Maths and Me: 2nd Class – Short-Term Plan, Unit 5: Time 1 (November: Weeks 1&2)

Strand(s) > Strand Unit(s)	Measures > Time.
Learning Outcome(s)	Through appropriately playful and engaging learning experiences children should be able to understand how time is measured, expressed and represented; explore equivalent expressions of time.

Lesson	Focus of Learning (with Elements)	CM	Learning Experiences	Assessment
1	**Units of Time:** Articulates and shares prior understanding of time concepts and vocabulary (U&C); Identifies, compares and sequences units of time (R); Identifies and matches equivalent units of time (R)		D Notice & Wonder L1–3, 5–6 D Think-Pair-Share L1–3, 5–6 D Reason & Respond L1–6 D Write-Hide-Show L1–6 D Would This Work? L2 D Build it; Sketch it; Write it L2 P C Create a Calendar L3 P C Game: Calendar Game L3 P Game: Measures of Time Bingo L4 D Quick Images L5–6 **Print resources** Pupil's Book pages 32–37 Home/School Links Book pages 14–15 PCMs 15, 16, 17, 18, 19, 20, 21, 22	**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 pages 13–14
2	**Measuring Time:** Estimates and compares lengths of elapsed time (R); Selects and uses appropriate timers for specific purposes (A&PS) [D] Build it; Sketch it; Write it L2			
3	**Calendars:** Reads day, date and month, using a calendar, and identifies the season (C); Investigates and discusses calendar patterns and characteristics of months and seasons (R); Analyses and creates calendars (A&PS)			
4	**O'Clock and Half Past:** Recognises and expresses time in hours and half hours on analogue and digital clocks (U&C); Reads and records time in one-hour and half-hour intervals on analogue and digital clocks (C); Recognises the significance of the hour hand (analogue) (U&C)			
5	**Quarter Past:** Recognises and expresses time in quarter hours on analogue and digital clocks (U&C); Reads and records time in quarter-hour intervals on analogue and digital clocks (C)			
6	**Quarter To:** Recognises and expresses time in quarter hours on analogue and digital clocks (U&C); Reads and records time in quarter-hour intervals on analogue and digital clocks (C)			
7	**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 5 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 5 Let's Strengthen Suggestions for Teachers. (These address the Common Misconceptions and Difficulties listed below.) • See Unit 5 Let's Strengthen PCM. • See Unit 5 Let's Deepen PCM.
Integration	See individual lesson plans.

Background and rationale

- This unit is specifically positioned to come after Fractions (quarters) and before Location and Transformation (quarter turns, clockwise, anti-clockwise).
- In 1st Class, the children explored time in half-hour intervals, in both digital and analogue forms. Therefore, this will be the first time they are introduced formally to quarter-hour intervals.
- This unit draws the children's attention to time, duration and sequencing of activities and events in their own lives, and helps them to use the language of time to describe these events and daily routines. You can further consolidate this by discussing time throughout the school day: *first*, *next*, *after*, *current time*, *day*, *date*, *month*, *season*.
- The idea of time passing can be hard for young children to understand as it is an abstract concept. Make it concrete for them by referring to a variety of schedules and different types of clocks at key points during the day, and use timers as part of regular classroom management.

Supporting the learning of time throughout the year

Time is an abstract concept and an essential life skill. Managing daily activities and telling the time are vital yet tricky skills for the children to learn. Therefore, it is essential that teachers maximise all opportunities to embed and reinforce understanding of time concepts, for the children to learn about it broadly and naturally – not just during these units on Time, but throughout the school day and school year.

Creating a time-rich learning environment

Where possible, display the following physical resources, in prominent locations, and incorporate them in a meaningful way into the daily routine:

- Display an analogue clock, with all 12 numerals, minute interval markings around the outer edge, with easily distinguishable hands.
- Use images of clocks marking notable times throughout the day, e.g. lunchtime, play time, home time.
- Use sand timers, online timers and/or countdown timers (with visual and audible features) to measure and monitor the time available for completing certain tasks.
- Make a display of the current day, date, month, season and weather, which could be incorporated into the morning routine. For example: 'Today is Monday the 3rd of March. Yesterday was …' Do this as appropriate to the class level; it could start as quite a simple routine and then develop in detail as the school year progresses.
- Current Calendar: At the beginning of each month, co-create a calendar for the month, and on it note any dates of significance (birthdays, school holidays, etc.).

- Use lists (poster, flash cards, etc.) of the days, months and seasons. The months list could also be used to incorporate birthday data.
- Use visual timetables and schedules (whole class and for individuals). Name each part of the routine and place it on the timetable each morning, with the help of the children. Some classes benefit from the timetable being further broken up into parts of the day (e.g. before break, after break, after lunch). Include a card that reads 'flexible' to help the children understand that routines always need to be flexible.
- Classroom Displays: Explore broader concepts of time in other subjects, e.g. change, growth, development and life cycles in plant, animal and human life, both in SPHE and Science, Technology and Engineering; planets, weather and seasons in Geography; sequencing events in stories and developing a sense of chronology in Language and History.

Time-rich Maths Talk

Refer to, and talk about, the resources listed above whenever appropriate.

Emphasise/incorporate the vocabulary of time by using it in meaningful contexts, as often as possible. Include the time of the event and/or its duration. For example:

- We have lunch at 12 o'clock (event). It lasts 15 minutes (duration).
- Sam's birthday is on Saturday (event). How many more sleeps until his birthday (duration)?
- We have 15 minutes to do this (duration).
- What will we do first/next/last?

Play and playful learning

- Pretend Play: Incorporate time devices as part of the props and equipment available. This could include shop opening and closing times, recipes for cooking and baking, timers, clocks, watches, illustrations of sequencing steps (e.g. planting in the garden, creating an art piece for the art gallery.)
- Physical Play and Games: Use timers and time language for races, obstacle courses and games, e.g. 'Who came first? Who was next? How long does it take to complete the obstacle course? Can we get faster? How many jumps/goals before the timer runs out?'

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

Common misconceptions and difficulties

Time is an abstract concept and the perception of the passage of time depends on the perspective of the individual, i.e. time flies when you're having fun! Time is also the only measure taught in primary school that is not on a base-ten system.

- The children may believe that time passes much slower or faster than it does in reality.
- They may have difficulty recalling the sequence of familiar units of time (e.g. days, months, seasons) and their equivalents (e.g. the number of hours in a day, days in a week).
- They may have difficulty reading, sequencing and expressing times to hour, half-hour and/or quarter-hour intervals.
- They may incorrectly assume that: there are five days in a week; all months have the same number of days; all months start on the same day; a date will fall on the same day every year; or that the calendar is structured like a 100 square (i.e. rows of ten with the 1st of the month in the top left-hand corner).
- They may incorrectly assume that time is measured on base-ten system (e.g. 100 minutes in an hour).
- They may incorrectly assume that on an analogue clock, the hour hand only points directly at a number and not appreciate that it travels slowly from number to number.
- They may incorrectly assume that the closest hour is also the current hour (e.g. for a quarter to 10, the child might assume that it must be 10:45 since the closest hour is 10).

- They may confuse language such as: *before* and *after*; *quicker* and *slower*; *earlier* and *later*.
- They may confuse the hands on the analogue clock, the direction in which they travel, and the words 'clockwise' and 'anti-clockwise'.
- They may misunderstand 'more time taken' to mean 'faster', and 'less time taken' to mean 'slower'.
- They may struggle to write out times in analogue/word form. (Allow the children to write the time in digital form, while encouraging them to verbalise this time in analogue word form also.)

The Unit 5 Let's Strengthen Suggestions for Teachers address the common misconceptions and difficulties listed above.

Mathematical models and representations

- Representations of analogue and digital watches/clocks, timers and time apps on devices (tablets, mobile phones, etc.)
- Cubes, links and number lines to represent the number of seconds and minutes
- Variety of calendar types

Jan							Feb							Mar							Apr						
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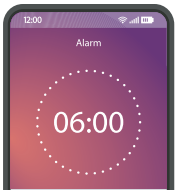
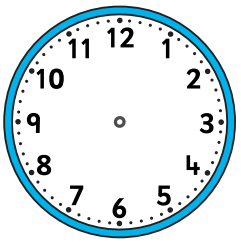
30																					30	31					

Calendar 12 months to a page



Digital time on a device



Analogue clock

Teaching tip

An Analogue Clock Face and Hands manipulative printable is available to support this unit. Click on the resources icon on the *Maths and Me* book cover on **edcolearning.ie**

Day 1, Lesson 1

Units of Time

Focus of learning (with Elements)

- Articulates and shares prior understanding of time concepts and vocabulary (U&C)
- Identifies, compares and sequences units of time (R)
- Identifies and matches equivalent units of time (R)

Learning experiences

- (D) Digital activity: Athletics ***MAM* Routines: Notice & Wonder, with Think-Pair-Share; Reason & Respond, with Write-Hide-Show**
- (D) Animation: Training Day
  ***MAM* Routines: Reason & Respond, with Write-Hide-Show**
- (P) (C) Activity: Comparing and Ordering Units of Time
  ***MAM* Routine: Reason & Respond**
- (P) Pupil's Book page 32: Units of Time

Equipment

- Scissors
- Glue
- PCM 15

Maths language

- time, clock, watch, stopwatch, timer, digital, second(s), minute(s), hour(s), day(s), week(s), month(s), year(s), season(s), fortnight(s), afternoon, halfway, last, longer, shorter, compare, order, greater than (>), less than (<)

Warm-up

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

Display the poster and, using Think-Pair-Share, ask:

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

Record the children's responses to both questions on the class 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: Athletics *MAM* Routines: Reason & Respond, with Write-Hide-Show**

Display the poster. Tell the children to use Write-Hide-Show on their MWBs to respond to the questions below. Ask them to give reasons for their responses (some of these questions may have already been answered in the warm-up). Click to play or ask:

Assessment Opportunity

- What do you think this unit will be about?
- What tools can be seen that can be used to measure time?
- What is each of them telling us?
- What time is it?
- Can you think of different ways to say or write this time?
- What date do you think it is?
- Can you think of different ways to say or write this date?
- What month do you think this is? Explain why.
- What season do you think this is? Explain why.
- What unit of time do you think the coach is measuring?

(D) **Animation: Training Day *MAM* Routines: Reason & Respond, with Write-Hide-Show**

Play the animation, in which Lexi is taking part in a training session at her running club, and preparing for

an upcoming track competition. The questions below are asked during the animation. Use Write-Hide-Show to collect feedback.

Teaching tip

These questions can be used to assess the children's understanding and may identify those who are confident or struggling. Encourage the children to justify their responses and to use appropriate evidence and/or models to explain their reasoning. Prompt the children to use accurate vocabulary and equivalent expressions of time when appropriate.

- Lexi trains twice a week. Her favourite event is the 200 m race. Her coach is very happy with her times and says that she is 2 seconds faster than she was three days ago. What was her time three days ago?
- It is Saturday afternoon. How do we know this?
- What day was it three days ago?
- What season do you think it is? Why do you think that?
- Lexi is halfway through her hour-long training session at her running club. What time is it now?
- At what time does the session start and end?
- Lexi is busy preparing for an upcoming track competition on the last Saturday of the month. What date is it on?
- How many days until the competition?
- On what days does Lexi train?

Activity: Comparing and Ordering Units of Time ***MAM*** **Routine: Reason & Respond**

Reflecting on the story, ask the children to answer the following questions and to give reasons for their responses:

- What units of time were part of the story? (seconds, minutes, hour, days, weeks, month)
- What other units of time can you think of?
- Which is shorter: a ... (e.g. week) or a ... (e.g. month)?
- Which is longer: a ... or a ...?

Distribute scissors, glue and a copy of PCM 15: Comparing and Ordering Units of Time. Ask the children to order the units of time in the spaces provided.

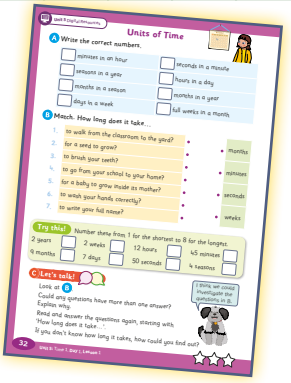
Let's deepen

Challenge some children to turn the units of time labels face down, pick two at random and place them on either side of greater than (>) or less than (<).

Challenge some children with additional questions, such as:

- What can you do in two seconds/minutes/hours/days/weeks/months? (e.g. a two-day weekend break, two-week Christmas/Easter holidays, two-month summer holidays)

Pupil's Book page 32: Units of Time



Let's strengthen

Because of the nature of this lesson, there is a lot of language on this page. Some children may benefit from completing the page in pairs/groups or orally as a whole class.

Let's deepen

Following on from the *Let's talk!* activity on this page, the children could consider, research and/or investigate each of the questions in B. If time allows, the children could plan how they would investigate and measure for some of the questions. (See PCM 3: Investigation Planning Sheet.)

Optional consolidation and extension possibilities

Integration PE: Athletics: Timing races, matches, identifying fastest. SPHE: Healthy lifestyles. Science: Food and nutrition. Language: English: Recount writing (diary entries; use of time connectives: *first*, *next*, *last*, etc.). Gaeilge: An t-Am. Music: Notation, steady beats.

Time Display Set up a Time display in the classroom. Include calendars, timers, clocks and other time devices, as well as appropriate labels (see Unit 5: Maths Language Cards). The children could contribute samples of their own work from the lessons. They could source time-related objects from home to add to the display.

Review and Reflect Use the Prompt Questions Poster.

Let's Investigate How long does it take? (See the Unit 5 Let's Deepen PCM: Time 1.)

Story Read *A Second Is a Hiccup* by Hazel Hutchins, or listen to a reading at: edco.ie/m8u8

Headline Story Create, model and solve maths questions. (See the Unit 5 Let's Deepen PCM: Time 1.)

My Book of Time See PCM 16 and PCM 17. The children could work on this at any stage over the course of this unit. (The children could also resume work on this when they reach Unit 14 – Time 2 later in the year.)

Day 2, Lesson 2

Measuring Time

Focus of learning (with Elements)

- Estimates and compares lengths of elapsed time (R)
- Selects and uses appropriate timers for specific purposes (A&PS)

Learning experiences

- (D) Digital activity: The Notebook
  ***MAM* Routines: Notice & Wonder, with Think-Pair-Share; Reason & Respond, with Write-Hide-Show**
- (D) Digital activity: Fastest? Slowest?
  ***MAM* Routine: Would This Work?, with Build it; Sketch it; Write it**
- (P) Pupil's Book page 33: Measuring Time

Equipment

- Variety of timers (digital stopwatch or watch with timer, mobile phone, tablet, laptop, internet)
- Analogue watch/clock with a second hand
- Sand timer

Maths language

- faster, slower, fastest, slowest

Warm-up

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

Display the poster and, using Think-Pair-Share, ask:

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

Record the children's responses to both questions on the class 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: The Notebook *MAM* Routines: Reason & Respond, with Write-Hide-Show**

Display the poster. The children use Write-Hide-Show on their MWBs to respond to the questions below. Ask them to give reasons for their responses (some of these questions may have already been answered in the warm-up):

Assessment Opportunity

- What do the numbers mean?
- What might a coach use to collect this information?
- What other devices can be used to measure time?
- On what date above was Lexi fastest?
- On what date was Lexi slowest?
- How could you prove your answer?
- On what date above was Sadie fastest?
- On what date was Yomna slowest?
- What was Sadie's fastest time?
- What was Kate's slowest time?

Let's deepen

Challenge the children with the following questions:

- Complete this sentence: On Saturday 11th, _____ was faster (or slower) than _____.
- The coach can run this distance twice as fast as Lexi. What is his time for the 200 m race?
- The coach has been told that only two children can take part in each event. Who do you think should go through?

Let's strengthen

Some children may benefit from experiencing how a 'greater time taken' means 'slower', and 'less time taken' means 'faster'. For example, bring the children outside to run an appropriate distance, which is roughly timed. Ask them to predict, with this question:

- If you run the same distance again, but as slowly as you can, would the time taken be a greater number or a lesser number than the first run?

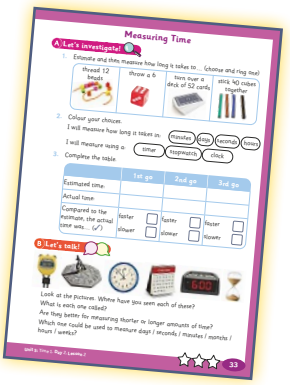
D **Digital activity: Fastest? Slowest?**
***MAM* Routine: Would This Work?, with Build it; Sketch it; Write it**

Display the activity. Begin by asking the children to use Build it; Sketch it; Write it to model and solve the question: which of these times (54, 52 and 50 seconds) is the fastest and which is the slowest? Allow time for the children to share how they did it.

Then, click to how the programme characters show a variety of ways to compare the numbers: do they work?

Ask the children to justify the strategies used, and perhaps say which strategy they would prefer to use.

P **Pupil's Book page 33: Measuring Time**



Teaching tip

Allow the children to choose which task to complete, how to conduct the investigation (e.g. as a whole class, in groups or individually), how to time the task, and what kind of timer they should choose. This will depend on the resources available. This could also be completed as stations (i.e. set up the required resources for a task on a table, and when the group has completed that task, they could move on to try another one).

Let's deepen

Challenge the children to reflect on the effectiveness and/or accuracy of the available timers in the classroom (e.g. a one-minute sand timer will only be able to give you an approximate time close to the nearest minute).

Challenge the children to suggest how they could measure time without a timer (e.g. count how many claps it takes; recite 'one banana, two bananas, three bananas …').

Optional consolidation and extension possibilities

Measuring Time Maximise opportunities to measure time on an ongoing basis: use timers as part of regular classroom management; estimate and discuss how long class activities will take, etc.

My Book of Time See PCM 16 and PCM 17.

Story Read *Me Counting Time: From Seconds to Centuries* by Joan Sweeney, or listen to a reading at: edco.ie/6s7g

Review and Reflect Use the Prompt Questions Poster.

Days 3 and 4, Lesson 3

Calendars

Focus of learning (with Elements)

- Reads day, date and month, using a calendar, and identifies the season (C)
- Investigates and discusses calendar patterns and characteristics of months and seasons (R)
- Analyses and creates calendars (A&PS)

Learning experiences

- D Digital activity: The Calendar ***MAM* Routines: Notice & Wonder, with Think-Pair-Share; Reason & Respond, with Write-Hide-Show**
- D Digital activity: The Calendar – Months of the Year ***MAM* Routines: Reason & Respond, with Write-Hide-Show**
- D Animation: Days in Each Month ***MAM* Routine: Reason & Respond**
- P C Activity: Create a Calendar
- P C Game: Calendar Game
- P Pupil's Book page 34: Calendars

Equipment

- Variety of calendar types
- Scissors
- PCM 18

Maths language

- calendar, date, names of days, months and seasons, year, leap year, 1st, 2nd, 3rd ..., weekdays, weekend

Teaching tip

Be mindful of children from different cultures and countries when it comes to using numbers only to write the date. While the convention DMY is the most common format in the world, YMD is used in some other countries, including China, Japan, Korea, Hungary and Lithuania, while MDY is used in the USA.

Warm-up

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

Display the poster and, using Think-Pair-Share, ask:

- What do you notice?
- What do you wonder?
- How many days are there in this month? How do you know?
- What month do you think this is?

Record the children's responses to both questions on the class 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: The Calendar *MAM* Routines: Reason & Respond, with Write-Hide-Show

Display the poster. The children use Write-Hide-Show on their MWBs to respond to the questions below. Ask them to give reasons for their responses (some of these questions may have already been answered in the warm-up). Click to play or ask:

Assessment Opportunity

- What is this called?
- What patterns can you see?
- Look at the date of each of the Tuesdays in this month. What do you notice?
- How is this calendar the same as or different from other calendars you have seen?
- What do we call the days we are not at school?
- What do we call the days we are at school?
- What date is the second Saturday of the month?
- The track competition is on the last Saturday of the month. What date is this?
- Show me how to write this date using just numbers.
- How many months are there in a year?

Let's strengthen

Some children may need extra practice at sorting and sequencing days, months and seasons. Consult the Unit 5 Let's Strengthen Suggestions for Teachers and/or use the Unit 5 Let's Strengthen PCM: Sorting and Sequencing Days, Months and Seasons.

D Digital activity: The Calendar – Months of the Year *MAM* Routines: Reason & Respond, with Write-Hide-Show

Display the image, which shows a calendar with all 12 months of the year. Ask:

- How many months are there in a year?
- How many days are there in each month? How do you know?
- Is this year a leap year? How do you know?
- Do you know a way to remember the number of days in each month?

D Animation: Days in Each Month

***MAM* Routine: Reason & Respond**

Play the animation (repeatedly, if required). Check for understanding/knowing by asking the children to repeat and/or show a way to remember the number of days in each month.

Teaching tip

The following activities are suggestions. Choose to conduct one or both, depending on the (emerging) needs of your class. These activities could also form the basis for stations.

P C Activity: Create a Calendar

Print enough copies of PCM 18: Blank Calendars to ensure that every pair gets at least one blank calendar grid. Ask the children to use the grid to create the calendar for a given month (e.g. the current month, or a month in the current school year).

Teaching tip

Ask the children to paste their calendars into their maths journals.

Let's strengthen

Some children may require the support of a sample calendar to complete the task.

Let's deepen

Challenge the children to create the calendar for the month before/after the month in the digital resource 'The Calendar' (i.e. before/after November). Do they realise that the days and dates in the preceding/following month must align with the days and dates at the beginning/end of the November calendar?

P C Game: Calendar Game

For this game, the children need to be able to read a month from a calendar. They could use the one they created in the activity above, or you could display any calendar month on the IWB. Distribute a pair of scissors and a copy of PCM 19: Calendar Game to each pair/group. Read the instructions below and check that the children know how to play.

Instructions for play:

- Cut out the cards and lay them face down on the table.
- Each player/team picks up a card and poses the question on the card to another player/team. If there is a blank space on the card, the player/team chooses a word/date from those suggested.
- If the question is answered correctly, the answerer keeps the card.
- If the question is answered incorrectly, the questioner keeps the card.
- The person/team with the most cards at the end wins the game.

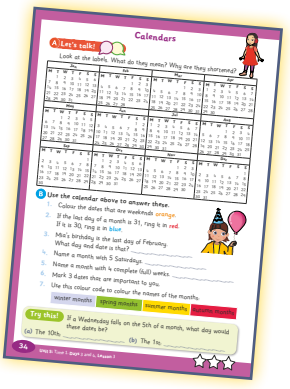
Let's strengthen

Some children may benefit from seeing the game being demonstrated first, before playing it independently in pairs/groups.

Variation: Provide the children with a one-page, 12-month calendar (e.g. print out the calendar of the current year or use the calendar on page 34 of the Pupil's Book. This time, each group chooses a focus month at the start of the game. Afterwards, ask:

- Were there any questions that were easier to answer this time?
- Why is that?
- In what ways were the calendars similar or different?
- Which calendar do you prefer? Why?

P Pupil's Book page 34: Calendars



Let's strengthen

Some children may need to start with calendars that have full-form day labels (e.g. 'Tuesday'), and progress to those with abbreviated day labels (e.g. 'Tue' or 'Tu') when ready.

Optional consolidation and extension possibilities

Ordering Mystery Months Search online for a number of different one-page, 12-month calendars for random years (not the current year). Print out two copies of a different calendar for each pair/group and distribute, along with scissors. Taking one of their copies, each pair/group cuts up the months, cuts off the month headings, shuffles the pieces, and then gives the pieces to another pair/group to put back together in the correct order. Once ordered, each pair/group can use their uncut copy to check the answers of the other pair/group.

Measuring Time Maximise opportunities to refer to calendars on an ongoing basis to explore the broader concepts of time – days, weeks, months, seasons and years. Ask the current day, date, month and season. Use opportunities in Science, such as growing plants, tree diaries, seasons, and life cycles. Discuss chronology in History.

Story Read *Game Time* and *Pepper's Journal: A Kitten's First Year,* both by Stuart J. Murphy.

Let's deepen

See the Unit 5 Let's Deepen PCM: Time 1. The second task (What is the most likely month?) can be done any time after this lesson.

My Book of Time See PCM 16 and PCM 17.

Home/School Links Book Page 14 can be done any time after this lesson.

Review and Reflect Use the Prompt Questions Poster.

Day 5, Lesson 4

O'Clock and Half Past

Focus of learning (with Elements)

- Recognises and expresses time in hours and half hours on analogue and digital clocks (U&C)
- Reads and records time in one-hour and half-hour intervals on analogue and digital clocks (C)
- Recognises the significance of the hour hand (analogue) (U&C)

Learning experiences

- (P) Game: Measures of Time Bingo
- (D) Animation: Broken Watches
  ***MAM* Routines: Reason & Respond, with Write-Hide-Show**
- (C) Digital to Analogue to Digital
  ***MAM* Routines: Reason & Respond, with Write-Hide-Show**
- (P) Pupil's Book page 35: O'Clock and Half Past

Equipment

- Teaching clocks (preferably geared, i.e. the hour hand moves when the minute hand moves)
- Online clocks
- PCM 20

Maths language

- analogue, digital, short hour hand, long minute hand, o'clock, half past, __:30 ('nine thirty', etc.)

Warm-up

(P) Game: Measures of Time Bingo

Play the game as a whole class, with the teacher as bingo caller. You will need a copy of PCM 20: Measures of Time Bingo Spinner.

Instructions for play:

- Before the game, every player writes four of the following numbers on their MWBs: 3, 4, 7, 12, 24, 28, 29, 30, 31, 60.
- Spin the spinner and call out the statement that it lands on.
- Players check the numbers on their MWBs. If they have the number that goes with the statement, they cross it out.
- The first player to cross out all four of their numbers and call out 'Bingo!' wins the game.

After someone calls 'Bingo!' go through each statement spun in that game, and ask the children to justify the matching number. Specifically, ask/say:

- How many minutes in an hour? I don't believe it! Prove it!

Let's deepen

Challenge the children to answer the following questions:

- Why do you think we are only picking from certain numbers?
- Are there any numbers that are more likely to get crossed out (have a better chance)?

Main event

D Animation: Broken Watches *MAM* Routines: Reason & Respond, with Write-Hide-Show

Play the animation, in which Lexi's dad is bringing her shopping for a new sports watch. Using Write-Hide-Show to collect feedback, ask the children to answer the following questions (some of which are included in the animation) and to give reasons for their responses:

Assessment Opportunity

- What time of the day do you think it is?
- In the watch shop, Lexi notices some watches that have been left at the shop to be repaired. What is wrong with the watches?
- If it is 3 o'clock, which broken watch can 'best' tell the time?
- Which broken watch would be best to use to time how long it takes to run around a running track twice?

After Lexi has chosen the watch she wants, the animation shows the five broken watches from earlier in the animation again. Each watch now partially shows the time 3:30/half past three. Ask:

- What time is it now?
- Can you think of different ways to say or write this time? (Record the suggestions on the board, e.g. half three, half past three, $\frac{1}{2}$ past 3, three thirty, 30 minutes past three.)
- How many minutes are in an hour?

Do the children recognise that the hour hand is the most significant hand on an analogue clock/watch as it can be used to tell the time with quite a level of accuracy?

Let's strengthen

Some children may benefit from reviewing the O'Clock and Half Past videos from 1st Class, and/or getting more practice at sorting and sequencing half past and o'clock times. Consult the Unit 5 Let's Strengthen Suggestions for Teachers and/or use the Unit 5 Let's Strengthen PCM: Sorting and Sequencing Times.

C Digital to Analogue to Digital *MAM* Routines: Reason & Respond, with Write-Hide-Show

Provide the children with teaching clocks. Write '5:00' on the board and ask/say:

- What time does this say?
- Show this time on your clock.
- What time would be an hour later than this time? Show me on your clock.
- What time would be an hour earlier than this time? Show me on your clock.

Repeat as required, with other digital times, both on the hour and on the half hour.

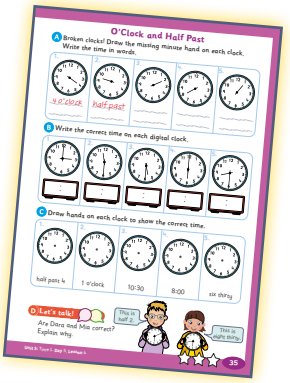
Use a clock (a teaching clock or the Time tool from the Manipulatives e-Toolkit) to create/select a random o'clock or half-past time to display to the class. Ask the children to respond to the following questions (using the equivalent digital time) on their MWBs and to give reasons for their responses:

- Write this as a digital time on your MWBs.
- What time would be an hour later than this time? Write the digital time.
- What time would be an hour earlier than this time? Write the digital time.

Repeat as required.

Pair work: One child writes a digital time on their MWB and their partner makes the matching analogue time on their clock. Swap roles and repeat. Next, one child makes a time on their clock and their partner writes the matching digital time on their MWBs. Swap roles and repeat.

P Pupil's Book page 35: O'Clock and Half Past



Let's strengthen

Some children may benefit from folding circular pieces of paper in half, to better understand the relationship between half as a fraction and half past.

Optional consolidation and extension possibilities

Story Read *It's About Time* by Stuart J. Murphy, or listen to a reading at: edco.ie/bpcb

My Book of Time See PCM 16 and PCM 17.

Home/School Links Book Page 15 can be done any time after this lesson.

Maths Journal The children record what they know about o'clock and half past times in their journals.

Review and Reflect Use the Prompt Questions Poster.

Days 6 and 7, Lesson 5

Quarter Past

Focus of learning (with Elements)

- Recognises and expresses time in quarter hours on analogue and digital clocks (U&C)
- Reads and records time in quarter-hour intervals on analogue and digital clocks (C)

Learning experiences

- (D) Digital activity: Quarter Hour ***MAM* Routine: Reason & Respond**
- (D) Digital activity: What Time Is It? (1)
  ***MAM* Routines: Quick Images, with Write-Hide-Show**
- (D) Digital activity: The Last Training Day
  ***MAM* Routines: Notice & Wonder, with Think-Pair-Share; Reason & Respond, with Write-Hide-Show**
- (D) Video: Quarter Past
  ***MAM* Routines: Reason & Respond, with Write-Hide-Show**
- (C) (D) Concrete activity: Making Quarter-past Times
  ***MAM* Routines: Reason & Respond, with Write-Hide-Show**
- (P) Pupil's Book page 36: Quarter Past

Equipment

- Teaching clocks (preferably geared, i.e. hour hand moves when minute hand moves)
- Online clocks

Maths language

- quarter past, __:15 ('nine fifteen', etc.)

Warm-up

NB: This lesson has two warm-up options. For both days, teachers can choose to do either/both.

(D) **Digital activity: Quarter Hour**
***MAM* Routine: Reason & Respond**

Display the image. Ask the children to answer the following questions and to give reasons for their responses:

- Lexi's trainer has asked her to jog slowly for a quarter of an hour to warm up. How can she use her new watch to time this?
- What will the display say when ready? Explain why.

Click the image to turn it over and reveal the answer.

(D) **Digital activity: What Time Is It? (1)** ***MAM* Routines: Quick Images, with Write-Hide-Show**

Briefly reveal and then hide the image(s). Ask the children to record the time in digital form 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? (Ask the children to verbalise the written digital times as analogue times, e.g. to say 3:30 as 'half past three'.) 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.

Main event

D **Digital activity: The Last Training Day**
***MAM* Routines: Notice & Wonder, with Think-Pair-Share; Reason & Respond, with Write-Hide-Show**

Display the poster, which shows the race schedule for the upcoming track competition. Using Think-Pair-Share, click to play or 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.

Ask the children to use Write-Hide-Show on their MWBs to respond to the questions below. Ask the children to give reasons for their responses. Click to play or ask:

- Today is the last training session before the track competition. (Zoom in on the calendar.) What day is it?
- Write today's date using words and also using only digits.
- (Zoom in on the race schedule for the day.) Lexi has the race list for Saturday. What do you notice? What do you wonder?
- Lexi is competing in two races: U10 100 m and U10 200 m. What time is her first race?
- What does '10 dot dot 15' mean?
- What other way can we say this time?
- What time is the last girls' race?
- What time is the last boys' race?
- What time is the first 200 m race?
- What time is the last 200 m race?

D **Video: Quarter Past *MAM* Routines: Reason & Respond, with Write-Hide-Show**

Play the video. Allow the children time to respond to the questions and to give reasons for their answers.

C **D** **Concrete activity: Making Quarter-past Times *MAM* Routines: Reason & Respond, with Write-Hide-Show**

Distribute a teaching clock to each child. Write '3:15' on the board and ask/say:

- What time does this say? (Prompt them to give both possible answers: 'three fifteen' and 'a quarter past three'.)

Assessment Opportunity

- Show me this time on your clock.
- What time would be an hour later than this time? Show me on your clock.
- What time would be an hour earlier than this time? Show me on your clock.

Repeat as required with other digital times on the quarter hour.

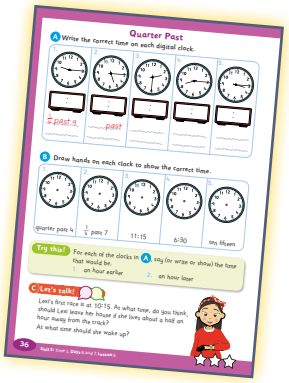
Use a clock (a teaching clock or the Time tool from the Manipulatives e-Toolkit) to create/select a random quarter-past time to display to the class. Tell the children to use Write-Hide-Show on their MWBs to respond to the questions below. Ask them to give reasons for their responses:

- Write this as a digital time on your MWB.
- What time would be an hour later than this time? Write the digital time.
- What time would be an hour earlier than this time? Write the digital time.

Repeat as required. As the children grow in confidence, include some other times (e.g. o'clock and half past).

Pair work: One child writes a digital time ending in ':15' on their MWB and their partner makes the matching analogue time on their clock. Swap roles and repeat. Next, one child makes a quarter-past time on their clock and their partner writes the matching digital time on their MWB. Swap roles and repeat.

Pupil's Book page 36: Quarter Past



Optional consolidation and extension possibilities

Measuring Time Maximise opportunities to use a variety of clock types to tell the time at key points during the day.

My Book of Time See PCM 16 and PCM 17. The children could add in any appropriate quarter-past times.

Review and Reflect Use the Prompt Questions Poster.

Days 8 and 9, Lesson 6

Quarter To

Focus of learning (with Elements)

- Recognises and expresses time in quarter hours on analogue and digital clocks (U&C)
- Reads and records time in quarter-hour intervals on analogue and digital clocks (C)

Learning experiences

- (D) Digital activity: What Time Is It? (2)
  ***MAM* Routines: Quick Images, with Write-Hide-Show**
- (D) Digital activity: Race Day
  ***MAM* Routines: Notice & Wonder, with Think-Pair-Share; Reason & Respond, with Write-Hide-Show**
- (D) Video: Quarter To
  ***MAM* Routines: Reason & Respond, with Write-Hide-Show**
- (D)(C) Concrete activity: Making Quarter-to Times
  ***MAM* Routines: Reason & Respond, with Write-Hide-Show**
- (P) Pupil's Book page 37: Quarter To

Equipment

- Teaching clocks (preferably geared, i.e. the hour hand moves when the minute hand moves)
- Online clocks

Maths language

- quarter to, __: 45 ('nine forty-five', etc.)

Warm-up

Teaching tip

This warm-up activity can be used on both days.

(D) **Digital activity: What Time Is It? (2)** ***MAM* Routines: Quick Images, with Write-Hide-Show**

Briefly reveal and then hide the image(s). Ask the children to record the time in digital form on their MWBs. Ask the children 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? (Ask the children to verbalise the written digital times as analogue times, e.g. to say 7:15 as 'a quarter past seven'.) 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.

Main event

D Digital activity: Race Day *MAM* Routines: Notice & Wonder, with Think-Pair-Share; Reason & Respond, with Write-Hide-Show

Display the poster and, using Think-Pair-Share, ask:

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

Note any 'wonderings' that could become the basis for a subsequent maths investigation.

Then, tell the children to use Write-Hide-Show on their MWBs to respond to the questions below. Ask them to give reasons for their responses, where appropriate:

- Lexi is racing in the U10 Girls' 100 m. What time is this race?
- How else can you say this time?
- What does '10 dot dot 45' mean?
- How else can you say this time?
- Lexi is also racing in the U10 Girls' 200 m. What time is this race?
- How else can you say this time?
- What race is being held at quarter to 10?
- How else can you say this time?
- What race is being held at half past 10?
- What race is being held 15 minutes later?

D Video: Quarter To *MAM* Routines: Reason & Respond, with Write-Hide-Show

Play the video. Allow the children time to respond to the questions and to give reasons for their answers.

C D Making Quarter-to Times *MAM* Routines: Reason & Respond, with Write-Hide-Show

Distribute a teaching clock to each child. Write '3:45' on the board, and ask/say:

Assessment Opportunity

- What time does this say? (Prompt them to give both possible answers: 'three forty-five' and 'a quarter to four'.)
- Show me this time on your clock.
- What time would be an hour later than this time? Show me on your clock.
- What time would be an hour earlier than this time? Show me on your clock.

Repeat as required, with other digital times ending in ':45'.

Use a clock (a teaching clock or the Time tool from the Manipulatives e-Toolkit) to create/select a random quarter-to time to display to the class. Tell the children to use Write-Hide-Show on their MWBs to respond to the questions below. Ask them to give reasons for their responses:

- Write this as a digital time on your MWB.
- What time would be an hour later than this time? Write the digital time.
- What time would be an hour earlier than this time? Write the digital time.

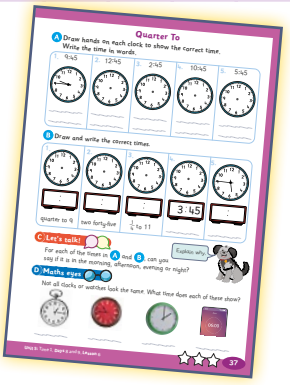
Repeat as required. As the children grow in confidence, include some other times (e.g. half past and quarter past).

Pair work: Child A writes a digital time ending in ':45' on their MWB and Child B makes the matching analogue time on their clock. Swap roles and repeat. Next, Child A makes a quarter-to time on their clock and Child B writes the matching digital time on their MWB. Swap roles and repeat.

Let's strengthen

Some children may benefit from more practice with quarter past/to times. Consult the Unit 5 Let's Strengthen Suggestions for Teachers and/or use the Unit 5 Let's Strengthen PCM: Sorting and Sequencing Times.

P Pupil's Book page 37: Quarter To



Activity B: Do the children recognise that it is not possible to identify whether the times relate to morning, evening, afternoon, etc.? Do any children suggest that further information is required (e.g. a.m. or p.m.)? This will be explored further in Unit 14 – Time 2.

Optional consolidation and extension possibilities

Let's Create Challenge the children to create a set of time dominoes. They could use PCM 21: Time Dominoes Game Template and then play as a matching game, similar to the usual game of dominoes.

Measuring Time Maximise opportunities to use a variety of clock types to tell the time at key points during the day.

Time Outdoors Draw a large chalk circle (clock) on the ground in the playground, labelled with the points of half past, o'clock, quarter past and quarter to. Call out one of the points (e.g. 'half past') and the children run to the correct point on the circle. To make this into a game, the last player to reach the correct point is out. The last player left wins the game.

Games Bank Play 'Time Cross-Off' either as a whole class or in groups.

Story Read *Rodeo Time* by Stuart J. Murphy, or listen to a reading at: edco.ie/zz3j

My Book of Time See PCM 16 and PCM 17. The children could add in any appropriate quarter-to times. (Remember to save these PCMs for use in Unit 14 – Time 2 later in the year.)

Let's deepen

See the Unit 5 Let's Deepen PCM: Time 1. The third and fourth tasks can be done any time after this lesson.

Review and Reflect Use the Prompt Questions Poster.

Day 10, Lesson 7

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. The children record what they know in their maths journals (e.g. using a concept map). Display PCM 22: Telling Time Language Cards on the board or distribute it to the children. At any given time of the day, ask a child to use the cards to describe the current time. Keep the cards and repeat this activity as often as possible in the coming weeks as reinforcement.	Play the Calendar Game (PCM 19), Measures of Time Bingo (PCM 20) and/or Time Dominoes (PCM 21). Play 'Time Cross-Off' either as a whole class or in groups.

Maths language	Maths strategies and models
Use the Maths Language Cards for this unit to revise the key terms. For example: If the image and text are cut apart, can the children match them? second(s), minute(s), hour(s), days, weeks, months, analogue clock, digital clock, o'clock, half past, quarter past, quarter to. Complete My Maths Fact File on page 124 of the Pupil's Book.	Ask the children to give examples of the strategies they used in this unit (e.g. how to remember the number of days in each month, how to count seconds without a timer, how to use the hour hand to tell the time). Which strategies and models did they prefer and why?
Progress Assessment Booklet	**Maths eyes**
Complete Questions 19–23 on pages 13–14 Alternatively, these can be left to do as part of a bigger review during the next review week.	Go for a walk through the school and/or local area, looking for time devices. How are they similar to/ different from those explored during this unit? For example, are there any analogue clock faces with Roman numerals/no numerals? Take photographs of different clock types and use them to make a display/digital slideshow when back in the classroom.
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 5 Let's Strengthen Suggestions for Teachers and/or use the Unit 5 Let's Strengthen PCMs.	Select one of the Cognitively Challenging Tasks on the Unit 5 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