

## Fact Fluency Phases

1. Counting Strategies
2. Reasoning Strategies
3. Mastery or efficient production of answers

## RESEARCH



## RESEARCH

- Brain Research
- Manipulatives
- Visual Models
- Fingers

Boser, 2015


Fluently add \& subtract within 20 using mental
strategies. Bythe end of grade 2, know from
memoryall sums of 2 one digit numbers.


Flashing, orshowing a frame forjusta
few seconds willhelp students begin
to subitize



Once you have donethemall, havestudents match the turn around facts.

- WHAT IS ANOTHERWAY WE MAKE

STRATEGIES CONCRETEAND
ACCESSIBLEFOR OURSTUDENTS?

- THE REKENREKNUMBER RACKISA

POWERFUL TOOLTHAT HELPS CHLDREN
"SUBITIZE",DEVELOP CARDINALTY,1-1 CORRESPONDENCE, AND WORK FLEXIBLYWITH STRATEGIES

WHAT IS THE NUMBER RACK?

- two strings of 10 beads Each

STRATEGICALUY BROKEN INTO GROUPS OF 5, ENTICES STUDENTS TO THINK IN GROUPS OF 5 AND 10

- students "see" the structure and beginto COMPOSE AND DECOMPOSE NUMBERS... TO SEE COMPOSE AND DECO
GROUPS OF $2,5 \& 10$.




## Reflection

- Think privately to yourself about one ideathat resonated with you today.
- Share yourideawith someonenext to you.

