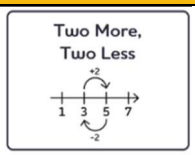
Stage 3 Book 2 Teaching Progression

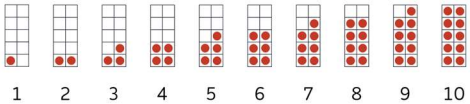


If we add two to a number, we go from odd to next odd or even to next even. If we subtract two from a number, we go from odd to previous odd, or even to previous even.

1 + 2 = 3	2 + 2 = 4	9 – 2 = 7	10 – 2 = 8
3 + 2 = 5	4 + 2 = 6	7 – 2 = 5	8 – 2 = 6
5 + 2 = 7	6 + 2 = 8	5 – 2 = 3	6 – 2 = 4
7 + 2 = 9	8 + 2 = 10	3 – 2 = 1	4 – 2 = 2

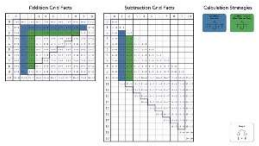
In Number Sense Maths we use the structure of odd and even numbers to teach adding or subtracting two. It is so easy to tell a child to count on or back two, but right from the start we avoid teaching finger counting to calculate. Often Year 1 teachers have told us "We teach them about odd and even numbers and then don't do anything with it." Well, this is one extremely useful thing you can do with it! Just as in the previous book we don't teach all facts within these fact families. For example in the 7 + 2 fact family, 7 + 2, 2 + 7 and 9 – 2 are taught as two more two less. However 9 – 7 is not about two more two less. It is taught as 'difference of two' in Stage 3 Book 8: Number Neighbours.

Prior knowledge starting point
In Stage 1, Book 3, children learnt to subitise quantities to ten presented twos-wise on tens frames. When shown a twos-wise image they should be able to both say the number name ("five") and write the numeral (5) to start this book. Children will also need to use the commutative law of addition, taught it Book 1, to understand that 2 + 5 is equivalent to 5 + 2 etc.



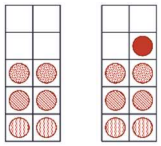
Learning outcome 1: Children understand their progress towards learning a defined set of facts

Animation 1: Grids build-up
This animation visually summarises the facts children need to be fluent in, the facts they already have a strategy for, and the facts covered by this strategy. It gives children a sense they are building towards full factual fluency and where they are on the journey towards this.



Learning outcome 2: Children can explain that even numbers are made from groups of two, and odd numbers are made from groups of two and one more.

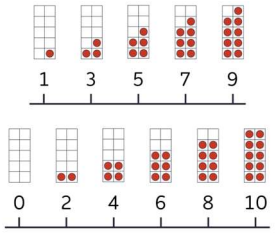
Animation 2: Odd or even?
This animations shows which of the numbers to 10 are made of groups of two, and which are made of groups of two and one more. '*Groups of two*' numbers are called even numbers. '*Groups of two and one more*' are called odd numbers. Teach children to look for flat tops (evens) and odd tops (odds) when numbers are arranged in twos.
<u>Generalisation</u>: **An even number is made from groups of two; an odd number is made from groups of two and one more**



Optional exercises: 1 - 5

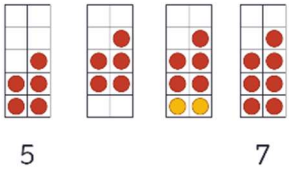
Learning outcome 3: Children can count forwards and back in odds and evens within 10 even when no image is shown.

Animations 3 & 4: Counting forwards and backwards: odds & evens
These animations support children to develop fluency in these counting patterns. The first half of the animation supports counting forwards, which leads to adding two. The second half supports counting backwards which leads to subtracting two. Use the images of tens frames on number lines at first; then practise rote counting without them, e.g counting together "nine, seven, five, three, one" as the children walk in after play.



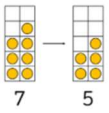
Learning outcome 4: Children can explain by talking or show by drawing the two more/two less relationship between next door odds or evens

Animations 5 & 6: Showing two more and two less: odds & evens
These animations expose why two more than an odd number gives the next odd number, and why two less than an odd number gives the previous odd number (and the same for evens). Children often say that counting in evens is counting in twos, but counting in odds is counting in ones or threes. These animations expose the 'two more' and 'two less' in both even AND odd sequences.



Learning outcome 5: Children can say two more or two less than an even or odd within 10, without counting through the sequence.

Animations 7 & 8: Knowing two more, Knowing two less
To be able to say 7 + 2 is 9 by thinking 'next odd', children need to be able to just say that 9 is the odd number after 7 (and this is true for all previous/next odds and evens within 10). These animations provide support for that. They provide the prompt of seeing the odds and evens 'grow' (or shrink) in sequence so children can use visualisation to support until they 'just know', or can self prompt by imagining the image.



Optional exercises: 6 - 15

Number Sense Maths

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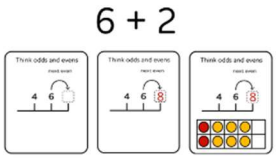
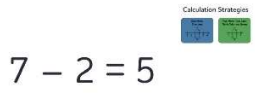
Learning outcome 6: Children use their knowledge of 'two more' and 'two less' to solve + 2 and – 2 equations within 10.	**Animations 9, 10, 11 & 12: Teaching animation, Practice animation, Story contexts, Factual fluency** These animations bring equations in for the first time. Like all of our strategy books, children have developed the understanding they need to add and subtract two before meeting the equations. The equations are just used to represent something the children already know. The first two animations use models to make this link explicit. The final two animations provide practice solving calculations in and out of context. Generalisation: **Adding two to an even number gives the next even number.** **Subtracting two from an even number gives the previous even number.** **Adding two to an odd number gives the next odd number.** **Subtracting two from an odd number gives the previous odd number.**	 Optional exercises: 6 - 29
Learning outcome 7: Children can choose between known calculation strategies	**Animation 13: Cumulative factual fluency** The final animation presents calculations from this strategy, alongside the previously learnt strategy One More, One Less for children to practise solving mixed calculations where they have to choose between strategies. As well as using this animation, use our **practice sheet generator** for independent retrieval practice of facts from this and previous strategies.	 Optional exercises: 30 – 31, and also use practice sheet generator