TEACHER RESOURCE BOOK · MATHS · 6TH CLASS

Lesson 62 MEASURES

Timetables, schedules and time zones

CURRICULUM ALIGNMENT

MEA.TIM.4 solve and pose practical tasks and problems involving the interpretation and calculation of time.

INTERACTIVES Timetable Reader · challenge, display, explore

WHAT THIS LESSON TEACHES

Read timetables in **columns** (one service each). **Time zones** mean clocks differ between places by whole hours.

→ Dublin to a city +1 hour: a 13:00 Dublin call is **14:00** there.

LESSON ARC

Open with the Dublin–Cork bus timetable on the IWB, reminding the class that 13:55 reads as just before 2pm. Walk one worked row-and-column read, then count on from 11:20 to 13:55 to get 2 h 35 min — never subtracting the minute digits. Sketch the turning Earth to anchor east-ahead, west-behind using a 15:00 Dublin anchor. Pupils copy three timetable rows and write durations plus New York and Sydney local times in their copies before the Class Challenge journey-planning bank.

TEACHING MOVES

1. **Getting Started.** Display the timetable as pupils settle and give about ten seconds of quiet look-time before any hands go up. Take two or three answers but don't resolve it — listen for whether pupils are reading the arrival column or accidentally the departure one.
2. **Watch and Notice.** Point along the Dublin row then down to Cork for the same bus, stressing the column number stays fixed as you move down. For the 11:20 bus, count up out loud — 40 min to 12:00, then 1 h 55 min to 13:55 — and say plainly 'we count on, we never subtract the minute digits.' Then head off the idea that the first bus to leave is always the fastest.
3. **Why is the time different?.** Draw a circle for the Earth with Dublin one side, Sydney the other, so pupils see the two places face the sun at different moments. Count back 5 hours from 15:00 for New York (10:00), then count on 11 hours for Sydney — slow right down at midnight so the class sees it cross into the next day to reach 02:00. Repeat 'east = ahead, west = behind.'
4. **Try It Together.** Bring individual pupils to the board to tap the departure cell and the arrival cell; the class reads the elapsed time off the interactive and agrees or corrects. Rotate three or four pupils, watching for anyone reading the wrong column when they move down a row. Revoice a strong one: 'so it leaves at 09:30 and arrives at 12:40 — that's 3 hours 10 minutes.'
5. **Write the durations in your copy.** Walk the room as pupils copy three rows and write each duration, glancing for whether they counted on and shifted each city's clock the right way. Watch for the next-day crossing — 15:00 + 11 h = 02:00, so catch anyone writing 26:00 for Sydney.
6. **Class Challenge.** Keep the board work brisk — pupils predict each journey duration, then a pupil checks it on the interactive and the class confirms before moving on. For the Sydney video-call stretch, lead the count-on yourself: 17:00 + 11 h = 04:00 the next day, catching the trap of forgetting it crosses midnight.
7. **What Did We Notice?.** Listen for pupils tying the time shift to the Earth turning. Revoice: 'so when it's afternoon here, Sydney has already had its night and is into the next day.' Don't push for a full rotation explanation — the goal is they accept the clock genuinely reads differently across zones.

COMMON MISCONCEPTIONS

⚠ Pupils find the 11:20 to 13:55 journey by subtracting digits — 55 minus 20 and 13 minus 11 — and announce '2 hours 35' for the wrong reason, or worse get tangled when the minutes don't subtract cleanly.

Stop and count on aloud together on the timetable: 40 minutes up to 12:00, then 1 hour 55 minutes on to 13:55. Make the count-on visible every time so pupils stop reaching for column subtraction.

⚠ When counting Sydney's 11-hour shift forward, pupils write 15:00 + 11 = 26:00 instead of rolling past midnight to 02:00 the next day.

Slow the count right down at the world-clock strip as you pass midnight — 24:00 becomes 00:00, then keep going to 02:00 — and say plainly the clock 'starts again' at midnight rather than climbing past 24.

⚠ Pupils assume the first bus to leave Dublin must be the fastest service, so they pick the earliest departure without comparing durations.

Put the 08:00 (3 h) and 11:20 (2 h 35 min) buses side by side and count both durations on the board. Show the later bus is the faster journey — leaving first and arriving soonest are not the same thing.

DIFFERENTIATION

EMERGING

- Give these pupils only the count-up-to-the-next-hour step first — find the minutes to the whole hour, then add whole hours — before tackling a full duration.
- Pre-mark the three copybook rows so pupils only write the duration beside each, not choose which rows to copy.

DEVELOPING

- After the copybook rows, ask: if a pupil missed the 11:20 bus, how much longer would they wait and arrive than if they'd caught it?
- Pose a return-journey twist — if the Sydney call is 17:00 here and lasts 90 minutes, what time does it finish over there?

PROFICIENT

- On the board, ask pupils to count both east to Sydney (+11) and west to New York (−5) from one Dublin time and work out the time gap between Sydney and New York directly — then explain how they know which is ahead.
- Narrate a harder Class Challenge variant: a journey with a connection where the second bus leaves 12 minutes after the first arrives — is the connection makeable, and what's the total travel time?

Cross-curricular: Tie to geography — pupils place New York, Dublin and Sydney west-to-east on a world map and link their clock differences to position relative to Ireland.

ANSWER KEY

W1: 1:15 am ↔ 01:15

W2: 14 min

Q1: 3 h 3 min

Q2: 3:50 pm ↔ 15:50

Q3: 12:50 pm ↔ 12:50

Q4: 5 h 52 min

EXTENSION SHEET · STRETCH ANSWERS

S1: 5 h 3 min

S2: 11:15 am ↔ 11:15

S3: 7 h 15 min

S4: 12:35 pm ↔ 12:35

S5: 2 h 41 min