

Lesson 64 MEASURES

Elapsed time and simple timetables

CURRICULUM ALIGNMENT

MEA.TIM.3a

compare, approximate and measure time using appropriate units of measurement.

MEA.TIM.3b

identify the relationship between different units and representations of time.

INTERACTIVES Timetable Reader · challenge, display, explore

WHAT THIS LESSON TEACHES

Elapsed time is how long has passed between a start time and a finish time. Count on to the next o'clock first, then add the minutes after it.

→ A bus leaves at 9:10 and arrives at 9:45, so 35 minutes have passed.

→ From 3:50 to 4:20 is 10 minutes up to 4:00, then 20 more, giving 30 minutes.

MODEL THIS ON THE BOARD

BUS 11:50 TO 12:25

- ① The bus leaves at **11:50** and arrives at **12:25**.
- ② Count on to the next hour: from **11:50** to **12:00** is **10** minutes.
- ③ Then count on from **12:00** to **12:25**: that is **25** more minutes.
- ④ Add the jumps: $10 + 25 = 35$ minutes.



DISCUSSION STARTER

REFLECT Do you count elapsed time hour-by-hour or in five-minute jumps? Which feels surer?

LESSON ARC

Open with the Gaillimh–Salthill bus (9:10 → 9:45) and take three hands-up answers, listening for anyone who counts on. Move to the real Cork–Dublin Irish Rail timetable interactive and model journey times as count-ons: hop to the next o'clock, count whole hours, then the last few minutes. Pupils take turns at the board on shared journeys, then write count-on jumps for three 07:00-train services in their copybooks. Class Challenge is four everyday elapsed-time problems, two crossing the hour.

TEACHING MOVES

1. **Getting Started.** Take three hands-up answers, not open call-outs, on the 9:10 → 9:45 bus. Listen for a pupil who hops forward from 9:10 rather than trying to subtract one time from the other, and re-voice that count-on as the method the whole lesson builds on.
2. **Watch and Notice.** Work each journey aloud as a count-on, never a take-away. Land on 08:00 and 09:00 as visible stepping stones before the final 35 minutes. On the third journey, ask the class to predict the Portlaoise hop before you tap it — both trains take 35 minutes, so make the point that the same gap gives the same time whatever the clock reads.

3. **Try It Together.** Insist the class counts each journey on aloud before a pupil taps the two timetable cells, so the interactive confirms the count rather than does it. Save the full 09:00 Cork–Dublin train (2h 35m) for last and give it three minutes; drop the short Mallow → Limerick Junction hop first if time runs tight.
4. **Write the Journey Length in Your Copy.** Walk the room checking pupils split the count at the next o'clock, not just writing a total. Nudge anyone who shows only an answer to write the two jumps that got them there. Shared answers to check against: Mallow → Thurles 55 min, Limerick Junction → Heuston 1h 40m, Cork → Mallow 20 min.
5. **Class Challenge.** Keep board work brisk — pupils take turns, check each answer, class confirms before moving on. Hold out for the two-part count on the train (11:50) and school (9:10) crossings before anyone types. Slow right down only for the school problem, which crosses two o'clocks and runs past a full hour.
6. **What Did We Notice?.** Ask why counting on to the next o'clock beats subtracting one time from the other. Re-voice a strong answer: 'we hop to the next o'clock because it's a tidy landmark, then the rest is easy.' Surface the 12:25 – 11:50 trap out loud — the minute digits won't subtract cleanly, but the count-on never trips on it.

COMMON MISCONCEPTIONS

⚠ A pupil reads 12:25 – 11:50 as '25 take 50' and gets stuck, or reads 9:45 – 9:10 as '45 take 10 = 35' and thinks subtracting the minute digits always works.

Surface both at the maths-talk step. Show that 9:45 – 9:10 happens to work but 11:50 → 12:25 doesn't — the minute digits won't subtract. Rebuild both as count-ons on the timetable: up to the o'clock, then on. The count-on never trips on this.

⚠ Pupils write only a total (e.g. '1h 50m') for a journey that crosses the hour, without showing the o'clock stepping stone.

At the copybook step, nudge them to write the two jumps that got them there: 07:00 → 08:00 is 60 min, then 08:00 → 08:50 is 50 min. Point to the o'clock landmark on the timetable so the split has an anchor they can see.

DIFFERENTIATION

EMERGING

- Keep these pupils on journeys that stay inside one hour (Mallow → Limerick Junction, the film, the training) so the count is a single hop with no o'clock crossing.
- Pre-mark the next o'clock on their copybook line so they only count up to it and then on, rather than deciding where to split.

DEVELOPING

- After the copybook three, ask them to find two different services on the timetable that take exactly the same journey time, and say how they know.
- Give a missing-time variant: a train leaves Thurles at 08:15 and the journey is 1h 20m — what time does it reach Heuston?

PROFICIENT

- During the Class Challenge, hand fast finishers the school problem as a teacher-narrated stretch: it crosses two o'clocks — count it on and then work out how many minutes are left until small break at 11:00 from any start time you call.
- Ask them to explain to the class, in their own words, why counting back from the finish time gives the same answer as counting on from the start.

✚ **Cross-curricular:** Tie to Geography — pupils trace the Cork–Dublin rail line on a map of Ireland, naming the towns each stop serves as they read the timetable.

ANSWER KEY

b) 35 minutes

c) 45 minutes

Q1: 30 minutes

Spot: Cian ignored the hour boundary. From 2:45 → 3:00 is 15 minutes, then 3:00 → 3:20 is another 20 minutes.
Total: 15 + 20 = 35 minutes.

EXTENSION SHEET · STRETCH ANSWERS

S1: 2 h 55 min

S2: 23:51

S3: 13:42

S4: 7 h 56 min

S5: 5 h 3 min

Investigation: Plan a day out — open-ended; scan pupils' working for valid solution paths rather than a single answer.