

# Add Single-digit Numbers Explaining Commutativity

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### Differentiate and Assess

Not every student will be ready to investigate this concept at this Level and so we will need to differentiate to ensure every student is learning at their leading edge. Select the Differentiate button on this screen.

### Integrate

Every mathematical concept is integrally related to other mathematical concepts. Teaching and learning related concepts simultaneously develops deep relational understanding. Select the Integrate button on this screen.

### Intervene

Some students may not yet be ready to investigate this concept at any Level, and so we will need to provide some intervention. Select the Intervention button on this screen.

# ADD SINGLE-DIGIT NUMBERS EXPLAINING COMMUTATIVITY.

## EXPLICIT TEACHING PLAN OVERVIEW PAGE

THIS PAGE IS A SUMMARY OF THE EXPLICIT TEACHING PLAN, INCLUDING STRATEGIC QUESTIONS, AND DESCRIBING THE SEQUENCE WHICH WILL OCCUR OVER MULTIPLE LESSONS.

RESOURCES: COUNTERS, PLAYING CARDS, PENCIL, PAPER

WHAT COULD WE DO?	WHAT LANGUAGE COULD WE USE TO EXPLAIN AND ASK QUESTIONS?
<p>Children:</p> <ul style="list-style-type: none"><li>• add by<ul style="list-style-type: none"><li>○ collecting each corresponding amount of counters, placing them in 2 rows, recording the counters and a number sentence using words, then using symbols when they can explain the symbols</li><li>○ counting each number from one in their heads, recording the numbers they</li></ul></li></ul>	<p>Children:</p> <ul style="list-style-type: none"><li>• ask one another questions about adding explaining commutativity, for example:<ul style="list-style-type: none"><li>• How could we add these numbers?</li><li>• How could we make groups using counters?</li></ul></li></ul>

counted and a number sentence using words, then using symbols when they can explain the symbols

- counting on by ones from 1 number, recording on an open empty number line
- explain commutativity, by swapping the order of the numbers and repeating the addition

- How could we count from 1 in our head?
- How could we count on from 1 number?
- How could we swap the order of the numbers and add them?
- Do we have the same amount?
- Can numbers swap places when we add?

# ADD SINGLE-DIGIT NUMBERS EXPLAINING COMMUTATIVITY.

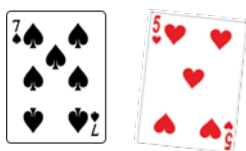
## EXPLICIT TEACHING PLAN

FULL EXPLICIT TEACHING PLAN, EMBEDDING DEEP RELATIONAL UNDERSTANDING, METALANGUAGE, AND QUESTIONS THAT MAY BE USED OVER MULTIPLE LESSONS.

### WHAT COULD WE DO?

Children think about, talk and listen to a friend about, then have the opportunity to share what they already know.

Select 2 playing cards, for example, 7 and 5



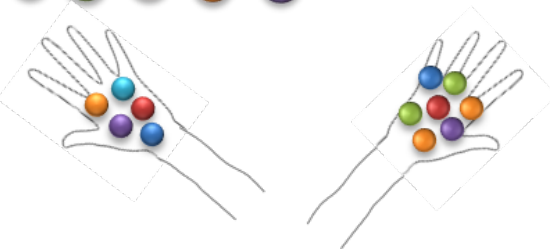
Make a group of 7, for example,



Make a group of 5, for example,



Hold 5 in one hand,  
and 7 in the other hand, for example,

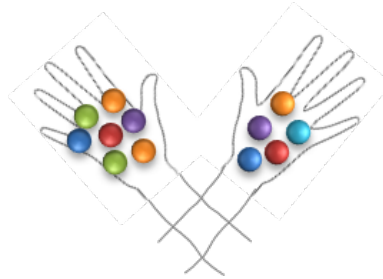


### WHAT LANGUAGE COULD WE USE TO EXPLAIN AND ASK QUESTIONS?

- ▶ Today we're going to investigate adding.
- ▶ What do you already know about adding?
- ▶ Talk to a friend about adding.
- ▶ Is anybody ready to share what they are thinking about adding?
  
- ▶ We've been investigating adding.
- ▶ And we found that adding means joining groups together.
- ▶ Let's continue our investigation!
- ▶ Here we have 2 cards.
- ▶ How could we add these numbers by making groups to join together?
- ▶ Could we make a group of 7?
  
- ▶ Could we make a group of 5?
- ▶ Let's hold our group of 5 in one hand, and our group of 7 in our other hand.
  
- ▶ How could we describe this?
- ▶ Could we say we are adding 5 and 7?

Record, for example,  $5 + 7 = 12$

Swap the 5 and the 7 by crossing over your arms, for example,



Record, for example,  $5 + 7 = 12$

Point to the 2 number sentences, for example,

$$5 + 7 = 12 \quad 7 + 5 = 12$$

- ▶ Could we record that we have 5 and we're adding 7?
- ▶ What does 5 and 7 equal?
- ▶ Does 5 and 7 equal 12?
  
- ▶ Let's swap our hands.
  
- ▶ How could we describe this?
- ▶ Could we say we are adding 7 and 5?
- ▶ What does 7 and 5 equal?
- ▶ Does 7 and 5 equal 12?
  
- ▶ When we add, does it matter which number we add first?
- ▶ Did we get the same amount when we added 5 and 7, and when we added 7 and 5?
- ▶ Can the numbers swap places?
  
- ▶ Can you swap places?
- ▶ Did you wake up at home this morning, and then come to school?
- ▶ Did you swap places?
- ▶ At lunch time, will you swap places again?
- ▶ Will you go outside?
- ▶ When you swap places we say that you commute.
- ▶ Commute just means to swap places.

Record the number sentence,  $7 + 5 =$

Record a mark at the end of each jump, and count forwards by 1s, for example,



Record the number sentence,  $7 + 5 = 12$

Record the number sentence,  $5 + 7 =$

Record a mark at the end of each jump, and count forwards by 1s, for example,



Record the number sentence,  $5 + 7 = 12$

- ▶ So just like you, numbers can commute when we add them.
- ▶ Let's check if the numbers can commute when we add by counting on a number line.
- ▶ Let's add 7 and 5.
- ▶ Let's start by recording our group of 7 on the number line, then adding our group of 5.
  
- ▶ What does 7 and 5 equal?
- ▶ Does 7 and 5 equal 12?
  
- ▶ Let's swap our numbers.
- ▶ Let's add 5 and 7.
- ▶ Let's record our group of 5 on the number line, then adding our group of 7.
  
- ▶ What does 5 and 7 equal?
- ▶ Does 5 and 7 equal 12?
- ▶ When we add, can the numbers swap places?
- ▶ When we add can the numbers commute?