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Year 3

Small Steps Guidance and Examples

Block 2: Time

White Rose Maths

Year 3 – Yearly Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number – Place Value			Number – Addition and Subtraction				Number – Multiplication and Division			Consolidation	
Spring	Number - Multiplication and Division			Measurement: Money	Statistics		Measurement: length and perimeter		Number - Fractions		Consolidation	
Summer	Number – fractions			Measurement: Time		Geometry – Properties of Shapes		Measurement: Mass and Capacity			Consolidation	

Overview

Small Steps

Months and years

Hours in a day

Telling the time to 5 minutes

Telling the time to the minute

AM and PM

24 hour clock

Finding the duration

Comparing the duration

Start and end times

Measuring time in seconds

NC Objectives

Tell and write the time from an analogue clock, including using Roman numerals from I to XII and 12-hour and 24-hour clocks.

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.

Know the number of seconds in a minute and the number of days in each month, year and leap year.

Compare durations of events [for example to calculate the time taken by particular events or tasks].

Months and Years

Notes and Guidance

Children look at the concept of a year and months. They are introduced to leap years and how they are different from a non-leap year.

Children should explore years using calendars to investigate the number of days in each month. rhymes, and songs are also helpful for children to remember the number of days in each month.

Mathematical Talk

When is your birthday? What other significant dates are there during the year? Are they the same every year?

Which month comes before _____? Which month comes after _____?

Which month changes when there is a leap year? Are there any other months that change? If the last leap year was 2016, when will the next one be?

Varied Fluency

- Children should spend time exploring a real calendar, looking at the number of months in a year and days in each month. Compare with a calendar from a leap year (2016) What is the same? What is different?

- Use the numbers to fill in the gaps in the sentences.

There are _____ days in a year.

7

365

There are _____ months in a year.

4

There are _____ days in a leap year.

366

12

There are _____ days in a week.

Leap years happen every _____ years.

- Put these dates in order from earliest to latest.

3rd March2nd MarchJanuary 31st1st December

Earliest



Latest

Months and Years

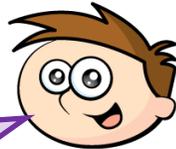
Reasoning and Problem Solving

4 children describe their birthdays.



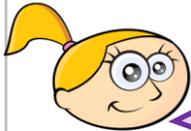
My birthday is the first day of the second month.

Mark



I was born on the 15th of June.

Sam



I was born on the last day of the year!

Faye



I was born two days before Mark.

Ann

Can you work out their birthdays and order them from earliest to latest in the year?

Ann – 30th Jan
 Mark – 1st Feb
 Sam – 15th June
 Faye – 31st Dec

Denise says,

Some months have 31 days, some days have 30 days. How many months have 28 days?



Only February has 28 days.

Tallie



Every month has 28 days!

Frank

Who do you agree with? Explain your thinking.

They are correct for different reasons. Tallie is correct because only February has exactly 28 days, but Frank is correct because every month has at least 28 days.

Hours in a Day

Notes and Guidance

Children are introduced to the number of hours in a day as well as language such as: 'noon', 'midday', 'midnight'. They do not need to know the difference between am or pm at this point.

Other facts such as days in a week/month are also taught.

Attention should be drawn to the difference between a school week and a calendar week.

Mathematical Talk

What time does the day start? How many hours are there in a day?

How many hours do you spend at school in a day? When does school start and finish?

Why are there two 11 o'clocks in a day?

Varied Fluency

- Fill in the gaps in the sentence stems.
There are ____ days in a whole week.
There are ____ days in a school week.
There are ____ hours in a day.
There are ____ hours in a school day.
- Put the times/events into the correct place on the diagram.

Morning	Afternoon	Evening	Night

Breakfast	Midnight	Midday/ Noon	2 o'clock
Supper	Bedtime	Assembly	Brushing teeth

- Complete the statements.
1 day = 24 hours
2 days = ____ hours
__ days = 240 hours
__ days = 120 hours
__ days = 60 hours
20 days = ____ hours

Hours in a Day

Reasoning and Problem Solving



Elvis

I get up at 7 o'clock so that means daytime starts at 7 o'clock



Tina

You are wrong. I get up at 8 o'clock so daytime starts at 8 o'clock

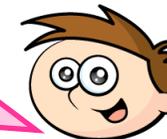
Who do you agree with?
Explain why.

Children should state that they do not agree with Elvis or Tina. Day time begins when the sun rises which can be at different times of the day, it is not dependent on when people get up.

Su	Mo	Tu	We	Th	Fr	Sa
	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	29	30	31			

In this month, there are no school holidays.

In this month we have to come to school for 31 days.



Rob

Do you agree with Rob?
Explain your thinking.
Which month could it be?

Rob is not correct, as the children only have to come to school for 23 days if there are no holidays. Children should discuss the fact they do not come to school on a Saturday or Sunday.

It is most likely to be March if there are no holidays at all. It is a good opportunity to look at your school calendar with the children.

Telling the Time (1)

Notes and Guidance

Children tell time to the nearest 5 minutes on an analogue clock. They focus on the language of past and to, as well as using Roman numerals on a clock face.

Attention should be drawn to the difference between the minute and hour hand. This is especially important for times that are close to the next hour, for example: 5 minutes to 12

Mathematical Talk

Which of the hands is the minute hand and which is the hour hand?

Is the minute hand past or to the hour?

How many minutes past/to the hour is the minute hand?

If the minute hand is pointing at the 6, how do we say this time?

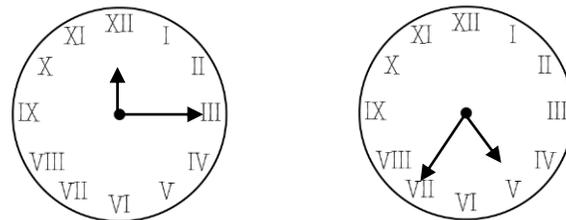
What do you notice about the clocks?

Which Roman numeral represents the number ____?

Varied Fluency

- 1 Give each child a clock with moveable hands. Children represent different times to the nearest 5 minutes on their own clock. Discuss whether the minute hand is past or to the hour in different times.

2



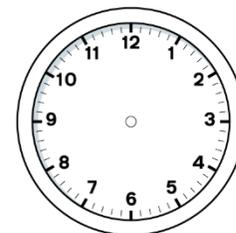
What time is shown on each clock?

_____ minutes past _____ _____ minutes to _____

3

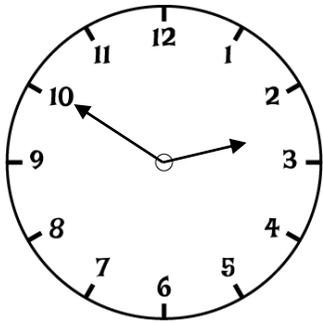
Draw the hands on the clock to show the time:

25 minutes to 6



Telling the Time (1)

Reasoning and Problem Solving



Ruby

The clock shows ten minutes to 3

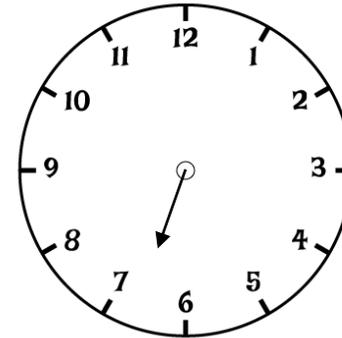


Huzayl

The minute hand is not quite pointing to the 3, so it must be ten to 2

Who do you agree with?
Explain your thinking.

Ruby is correct. Because it is not 3 o'clock yet, the hour hand will not be exactly on the 3



This clock has lost its minute hand.

What time could it be?
Justify your answer.

The time is past half past six-children could suggest it could be twenty five to up to quarter to seven.

Telling the Time (2)

Notes and Guidance

Children tell time to the nearest minute using an analogue clock. They use the terms 'past' and 'to'. When telling time 'to' the next hour, children may need to count on to find how many minutes are left in the hour.

Mathematical Talk

Which hand is the minute hand? Which hand is the hour hand?

How many minutes is it past the hour?

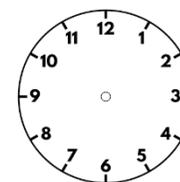
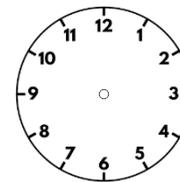
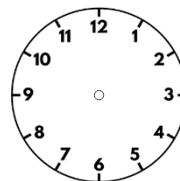
How many minutes is it to the next hour?

If the hour hand is between ____ and ____, which hour is the time referring to?

Varied Fluency

- 1 Show children various times to the nearest minute for them to read.
Give each child a clock with moveable hands.
Children represent different times to the nearest minute on their own clock.
Discuss whether the minute hand is past or to the hour in different times.

- 2 Draw the hands on the clock from the following times.



24 minutes to 8

24 minutes past 8

Four minutes to 4

- 3 Leila is telling the time from an analogue clock.



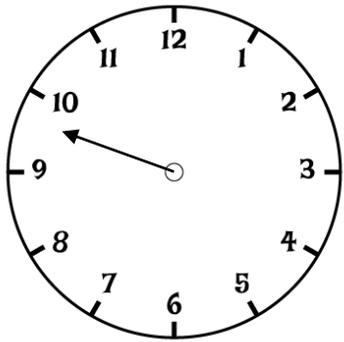
The hour hand is pointing to XI the minute hand is pointing to XII

What time is it?

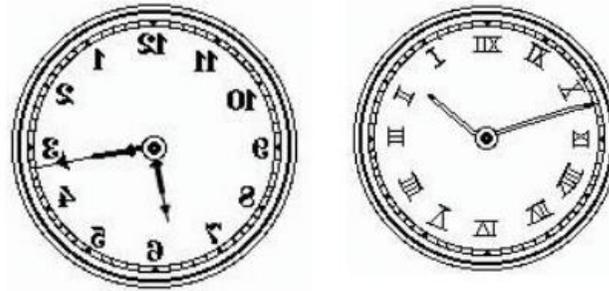
Telling the Time (2)

Reasoning and Problem Solving

This clock has lost its hour hand.
What time could it be?



The minute hand is at about 12 minutes to the hour. It could therefore be 12 minutes to any hour.



The clocks above have been reflected in a mirror.

Can you work out what time they show?

16 minutes past 6

12 minutes to 2

AM and PM

Notes and Guidance

Children use ‘morning’, ‘afternoon’, ‘am’ and ‘pm’ to describe the time of day.

Children continue using analogue clocks and will be introduced to digital time for the first time.

Mathematical Talk

- What time of the day does ___ happen?
- Is ___ earlier or later than ___?
- How do you know whether a time is in the morning or afternoon?
- What times could be AM?
- What times could be PM?
- What is the difference between analogue and digital?
- What would the time look like on an analogue clock?
- How can we change analogue to digital?

Varied Fluency

- Using a visual timetable, sort the events into morning and afternoon.
Create sentences to describe when events take place.
For example: Maths is in the morning. Guided Reading is in the afternoon.

- Sort the times from latest to earliest.

5:30PM	9:45AM	9:45PM	10:23AM
7:31AM	10:13PM	8:30AM	6:32AM
0:24AM	8:55PM	2:11AM	7:40AM

- Complete the table.

	Show the time on an analogue clock	Show the time on a digital clock
Guided Reading is at 10 o'clock in the morning.		<input type="text"/>
Home time is at half past 3 in the afternoon.		<input type="text"/>
Lunchtime is at 12 o'clock midday.		<input type="text"/>

AM and PM

Reasoning and Problem Solving

The board shows the times of trains arriving and leaving the train station.

	Arrives	Leaves
London	5:50AM	6:00AM
Edinburgh	8:00AM	8:20PM
Manchester	2:33PM	2:45PM
Leeds	7:31PM	7:35PM

Benj's watch shows the time he arrives at the station.



Which train could he be catching?
Explain how you know.

Benj could be catching the train to Edinburgh or Leeds.

Children should explain that analogue clocks give no indication to AM or PM and because it is 20 past 7 Benj could be catching the 8:20AM train or the 7:35PM train.



Martha

When telling the time on a digital clock, the larger the first number the later in the day it is.

Is Martha correct?
Explain how you know.

Martha is incorrect. It is important to know whether the time is AM or PM. For example 5:34PM is later in the day than 8:00AM.

24-hour Clock

Notes and Guidance

Children are introduced to telling the time on a 24 hour digital clock for the first time.

Children spend time looking at an analogue and digital clocks at various times throughout the day, in order to compare what is the same and what is different.

Mathematical Talk

Is the time an am or a pm time?

What will the hour be in 24 hour time? What can you count from? When does the hour go back to 0?

What will the minutes be in 24 hour time? What can you count from? When does the minute go back to 0?

Varied Fluency

- 1 Create a diary using pictures to show your day from waking up to going to bed.
Put times on these events using digital time.

- 2 Match the times to the clocks showing the same time.

9 o'clock in the morning.		19:15
Half past 3 in the afternoon.		09:00
Quarter past 7 in the evening.		15:30

- 3 Complete the times.

13:45	Quarter to one in the _____.	__:15	Quarter past three in the afternoon.
11:20	Twenty past eleven in the _____.	17:__	Twenty five to six in the evening.
15:50	Ten to four in the _____.	__:__	Twenty to 9 in the morning.

24-hour Clock

Reasoning and Problem Solving

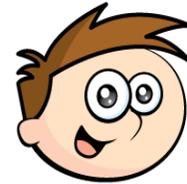
Charlotte says the clocks are showing the same time.
Is she correct?
Explain how you know.

12:45



Charlotte could be correct. Children should explain that analogue clocks do not tell us whether it's AM or PM therefore it could be correct.

Is Ralph correct?
Prove it.



If the time has an 8 in it, it has to be 8 o'clock.

Ralph is not correct. Children should give examples to show this is incorrect. For example: 18:00, 8:30, 10:38 etc.

Finding the Duration

Notes and Guidance

Children find durations using analogue and digital clocks. They should be given opportunities to practically work out durations of time using real clocks.

Children explore the most efficient ways of breaking the time down in order to work out the duration. For example: half hours, quarter of an hour and five minutes.

Mathematical Talk

When did ____ start and finish?

How many hours/minutes is a full turn around the clock?

Do we need to count each individual minute?

How else could you break down the duration to make it easier to count?

Varied Fluency

- 1 Calculate the duration of the TV programmes.

TV Programme	Start	Finish	Duration
Pals	Half past 6	Half past 7	
Dennis the explorer	15:15	18:15	
The football show	12 o'clock midday	14:00	
Art Adventure	10:40	Twenty to one in the afternoon	

- 2 Use an individual clock to work out the time spent running then complete the sentences.

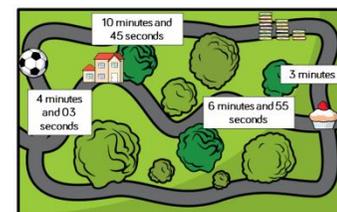
Martha started running at 13:20 and stopped at 13:45.

Martha ran for ____ minutes.

Xander started running at at 09:10 and stopped at 09:55.

Xander ran for _____ minutes.

- 3 On Sunday Heather played football, then went to the library, then called in at the bakery before going home. The times between each place is recorded on the map. How long was Heather out for?



Finding the Duration

Reasoning and Problem Solving

Emilia and Harry are learning their times tables.

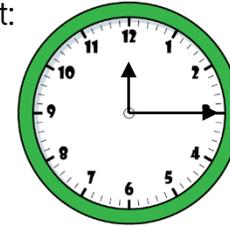
The table shows how long they practiced for each day.

Day	Emilia	Harry
Monday	2 minutes 10 seconds	2 minutes 14 seconds
Tuesday	2 minutes 05 seconds	2 minutes 04 seconds
Wednesday	2 minutes 07 seconds	2 minutes 10 seconds
Thursday	1 minutes 01 seconds	1 minutes 55 seconds
Friday	1 minutes 59 seconds	2 minutes 0 seconds

Who was the quickest over the week and by how much?
How do you know?

Emilia was the quickest over the week. She spent 9 minutes and 22 seconds on her times tables and Harry spent 10 minutes and 23 seconds on his. Emilia was quicker by 1 minute and 1 second.

Lunchtime begins at:



Lunchtime ends at:



Joshua and Ellie are working out how long lunchtime lasts for.



I did three quarters then added 10

Joshua

I did 11 five minutes.



Ellie

Whose method is correct?

Both children's methods are correct.

Josh has found the duration by $15 + 15 + 15 + 10 = 55$ minutes.

Ellie has found the duration by $5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 = 55$ minutes.

Comparing the Duration

Notes and Guidance

Children compare durations of time using analogue and digital clocks.

They use their knowledge of addition and subtraction to compare the length of time taken by particular events or tasks.

Mathematical Talk

Which is the longest amount of time?

Which is the shortest amount of time?

Is _____ longer or shorter than _____?

How much longer was _____?

How much shorter was _____?

Varied Fluency

- 1 Use your class daily timetable to answer these questions.
What is the longest lesson?
Which is the shortest lesson?
How much longer is _____ than _____?

- 2 Use individual clocks to find and compare the following durations.

14:00 – 18:00 08:00 – 12:00
07:30 – 09:30 11:30 – 14:30
15:30 – 17:00 14:00 – 14:30

- 3 Complete the sentences about the duration of the train journeys.

Destination	Train leaves	Train arrives
London	08:45	11:35
Leeds	10:05	10:33
Manchester	13:10	14:20

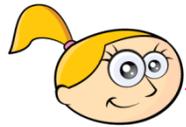
The journey to London is _____ than the journey to Manchester.

The journey to _____ is less than the journey to London.

Comparing the Duration

Reasoning and Problem Solving

Bella and Tom are having a race.
It takes Bella 3 and a half minutes to complete the race.
It takes Tom 3 minutes and 15 seconds.



I won because I got a higher time.

Is Bella correct?
Explain how you know.

Bella is incorrect. Bella took longer to finish the race therefore she finished after Tom. The winner of a race is the person who finishes first.

Here are the times for films showing at the cinema.

Film	Start	Finish
Catman	16:30	17:45
Batwoman	17:00	18:00
Spiderdog	15:25	16:35

Evie has 1 hour and 15 minutes before she has to go home.

Which film(s) could Evie go and see?

Explain your reasoning.

Evie could go and see Batwoman or Spiderdog. Batwoman lasts for an hour and Spiderdog lasts for 1 hour and 10 minutes which is less than the time Evie has.

Start and End Times

Notes and Guidance

Children find start and end times to the nearest minute using analogue and digital times.

They use real clocks with moveable hands moving to number lines to help calculate start and end times.

Mathematical Talk

Which hand do you need to move?

Do you need to move the hand clockwise or anti-clockwise?

What time should the number line start at?

Will you jump forwards or backwards?

How many intervals will you break the duration in to?

Varied Fluency

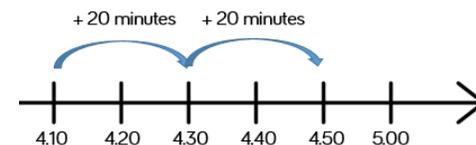
- Practice finding start/end times by moving hands on a clock. For example, If playtime starts at five past ten and lasts for 20 minutes, what time will playtime end? An hour maths lesson finishes at 10.15. What time does the lesson start?

2



A 40 minute TV programme starts at the time shown. What time does it finish?

We can use a number line to work out the end time.



Use this method to work out:

- The end time of a 25 minute lesson starting at 2.15 p.m.
- The start time if a 1 hour 10 minute journey ended at 4 o'clock.

3

Which activity ends the latest?

Gymnastics starts at **15.30** and lasts 1 hour 15 minutes

Football starts at **16.05** and lasts 45 minutes.

Start and End Times

Reasoning and Problem Solving



School ends in 45 minutes.
What time will it be?

Jack says,



School ends at
25 past 3

Molly says,



School ends at 2:85

Who do you agree with?
Explain why.

I agree with Jack,
because Molly has
not remembered
that there are 60
minutes in an hour
and has added 45
minutes to 2:40
Children may use
a number line to
prove Jack is
correct.

15:45

The time shows the mid-way point of
Alfie's favourite TV show.
The show is less than 1 hour long.

What could the start and end time be?

How many different start and end times
can you find?

The show could:
Start at 15.20 and
end at 16.10
Start at 15.25 and
end at 16.05
Start at 15.30 and
end at 16.00
Start at 15.35 and
end at 15.55
Start at 15.40 and
end at 15.50

Measuring Time in Seconds

Notes and Guidance

Children measure and compare durations of time in seconds. It is important for children to have a realistic sense of what time in seconds feels like as they often count in seconds much quicker. They need to use a stop watch to compare, for example, counting to 10 seconds with the timed duration. They recognise that there are 60 seconds in one minute and use this to write durations of time in different ways. For example, 80 seconds and 1 minute, 20 seconds.

Mathematical Talk

What can we use to measure time in seconds accurately?
 Can you suggest a task that lasts ____ seconds?
 Which task took the longest/shortest time to complete?
 How many seconds are there in 1 minute?
 If a task takes longer than 60 seconds, how else could we record the duration of time?
 How could we work out how many seconds there are in ____ minutes?

Varied Fluency

1 Children use a stop watch to find the length of time it takes, in seconds, to complete different tasks. For example, run across the hall/playground, do 10 star jumps, write their name. How long did each task take?
 Order the tasks based on the time they took to complete.

2 Match the written times to the stop watches.

One minute five seconds

00:00:55

55 seconds

00:01:30

Ninety seconds

00:01:05

3 Convert the times given in the table.

Time in minutes	Time in seconds
2 minutes	
	100 seconds
3 minutes 20 seconds	

Measuring Time in Seconds

Reasoning and Problem Solving

Jill takes 153 seconds to skip around the playground.



Tom takes 2 minutes 23 seconds.

Who is the quickest?
Explain how you know.

Tom is quickest.
If we convert 2 minutes 23 seconds into seconds it is $120 + 23 = 143$ seconds
So Tom was 10 seconds quicker than Jill.

True or False?

- 3 minutes 5 seconds < 190 seconds
- 4 minutes = 204 seconds
- 170 seconds > 2 minutes 50 seconds

- TRUE
 - FALSE
- 4 minutes is equal to 240 seconds
- FALSE
- 170 seconds is equal to 2 minutes 50 seconds

Nisha works out how many seconds there are in 4 minutes 15 seconds.

She says,



That's easy, it is 415 seconds.

Can you spot and correct Nisha's mistake?

Nisha thinks there are 100 seconds in 1 minute, but there are 60.
The correct answer is $60 \times 4 = 240$
 $240 + 15 = 255$ seconds