











• Efficient • Accurate • Flexible Computational Fluency

Efficiency implies that the student does not get bogged down in many steps or lose track of the logic of the strategy.

 Accuracy depends on several aspects of the problem-solving process; careful recording, the knowledge of basic number combinations and relationships.

 <u>Hexibility</u> requires the knowledge of more than one approach. Students need to be able to choose an appropriate strategy for the problem. They can use one and another method to double check the results.

RESEARCH

-Boaler, 2015

- Brain Research
- Manipulatives
- Visual Models
- Fingers





Grade 2 Standard 2. OA. 2 • Fluentlyadd & subtract within 20 using mental strategies. By the end of grade 2, <u>know from</u> <u>memory</u>all sums of 2 one-digit numbers.











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ade 2 Standard 2. OA. 2

Fluentlyadd & subtract within 20 using mental strategies. By the end of grade 2, <u>know from</u> <u>memory</u>all sums of 2 one-digit numbers.

 Talk to students and parents about computational fluency just like you talk to them about reading fluency.



What can families do at home?

- Board Games
 Sort Flashcards by Strategies
 Use Free Visual Model Apps to Practice Facts
 Online Games Promoting Visual Models and / or Strategy Development

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Reflection

- Think privately to yourself about one idea that resonated with you today.
- Share your idea with some one next to you.

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