a variety of strategies to approach problems.

**accuracy**
By using the strategy appropriately, students should arrive at the correct answer.

**efficiency**
Students are able to choose a strategy and implement it without struggling.

GRADE K
5 – 2 = 3

GRADE 3
8 X 7 = 56

GRADE 5

$$\begin{array}{r} 83 \\ \times\ 42 \\ \hline 166 \\ +3{,}320 \\ \hline 3{,}486 \end{array}$$

**Fluency is built within and across grades.**

# How is fluency developed?

*In IM K–5 Math, the development of fluency is embedded throughout the lessons. This allows us to develop flexibility and judgement about the appropriate method in parallel with developing efficiency and accuracy."*

**William McCallum**
Cofounder of Illustrative Mathematics

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