

Maths and Me: 1st Class – Short-Term Plan, Unit 14: Time 2 (April: Week 1)

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	Digital Time: Begins to recognise and express time in hours and half hours on digital clocks (U&C); Recognises and identifies the time of significant daily events represented on analogue clocks (U&C)		<div> <div>D</div> Quick Images L1–3 <div>C</div> Write-Hide-Show L1–3 <div>C</div> Reason & Respond L1–3 <div>D</div> Concept Cartoon L2 <div>D</div> Think-Pair-Share L2 <div>D</div> Would This Work? L3 <div>C</div> Build it; Sketch it; Write it L3 </div> <div> Print resources Pupil's Book pages 89–91 Home/School Links Book page 32 PCM 24 </div>	Intuitive Assessment: responding to emerging misconceptions Planned Interactions: responding to insights gleaned from children's responses to learning experiences Assessment Events: information gathered from completion of the unit assessment in the Progress Assessment Booklet page 25
2	A Day: Communicates the sequence of events (e.g. 24 hours in a day) (C); Uses language of approximation to relate events which occur naturally throughout the day to various units of time (A&PS)			
3	TV Timetable: Begins to compare lengths of elapsed time (R); Begins to explore different ways of presenting time using a variety of strategies (e.g. using time number lines and empty clock faces) (C)			
4	Review and Reflect: Reviews and reflects on learning (U&C)			

Key: Elements: (U&C) Understanding and Connecting; (C) Communicating; (R) Reasoning; (A&PS) Applying and Problem-Solving. **CM: Cuntas Míosúil:** please tick when you have completed the focus of learning. **Learning Experiences:**

C

 concrete activity;




D

 digital activity;

P

 activity based on printed materials, followed by lesson numbers.

Additional information for planning

 Progression Continua	See '1st Class <i>Maths and Me</i> Progression Continua Overview' for a detailed breakdown of how all progression continua are covered.
 Maths Language	See '1st Class <i>Maths and Me</i> Maths Language Overview', individual lesson plans and Unit 14 Maths Language Cards.
 Equipment	See '1st Class <i>Maths and Me</i> Maths Equipment Overview' and individual lesson plans.
Inclusive Practices	<ul style="list-style-type: none"> ● See Let's Strengthen and Let's Deepen suggestions throughout lesson plans. ● See Unit 14 Let's Strengthen Suggestions for Teachers. (These address the Common Misconceptions and Difficulties listed below.) ● See Unit 14 Let's Strengthen PCM. ● See Unit 14 Let's Deepen PCM.
Integration	See individual lesson plans.

Background and rationale

- This unit is a one-week block of content located in April. The unit builds on Time 1, revising the children's understanding of time to half-hour intervals on the analogue clock, and extending this to incorporate the equivalent digital times.
- While digital time would traditionally not be introduced until 2nd Class, at which point the children are expected to be able to tell time to quarter-hour intervals in both analogue and digital, in this unit of *Maths and Me* for 1st Class the children revise telling time to half-hour intervals (Unit 5 – Time 1) on analogue clocks and are introduced to the digital equivalents, which prepares them for the content in 2nd Class.
- As mentioned previously in Unit 5, the concept of time passing can be difficult for young children to grasp as it is quite abstract. Make it as meaningful as possible for them by referring to a variety of schedules/timetables and clock types at key points during the day and use timers as part of regular classroom management. In particular, incorporate the use of visual timetables where possible and explore timetables that are relevant to the children and/or their locality. See also suggested ways to embed and reinforce an understanding of time throughout the year, on page 89 of Unit 5 – Time 1.

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

Common misconceptions and difficulties

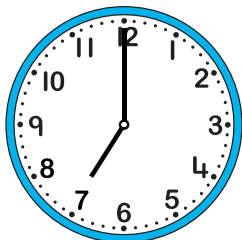
See also the Common Misconceptions and Difficulties for Unit 5 – Time 1.

- The children may struggle to write times in analogue/word form. Introducing time in digital form offers the children an easier way to record time. However, encourage the children to verbalise these written digital times as analogue/word form times also.

The Unit 14 Let's Strengthen Suggestions for Teachers address the common misconceptions and difficulties listed above.

Mathematical models and representations

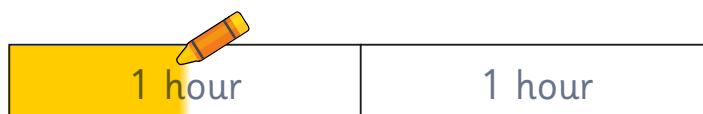
- Representations of analogue and digital watches/clocks, timers and time apps on devices (tablets, mobile phones, etc.)
- Teaching clocks
- Time number lines to represent duration (elapsed time)
- Bar models to represent hours
- Variety of timetable types



Analogue clock



Digital time on a device



Bar model for hours

Teaching tip

The following manipulative printables are available to support the unit: Analogue Clock Face and Hands, Digital Clock (Blank), Time Number Line, Bar Model, Timetable. Click on the resources icon on the *Maths and Me* book cover on [edcolearning.ie](https://www.edcolearning.ie)

Days 1 and 2, Lesson 1

Digital Time

Focus of learning (with Elements)

- Begins to recognise and express time in hours and half hours on digital clocks (U&C)
- Recognises and identifies the time of significant daily events represented on analogue clocks (U&C)

Learning experiences

- D** Digital activity: Time Quick Images (1)
MAM Routines: Quick Images, with Write-Hide-Show
- D** Digital activity: Dara's Timetable
MAM Routine: Reason & Respond
- D** Video: Digital Time **MAM Routine: Reason & Respond**
- C** Concrete activity: Digital to Analogue to Digital
MAM Routines: Reason & Respond, with Write-Hide-Show
- P** Pupil's Book page 89: Digital Time

Equipment

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

Maths language

- timetable, o'clock, half past, analogue, digital, later, earlier

Teacher note: It is essential that children use teaching clocks for this lesson.

Warm-up

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

Briefly reveal and then hide the image(s). Ask the children to record the time on their MWBs. Ask them to show their proposed answers and record all of these on the board. Be careful not to confirm the correct answer. Ask:

- Are there any answers that are unreasonable/not likely because they do not 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.

Let's strengthen

Choose the 'hour hand only' options (Slides 5 and 9). Do the children remember 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?

Main event

- D** **Digital activity: Dara's Timetable**
MAM Routine: Reason & Respond

Provide the children with teaching clocks and display the image. Ask the children to answer the questions below and to give reasons for their responses.

- What does this remind you of? Where have you seen something like this before?



- Look at the numbers on this timetable. How might you 'read' the numbers? What do they represent/mean?

If not already suggested, explain that a timetable is another way to say and write time.

- Look at the times. Do you notice any patterns?
- What is the same? What is different?
- Look at the first time. Show me this time on your clock. How can we say this time?

- Look at the second time. Will this time look different on your clock? Describe how. Now, show me this time on your clock. How can we say this time?
- Look at the third time. Will this time look different on your clock? Describe how. Now, show me this time on your clock. How can we say this time?
- If you made a timetable for your school day, in what ways would it be similar?
- In what ways would it be different?



D Video: Digital Time

MAM Routine: Reason & Respond

Play the video. Allow the children time to respond to the questions, giving reasons for their answers.

Let's strengthen

The children may benefit from watching the 'O'clock' and 'Half Past' videos again from Unit 5 – Time 1.

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

Write 5:00 on the board. Provide the children with teaching clocks. Ask:

- 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 (teaching clock) to create/select a random o'clock or half-past time to display to the class. Ask the questions below. Ask the children to use their MWBs to respond using the equivalent digital time and to give reasons for their responses.

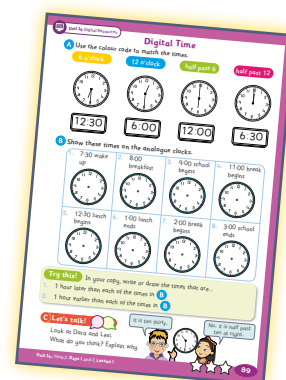
- Write this as a digital time on your MWBs.
- What time would be an hour later than this time? Write the digital time.
- What time would be an hour earlier than this time? Write the digital time.

Repeat as required.

Ask the children to work in pairs. Child A writes a digital time on their MWB and Child B makes the matching analogue time on their clock. Swap roles and repeat.

Then Child A makes a time on their clock and Child B writes the matching digital time on their MWB. Swap roles and repeat.

P Pupil's Book page 89: Digital Time



On page 89 of the Pupil's Book, for Activity C: Let's Talk, encourage the children to explain their thinking. Do they appreciate that every possible time on a 12-hour clock will occur twice in a 24-hour period? This will be developed further in the next lesson.

Optional consolidation and extension possibilities

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

Time Display Set up or add to a Time display in the classroom. Include calendars, timers, clocks and other time devices, as well as appropriate labels (see Unit 5 and Unit 14 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.

Let's Strengthen Some children might benefit from the opportunity to practise writing digital time for hour intervals only, before extending it to half-hour intervals. See the Unit 14 Let's Strengthen Suggestions for Teachers and the Unit 14 Let's Strengthen PCM: Time 2.

Digital Time At opportune moments during the school day (e.g. when the time is exactly or approximately half past the hour), ask the children to say the time and write the matching digital time on their MWBs.

Maths Eyes Where can the children find examples of digital time in the classroom and school? What about at home and/or in the locality (e.g. watches, devices including phones, tablets and computers)?



Online Games Play any of these online games that involve matching equivalent analogue and digital times (choose hour and/or half-hour options):

edco.ie/ja94

edco.ie/rgbe

edco.ie/u5cx

Games Bank Play the digital version of 'Time Cross-Off' either as a whole class or in groups. At the beginning, each player writes four digital times on their MWBs.

PCM 24 Cut up the images from PCM 24: Sorting and Sequencing Time (from Unit 5). Turn over the images

and mix them up. The children take turns to pick one up. If they can write the digital time correctly on their MWB, they keep the image. If not, they put it back down upside down. The person with the most images at the end wins the game.

My Book of Time See PCM 19: My Book of Time (1 of 2) and (2 of 2). The children could start (or resume) work on this, adding in the digital equivalents of the analogue times (from Unit 5).

Review and Reflect Use the Prompt Questions Poster.

Day 3, Lesson 2

A Day

Focus of learning (with Elements)

- Communicates the sequence of events (e.g. 24 hours in a day) (C)
- Uses language of approximation to relate events which occur naturally throughout the day to various units of time (A&PS)

Learning experiences

- D** Digital activity: Time Quick Images (2)
MAM Routines: Quick Images, with Write-Hide-Show
- D** Digital activity: What Time of the Day?
MAM Routines: Concept Cartoon, with Think-Pair-Share
- D P** Video: A Day **MAM Routine: Reason & Respond**
- P** Pupil's Book page 90: A Day

Equipment

- There is no equipment for this lesson

Maths language

- before, after, nearly, soon, almost, just gone, day, night, midnight, midday, noon, morning, afternoon, evening

Warm-up



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

Teacher note: The children are not expected to use a.m. or p.m. A graphic is displayed beside each clock to indicate the time of day.

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 proposed answers and record all of these on the board. Be careful not to confirm the correct answer. Ask:

- Are there any answers that are unreasonable/not likely because they do not make sense? Which ones? Why do you think this?
- Which answer do you agree with? (Encourage the children to verbalise the written digital times as analogue times, e.g. 8:30 as 'half past eight'.)
- 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.

Let's deepen

Challenge the children to write the time that is one hour later/earlier, two hours later/earlier, etc. than the displayed time.

Main event

D Digital activity: What Time of the Day?

MAM Routines: Concept Cartoon, with Think-Pair-Share

Display the Concept Cartoon and, using Think-Pair-Share, ask:

- What do you think?
- (Point to a specific character.) Do you agree with their idea? Explain why.
- Do you think something different? What do you think? Why do you think this?

If appropriate, record the children's responses to these 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.

Follow up with these questions, as appropriate (some of these may already have been addressed/answered through the earlier discussions). Encourage the children to provide reasons to justify their responses. Ask:

- Is it exactly 12 o'clock?
- Is it just before or just after 12 o'clock?
- Which of the characters' phrases means 'just before' 12 o'clock?
- Which of the characters' phrases means 'just after' 12 o'clock?
- Can we say for definite that it is nearly 12 o'clock at night? Explain why.
- If it is not nighttime, what time could it be instead?
- What does 'midday' mean? When is it? Do you know another name for midday?
- What is the opposite time to midday? When is it?
- What does 'afternoon' mean? When is it?



- What comes before afternoon?
- What comes after afternoon?
- Why did Jay say, 'I think it is almost tomorrow.'

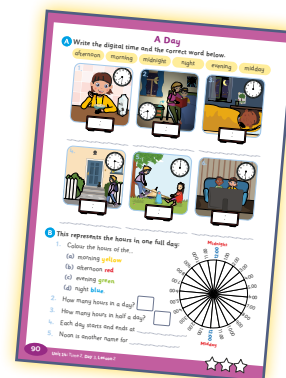
D P Video: A Day

MAM Routine: Reason & Respond

Play the video. Allow the children time to respond to the questions, giving reasons for their answers. Distribute PCM 24: Sorting and Sequencing Time Cards to the children. (This PCM was initially used in Unit 5, Time 1, Lesson 6, and the cards can be reused here if still available. If the children have already pasted them into their Maths Journals, the PCM can be copied and cut up again.)

- (Point to an image.) What happens just before this?
- (Point to an image.) What happens just after this?
- Use the words *morning*, *afternoon*, *evening* and *night* to describe these times.
- Write the matching digital time beside each of these.

P Pupil's Book page 90: A Day



Let's strengthen

Some children may benefit from working with the o'clock images first (i.e. the top half of the page.)

Optional consolidation and extension possibilities

Home/School Links Book Page 32 can be completed at any time after this lesson.

Time Opposites Ask the children to name and/or draw a picture of things they do at the same time but at opposite times of the day, e.g. wake up at 8:00 in the morning and go to bed at 8:00 in the evening.

Story Read *It's About Time!* by Stuart J. Murphy or listen to a reading at: edco.ie/bpcb
It tells the story of a boy's day, hour by hour, with the support of analogue and digital displays. (N.B. The digital display includes a.m./p.m., which can be acknowledged or not, depending on the ability of your class.)

Story Read *Summer Sun Risin'* by W. Nikola-Lisa or listen to a reading at: edco.ie/ttbh

It tells the story of a hot summer's day in the life of a boy on a farm, with particular emphasis on the position of the sun throughout. While it does not reference times, the children could be asked to identify the time of the day (morning, noon/midday, afternoon, evening, night) and to approximate the analogue/digital time.

Review and Reflect Use the Prompt Questions Poster.

Day 4, Lesson 3

TV Timetable

Focus of learning (with Elements)

- Begins to compare lengths of elapsed time (R)
- Begins to explore different ways of presenting time using a variety of strategies, e.g. using time number lines and empty clock faces (C)

Learning experiences

- D** Digital activity: Time Quick Images (3)
MAM Routines: Quick Images, with Write-Hide-Show
- D** Digital activity: TV Timetable **MAM Routine: Reason & Respond**
- D** Digital activity: Duration **MAM Routine: Would This Work?**
- C D** Concrete activity: Modeling Duration (elapsed time)
MAM Routine: Build it; Sketch it; Write it (optional: **I Do, We Do, You Do**)
- P** Pupil's Book page 91: TV Timetable

Equipment

- Teaching clocks for children (preferably geared, i.e. the hour hand moves when the minute hand moves)
- PCM 24

Maths language

- about how long? lasts the most time, lasts the least time, time number lines

Warm-up

- D** Digital activity: Time Quick Images (3) **MAM Routines: Quick Images, with Write-Hide-Show**

Teacher note: The children are not expected to use a.m. or p.m. A graphic is displayed beside each clock to indicate the time of day.

Briefly reveal and then hide the image(s). Ask the children to record the time in digital form on their MWBs and to write *M*, *A*, *E* or *N* after the time to indicate whether they think it is in the morning, afternoon, evening or night.

Ask the children to show their proposed answers, and record all of these on the board. Be careful not to confirm the correct answer. Ask:

- Are there any answers that are unreasonable/not likely because they do not make sense)? Which ones? Why do you think this?
- Which answer do you agree with? (Encourage the children to verbalise the written digital times as analogue times, e.g. 2:30 as 'half past two in the afternoon'.)

- 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: TV Timetable

MAM Routine: Reason & Respond

Provide the children with teaching clocks and display the image. Ask the children to answer the questions below and to give reasons for their responses.



- Look at the first time. Show me this time on your clock. How can we say this time?
- Look at the second time. Will this time look different on your clock? Describe how. Now, show me this time on your clock. How can we say this time?
- Look at the third time. Will this time look different on your clock? Describe how. Now, show me this time on your clock. How can we say this time? (Repeat as appropriate for the other times.)
- What is on just before the news? (Repeat as appropriate for other programmes.)
- What is on just after the news? (Repeat as appropriate for other programmes.)

D Digital activity: Duration

MAM Routine: Would This Work?

Display the image and ask:

- For about how long did *Cartoon Time* last?
- How did you solve it?
- Why did you do it this way?

Then click each character to display the various models and approaches and ask:

- Would this work? (Click on to reveal images.)

Display the various models and approaches, allowing the children time to comment on each, and justify if the methods/opinions work.

Let's deepen

Challenge the children to suggest why the question is worded 'for about how long' rather than 'for how long'. Prompt them, if necessary. For example: 'If *Cartoon Time* starts at 4:00, and the next programme starts at 4:30, will *Cartoon Time* be on for all that time? Explain why.'

C D Concrete activity: Modeling Duration (elapsed time) MAM Routines: Build it; Sketch it; Write it (optional: I Do, We Do, You Do)

Ask the children to work in pairs or groups. Display the TV Timetable on the board again. Using this visual stimulus, ask:

- Which programme lasts the most time?
- Name the programme that lasts the least time. Is there more than one?

Allow the children time to work on these questions in their groups. When appropriate, address the class as a group or address the individual groups and ask:

- How can you prove your answers?
- Why did you do it this way?

Build it! Can you use the clocks to prove your answer? Show us.

Sketch it! Can you sketch clock faces on your MWB to prove your answer? Show us.

Write it! Can you sketch a time number line on your MWB to prove your answer? Show us.

Teaching tip

In their Maths Journals, the children use images/ words to record what they built, sketched or wrote.

Encourage the children to try out any mathematical model suggested by another child that they did not use.

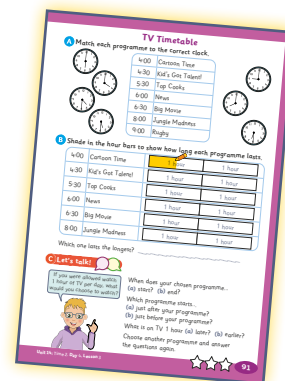
If the children are unsure how to use these mathematical models to represent duration, use 'I Do, We Do, You Do' to demonstrate. For example: I Do: Use clocks, sketches of clock faces, and/or time number lines, to model possible approaches. Verbalise your thinking processes (think aloud) to provide an explanation and rationale for each step of the process(es).

We Do: Give the children the opportunity to complete similar problems in pairs or in small groups. You Do: When ready, ask the children to create their own choice of models, independently.

Let's strengthen

Initially, the children may benefit from only working out the duration of an individual programme that starts on the hour (i.e. not half-hour intervals).

P Pupil's Book page 91:
TV Timetable



Optional consolidation and extension possibilities

PCM 24 Shuffle all the cut-up cards from PCM 24: Sorting and Sequencing Time, and then put them in order for the day. How much time has passed from this card to this card? Use Build it or Sketch it to show how you know.

Story Read *Get Up and Go!* by Stuart J. Murphy, which uses timelines to calculate elapsed time.

Maths Eyes Collect and display TV listings from newspapers or magazines (e.g. TV guides). Ask the children to create their own questions based on how long certain programmes last. They can use the TV listings in the book or from a newspaper/magazine.

Review and Reflect Use the Prompt Questions Poster.

Day 5, Lesson 4

Review and Reflect

Focus of learning (with Elements)

- Reviews and reflects on learning (U&C)

Warm-up

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

Main event

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

Let's talk!	Let's play!
Classroom poster: Review and Reflect. Use Think-Pair-Share alongside the prompt questions to review the unit.	Play 'Time Cross-Off' either as a whole class or in groups.
Maths language	Maths strategies and models
Ask the children to explain the following terms (perhaps using examples or drawings on their MWBs): o'clock, half past, analogue, digital, day, night, midnight, midday, noon, morning, afternoon, evening, before, after, nearly, soon, almost, gone. Use the Unit 14 Maths Language Cards to revise the key terms. For example: If the image and text are cut apart, can the children match them? If not completed already, complete the 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 they used clocks, sketches of clocks, sketches of time number lines and bar models to represent hours) to model how long something lasts. Which strategies and models did they prefer and why?
Progress Assessment Booklet	Maths eyes
Complete Questions 53–55 on page 25. 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 timetables and/or examples of digital time (e.g. timetables for when classes have access to devices or the PE hall, timetables for buses, the swimming pool and local lessons). How are these timetables/times similar/different to those looked at during this unit? Take photographs 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. Use the Unit 14 Let's Strengthen PCM. Consult the Unit 14 Let's Strengthen Suggestions for Teachers.	Use the Unit 14 Let's Deepen PCM.

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