

Counting Forwards by 1s is Adding 1 Each Time, on a Number Line

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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.

COUNTING FORWARDS BY 1S IS ADDING 1 EACH TIME, ON A NUMBER LINE.

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.

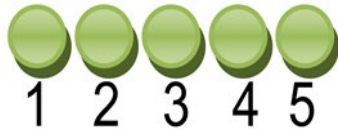
RESOURCES: Counters, Numeral Cards, Paper, Pencil

What could we do?

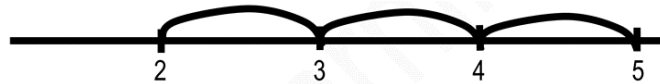
Children:



- count forwards
- add counters one at a time
- recording adding counters one at a time, and the forwards count, for example,



- record an open empty number line
- repeatedly add 1, recording as jumps forwards on the number line, for example,



- explain counting forwards by ones is adding 1 each time

What language could we use to explain and ask questions?

Children ask one another questions about counting forwards by 1s is adding 1 each time, recording on a number line, for example,

- how can we add 1 counter?
- how many counters altogether?
- did we add one to 2 to get 3?
- is the number after 3 one more than 3?
- how many have we been adding each time?
- when we count forwards by ones, how many are we adding each time?

- how can we add 1 on a number line by jumping forwards?
- did we add one to 2 to get 3?
- is the number after 3 one more than 2?
- how many have we been adding each time?

- when we count forwards by ones, how many are we adding each time?

COUNTING FORWARDS BY 1S IS ADDING 1 EACH TIME, ON A NUMBER LINE.

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?	What language could we use to explain and ask questions?
<p>Children think about, talk and listen to a friend about, then have the opportunity to share what they already know.</p> <p>Record the numbers 1-10 as children count forwards. Point to the numbers 10 – 1 as children count backwards. Children identify that we are saying the same numbers when counting forwards and backwards.</p> <p>Record the numbers 17-23 as children count forwards. Point to the numbers 23 – 17 as children count backwards. Children identify that we are saying the same numbers when counting forwards and backwards.</p> <p>Display a container of counters (grouping 20 counters in small containers for each child is very convenient).</p> <p>Children add 1 counter. Children explain that they added 1 counter.</p>	<ul style="list-style-type: none">▶ Today we're going to investigate what we are doing when we count forwards by ones.▶ What do you already know about counting forwards by 1s?▶ Talk to a friend about counting forwards by 1s.▶ Is anybody ready to share what they are thinking about counting forwards by 1s? ▶ Let's count forwards, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.▶ Let's count backwards, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1.▶ When we counted forwards and backwards, did we say the same numbers? ▶ Let's count forwards from 17- 17, 18, 19, 20, 21, 22, 23.▶ Let's count backwards from 23, 23, 22, 21, 20, 19, 18, 17▶ When we counted forwards and backwards, did we say the same numbers? ▶ We've investigated counting forwards by ones using counters.▶ Let's add 1 counter.▶ What did we do?▶ Did we add 1 counter?

Children explain that they now have 1 counter.

Record the counter and the numeral 1, for example,

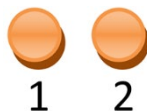


A child adds 1 counter.

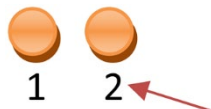
Children explain that they added 1 counter.

Children explain that they now have 2 counters.

Record the counter that we added and the numeral 2, for example,



Point to the number 2, for example,



A child adds 1 counter.

Children explain that they added 1 counter

Children explain that they now have 3 counters

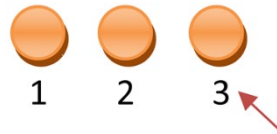
Record the counter that we added and the numeral 3, for example,



- ▶ How many counters altogether?
- ▶ Is there 1 counter altogether?
- ▶ How could we record this?
- ▶ Could we record the counter that we added?
- ▶ Could we record the number 1?
- ▶ Please add 1 counter.
- ▶ What did we just do?
- ▶ Did we add 1 counter?
- ▶ How many counters altogether?
- ▶ Are there 2 counters altogether?
- ▶ How could we record this?
- ▶ Could we record the counter that we added?
- ▶ Could we record the number 2?
- ▶ Let's look at the number 2.
- ▶ Is 2 the number after 1?
- ▶ Is 2 one more than 1?
- ▶ Did we add one to 1 to get 2?

- ▶ Please add 1 counter.
- ▶ What did we just do?
- ▶ How many counters altogether?
- ▶ How could we record this?

Point to the number 3.



Record an open, empty number line (a line), for example,



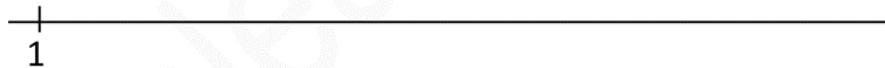
- ▶ Let's look at the number 3.
- ▶ Is 3 the number after 2?
- ▶ Is 3 one more than 2?
- ▶ Did we add one to 2 to get 3?
- ▶ Is the number 3 one more than 2?
- ▶ How many have we been adding each time?
- ▶ Have we been adding 1 each time?
- ▶ Let's read the numbers, 1, 2, 3.
- ▶ Are we counting forwards by ones?
- ▶ When we count forwards by ones, how many are we adding each time?
- ▶ Are we adding 1 each time?

- ▶ **This time when we count forwards, we're going to place the numbers on a number line to investigate what is happening when we count forwards by ones.**
- ▶ So far, this is just a line.
- ▶ What do you think we're going to put on the line to make it a number line?
- ▶ Let's put some numbers on the number line.
- ▶ When we count forwards, do the numbers get bigger or smaller?
- ▶ Do the numbers get bigger when we count forwards?
- ▶ On a number line, numbers get larger as we move to the right. There is no reason for this, but if everyone in the world makes the numbers get higher as they move to the right, we will all be able to read everyone else's number lines!
- ▶ Our lowest number today is 1, which end of the number line do you think 1 would

Place a mark on the left end of the open, empty number line, for example,



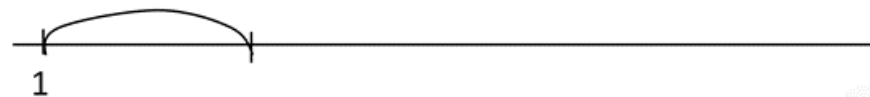
Place the number 1 on the mark, for example,



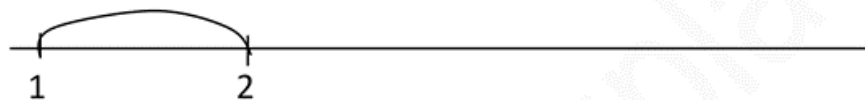
Record a jump from the mark where 1 is on the open, empty number line, for example,



Record a mark where the jump lands on the open, empty number line, for example,



Record 2 on the mark where the jump ends on the open, empty number line, for example,



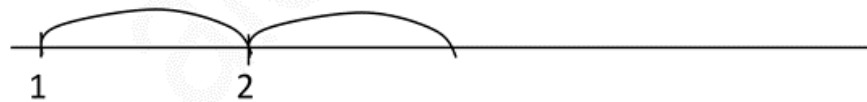
go?

- ▶ Will 1 go on the left end of the number line? Why?
- ▶ Will 1 go the left end of the number line so that we can get higher as we count forwards?
- ▶ Will 1 go the left end of the number line so that we can get bigger as we count forwards?
- ▶ Let's start by making a mark where the number 1 will go.
- ▶ Now let's record the number 1 under the mark.

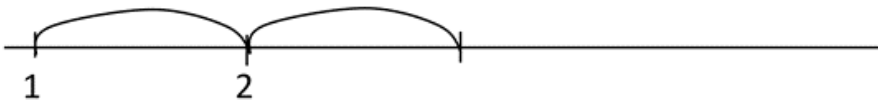
- ▶ Let's add 1.
- ▶ To show that we are adding 1, we'll record a jump to the right.
- ▶ Where is the jump starting from?
- ▶ Is the jump starting from the mark where 1 is on the number line?

- ▶ Let's record a mark where the jump ended.
- ▶ If we started at 1, and added 1, what number will we land on?
- ▶ Will we land on number 2?
- ▶ Let's record 2 on the mark where the jump landed.
- ▶ Let's look at the number 2.
- ▶ Is 2 the number after 1?
- ▶ Is 2 one more than 1?
- ▶ Did we add one to 1 to get 2?

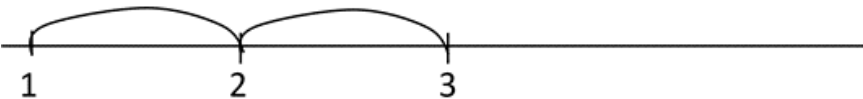
Record a jump from the mark where 2 is on the open, empty number line, for example,



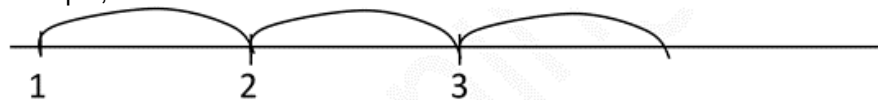
Record a mark where the jump ends on the open, empty number line, for example,



Record 3 on the mark where the jump ends on the open, empty number line, for example,



Record a jump from the mark where 3 is on the open, empty number line, for example,



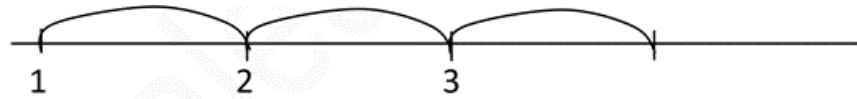
- ▶ Did we add 1 on a number line?
- ▶ Let's add another 1!
- ▶ How will we show that we are adding 1?
- ▶ Will we record a jump to the right?
- ▶ Where is the jump starting from?
- ▶ Is the jump starting from the mark where 2 is on the number line?

- ▶ Let's record a mark where the jump ended.
- ▶ If we started at 2, and added 1, what number will we end on?
- ▶ Will we end on number 3?

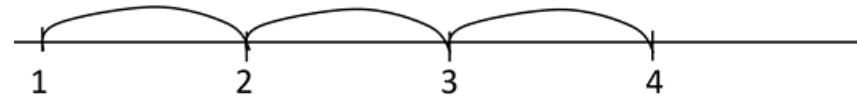
- ▶ Let's record 3 on the mark where the jump ended.
- ▶ Let's look at the number 3.
- ▶ Is 3 the number after 2?
- ▶ Is 3 one more than 2?
- ▶ Did we add one to 2 to get 3?
- ▶ Did we add 1 on a number line?

- ▶ Let's add another 1!
- ▶ How will we show that we are adding 1?
- ▶ Will we record a jump to the right?
- ▶ Where is the jump starting from?
- ▶ Is the jump starting from the mark where 3 is on the number line?

Record a mark where the jump ends on the open, empty number line, for example,



Record 4 on the mark where the jump ends on the open, empty number line, for example,



Children alternate between counting forwards by adding 1 each time and counting backwards by subtracting 1 each time to develop deep and flexible understanding of BOTH, and the inverse relationship between counting forwards and counting backwards.

- ▶ Let's record a mark where the jump ended.
- ▶ If we started at 3, and added 1, what number will we end on?
- ▶ Will we end on number 4?

- ▶ Let's record 4 on the mark where the jump ended.
- ▶ Let's look at the number 4.
- ▶ Is 3 the number after 3?
- ▶ Is 3 one more than 3?
- ▶ Did we add one to 3 to get 4?
- ▶ Are we adding 1 on a number line?
- ▶ Let's read the numbers in order, 1, 2, 3
- ▶ Are we counting forwards by ones?
- ▶ When we count forwards by ones, how many are we adding each time?
- ▶ Are we adding 1 each time?
- ▶ How do we show that we adding 1 on a number line?
- ▶ Do we record a jump to the right?

Numeral cards 0 – 19 (print, cut out and distribute as appropriate to each child)

0	1	2	3
4	5	6	7
8	9	10	

14	16	17	18
19	15	13	12
11			