Maths and Me: 2nd Class – Short-Term Plan, Unit 1: Numbers to 100 (September: Weeks 1&2)

Strand(s) > Strand Unit(s)	Number > Numeration and Counting; Place Value and Base Ten; Sets and Operations.
Learning Outcome(s)	Through appropriately playful and engaging learning experiences children should be able to demonstrate proficiency in using and applying different counting strategies; understand that digits have different values depending on their place or position in a number; use estimation to quickly determine number values and number calculations; select, make use of and represent a range of addition and subtraction strategies.

Lesson	Focus of Learning (with Elements)	CM	Learning Experiences	Assessment
1	**Counting:** Uses strategies to estimate and count quantities within at least 100 (R); Describes strategies used to count (C)		(D) Choral Counting L1–3 (D) Three-Act Task L1 (D) Notice & Wonder L2, 4	**Intuitive Assessment:** responding to emerging misconceptions
2	**Counting Groups:** Practises repeated addition and group or skip counting (U&C); Uses number lines, benchmark numbers (2s, 10s and 5s), and patterns to count forwards and backwards (A&PS)		(D) Think-Pair-Share L2, 5–6 (D) Reason & Respond L2–7 (D) Would This Work? L3, 4, 5	
3	**Representing Numbers:** Represents numbers up to 100 using different models, illustrations and number expressions (C)		(C) Build it; Sketch it; Write it L3, 4 (D) Quick Images L4, 5 (D) Write-Hide-Show L4–7	**Planned Interactions:** responding to insights gleaned from children's responses to learning experiences
4	**Tens and Ones:** Demonstrates an ability to estimate various arrangements or models of numbers to 99 (U&C); Composes and decomposes the structure of two-digit whole numbers (U&C)		(D) Reason & Respond, with Think-Pair-Share L5	
5	**Comparing and Ordering Numbers:** Compares two 2-digit numbers and equivalent and non-equivalent sets and represents the relationship between these numbers/sets using symbols and language (For example: <, >, and =) (U&C) (C); Orders two-digit numbers (R)		(C) Game: Win Big (or Less Is Best) L5 (C) Board activity: >, < or =? L6 (D) Concept Cartoon L6 (C) Rounding with Number Lines L6	
6	**Estimating Numbers:** Rounds numbers to the nearest ten (R)		(C) Number Hunts L7	**Assessment Events:** information gathered from completion of the unit assessment in the Progress Assessment Booklet pages 8–9
7	**Number Hunts:** Identifies and recognises two-digit numbers in the environment (U&C)		**Print resources** Pupil's Book pages 6–12 Home/School Links Book pages 6–7 PCM 4	
8	**Review and Reflect:** Reviews and reflects on learning (U&C)			

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 1 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 1 Let's Strengthen Suggestions for Teachers. (These address the Common Misconceptions and Difficulties listed below.) - See Unit 1 Let's Strengthen PCM. - See Unit 1 Let's Deepen PCM.
Integration	See individual lesson plans.

Background and rationale

- Numbers to 100 is the first unit in *Maths and Me* for 2nd Class, designed to revise and develop the content of Unit 7 Numbers to 100 in *Maths and Me* for 1st Class, as well as to prepare the children to apply their understanding to numbers up to 200 (Unit 7).

- Given the time of year (the first two weeks of September), the overarching theme of The Classroom is especially meaningful and purposeful for this two-week block of content. For the children to develop their mathematical modeling skills, they also need to be familiar with the concrete materials available in the classroom, especially if it is a new classroom. This unit specifically provides activities to develop that familiarity.

- To enable the children to make rich and meaningful connections between learning experiences in different strand units, this unit combines learning experiences primarily from Numeration and Counting, and Place Value and Base Ten; and, to a lesser extent, Sets and Operations, and Patterns, Rules and Relationships.

- The progression continua statements for this unit largely refer to skills relating to three-digit numbers up to 199. This unit will develop all those skills for numbers up to 100; Unit 7 will complete this work with numbers up to 200.

- Oral counting is a key skill required in order to develop a solid understanding of our number system. To emphasise the importance of oral counting, Choral Counting is the warm-up for the first three lessons, but it could also be used as part of the warm-up to every lesson in this and subsequent units, as needs be. Consider incorporating a quick 1–2-minute counting practice (forwards, backwards, various starting points and/or intervals), focused on a range appropriate to the needs of your class/group, as part of your daily routine, both within and outside Maths lessons. For example, you could have brief counting sessions as part of morning welcome, transitions between lessons, en route to the PE hall or yard, while children are tidying up after breaks and/or when they are going home.

- Counting collections: For the children to embed their counting skills, they need to experience meaningful counting with a purpose, i.e. counting things. While counting sets of objects up to 100 requires a lot of materials, it is not necessary that they all be commercial maths equipment. There are many inexpensive alternatives widely available, such as paper clips, paper fasteners, pieces of pasta, buttons, beads or art sequins. However, it will be necessary to ensure in advance that sufficient numbers of these resources are available.

- In keeping with the new primary mathematics curriculum, *Maths and Me* uses the terminology of tens and ones, as opposed to tens and units. That said, it would be beneficial to explicitly explain that 'units' and 'ones' are interchangeable, especially as the children will likely encounter the term 'units' elsewhere.

The theme of this unit is **The Classroom**.

Common misconceptions and difficulties

Counting, numeration and place value are among the most important topics in primary maths, in that a child's understanding of the fundamental concepts of place value will greatly impact on their understanding of almost all the other concepts, especially in Number and Measures. Therefore, it is vital that misconceptions are identified as early as possible and appropriate interventions implemented.

- The children may struggle to count forwards from any random number.
- They may count forwards comfortably, and yet struggle to count the same range backwards.
- They may struggle with -teen numbers due to inconsistencies in the number–word sequences. For example: In 41/forty-one, the tens are verbalised first, yet in 14/fourteen, the ones/units are verbalised first; we say 'eleven, twelve' when the pattern of the other -teen numbers would suggest that we should say 'oneteen, twoteen'.
- The children may confuse -ty and -teen numbers (e.g. fifty and fifteen sound very alike when said aloud).
- The children may not demonstrate one-to-one correspondence when counting.
- They may struggle with crossing decades when counting aloud (e.g. a child incorrectly says '… 58, 59, 70, 71 …').
- The children may confuse the tens and ones place (e.g. build 83 as 3 tens and 8 ones, or write a representation of 5 tens and 2 ones as 25).
- They may incorrectly bundle together/compose 9, 11, etc. as a ten.
- They may record numbers on a place value grid or branching bond incorrectly (e.g. 56 as 50 tens and 6 ones or 56 = 5 + 6).
- They may not recognise that any number can be partitioned in multiple ways (e.g. 56 as 5 tens and 6 ones, 4 tens and 16 ones, 3 tens and 26 ones, etc.). This is a very important foundational concept leading to regrouping/decomposing tens for the purpose of subtraction.
- They may incorrectly compare ones to determine if a number is smaller/greater, as opposed to looking to tens first.
- They may not appreciate how their ability to subitise can be used as part of the initial visual comparison of numbers.
- They may order numbers in the opposite order to that asked (e.g. order numbers in ascending order when asked to order starting with the greatest number).
- They may incorrectly assume that a number is always rounded to the lower multiple of ten.

The Unit 1 Let's Strengthen Suggestions for Teachers address the common misconceptions and difficulties listed above.

Mathematical models and representations

- Assorted countable resources in classroom, e.g. bears, links, lollipop sticks, counters
- Interlocking cubes
- 100 square
- Ten frames
- Tally marks
- Number lines
- Number paths

Quick cubes

- Branching bonds (an example of part–whole models)
- Place value grid
- Place value counters
- Place value arrow cards
- Base ten blocks
- Quick cubes
- Number shapes
- Bundling sticks
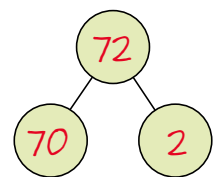
Branching bonds

Teaching tip

The following manipulative printables are available to support this unit: 100 Square, Double Ten Frames, Number Line 0–100, Branching Bonds, Place Value Grid, Place Value Counters, Place Value Arrow Cards, Base Ten Blocks and Number Shapes. Click on the resources icon on the *Maths and Me* book cover on **edcolearning.ie**

Day 1, Lesson 1

Counting

Focus of learning (with Elements)

- Uses strategies to estimate and count quantities within at least 100 (R)
- Describes strategies used to count (C)

Learning experiences

- **P** Hundred square: Counting within 100
  MAM Routine: Choral Counting
- **D** Digital activity: Paper Clips **MAM Routine: Three-Act Task**
- **P** Pupil's Book page 6: Counting

Equipment

- Manipulatives for counting, such as bears, links, cubes, counters and lollipop sticks
- Counting aids, such as 100 square or number lines

Maths language

- numbers from zero to one hundred, count (up/forwards/back(wards)), ones (units), tens, estimate

Warm-up

P **Hundred Square: Counting within 100**
MAM Routine: Choral Counting

See it, then say it! Choose two numbers and use the 100 square to count forwards/backwards. Ask the children if they can spot any patterns. Repeat as required.

Let's deepen

As the children get more confident and competent, challenge them further by asking them to:

- Count forwards from various starting points without the 100 square
- Count backwards from various starting points without the 100 square.

Teaching tip

Oral counting is a key skill required to develop a solid understanding of our number system. Consider incorporating a quick 1–2-minute counting practice (forwards, backwards, various starting points and/or intervals), focused on a range appropriate to the needs of your class/group, as part of your daily routine, both within and outside Maths lessons. For example, you could have brief counting sessions as part of morning welcome, transitions between lessons, en route to the PE hall or yard, while children are tidying up after breaks and/or when they are going home.

To emphasise the importance of oral counting, Choral Counting is the warm-up for the first three lessons, but it could also be added to the warm-up for every lesson in this and subsequent units, as needs be. For variation, other strategies could also be used, e.g. counting can or counting stick.

Main event

D **Digital activity: Paper Clips**
MAM Routine: Three-Act Task

Act 1: Notice & Wonder

Play the video, in which an open box of paper clips gets knocked onto the floor.

Assessment Opportunity

Click to play or ask:

- What do you notice? What do you wonder? (Note any 'wonderings' that could become the basis for a subsequent Maths investigation.)
- (Reveal the focus question.) How many paper clips are there?

Act 2: Productive Struggle

Look at the image and click to play or ask:

- Write an estimate that is too high.
- Write an estimate that is too low.
- Write a reasonable estimate on your MWB.

The children work in pairs or small groups to answer the focus question. If necessary, prompt them by asking:

- Do you have enough information? What else do you need to know?

Once the children explain that they need to see the paper clips more clearly, click to reveal the second image, which shows the paper clips organised into groups of 5. Pause to allow the children to work towards an answer. Click to play or ask:

- What information do you have now?
- To get an answer, what needs to be done?
- What strategies can we use?

Using Build it; Sketch it; Write it, the children choose their preferred way to mathematically model their strategies/solution(s).

Act 3: The Big Reveal

The children share and discuss their strategies, solutions and models. Ask:

- What answer did you get?
- What strategies did you use to get the answer?
- What do you think was the most efficient strategy?

Then flip the image to play a video which reveals the actual total. Ask:

- Is that the answer that you expected? Why or why not?
- What 'I wonder' questions did you answer?
- Do you have any new 'I wonder' questions?

Teaching tip

In their maths journals, the children could use images/words to record what they built, sketched or wrote.

Let's strengthen

Encourage the children to use available counting aids, e.g. the 100 square or the open number line (on their MWBs).

Let's deepen

Challenge some children to subitise groups of 10, e.g. to see that there are three groups of 10 (or six groups of 10) and know that this is 30 (or 60) without counting 10, 20, 30 …

Challenge some children to calculate how many paper clips were missing from the box if it originally held 100.

P **Pupil's Book page 6: Counting**
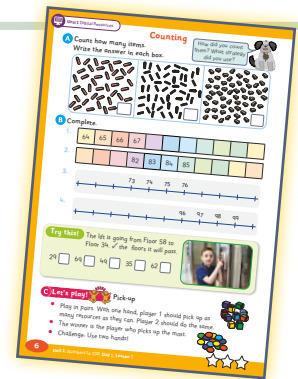
Optional consolidation and extension possibilities

Integration As the theme for this unit is The Classroom, there are lots of opportunities for cross-curricular integration. Language, English: Language and vocabulary development using the theme of My classroom/My school. Language, Gaeilge: *An téama Ar Scoil.* Geography: Local environments and where I live (see also the Eircode activity in the Home/School Links Book on p.6). History: Continuity and change, schools and classrooms of the past.

Counting Collections Using various countable resources in the classroom, the children take a handful, count how many and record the total on their MWBs. They could also reconstruct the Three-Act Task, using a box of paper clips or similar resource.

Estimation Station Fill a transparent container with fewer than 100 small items from the classroom. Leave a box close by where children can 'post' their estimates. After two or three days, ask a group to count the items and identify who had the closest estimate. The children can then set up the station again with more/fewer items or different items.

Review and Reflect Use the Prompt Questions Poster.

Counting Use the Unit 1 Let's Strengthen PCM for more counting practice.

Days 2 and 3, Lesson 2

Counting Groups

Focus of learning (with Elements)

- Practises repeated addition and group or skip counting (U&C)
- Uses number lines, benchmark numbers (2s, 10s and 5s), and patterns to count forwards and backwards (A&PS)

Learning experiences

- **D** Digital activities: Skip Counting in 2s, 10s and 5s (A) & (B) *MAM* Routine: Choral Counting
- **D** Digital activity: The Classroom *MAM* Routines: Notice & Wonder, with Think-Pair-Share; Reason & Respond
- **P** Pupil's Book page 7: Counting Groups

Equipment

- Manipulatives for counting, such as bears, links, cubes, counters and lollipop sticks
- Large container per group
- Counting aids, such as 100 square or number lines

Maths language

- twos, fives

Teaching tip

Counting large collections of objects (up to 100) is an essential learning experience, but it can be time-consuming. Therefore, this lesson is allocated two days.

Warm-up

D Digital activities: Skip Counting in 2s, 10s and 5s (A) & (B) *MAM* **Routine: Choral Counting**

(Day 2) Display the Skip Counting in 2s (A), Skip Counting in 10s (A) and Skip Counting in 5s (A) PowerPoint presentations. The children count aloud along with the text/images. Ask them if they can spot any patterns. Repeat as required.

(Day 3) Display the Skip Counting in 2s (B), Skip Counting in 10s (B) and Skip Counting in 5s (B) PowerPoint presentations. The children count aloud along with the text/images. Ask them if they can spot any patterns. Repeat as required.

Let's deepen

Split the class into two groups (or more). One group starts the count, and, on the signal from the teacher, the other group takes over. Continue, moving from one group and back to the other. This encourages the children to concentrate and listen better.

Main event

D Interactive poster: The Classroom *MAM* **Routines: Notice & Wonder, with Think-Pair-Share; Reason & Respond**

Display the poster and, using Think-Pair-Share, click to play or ask:

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

Assessment Opportunity

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.

If not suggested during 'share', ask:

- What do you think this unit will be about?

Then click to play or ask the questions below. Ask the children to give reasons for their responses.

- What do you think is happening in the classroom?
- What are the children doing?
- What counting strategy is Jay using?
- What numbers will he say?
- What counting strategy is Mia using?
- What numbers will she say?
- What counting strategy is Lexi using? What numbers will she say?
- What counting strategy is Dara using?
- What other ways could this be done?
- Which counting strategy would you choose and why?

(P) Pupil's Book page 7: Counting Groups

Let's investigate! Allow each group to choose a resource (e.g. bears, links, lollipop sticks, counters, pegs, paper clips, paper fasteners, pieces of pasta or interlocking cubes) for their table. Each

group also needs one large empty container. Say:

- Write an estimate that is too big, and one that is too small. Now, write a reasonable estimate.

When ready, ask the children to count the number of items and complete the 'count' section of the table.

Teaching tip

In their maths journals, the children could use images/words to record how they investigated.

When groups have finished counting, they can rotate that same amount of resources to another group. Repeat for up to four different resources. Take note of the counting strategies being used. If not using efficient strategies (e.g. making groups of 10 or 5), prompt the children to reconsider their strategy.

Let's deepen

Challenge some children to count back from 100 to this number.

Let's strengthen

Some children may benefit from choosing an initial amount of resources that is less than 50.

Optional consolidation and extension possibilities

Strategy Wall Add the Calculation Strategy Wall Card for Counting in groups to the class Strategy Wall. 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 their maths journals.

Counting Collections Set up containers or bags labelled A, B, C, D, etc. Add a collection of objects to each, e.g. Bag A could contain beads, Bag B could contain buttons, Bag C could contain paper clips, etc. In pairs or small groups, the children take a collection, count it and record the amount on their MWBs. After a set amount of time, the pairs/groups confer to compare the totals they got for each labelled collection.

Games Bank Play 'Four Throws to 100'.

Missing Multiples Working in pairs, the children use the top open number line on the back of their MWBs to write a set of multiples in order, e.g. 0, 2, 4, 6 …. 20. Once the multiples are written, the children recite them together – forwards, and then

backwards. Then Child A removes (rubs out) one of the multiples. The pair recite the multiples again including the missing number. They repeat until all the written numerals have been removed. They can also repeat this using a different set of multiples (e.g. 0, 5, 10, … 50 or 0, 10, 20, … 100.

Let's deepen

Challenge some children to record and recite multiples beyond these familiar ranges (e.g. 5s from 50 to 100, or 2s from 80 to 100)

Story Read *The King's Commissioners* by Aileen Friedman. A reading of the story is available at: edco.ie/w5u5

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 4, Lesson 3

Representing Numbers

Focus of learning (with Elements)

- Represents numbers up to 100 using different models, illustrations and number expressions (C)

Learning experiences

- **D** Digital activities: Skip Counting in 2s, 10s and 5s (C)
  MAM **Routine: Choral Counting**
- **D** Digital activity: Same But Different
  MAM **Routine: Reason & Respond**
- **D** Digital activity: Representing 65
  MAM **Routine: Would This Work?**
- **C** Concrete activity: Representing Two-Digit Numbers
  MAM **Routine: Build it; Sketch it; Write it**
- **P** Pupil's Book page 8: Representing Numbers

Equipment

- Manipulatives for counting, such as bears, links, cubes, counters and lollipop sticks
- Counting aids, such as 100 square or number lines

Maths language

- There is no new maths language for this lesson.

Warm-up

D **Digital activities: Skip Counting in 2s, 10s and 5s (C)** *MAM* **Routine: Choral Counting**

Depending on the needs of the children, you might wish to reinforce 2s, 10s, and/or 5s. Display the Skip Counting in 2s (C), Skip Counting in 10s (C) and/or the Skip Counting in 5s (C) PowerPoint presentations. The children count aloud along with the text/images. Ask them if they can spot any patterns. Repeat as required.

Main event

D **Digital activity: Same But Different**
MAM **Routine: Reason & Respond**

Using Think-Pair-Share, play the slideshow and ask the children to suggest reasons why the images are the same and why they are different.

D **Digital activity: Representing 65**
MAM **Routine: Would This Work?**

Display the activity, in which the characters show a variety of ways to represent 65. Encourage the children to identify if the representation is accurate, and to justify their reasoning. If not correct, how might the representation be changed to make it correct?

Assessment Opportunity

C **Concrete activity: Representing Two-Digit Numbers**
MAM **Routine: Build it; Sketch it; Write it**

In pairs or groups, ask the children to represent various numbers (from 50 to 100, including numbers ending in zero), using at least one mathematical model in each of the following three categories:

- Build it: Can you use classroom resources to represent the number? Show us.
- Sketch it: Can you represent the number as a sketch? Show us.
- Write it: Can you use words, branching bonds or number sentences to represent the number? Show us.

Optional: Following this task, create a 2-D and/or 3-D display for a particular number (e.g. 73), illustrating all the different ways to represent this number. The display could be changed regularly to represent other numbers, and could be incorporated with, or become, an activity for Number of the Day.

Teaching tip

In their maths journals, the children could draw, write or stick in images of the numbers they represented.
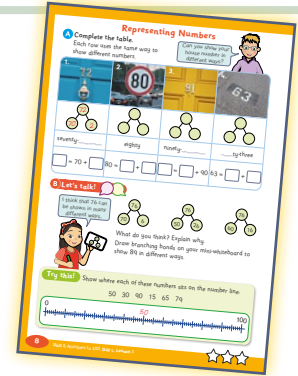
Let's strengthen

Some children may struggle to 'write it' and should be allowed to build and/or sketch only.

Let's deepen

Challenge some children to express the number using word form and/or non-canonical arrangements, i.e. 50 + 15 for 65.

P **Pupil's Book page 8: Representing Numbers**

Optional consolidation and extension possibilities

Number of the Day Select a number and using the prompt Build it; Sketch it; Write it, ask the children to represent the number. Children should be encouraged to choose their own preferred way to do this. This can also be incorporated as part of the general Number Display (see below)

Number Display Set up a Number Display in the classroom. This could include representations of numbers (e.g. Number of the Day above), images or numbers/amounts sourced in print media and online, as well as appropriate labels (see Unit 1 Maths Language Cards). The children could contribute

samples of their own work from the lessons, and label them.

Games Bank Play 'Four Throws to 100'.

Story Read *100 Days of Cool* by Stuart J. Murphy. A reading of the story is available at: edco.ie/7tu6

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

Tens and Ones

Focus of learning (with Elements)

- Demonstrates an ability to estimate various arrangements or models of numbers to 99 (U&C)
- Composes and decomposes the structure of two-digit whole numbers up to 99 (U&C)

Learning experiences

D Digital activity: How Much Is Here? (1)
MAM Routines: Quick Images, with Write-Hide-Show

D Digital activity: The Classroom Cupboard
MAM Routines: Notice & Wonder; Reason & Respond

D Digital activity: Tens and Ones *MAM* Routine: Would This Work?

C Concrete activity: Representing Two-Digit Numbers
MAM Routine: Build it; Sketch it; Write it

P Pupil's Book page 9: Tens and Ones

Equipment

- Manipulatives for counting, such as bears, links, cubes, counters and lollipop sticks
- Counting aids, such as 100 square or number lines
- Place value counters
- Place value arrow cards

Maths language

- tens, ones, one-digit, two-digit, teens, place value

Warm-up

D Digital activity: How Much Is Here? (1) *MAM*
Routines: Quick Images, with Write-Hide-Show

Briefly reveal and then hide the image(s). Ask the children to record the total on their MWBs. Next, ask them to show their answers, and record these on the board. Be careful not to confirm the correct answer. Ask:

- Are there any answers that are unreasonable/ not likely because they don't make sense? Which ones? Why do you think this?
- Which answer do you agree with? Explain the strategy you used to get your answer.

- Did anybody use a different strategy?

When there are no new strategies to discuss, reveal the image again and confirm the answer, using a variety of possible strategies.

Teaching tip

There are 10 slides in this activity. It is not necessary or advised to do all of these. Choose a selection that best suits the ability of your class. This activity will be used again in Lesson 5, so you could split the slides between the two lessons.

Main event

D Digital activity: The Classroom Cupboard *MAM*
Routines: Notice & Wonder; Reason & Respond

Display the poster and use the audio questions below to prompt children to consider the scene, giving reasons for their responses. The classroom store cupboard holds various items organised as packs of tens and loose ones. Click to play or ask:

- Count: how many highlighters are there?
- What counting strategies could be used?
- How many packets of paint brushes?
- How many paintbrushes not in a packet?
- How many paintbrushes altogether?
- How many pencils? How many tens and how many ones?
- How many copies? How many tens and how many ones?
- If 2 more packets of 10 highlighters are bought, how many will there be then?
- Dara needs to give out 30 paintbrushes. How many more ones are needed?
- How many ones are needed to make 43 copies?

D Digital activity: Tens and Ones
MAM Routine: Would This Work?

Begin by asking the children to show 48, 70 and 87 as tens and ones, using concrete materials and/or by writing on their MWBs. Display the activity, in which the characters show a variety of ways for each. Do they work?

Assessment Opportunity

C Concrete activity: Representing Two-Digit Numbers
MAM Routine: Build it; Sketch it; Write it

In pairs or groups, ask the children to represent various numbers (from 50 to 100, including numbers ending in zero), using at least one mathematical model in each of the following three categories:

- Build it: Can you use classroom resources to represent the number? Show us.
- Sketch it: Can you represent the numbers as a sketch? Show us.
- Write it: Can you use words, branching bonds or number sentences to represent the number? Show us.

Encourage the children to also use their place value counters and place value arrow cards to do this.

Teaching tip

In their maths journals, the children could use images/words to record what they built, sketched or wrote.

Let's strengthen

Some children may not fully grasp the concept of tens and ones, i.e. that ten ones = one ten. For example, for 63, when using a place value grid, the child may write 60 tens and 3 ones; when using branching bonds, the child may write 6 + 3. Place value arrow cards (along with

concrete materials) could be very useful in this case. For more practice activities, see Unit 1 Let's Strengthen Suggestions for Teachers and the Unit 1 Let's Strengthen PCM.

(P) Pupil's Book page 9: Tens and Ones
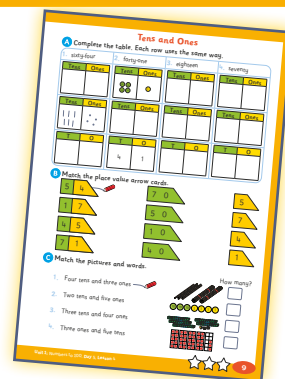
Optional consolidation and extension possibilities

Games Bank Play 'Throw and Keep', 'Throw and Place' and/or 'Dip, Dip!'.

Story Read *All the Little Ones (And a Half)* by Mary Murphy.

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

Maths Eyes Can you think of examples of items that come in packets in tens?

Review and Reflect Use the Prompt Questions Poster.

Home/School Links Book Page 6 can be completed at any stage after this lesson.

Days 6 and 7, Lesson 5

Comparing and Ordering Numbers

Focus of learning (with Elements)

- Compares two 2-digit numbers and equivalent and non-equivalent sets and represents the relationship between these numbers/sets using symbols and language (For example: <, >, and =) (U&C) (C); Orders two-digit numbers (R)

Learning experiences

- **(D)** Digital activity: How Much Is Here? (2)
  MAM Routine: Quick Images, with Write-Hide-Show
- **(D)** Digital activity: Same But Different – Tens and Ones
  MAM Routine: Reason & Respond, with Think-Pair-Share
- **(D)** Digital activity: Comparing Numbers
  MAM Routine: Would This Work?
- **(C)** Game: Win Big (or Less Is Best)
- **(P)** Pupil's Book page 10: Comparing and Ordering Numbers

Equipment

- Manipulatives for counting, such as bears, links, cubes, counters and lollipop sticks
- Counting aids, such as 100 square or number lines
- Place value counters
- 0–9 spinner
- Unit 1 Maths Language Cards

Maths language

- compare, order, fewer, fewest, smaller, smallest, less, less than, least, (<), larger, largest, greater than, greatest, bigger, more, most, (>), equal to, (=)

Warm-up

(D) Digital activity: How Much Is Here? (2) *MAM Routines: Quick Images, with Write-Hide-Show*

Display the Quick Images activity from Lesson 4 again, this time choosing different slides. Briefly reveal and then hide the image(s). Ask the children to record the total on their MWBs. Next, ask them to show their answers, and record these on the board. Be careful not to confirm the correct answer. Ask:

- Are there any answers that are unreasonable/ not likely because they don't make sense? Which ones? Why do you think this?
- Which answer do you agree with? Explain the strategy you used to get your answer.
- Did anybody use a different strategy?

When there are no new strategies to discuss, reveal the image again and confirm the answer, using a variety of possible strategies.

D Digital activity: Same But Different – Tens and Ones *MAM* **Routines: Reason & Respond, with Think-Pair-Share**

Play the slideshow and, using Think-Pair-Share, ask the children to propose reasons why the images are the same or different.

The children could also be asked to suggest what symbol could be used to compare the relationship between the two representations.

Main event

D Digital activity: Comparing Numbers *MAM* **Routine: Would This Work?**

Display the activity, in which the characters show a variety of ways to compare each set of numbers. Ask:

- Which is greater: 70 or 87? Would this work?
- Which is greater: 87 or 48? Would this work?

Choose other random two-digit numbers. Ask the children to use greater than/less than/equals to explain the relationship between them, and to use concrete materials or sketches to justify their explanations.

C Game: Win Big (or Less is Best)

Play 'Win Big' and/or 'Less Is Best' from the Games Bank. Use the place value counters and a 0–9 spinner.

P Pupil's Book page 10: Comparing and Ordering Numbers
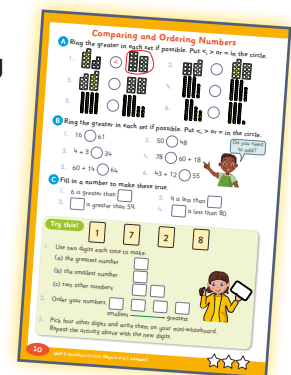
Optional consolidation and extension possibilities

Games Bank Play 'Place Value Domino Draw'.
Estimation Station Remind the children to submit estimates, count the items and/or set up a new station.

Counting Use the Unit 1 Let's Strengthen PCM for more counting practice.
Review and Reflect Use the Prompt Questions Poster.

Day 8, Lesson 6

Estimating Numbers

Focus of learning (with Elements)

- Rounds numbers to the nearest ten (R)

Learning experiences	Equipment
C Board activity: >, < or =? *MAM* **Routine: Reason & Respond, with Write-Hide-Show** **D** Digital activity: Estimating *MAM* **Routine: Concept Cartoon, with Think-Pair-Share** **D** Animation: Rounding Numbers *MAM* **Routine: Reason & Respond, with Write-Hide-Show** **C** Concrete activity: Rounding with Number Lines **P** Pupil's Book page 11: Estimating Numbers	• Manipulatives for counting, such as bears, links, cubes, counters and lollipop sticks • Counting aids, such as 100 square or number lines • Open number line • Place value counters • 0–9 spinner

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Maths language

- nearly, roughly, close to, about the same as, just over, just under, exact, exactly, round to the nearest ten

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Warm-up

C **Board Activity: >, < or =?** *MAM* **Routine: Reason & Respond, with Write-Hide-Show**

Write two random numbers (up to 100) with an empty box in between them on the board, e.g. 14 ☐ 41. The children rewrite what you have written and also insert the correct sign. Ask them to suggest reasons/models to prove their answer.

Main event

D **Digital activity: Estimating** *MAM* **Routine: Concept Cartoon, with Think-Pair-Share**

Display the image of the characters estimating how many counters, and facilitate Think-Pair-Share. Click each character to hear their statement. Afterwards ask (if not answered already):

Assessment Opportunity

- What do you think? Explain why.
- Who do you not agree with? Why is it that they think that?
- How can we find out whose thinking is correct?

D **Animation: Rounding Numbers** *MAM* **Routine: Reason & Respond, with Write-Hide-Show**

Play the animation. The children use Write-Hide-Show on their MWBs to respond to the questions.

C **Concrete activity: Rounding with Number Lines** *MAM* **Routine: I Do, We Do, You Do**

Spin the 0–9 spinner twice to create a two-digit number. Use I Do, We Do, You Do to demonstrate how to use the open number lines on the MWBs to round the number to the nearest ten. Repeat as required,

gradually reducing support until the children can do it independently.
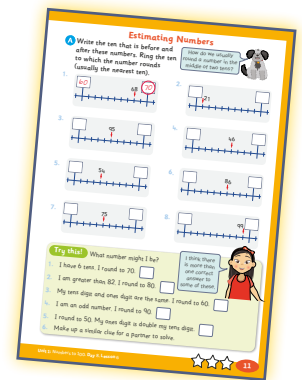
Let's strengthen

Some children may benefit from the additional support of a more detailed 0–100 number line (e.g. a numeral roll, measuring tape or metre stick).

Let's deepen

Challenge some children to calculate the answer by mentally visualising the number line and not actually sketching it.

P **Pupil's Book page 11: Estimating Numbers**

Optional consolidation and extension possibilities

Story Read *The Long Wait* by Annie Cobb.

Strategy Wall Add the Calculation Strategy Wall Card for Rounding to the Nearest Ten to the class Strategy Wall. 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.

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.

Home/School Links Book Page 7 can be completed at any stage after this lesson.

Day 9, Lesson 7

Number Hunts

Focus of learning (with Elements)

- Identifies and recognises two-digit numbers in the environment (U&C)

Learning experiences

D Digital activity: What Am I?
MAM **Routine: Reason & Respond, with Write-Hide-Show**
C Concrete activity: Number Hunts
P Pupil's Book page 12: Number Hunts

Equipment

- The children's own books
- A variety of print materials, such as newspapers, magazines and brochures

Maths language

- There is no new maths language for this lesson.

Warm-up

D Digital activity: What Am I? *MAM* **Routine: Reason & Respond with Write-Hide-Show**

Play the slideshow. The children are given several clues to guess a number. They use Write-Hide-Show on their MWBs to respond to the instructions/ questions.

## Main event

C Concrete activity: Number Hunts

Number Hunt 1: Using their Pupil's Book, the children race to be first to open the book on the two-digit page number called out by the teacher. Ask:

Assessment Opportunity

- What is the first word/sentence/picture on the page?

Repeat this using any other book for which every child has a copy (e.g. a reader, textbook or dictionary).

Number Hunt 2: Using newspapers, magazines and brochures, the children find numbers in standard or word form. They cut out and display the numbers.

P Pupil's Book page 12: Number Hunts
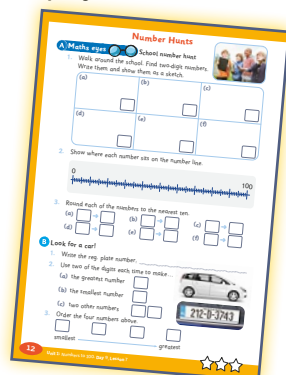
Teaching tip

The purpose of this page is to encourage the children to 'switch on their Maths Eyes' and become more aware of the numbers in their environment. In advance, check out the environment to ensure there are actual numbers to be seen (on doors, car parks, signposts, etc.). If there are not many, it may be useful to add some! You could also enlist the help of other teachers and/or older pupils when working outside with the children. If it is not suitable to find a car registration plate, alternatively display a registration plate on the IWB (perhaps your own car) and/or ask the children to find out the registration number of a family member.

If working in a multi-class situation, all the children could participate if they are organised into mixed class groupings, where the 2nd Class children, using their Pupil's Book, are the scribes for their group. Depending on the ability of the group as a whole, it may be necessary to differentiate the task (by outcome, by range of numbers available, etc.).

Optional consolidation and extension possibilities

Story Read *One Hundred Hungry Ants* by Elinor J. Pinczes. A reading of the story is available at: edco.ie/xkv6

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 10, Lesson 8

Review and Reflect

Focus of learning (with Elements)

● Reviews and reflects on learning (U&C)

Warm-up

Carry out a warm-up activity of your choice from one of the lessons in this unit.

Main event

Choose from this menu of activity ideas, or choose your own way to best structure this last lesson to suit your needs and the needs of your class.

Let's talk!	Let's play!
Use Think-Pair-Share to review the unit. Individual children could present examples of their own drawings/work/constructions to the class, and talk about what they have learned.	Play a game from the Games Bank.
Let's create!	**Maths strategies and models**
Create a 2-D and/or 3-D display illustrating all the different ways that numbers can be represented. Include examples of two-digit numbers found in print or online media. Estimation Stations: Each group of children creates their own Estimation Station for the other groups. When complete, each group rotates to the others to leave their estimate. Afterwards, count to reveal the totals.	Using various two-digit numbers (of teacher's or children's choosing), ask the children to show how they can model/represent numbers. This could include: concrete materials, place value counters, place value arrow cards, number lines/paths, base ten blocks (see PCM 4), place value grids, branching bonds, etc. Ask the children to explain how they estimated and/or rounded numbers. Which strategies and models did they prefer and why?

Progress Assessment Booklet	Maths eyes
Complete Questions 1–6 on pages 8–9. Alternatively, these can be left to do as part of a bigger review during the next review week.	Go for a walk around the school. Ask: ● Where can you see examples of one- and two-digit numbers? Take photos to record them. Create a number trail specific to your school. You could use the images collected previously. Enlist children from the older classes to create a trail for the younger classes.
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 1 Let's Strengthen Suggestions for Teachers.	Select one of the cognitively challenging tasks on the Unit 1 Let's Deepen PCM (this could be displayed on the class board) and encourage the children to work together in groups to model solutions for the task. Alternatively, each group could choose their own preferred task to solve.

Notes