# Reasoning and Problem Solving
## Step 6: 24-hour Clock

## National Curriculum Objectives:

**Mathematics Year 3: (3M4b)** Tell and write the time from an analogue clock and 24-hour clocks

**Mathematics Year 3: (3M4d)** Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., Before noon, afternoon, noon and midnight

## Differentiation:

Questions 1, 4 and 7 (Problem Solving)
**Developing** Ordering train times. 3 times, using 15 minute intervals.
**Expected** Ordering train times. 5 times, using 5 minute intervals.
**Greater Depth** Ordering train times. 5 times, using 1 minute intervals.

Questions 2, 5 and 8 (Reasoning)
**Developing** Finding the right robber based on times they were seen leaving a crime scene. 2 options, using 15 minute intervals.
**Expected** Finding the right robber based on times they were seen leaving a crime scene. 4 options, using 5 minute intervals.
**Greater Depth** Finding the right 2 robbers based on times they were seen leaving a crime scene. 4 options, using 1 minute intervals.

Questions 3, 6 and 9 (Problem Solving)
**Developing** Sorting times (24-hour clock, words and analogue clock) into 3 categories ('Before noon', 'After noon', and 'Can't tell'). 3 times, using 15 minute intervals.
**Expected** Sorting times (24-hour clock, words and analogue clock) into 3 categories ('Before noon', 'After noon', and 'Can't tell'). 4 times, using 5 minute intervals.
**Greater Depth** Sorting times (24-hour clock, words and analogue clock) into 3 categories ('Before noon', 'After noon', and 'Can't tell'). 3 times, using 1 minute intervals.

## More Year 3 Time resources.

## Did you like this resource? Don't forget to review it on our website.

# 24-hour Clock

**1a.** Here is an information board at a station. It shows when trains leave.

| Train A | 05:45 |
|---------|-------|
| Train B | 20:00 |
| Train C | 12:15 |

Put the trains in order from earliest leaving to latest leaving in the day.

D ⭐

PS

**2a.** A shop was robbed some time after 10.15am. Detective Ivor Clue knows when some criminals left the shop.

| Rob Erry | 09:45 |
|----------|-------|
| Justin Jale | 14:00 |

Who should Detective Clue arrest? Explain your answer.

D ⭐

R

**3a.** Here are some different times.

A
**21:55**

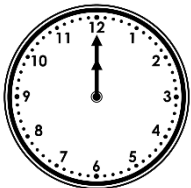B

C
Ten minutes before midday

Sort them into these categories:

| Before noon | After noon | Can't tell |
|-------------|------------|------------|

D ⭐

PS

# 24-hour Clock

**1b.** Here is an information board at a station. It shows when trains leave.

| Train A | 17:30 |
|---------|-------|
| Train B | 11:15 |
| Train C | 16:30 |

Put the trains in order from latest leaving to earliest leaving in the day.

D ⭐

PS

**2b.** A shop was robbed some time after 6.45pm. Detective Ivor Clue knows when some criminals left the shop.

| Mo Formee | 15:30 |
|-----------|-------|
| Nick Stuff | 19:15 |

Who should Detective Clue arrest? Explain your answer.

D ⭐

R

**3b.** Here are some different times.

A
**10:05**

B

C
Twenty-five past six in the evening

Sort them into these categories:

| Before noon | After noon | Can't tell |
|-------------|------------|------------|

D ⭐

PS

**Reasoning and Problem Solving – 24-hour Clock – Year 3 Developing**

# 24-hour Clock

# 24-hour Clock

**4a.** Here is an information board at a station. It shows when trains leave.

| Train A | 10:35 |
|---------|-------|
| Train B | 18:00 |
| Train C | 07:05 |
| Train D | 02:15 |
| Train E | 22:45 |

Put the trains in order from latest leaving to earliest leaving in the day.

PS

**4b.** Here is an information board at a station. It shows when trains leave.

| Train A | 01:30 |
|---------|-------|
| Train B | 19:20 |
| Train C | 06:10 |
| Train D | 04:55 |
| Train E | 20:50 |

Put the trains in order from earliest leaving to latest leaving in the day.

PS

**5a.** A shop was robbed some time after 03:35pm. Detective Ivor Clue knows when some criminals left the shop.

| Noah Fewtrix | 9:35 |
|--------------|------|
| Rob Banks | 16:30 |
| Eva Wayin | 15:10 |
| Misty Meena | 11:05 |

Who should Detective Clue arrest? Explain your answer.

R

**5b.** A shop was robbed some time after 01.40pm. Detective Ivor Clue knows when some criminals left the shop.

| Art Forger | 13:15 |
|------------|-------|
| Nicole Ovit | 10:45 |
| Eli Zalot | 13:50 |
| Carrie Itov | 12:35 |

Who should Detective Clue arrest? Explain your answer.

R

**6a.** Here are some different times.

**A**
00:10

**B**

**C**
Eight thirty-five at night

**D**
12:40

Sort them into these categories:

| Before noon | After noon | Can't tell |
|-------------|------------|------------|

PS

**6b.** Here are some different times.

**A**
22:50

**B**

**C**
Quarter past four in the morning

**D**
15:25

Sort them into these categories:

| Before noon | After noon | Can't tell |
|-------------|------------|------------|

PS

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**Reasoning and Problem Solving – 24-hour Clock – Year 3 Expected**

**7a.** Here is an information board at a station. It shows when trains leave.

| Train A | 03:19 |
|---------|-------|
| Train B | 15:32 |
| Train C | 05:43 |
| Train D | 20:56 |
| Train E | 21:07 |

Put the trains in order from earliest leaving to latest leaving in the day.

PS

**7b.** Here is an information board at a station. It shows when trains leave.

| Train A | 22:09 |
|---------|-------|
| Train B | 13:34 |
| Train C | 09:48 |
| Train D | 15:27 |
| Train E | 16:21 |

Put the trains in order from latest leaving to earliest leaving in the day.

PS

**8a.** A shop was robbed some time after 12:24pm. Detective Ivor Clue knows when some criminals left the shop.

| Rob Ing | 12:19 |
|---------|-------|
| Anna Bitmore | 09:36 |
| Kat Burglar | 13:01 |
| Will Steal | 12:26 |

Who should Detective Clue arrest? Explain your answer.

R

**8b.** A shop was robbed some time after 08.13pm. Detective Ivor Clue knows when some criminals left the shop.

| Owen Money | 20:21 |
|------------|-------|
| Em Bezzle | 08:43 |
| Lars Senny | 18:18 |
| Phil Mybag | 20:31 |

Who should Detective Clue arrest? Explain your answer.

R

**9a.** Here are some different times.

A
Eight minutes to five in the morning

B
**08:17**

C
Five sixteen in the evening

E

D
**19:57**

F
**17:22**

Sort them into these categories:

| Before noon | After noon | Can't tell |
|-------------|------------|------------|

PS

**9b.** Here are some different times.

A
Six thirty-three at night

B
**18:14**

C
Nineteen minutes past midday

E

D
**22:19**

F
**11:56**

Sort them into these categories:

| Before noon | After noon | Can't tell |
|-------------|------------|------------|

PS

## Developing
**1a.** Train A, Train C, Train B.
**2a.** Justin Jale, because the other criminal left the shop before 10.15am.
**3a.** Before noon: C. After noon: A. Can't tell: B.

## Expected
**4a.** Train E, Train B, Train A, Train C, Train D.
**5a.** Rob Banks, because all the other criminals left the shop before 3.35pm.
**6a.** Before noon: A. After noon: C, D. Can't tell: B.

## Greater Depth
**7a.** Train A, Train C, Train B, Train D, Train E.
**8a.** Kat Burglar and Will Steal, because all the other criminals left the shop before 12.24pm.
**9a.** Before noon: A, B. After noon: C, D, F. Can't tell: E.

## Developing
**1b.** Train A, Train C, Train B.
**2b.** Nick Stuff, because the other criminal left the shop before 6.45pm.
**3b.** Before noon: A. After noon: C. Can't tell: B.

## Expected
**4b.** Train A, Train D, Train C, Train B, Train E.
**5b.** Eli Zalot, because all the other criminals left the shop before 1.40pm.
**6b.** Before noon: C. After noon: A, D. Can't tell: B.

## Greater Depth
**7b.** Train A, Train E, Train D, Train B, Train C.
**8b.** Owen Money and Phil Mybag, because all the other criminals left the shop before 8.13pm.
**9b.** Before noon: F. After noon: A, B, C, D. Can't tell: E