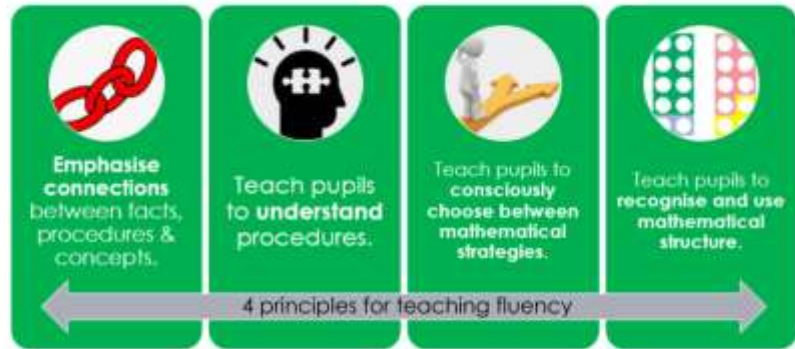


## Teaching Fluency Through Instruction: Addition & Subtraction

Fluency is the ability to use **number sense** to select **efficient methods of calculation**.

The best mathematicians do the easiest maths!  
Boaler 2009



Counting on / back	Partitioning	Bridging	Adjusting (Compensation)	Near Doubles	Counting up to find the difference
Use when: Adding or subtracting small numbers or simple multiples	Use when: You don't need to exchange	Use when: Adding or subtracting across a place value	Use when: Adding or subtracting a number ending with 5	Use when: Adding numbers close to value	Use when: Subtracting numbers close to value

Six strategies to support efficient addition and subtraction calculations.

Taken from RISE policy.



## Teaching Fluency Through Instruction: Multiplication

Fluency is the ability to use **number sense** to select **efficient methods of calculation**.

Jump Counting: Rolling Numbers	Commutative Law	Deriving	Partitioning
Use when: Aiming for accuracy	Use when: Consolidating known facts	Use when: Finding unknown facts	Use when: Multiplying by 11 or more



Strategies to support efficient multiplication.

Taken from RISE policy.

...multimodal instruction that includes **visual hand gestures** along with **auditory speech** has been shown to **improve mathematical understanding**.

Aldugom M, Fern K, Cook SW (2020)

