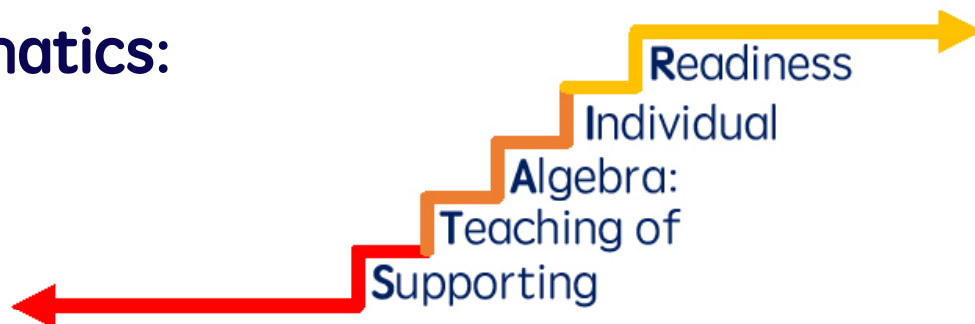


# Ideas in Mathematics:

## Fluency Practice



## Concepts to Know

- When students are able to quickly and easily recall math facts, this allows them to focus on more advanced math topics without having to spend energy solving basic recall facts.
- Students with MD may require explicit instruction in learning math facts, and they should receive brief but daily or near daily opportunities to practice their math facts.
- When teaching math facts, it is beneficial to work on counting strategies, then reasoning strategies, and finally mastery practice.

## Reasoning Strategies

### Addition:

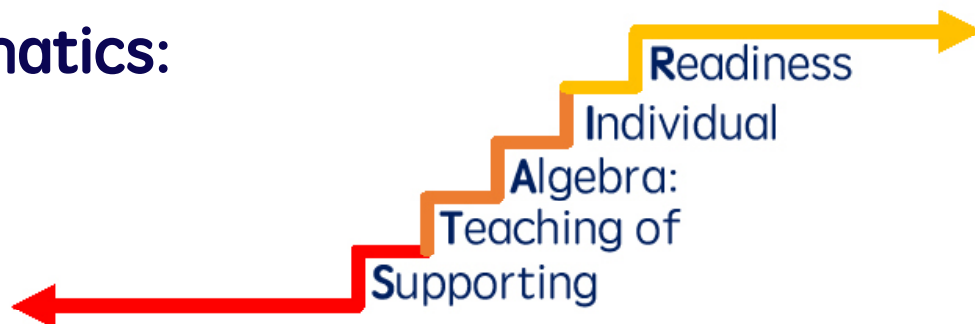
- One More and Two More Than (Count On);  $3 + 1 = 4$
- Adding Zero;  $5 + 0 = 5$
- Doubles;  $6 + 6 = 12$
- Combinations of 10;  $6 + 4 = 10$
- Making 10;  $6 + 8 = (4 + 2) + 8 = 4 + 10 = 14$
- Using 5 as an anchor;  $7 + 6 = (2 + 5) + (1 + 5) =$   
 $2 + 1 + 5 + 5 =$   
 $3 + 10 = 13$
- Near Doubles;  $4 + 4 = 8$   
 $4 + 5 = 4 + 4 + 1 = 8 + 1 = 9$

### Subtraction:

- Think Addition;  $13 - 8$   
What plus 8 equals 13?
- Down under 10;  $13 - 8$   
(1)  $13 - 10 = 3$   
(2)  $10 - 8 = 2$   
(3)  $3 + 2 = 5$
- Take from 10;  $13 - 8$   
(1)  $13 = 10 + 3$   
(2)  $10 - 8 = 2$   
(3)  $3 + 2 = 5$

# Ideas in Mathematics:

## Fluency Practice



### Multiplication:

- Foundational Facts First; 2, 5, 10, 0, and 1
- Nines;  $10 - 1$
- Adding of Subtracting a Group;  $6 \times 4 = (5 \times 4) + 4$
- Doubling & Halving;  $6 \times 8 = (3 \times 8) \times 2$
- Break Apart;  $8 \times 6 = (5 \times 6) + (3 \times 6)$

### Division:

- Think Multiplication;  $36 \div 4 = \square$  is the same as  $4 \times \square = 36$
- Practice Near Division Facts;  $50 \div 6$

## Strategies to Practice Fluency

- **Cover, Copy, Compare**  
Students cover up the correct answer, write their answer, and then compare it to the correct answer
- **Taped Problems**  
Students must solve the problem within a set amount of time before the teacher or audio recorded tape reads the correct answer
- **Dice, Domino, or Card Games**  
Allow students to draw cards, roll a dice, or pick a domino and then add, subtract, multiply, or divide the numbers chosen
- **Use Technology**  
There are many games and apps that allow for fluency practice. For the best games, there should be a feature that corrects students when they make a mistake, and ideally the program will track students' progress.
- **Flash Cards**  
If students struggle with learning math facts, then create small sets of flashcards and only

## Example Fluency Games Online

- <https://www.ixl.com/math>; comprehensive math practice with corrections data tracking
- <https://home.xtramath.org/>: progressive monitoring data and classroom tools are available
- <https://www.coolmathgames.com/0-sum-blocks>; addition sum blocks
- <https://www.coolmathgames.com/0-make-24>; addition, subtraction, multiplication, and division

# Ideas in Mathematics

Fluency Practice



## Manipulatives

- <https://toytheater.com/dice/>; Virtual Dice
- <https://www.didax.com/apps/spinners/>: Spinner
- <https://www.didax.com/apps/spinners/>: Fact Flashcards