LESSON PLAN

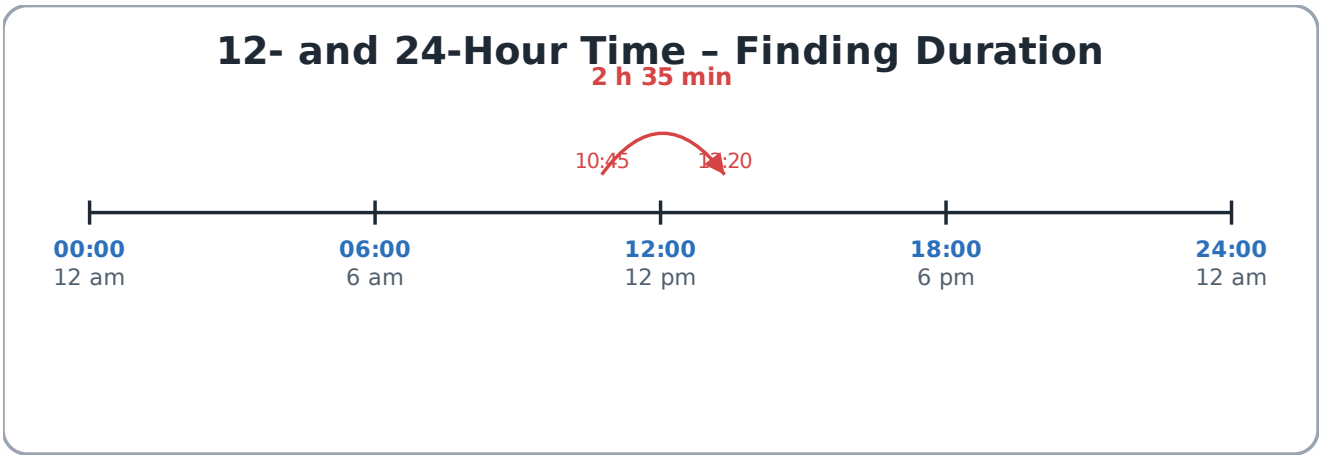
Non-Spatial Measurement: Time, Timetables & Duration

Explicit teaching — I Do (~15 min)

1. 12- and 24-hour time WA6MMGN1

Model converting between the two systems: $1{:}30\ pm = 13{:}30$; $9{:}00\ am = 09{:}00$; midnight $= 00{:}00$. Use a clock to show the afternoon "add 12" idea.

2. Duration



The "jump and count on" strategy for elapsed time.

> **Worked example.** From $10{:}45$ to $13{:}20$: jump to $11{:}00$ (15 min), to $13{:}00$ (2 h), to $13{:}20$ (20 min) $\rightarrow 2\ h\ 35\ min$.

3. Timetables

Display a bus or train timetable; model reading a departure and arrival and finding the journey length.

Guided practice — We Do (~20 min)

1. **Convert together.** The class converts a set of times both ways between 12- and 24-hour formats.
2. **Duration jumps.** Find several durations using the number-line jump strategy, including some that cross midday.
3. **Read a timetable.** Using a real timetable, answer "which train arrives by 9:00?" and "how long is the 08:15 service?" as a class.

4. **Plan a mini-itinerary.** Order a short day's events and total the time.

Independent practice — You Do (~15 min)

Worksheet/task:

- convert between 12- and 24-hour time;
- calculate durations of events (including some that cross the hour and midday);
- read a provided timetable to find journey times and the best service to catch;
- plan a simple half-day itinerary and total its duration.

> **Exit ticket.** A movie starts at $14{:}40$ and ends at $16{:}25$. How long is it? Write the start time in 12-hour format.

Teacher notes

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Curriculum link: WA6MMGN1.

Materials: sample bus/train/flight timetables, a geared analogue clock, blank time number lines.

Common misconceptions

> - Treating time as base-10 (e.g. thinking 1.50 means 1 h 50 min, or subtracting times like decimals).
> - Forgetting to add 12 only for pm in 24-hour conversion.
> - Mishandling durations that cross the hour or midday.

Assessment for learning: the "cross-the-hour" duration questions are the key diagnostic.

Approaches

EXPERIENTIAL · AUTHENTIC REAL-WORLD MATERIALS APPROACH

Authentic real-world materials approach

Ground time in authentic, real-world materials so the maths matches situations students actually face.

Genuine timetables. Provide real public-transport timetables, cinema session times and flight schedules; students answer questions they would meet in daily life.

"Plan a day out" project. Given opening hours and transport times, students build a workable itinerary — this forces repeated duration calculations in context.

Geared analogue clock. Use a large geared clock alongside a 24-hour display so students physically move the hands while reading both formats.

Lived-experience think-alouds. Use a familiar journey (such as travel time to school) to connect duration to everyday experience.

Game-Based: Beat the Clock Challenges

This approach turns time and measurement into quick, competitive games. The pressure of a real countdown makes elapsed-time thinking feel urgent and fun.

Clock-Face Race. The teacher calls a time (“quarter to nine”, “19:05”); students set a geared mini-clock and hold it up. Fastest correct face wins the round. Mix 12-hour and 24-hour calls.

Elapsed-Time Dominoes. Each domino has a start time on one half and a duration on the other. Players match the end time of one card to the start time of the next, building a chain around the table.

Timetable Detective. Give groups a real bus or train timetable and a set of mission cards (“arrive in town by 10 am”). Teams race to find the journey that works and prove the duration.

Estimate & Check. Students guess how long one minute is with eyes closed and hands up; the teacher times it. Then they estimate the duration of a short task and check against a stopwatch.

Why it works. Games supply instant feedback and lots of repetition without it feeling like drill. Switching between analog faces, 24-hour times and durations in fast rounds builds fluent, flexible time sense.