Maths and Me: 2nd Class– Short-Term Plan, Unit 19: Addition and Subtraction 4 (June: Week 2)

Strand(s) > Strand Unit(s)	Number > Sets and Operations; Numeration and Counting. Algebra > Expressions and Equations.
Learning Outcome(s)	Through appropriately playful and engaging learning experiences children should be able to select, make use of and represent a range of addition and subtraction strategies; demonstrate proficiency in using and applying different counting strategies; interpret the meaning of symbols or pictures in number sentences..

Lesson	Focus of Learning (with Elements)	CM	Learning Experiences	Assessment
1	**Adding and Subtracting within 200:** Explores addition and subtraction within 200, without renaming (U&C); Develops strategies for efficient computation of addition and subtraction within 200, without renaming (R)		D Notice & Wonder L1 D C Think-Pair-Share L1, L3 D Would This Work? L1–3 D Build it; Sketch it; Write it L1–3 D C Reason & Respond L1–3 D C Write-Hide-Show L1–3 D Number Strings L2–3 **Print resources** Pupil's Book pages 111–113 Home/School Links Book page 39 PCMs (there are no general PCMs for Unit 19)	**Intuitive Assessment:** responding to emerging misconceptions **Planned Interactions:** responding to insights gleaned from children's responses to learning experiences **Assessment Events:** information gathered from completion of the unit assessment in the Progress Assessment Booklet page 30
2	**Adding with Renaming:** Explores addition within 200, with renaming (U&C); Develops strategies for efficient computation of addition within 200, with renaming (R)			
3	**Subtracting with Renaming:** Explores subtraction where renaming a hundred and/or ten is required (U&C); Develops strategies for efficient computation where crossing a hundred and/or ten is required (with renaming) (R)			
4	**Review and Reflect:** Reviews and reflects on learning (U&C)			

Key: Elements: (U&C) Understanding and Connecting; (C) Communicating; (R) Reasoning; (A&PS) Applying and Problem-Solving. **CM: Cuntas Míosúil:** please tick when you have completed the focus of learning. **Learning Experiences:** C concrete activity; D digital activity; P activity based on printed materials, followed by lesson numbers.

Additional information for planning

Progression Continua	See '2nd Class *Maths and Me* Progression Continua Overview' for a detailed breakdown of how all progression continua are covered.
Maths Language	See '2nd Class *Maths and Me* Maths Language Overview', individual lesson plans and Unit 18 Maths Language Cards.
Equipment	See '2nd Class *Maths and Me* Maths Equipment Overview' and individual lesson plans.
Inclusive Practices	• See Let's Strengthen and Let's Deepen suggestions throughout lesson plans. • See Unit 19 Let's Strengthen Suggestions for Teachers. (These address the Common Misconceptions and Difficulties listed below.) • See Unit 19 Let's Strengthen PCM. • See Unit 19 Let's Deepen PCM.
Integration	See individual lesson plans.

Background and rationale

- The children have already been introduced in many ways to addition and subtraction of numbers within 200. However, this is the first time they will use the column method to perform calculations where renaming of both ones and tens (addition), or both a hundred and some tens, is required in the same calculation. This unit also revises the children's understanding of various mental and written strategies for addition and subtraction of numbers within 200.
- Mathematical modeling is very much the focus of this unit. Build it; Sketch it; Write it, and Would This Work? activities feature strongly in every lesson. While it is important that the children develop procedural fluency with such standard algorithms as the column method, it is essential that this is balanced to include other computation methods and models, especially as many of these support the development of mental calculation skills. Ultimately, the children are enabled to choose their preferred models and approaches, encouraged to consider the efficiency of their strategies, and supported to become less reliant on inefficient strategies.
- Concrete materials: For this unit it is preferable that the children initially use only groupable base ten resources, i.e. those which can be physically composed and decomposed (such as interlocking cubes, bundles of lollipop sticks, maths links/chains, ten frames and counters). This is preferable to other base ten resources which cannot be physically composed and decomposed, and must be swapped instead (e.g. base ten blocks, place value counters). While using groupable materials may be more time-consuming and require more resources and organisation, swapping is considerably more abstract and has the potential to introduce an element of error (e.g. where the child swaps nine/eleven ones for a ten). Only use swappable materials when the children are capable and confident with the groupable materials.
- Teachers are encouraged to use every available opportunity throughout this and all units to embed the strategies of estimating numbers and checking calculations by regularly asking the children to estimate a reasonable answer (e.g. 'Is it forty-something, fifty-something or sixty-something?'), and encouraging them to check their answers (e.g. by solving the same calculation a different way, using the inverse operation, and so on).

The theme of this unit is **The Library**. This theme can also be connected to the Summer Stars programme, which runs in most libraries from mid-June to the end of August.

Common misconceptions and difficulties

See also Common Misconceptions and Difficulties in Units 2, 8 and 12 (Addition and Subtraction 1, 2 and 3). Additionally:

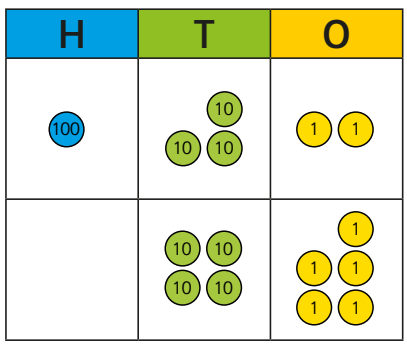
- The children may struggle to accurately use non-groupable base ten resources to model calculations. (Therefore, use groupable materials instead.)
- The children may use an incorrect procedure when using the column method for addition and subtraction. For example, they may:
  - Consider each digit as a separate number rather than as a representation of the number of tens or ones
  - Mistranslate a calculation from a horizontal to a vertical format and vice versa
  - When subtracting, forget altogether to rename; subtract the smaller digit (on top) from the larger digit (on the bottom); rename incorrectly; rename when not required.
  - In addition, forget altogether to rename; reverse the digits when they rename (i.e. carry over the ones value, not the tens); rename correctly, but forget to add new ten(s)/hundred; rename when not required.
- The children may became over-reliant on one particular approach and use it even when it might not be the most efficient way (e.g. resorting to counting strategies rather than applying known number facts to add/subtract the digits within a calculation; always using the column method, rather than applying different written, pictorial or mental approaches as appropriate to the given numbers, situation; and so on).
- They may have difficulties with operations involving hundreds, even though they were confident of the same operation using tens and ones only. (This may indicate that their understanding of place value above 100 is not secure and may need to be strengthened.)
- They may incorrectly verbalise numbers above 100 (e.g. reading 103 as 'one, zero, three' rather than 'one hundred and three').
- They may write three-digit numbers incorrectly (e.g. one hundred and thirty-four as 1034 or 10034).

The Unit 19 Let's Strengthen Suggestions for Teachers address the common misconceptions and difficulties listed above.

Mathematical models and representations

- Interlocking cubes
- Base ten blocks
- Quick cubes (pictorial representations of base ten blocks)
- 100 squares
- Number lines
- Branching bonds
- Bar models
- Place value grids
- Column method
- Number sentences
- Place value counters

Quick cubes



Place value grid with place value counters

Teaching tip

While there are no specific lessons in this unit that are dedicated to estimating numbers and checking calculations, it is important that you embed these strategies by routinely asking the children to estimate a reasonable answer (e.g. 'Is it greater than or less than one hundred?', 'Is it one hundred and forty-something, one hundred and fifty-something or one hundred and sixty-something?'), and encourage them to check their answers (e.g. by solving the same calculation a different way, using the inverse operation, and so on). Practise this at every available opportunity.

Day 1, Lesson 1

Adding and Subtracting within 200*

**without renaming*

Focus of learning (with Elements)

- Explores addition and subtraction within 200, without renaming (U&C)
- Develops strategies for efficient computation of addition and subtraction within 200, without renaming (R)

Learning experiences

- (D) Digital activity: The Library
  ***MAM* Routines: Notice & Wonder, with Think-Pair-Share**
- (D) Digital activity: Jay's Notebook ***MAM* Routines: Would This Work?, with Build it; Sketch it; Write it**
- (D) Digital activity: Mia's Notebook ***MAM* Routines: Would This Work?, with Build it; Sketch it; Write it**
- (C) Concrete activity: Adding and Subtracting within 200
  ***MAM* Routines: Reason & Respond, with Write-Hide-Show**
- (P) Pupil's Book page 111: Adding and Subtracting within 200

Equipment

- Countable resources, such as base ten blocks and place value counters
- Groupable base ten resources that can be physically composed and decomposed (e.g. interlocking cubes and bundles of lollipop sticks)
- Counting aids, such as 100 squares, number lines and place value grids

Maths language

- adding, add, count on (+), subtracting, minus, take-away, count back (–), is equal to/equal(s) (=) hundreds, tens, ones, number story, number sentence, adding/subtracting in chunks, branching, column method, estimate, reasonable, check, efficient, inverse

Warm-up

(D) Digital activity: The Library *MAM* Routines: Notice & Wonder, with Think-Pair-Share

Play the slideshow, which shows the characters at the library. Using Think-Pair-Share, ask:

- What do you notice?
- What do you wonder?

Record the children's responses to both questions on the board. Allow the children the opportunity to respond to (agree/disagree with or query) others' responses, but do not confirm or reject any of the ideas. Note any 'wonderings' that could become the basis for a subsequent maths investigation.

Main event

(D) Digital activity: Jay's Notebook *MAM* Routines: Would This Work?, with Build it; Sketch it; Write it

Display the activity, which gives information about the number of pages that Jay has read. Ask:

Assessment Opportunity

- What does this tell us about Jay's pages? How might we represent this number story?
- Build it! Can you use classroom resources to represent this number story? Show us.
- Sketch it! Can you represent this number story as a sketch? Show us.
- Write it! Can you use numbers, words, branching bonds or number sentences to represent this number story? Show us.

Allow time for the children to share how they did it. Ask:

- Is there more than one way to write a number sentence?
- What could we work out?

- How many pages has Jay read in total?
- Estimate quickly a reasonable answer. Do you think it will be one hundred and thirty-something, one hundred and forty-something ...? Explain why.

Then click to show the various models and approaches used by the characters. Allow the children time to comment on each (e.g. What is the same/different about each?) and to justify whether or not the methods/opinions work. Ask:

- Do the answers and/or approaches look reasonable? Explain why.
- How could we check the answers? (e.g. by solving the same calculation a different way, using the inverse operation)
- Which is the most efficient way to arrive at an answer, in your opinion?

Teaching tip

The characters' solutions should not be presented to the class as the only 'correct' ways to solve questions. If the children come up with their own solutions that arrive at the correct answer, these are just as valid as those presented by the characters and should be acknowledged as so. If a child uses a strategy not already in the Strategy Wall, you could include the strategy later.

D Digital activity: Mia's Notebook

***MAM* Routines: Would This Work?, with Build it; Sketch it; Write it**

Display the activity, which gives more information about the number of pages that Mia has read. Ask:

- What does this tell us about Mia's pages? How might we represent this number story?
- Build it! Can you use classroom resources to represent this number story? Show us.
- Sketch it! Can you represent this number story as a sketch? Show us.
- Write it! Can you use numbers, words, branching bonds or number sentences to represent this number story? Show us.

Allow time for the children to share how they did it. Ask:

- Is there more than one way to write a number sentence?
- What could we work out?
- How many pages did Mia read today?
- Estimate quickly a reasonable answer. Do you think it will be more than one hundred or less than one hundred? Explain why.
- Do you think it will be twenty-something, thirty-something ...? Explain why.

Then click to reveal the various models and approaches of the characters. Allow the children time to comment on each (e.g. What is the same/different about each?) and to justify whether or not the methods/opinions work. Ask:

- Do the answers and/or approaches look reasonable? Explain why.
- How could we check the answers? (e.g. by solving the same calculation a different way, using the inverse operation)
- Which is the most efficient way to arrive at an answer, in your opinion?

C Concrete activity: Adding and Subtracting within 200 *MAM* Routines: Reason & Respond, with Write-Hide-Show

Note: For Write-Hide-Show activities in other units, the children have typically written *answers only* (i.e. no working out), thus emphasising the use of mental calculation strategies, as opposed to written strategies. However, given the extra cognitive load that may accompany three-digit numbers in this unit, allow the children to use their MWBs for calculations, sketches or drawings as they require/choose.

Write one of the calculations below on the board, and ask the children to use their MWBs to work out and/or record an answer to the calculation. Emphasise that during the 'hide' stage, they should consider their strategy and other strategies that might work. Record all of their answers on the board, being careful not to give away the correct answer. Ask:

- Are there any answers that are unreasonable/unlikely because they do not make sense? Which ones? Why do you think this? (e.g. Is the answer too big or too small because the incorrect operation was used?)
- How did you work out your answer? What strategy did you use?
- Could the answer be proved a different way?

Prompt the children to use the column method each time to justify their answer, and at least one other strategy.

Repeat as required, ensuring that there is a mix of operations.

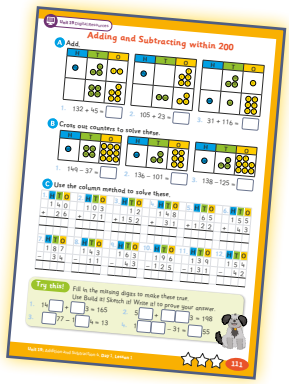
Suggestions:

117 + 22	156 – 24
145 + 21	168 – 15
153 + 34	196 – 56
72 + 102	179 – 49
26 + 163	187 – 32

Let's strengthen

The children may wish to use groupable base ten resources. Ensure that these are available and accessible to all, and that the children know they can use them.

Pupil's Book page 111: Adding and Subtracting within 200



Optional consolidation and extension possibilities

STEM Project Sort the books into categories, calculate the totals of the categories; gather data on the number and types of books borrowed from the class library over a week; stack books to explore balance and the effect of gravity (e.g. predict how high they can stack before it topples, and record the number of books); use block-based coding tools like Scratch to create a digital story or animation about borrowing and returning library books.

Integration Oral language development around the theme of the books and reading: Gaeilge: Caitheamh aimsire, Ag léamh. Geography: Human environments (The Local Library); mapping the route to the local library from school; People at Work – the librarian. Visual Arts: Making, looking at and responding to book covers, etc.

Strategy Wall Add the Calculation Strategy Wall Cards for: Adding using the Column Method, Subtract using Column Method. Refer to them throughout this and subsequent units. The children could also add their own sketches of this strategy, both to the Strategy Wall and in their maths journals.

Let's Strengthen Use the Unit 19 Let's Strengthen PCM Task A for reinforcement questions.

Estimation Station Fill a transparent container with between 100 and 200 small items of two different colours. Leave a box close by, where children can 'post' their estimated number sentences. After two or three days, ask a group to count each colour group and identify who had the closest estimate for the two amounts (addends). Then, set up the station again with a different number of items.

Let's deepen

Challenge the children to use addition rather than counting to total the two groups of different colours.

Review and Reflect Use the Prompt Questions Poster.

Day 2, Lesson 2

Adding with Renaming*

**totals of 100 to 200*

Focus of learning (with Elements)

- Explores addition within 200, with renaming (U&C)
- Develops strategies for efficient computation of addition within 200, with renaming (R)

Learning experiences

- D Digital activity: Making Tens ***MAM* Routines: Number Strings, with Write-Hide-Show**
- D Digital activity: Lexi's Notebook ***MAM* Routines: Would This Work?, with Build it; Sketch it; Write it**
- C Concrete activity: Adding with Renaming ***MAM* Routines: Reason & Respond, with Write-Hide-Show**
- P Pupil's Book page 112: Adding with Renaming

Equipment

- Countable resources, such as base ten blocks and place value counters
- Groupable base ten resources that can be physically composed and decomposed (e.g. interlocking cubes and bundles of lollipop sticks)
- Counting aids, such as 100 squares, number lines and place value grids

Maths language

- renaming

Warm-up

D Digital activity: Making Tens *MAM* Routines: Number Strings, with Write-Hide-Show

This PowerPoint presentation contains eight slides, broken into two four-slide sections. Each set of four slides builds up a number string, with one part revealed per slide. (Use slideshow mode, so that only one part of the number string is revealed at a time.) Ask the children to record their proposed answer only on their MWBs, using Write-Hide-Show. Emphasise that during the 'hide' stage, they should consider their strategy and other strategies that might work. Record all of the children's answers on the board, being careful not to give away the correct answer. Ask:

- Are there any answers that are unreasonable/unlikely because they do not make sense? Which ones? Why do you think this? (e.g. Is the answer too big or too small because the incorrect operation was used?)
- Which answer do you think is correct? What strategy did you use?
- Does anybody have a different proof?

Models that reflect, rather than direct, children's thinking: Use concrete materials and/or pictorial representations to model the approaches and strategies shared, in order to make them more visible to all of the class.

Repeat with the next parts of the number string (i.e. slides 2–4). Repeat with the other number string as required (i.e. slides 5–8).

Let's strengthen

The children may benefit from seeing and/or having groupable base ten resources available to model the calculations concretely.

Main event

D Digital activity: Lexi's Notebook *MAM* Routines: Would This Work?, with Build it; Sketch it; Write it

Display the activity, which gives information about the number of pages that Lexi has read. Ask:

- What does this tell us about Lexi's pages? How might we represent this number story?
- Build it! Can you use classroom resources to represent this number story? Show us.
- Sketch it! Can you represent this number story as a sketch? Show us.
- Write it! Can you use numbers, words, branching bonds or number sentences to represent this number story? Show us.

Allow time for the children to share how they did it. Ask:

- Is there more than one way to write a number sentence?
- What could we work out?
- How many pages has Lexi read in total?
- Estimate quickly a reasonable answer. Do you think it will be more or less than one hundred? Explain why.
- Do you think it will be one hundred and thirty-something, one hundred and forty-something ...? Explain why.

Then click to reveal the the various models and approaches used by the characters. Allow the children time to comment on each (e.g. What is the same/different about each?) and to justify whether or not the methods/opinions work. Ask:

- Do the answers and/or approaches look reasonable? Explain why.
- How could we check the answers? (e.g. by solving the same calculation a different way, using the inverse operation)
- Which is the most efficient way to arrive at an answer, in your opinion?

Let's deepen

Challenge the children to consider ways to make their calculations more efficient, for example:

- When using the column method, is it necessary or unnecessary to write down the new hundred to be carried over? Explain why.

C **Concrete activity: Adding with Renaming**
***MAM* Routines: Reason & Respond, with Write-Hide-Show**

Write one of the calculations below on the board, and ask the children to use their MWBs to work out and/or record an answer to the calculation. Emphasise that during the 'hide' stage, they should consider their strategy and other strategies that might work. Record all of their answers on the board, being careful not to give away the correct answer. Ask:

- Are there any answers that are unreasonable/ unlikely because they do not make sense? Which ones? Why do you think this? (e.g. Is the answer too big or too small because the incorrect operation was used?)
- How did you work out your answer? What strategy did you use?
- Could the answer be proved a different way?

Prompt the children to use the column method each time to justify their answer, and at least one other strategy.

Repeat as required, ensuring that there is a mix of calculation types.

Suggestions:

25 + 145	74 + 88
143 + 29	93 + 98
152 + 28	75 + 96
139 + 51	66 + 39*
87 + 54	57 + 48*

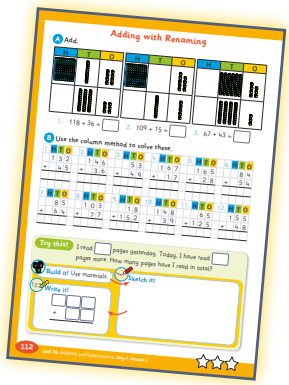
Teaching tip

*The children may find it confusing when renaming the ones has a knock-on effect that results in renaming the tens, as occurs in calculations 66 + 39 and 57 + 48. Choose at least one of these examples to explore, and model the process, using appropriate base ten resources.

Let's strengthen

- The children may benefit from having the column method procedure demonstrated to them, using I Do, We Do, You Do.
- The children may also benefit from having groupable base ten resources available on their desks in order to model the calculations concretely. See also the Unit 19 Let's Strengthen Suggestions for Teachers.

P **Pupil's Book page 112: Adding with Renaming**



Note: There are some examples on this page that do not require renaming. These have been deliberately included to ensure that the children are considering each set of numbers and not just renaming in all cases.

Let's strengthen

If useful, use the Maths and Me routine My Favourite No (see the At-a-Glance Guide to Maths and Me Routines plus also see the next lesson's Warm-up) to analyse some common errors.

Teaching tip

Use the My Favourite No method from the Warm-up in Lesson 3 to analyse some of the common errors being made.

Optional consolidation and extension possibilities

Story Read any book that highlights the value of visiting the library, e.g. *Luna Loves Library Day, Library Lion, A Library Book for Bear.*

Games Bank Play 'Pig', and/or 'Chance Calculations – Adding Tens and Ones'.

Strategy Wall Add the Calculation Strategy Wall Card for Adding, Using the Column Method with Renaming. Refer to it throughout this and subsequent units. The children could also add their own sketches of this strategy, both to the Strategy Wall on the wall and in their maths journals.

Let's Strengthen Use the Let's Strengthen PCM Task B for reinforcement questions.

Estimation Station Remind the children to submit estimates, count the items and/or set up a new station.

Review and Reflect Use the Prompt Questions Poster.

Days 3 and 4, Lesson 3

Subtracting with Renaming*

**hundreds and tens*

Focus of learning (with Elements)

- Explores subtraction where renaming a hundred and/or ten is required (U&C)
- Develops strategies for efficient computation where crossing a hundred and/or ten is required (with renaming) (R)

Learning experiences

- (D) Digital activity: Subtraction Through Tens
  ***MAM* Routines: Number Strings, with Write-Hide-Show**
- (C) Concrete activity: My Favourite No
  ***MAM* Routine: Think-Pair-Share**
- (D) Digital activity: Dara's Notebook ***MAM* Routines: Would This Work?, with Build it; Sketch it; Write it**
- (C) Concrete activity: Subtracting with Renaming
  ***MAM* Routines: Reason & Respond, with Write-Hide-Show**
- (P) Pupil's Book page 113: Subtracting with Renaming

Equipment

- Countable resources, such as base ten blocks and place value counters
- Groupable base ten resources that can be physically composed and decomposed (e.g. interlocking cubes and bundles of lollipop sticks)
- Counting aids, such as 100 squares, number lines and place value grids
- A sheet of card or paper

Maths language

- There is no new maths language for this lesson.

Teacher note: The children were introduced to exchanging one ten for ten ones in *Maths and Me* for First Class. In Unit 12 – Addition and Subtraction 3 of *Maths and Me* for Second Class, this was reviewed and extended to include exchanging one hundred for ten tens. This was the first lesson in which the children exchanged both hundreds and tens in the same calculation.

Warm-up

(D) **Digital activity: Subtraction Through Tens**
***MAM* Routines: Number Strings, with Write-Hide-Show**

(Recommended on Day 3.)

This PowerPoint presentation contains eight slides, broken into two four-slide sections. Each set of four slides builds up a number string, with one part revealed per slide. Use slideshow mode, so that only one part of the number string is revealed at a time. Ask the children to record their proposed answer only on their MWBs, using Write-Hide-Show. Emphasise that during the 'hide' stage, they should

consider their strategy and other strategies that might work. Record all of the children's answers on the board, being careful not to give away the correct answer. Ask:

- Are there any answers that are unreasonable/unlikely because they do not make sense? Which ones? Why do you think this? (e.g. Is the answer too big or too small because the incorrect operation was used?)
- Which answer do you think is correct? What strategy did you use?
- Could the answer be proved a different way?

Models that reflect, rather than direct, children's thinking: Use concrete materials and/or pictorial representations to model the approaches and strategies shared, in order to make them more visible to all of the class.

Repeat with the next parts of the number string. Repeat with other slides as required.

Let's strengthen

The children may benefit from seeing and/or having groupable base ten resources available to model the calculations concretely. See also the Unit 19 Let's Strengthen Suggestions for Teachers.

C Concrete activity: My Favourite No
***MAM* Routine: Think-Pair-Share**

(Recommended on Day 4.)

Give the children a calculation (e.g. 131 – 78)* to solve on a sheet of card or paper or on their MWBs. Collect and quickly sort these into two groups: correct (Yes) and incorrect (No). From the No group, choose the favourite incorrect No answer (based on common errors from the group). To ensure anonymity, rewrite the calculation exactly as it was done originally and present it to the children. Using Think-Pair-Share, prompt the children to collaboratively discuss the No answer. Ask:

- What is done well/correctly?
- Where did this go wrong? (identifying the error)
- What might this person have been thinking? (identifying the misconception)
- What needs to be done to fix this mistake? (reinforcing the correct procedure/process)
- What have you learned from this mistake? (emphasising mistakes as opportunities to learn)

**Here, you could choose a common error that occurred in the children's work on the previous day.*

Main event

D Digital activity: Dara's Notebook *MAM* Routines: Would This Work?, with Build it; Sketch it; Write it

Display the activity, which gives information about the number of pages that Dara has read. Ask:

- What does this tell us about Dara's pages? How might we represent this number story?
- Build it! Can you use classroom resources to represent this number story? Show us.
- Sketch it! Can you represent this number story as a sketch? Show us.
- Write it! Can you use numbers, words, branching bonds or number sentences to represent this number story? Show us.

Allow time for the children to share how they did it. Ask:

- Is there more than one way to write a number sentence?
- What could we work out?
- How many pages did Dara read today?
- Estimate quickly a reasonable answer. Do you think it will be more or less than one hundred? Explain why.
- Do you think it will be twenty-something, thirty-something ...? Explain why.

Click to reveal the various models and approaches used by the characters. Allowing the children time to comment on each (e.g. What is the same/different about each?) and to justify whether or not the methods/opinions work. Ask:

- Do the answers and/or approaches look reasonable? Explain why.
- How could we check the answers? (e.g. by solving the same calculation a different way, using the inverse operation)
- Which is the most efficient way to arrive at an answer, in your opinion?

Let's deepen

Challenge the children to consider ways to make their calculations more efficient, for example:

When using the column method, is it necessary or unnecessary to write down the new hundred to be carried over? Explain why.

C Concrete activity: Subtracting with Renaming

***MAM* Routines: Reason & Respond, with Write-Hide-Show**

Assessment Opportunity

Write one of the calculations below on the board, and ask the children to use their MWBs to work out and/or record an answer to the calculation. Emphasise that during the 'hide' stage, they should consider their strategy and other strategies that might work. Record all of the children's answers on the board, being careful not to give away the correct answer. Ask:

- Are there any answers that are unreasonable/unlikely because they do not make sense? Which ones? Why do you think this? (e.g. Is the answer too big or too small because the incorrect operation was used?)
- How did you work out your answer? What strategy did you use?
- Could the answer be proved a different way?

Prompt the children to use the column method each time to justify their answer, and at least one other strategy.

Repeat as required, ensuring that there is a mix of operations.

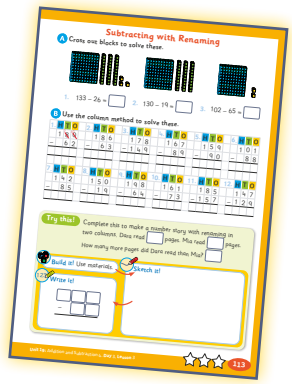
Suggestions:

152 – 24	109 – 28
165 – 39	133 – 87
143 – 26	124 – 49
117 – 32	

Let's strengthen

- The children may benefit from having the column method procedure demonstrated to them, using I Do, We Do, You Do.
- The children may also benefit from having groupable base ten resources available on their desks in order to model the calculations concretely. See also the Unit 19 Let's Strengthen Suggestions for Teachers.

P Pupil's Book page 113: Subtracting with Renaming



Note: There are some examples on this page that do not require renaming. These have been deliberately included to ensure that the children are considering each set of numbers and not just renaming in all cases.

Let's strengthen

The children will benefit from using concrete resources and/or sketching. (See also the Unit 19 Let's Strengthen Suggestions for Teachers.)

Let's deepen

Before calculating, challenge the children to identify if renaming is required and, if so, do it at the beginning. In this way, rather than renaming the tens and then renaming the hundreds at a later stage, they rename both at the start. (For example: In the case of 124 – 49, they start by renaming 124 as 11 tens and 14 ones: 110 and 14.)

Teaching tip

Use the 'My Favourite No' method (see Warm-up) to analyse some of the common errors being made.

Optional consolidation and extension possibilities

Games Bank Play 'Reverse Pig', 'Dice Darts' (from 201), and/or 'Chance Calculations – Subtracting Tens and Ones'.

Home/School Links Book Page 39 could be completed at any stage after this lesson.

Headline Stories Display various Headline Stories to the class and use these to inspire the children to create word problems involving addition and subtraction within 199, to share with others. Find suitable Headline Stories here: edco.ie/emxr Alternatively, you could search online for 'maths headline stories'.

Strategy Wall Add the Calculation Strategy Wall Card for Subtracting, Using the Subtract using Column Method. Refer to it throughout this and subsequent units. The children could also add their own sketches of this strategy, both to the Strategy Wall and in their maths journals.

Let's Strengthen Use the Unit 19 Let's Strengthen PCM Task C for reinforcement questions.

Estimation Station Remind the children to submit estimates, count the items and/or set up a new station.

Review and Reflect Use the Prompt Questions Poster.

Day 5, Lesson 4

Review and Reflect

Focus of learning (with Elements)
• Reviews and reflects on learning (U&C)

Warm-up

Revisit My Favourite No or choose from any of the lesson warm-ups, from this unit or another.

Main event

Use this menu of activity ideas to choose how best to structure this last lesson of the unit to suit your needs and the needs of your class.

Let's talk!	Let's play!
Review and Reflect Poster: Use Think-Pair-Share alongside the prompt questions to review the unit. The children record what they know in their maths journals (e.g. using a concept map). Individual children could present examples of their word problems to the class, and talk about what they have learned.	Play any of the games from the Games Bank for this unit
Maths language	**Maths strategies and models**
Ask the children to explain the following terms (perhaps using examples or drawings on their MWBs): Adding, count on (+), subtracting, count back (–), column method, branching, related facts, number story, number sentence, estimate, reasonable, inverse, efficient, renaming, compare, difference. Use the Unit 19 Maths Language Cards to revise the key terms. For example: if the image and text are cut apart, can the children match them?	Ask the children to give examples of the strategies they used in this unit: how to add/subtract ones, tens and/or hundreds without and with renaming, using the column method; friendly numbers; finding difference, etc. Ask the children to give examples of the models they used in this unit: groupable base ten resources; place value grids; base ten blocks; 100 squares; pictorial representations, such as quick cubes and number lines; abstract models, such as branching; column method, etc. Which strategies and models did they prefer and why?
Progress Assessment Booklet	**Maths eyes**
Complete Questions 69–71 on page 30. Alternatively, these can be left to do as part of a bigger review during the next review week.	Ask the children to identify situations in the classroom or school in which they could use their addition and subtraction skills (e.g. total number of pupils in certain rooms, comparing the numbers of children in classes, totalling and/or comparing the number of pages in books).
Let's strengthen	**Let's deepen**
Identify children who might benefit from extra practice with some of the key concepts or skills in this unit. Consult the Unit 19 Let's Strengthen Suggestion for Teachers and/or use the Unit 19 Let's Strengthen PCM.	Use the Unit 19 Let's Deepen PCM.