

Year 5 Unit 2: Integer addition and subtraction (2 weeks)

...is equal to ...

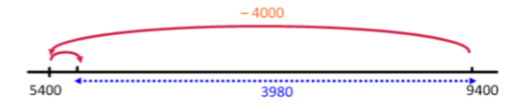
Ensure a depth of understanding of the symbol '='. Recording statements such as $27 + 9 = 27 + 10 - 1$ challenge learners to interpret the symbol as meaning balance or equality rather than 'gives the answer'.

Video: Exploring addition strategies.

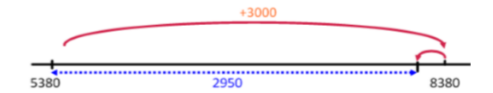
Video: Exploring subtraction strategies.

Round and adjust

$$9400 - 3980 =$$

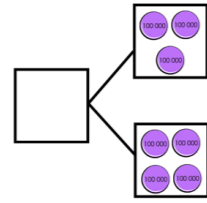


$$5380 + 2950 =$$



Before you start...

- How fluent are your pupils with number bonds?
- What calculation strategies are your pupils confident with?
 - using known facts to derive new facts
 - partitioning
 - near doubles
 - round and adjust
 - finding the difference
 - column method

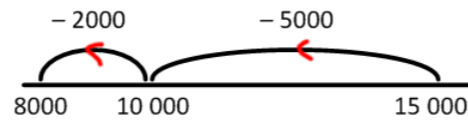


Use known facts

$$15 - 7 = 8$$

$$15\ 000 - 7\ 000 = 8\ 000$$

'Make ten' (subtract to a multiple of ten)



Using what you already know

- L1 Use and explain addition and subtraction strategies
- L2 Add and subtract multiples of 10, 100, 1000, 10 000 and 100 000

The unit starts by exploring calculation strategies for addition and subtraction of 2-digit and 3-digit numbers. This is an opportunity to review strategies from previous years with a strong focus on clearly explaining, using equipment, sketches and jottings, to demonstrate the understanding. There is a focus on using known facts to calculate with large numbers, supporting pupils to realise how much they can do with number bonds to 20, and highlighting the importance of being fluent in the recall of these facts.

- ? What language and models do you expect pupils to use when describing strategies?
- ? What techniques will you use to encourage exploration and explanation of a range of strategies?

Exploring strategies

- L3 Add and subtract using a round and adjust strategy
- L4 Use a range of partitioning strategies to add and subtract
- L5 Use rounding to estimate calculations

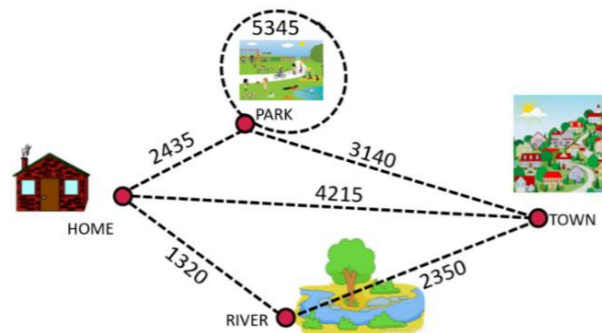
The purpose of these lessons is to review calculation strategies that pupils know from previous years and extend these for use with larger integers. A variety of manipulatives and models are suggested to visualise the structure of these strategies to support understanding and accuracy. Lesson 5 makes clear links to the previous unit and provides an important purpose for rounding in order to estimate and check accuracy of calculation.

- ? What would expect your pupils to do when asked to use pictorial or concrete representations to show their answers?
- ? What opportunities will you give pupils to explore the relationship between addition and subtraction?

Fluency

Quick recall with key addition and subtraction facts is important in developing efficiency. What games can you play to develop and maintain this?

There is one consolidation lesson in this unit. Use assessments to make an informed decision about where in the unit to use this.



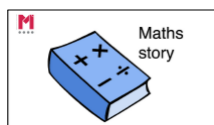
Solving multi-step problems

- L9 Use a range of mental strategies while problem solving

The final lesson provides a context for pupils to complete lots of calculations. This is an opportunity to bring together the experiences so far in the year to solve multi-step problems. A variety of calculation strategies should be encouraged.

- ? How will you draw together different strategies pupils may suggest?
- ? What representations will support pupils in understanding the word problems?

Create a maths story



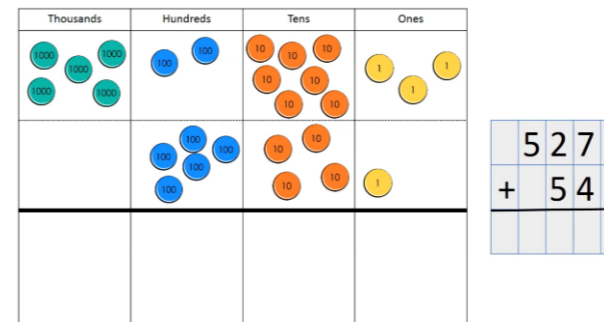
Encourage pupils to come up with their own situations that involve adding or subtracting.

Using written methods

- L6 Use column addition to calculate with large whole numbers
- L7 Use column subtraction to calculate with large whole numbers
- L8 Use column methods

Formal written method of addition and subtraction are the focus of the next sequence of lessons. Pupils have used these methods in Year 4 and now extend to work with 5-digit and 6-digit numbers as well as adding more than two numbers. Place value counters are used alongside the written method as a tool for explaining how the procedure works and focusing attention on what is happening as each step is carried out. Support pupils to develop the habit of deciding when to use a written method and when a different method may be more efficient.

- ? How will you support conceptual understanding during these lessons?
- ? What connections will you make between representations and pupils' existing knowledge?



Developing efficiency
Seek opportunities to think about the numbers involved in calculations, sharing a range of possible strategies. Continue to provide experience with this in Maths Meetings.

Video: Column addition with place value counters

Video: Column subtraction with place value counters