Reasoning and Problem Solving – Hours in a Day

National Curriculum Objectives:

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., morning, afternoon, noon and midnight
Mathematics Year 3: (3M4e) Know the number of seconds in a minute and the number of days in each month, year and leap year
Mathematics Year 3: (3M4f) Compare durations of events, [e.g. to calculate the time taken by particular events or tasks]

Differentiation:

Questions 1, 4 and 7 (Reasoning)
Developing Decide if a statement about time is possible or impossible and how you know. Statements based on time in one day.
Expected Decide if a statement about time is possible or impossible and how you know. Statements based on time across multiple days.
Greater Depth Decide if a statement about time is possible or impossible and how you know. Statements based on time across multiple days and with topic based language.

Questions 2, 5 and 8 (Reasoning)
Developing Decide if a statement about time is right or wrong and explain your answer. Limited to facts about the hours in a day.
Expected Decide if a statement about time is right or wrong and explain your answer. Covering multiple days.
Greater Depth Decide if a statement about time is right or wrong and explain your answer. Including facts that may be possible, but unlikely.

Questions 3, 6 and 9 (Problem Solving)
Developing Answer a simple question based on a month shown on a calendar.
Expected Answer a more complicated question based on a month shown on a calendar.
Greater Depth Answer a question based on a month shown on a calendar including where there could be more than one answer.

More resources which follow the same small steps as White Rose.

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

Reasoning and Problem Solving – Hours in a Day

1a. Sian says:

I get up at 7 o'clock and I go to bed at 7 o'clock too.

Is that possible?
Explain how you know.

D R

1b. Morgan says:

I walk to school at 8 o'clock and I go to sleep at 8 o'clock as well.

Is that possible?
Explain how you know.

D R

2a. True or false?

"There are 24 hours in a day. That means it is light for 24 hours every day."

Explain how you know.

D R

2b. True or false?

"There are 24 hours in a day. That means there are 48 hours in two days."

Explain how you know.

D R

3a. Which month could this calendar be?

Mo	Tu	We	Thu	Fri	Sa	Su
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

D PS

3b. How many times in this month would you go to bed?

Mo	Tu	We	Thu	Fri	Sa	Su
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

D PS

Reasoning and Problem Solving – Hours in a Day

4a. Ellie says:

School starts at 9 o'clock. I am always on time, but I am also in bed at 9 o'clock.

Is that possible?
Explain how you know.

E R

4b. Raj says:

It will always be dark at 11 o'clock.

Is that possible?
Explain how you know.

E R

5a. True or false?

"There are seven days in a week. That means we come to school seven times a week."

Explain how you know.

E R

5b. True or false?

"Today the sunrise was at 6 o'clock. That means every day must start at 6 o'clock."

Explain how you know.

E R

6a. How many days in this month are at the weekend?

Mo	Tu	We	Thu	Fri	Sa	Su
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

E PS

6b. How many times in this month would it be exactly noon?

Mo	Tu	We	Thu	Fri	Sa	Su
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

E PS

Reasoning and Problem Solving – Hours in a Day

7a. Crystal says:

I finish school at 3 o'clock. There are 5 school days a week. So it must only be 3 o'clock 5 times a week.

Is that possible?
Explain how you know.

GD

R

7b. Oscar says:

If I wake up in the night it must be midnight.

Is that possible?
Explain how you know.

GD

R

8a. True or false?

"There are 28 days in February. That is the same as 4 weeks. That means you always have 4 weeks of school in February."

Explain how you know.

GD

R

8b. True or false?

"There are 24 hours in a day. That means there are 168 hours in a week."

Explain how you know.

GD

R

9a. How many times in this month might you go to school?

Mo	Tu	We	Thu	Fri	Sa	Su
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

GD

PS

9b. How many times in this month will it be 6 o'clock?

Mo	Tu	We	Thu	Fri	Sa	Su
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

GD

PS

Reasoning and Problem Solving – Hours in a Day

Developing

1a. Yes, because there is a 7 o'clock in the morning and one in the evening.
1b. Yes, because there is an 8 o'clock in the morning and one in the evening.
2a. False, it is not light for the full 24 hours, it is dark at night.
2b. True. 2 x 24 = 48
3a. February
3b. 28

Expected

4a. Yes, because it is 9 o'clock twice a day.
4b. No, there is an 11 o'clock in the morning and one at night. It will be light for one and dark for the other.
5a. False. Only 5 of the days are school days.
5b. False. The sun rises at different times and changes in different seasons.
6a. 8
6b. 28

Greater Depth

7a. No. It is that time twice a day and it still happens at the weekend as well.
7b. Possible (but unlikely). Midnight is only at 12 o'clock. It could be midnight when he wakes up, but it's unlikely.
8a. False. There could be school holidays that fall in February.
8b. True. 24 x 7 = 168 so that will always be the case.
9a. 20, but only if there are no school holidays in the month.
9b. 56