

<p>Links to prior learning/ objectives</p> <p>Children will have learned to interpret pictograms and block graphs. Children can count in multiples of 2/5/10 and 100. Children will have been taught to tell the time to 5-minute intervals. Children have been taught the facts of time.</p>	<p>Resources</p> <p>Axis, clocks, blank clock faces,</p>	<p>Vocabulary:</p> <p>Bar chart, pictograms, scaled, intervals, multiples, interpret, present, fewer, more, solve problems Seconds, hours, minutes, o'clock, a.m./p.m., morning, afternoon, noon and midnight, 12-hour, 24-hour, roman numerals, multiples of 5, analogue, digital, clock, face, hands.</p>
<p>Objectives and Teaching</p>		
<p>Barriers to ARE (misconceptions) Week 1</p> <p>Children may struggle to understand what a bar chart and pictogram shows. Children may struggle to count in multiples of 2/5/10/ 25/50/100 to read a scale. Children may not recognise that intervals must be of equal distance apart. Children may struggle to work with more than one piece of data.</p>	<p>Solve one-step and two-step questions (e.g. how many more? And how many fewer?) using information presented in scaled bar charts and pictograms. Interpret and present data using bar charts, pictograms and tables.</p> <ul style="list-style-type: none"> • To know how to interpret a pictogram. • To know how to solve problems based on pictograms. • To know how to interpret and solve problems based on tables. (Could be moved to time if needed?) • To know how to interpret bar charts. • To know how to solve problems based on bar charts. 	
<p>Fluency</p>	<p>Reasoning</p>	<p>Problem Solving</p>

Summer 2 Year 3

The pictogram shows how many books some classes read.

Class	Books read
Class 1	
Class 2	
Class 3	
Class 4	

Key

= 5 books

- Which class read the most books?
- Which class read the least books?
- How many more books did class 3 read than class 2?
- What other questions could you ask about the pictogram?

Use the clues to complete the pictogram to show how many apples each group collect. = 10 apples.

- Group 6 collected twice as many as group 2
- Group 3 collected 35 more apples than group 5
- Group 1 collected a quarter of the amount group 4 collected.

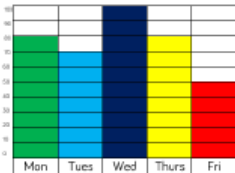
Group	Apples
1	
2	
3	
4	
5	
6	

Use the information from the pictogram to complete the bar chart.

Group	Number of cupcakes eaten
Group 1	
Group 2	
Group 3	
Group 4	
Group 5	

Group	Group	Group	Group	Group
1	2	3	4	5

The bar chart shows how many children participate in after school clubs.



Which day is the most popular? By how many children?
Which day is the least popular?
What is the difference between the number of children participating on Tuesday and on Thursday?

Use the information in the table to draw a bar chart.

Sport	Tally	Number
Football		16
Tennis		14
Rugby		18
Cricket		12
Basketball		8

Daniel, Charlotte and Freddie record the scores of six football matches.

Unfortunately, Freddie spilt paint on the results.

Help them record the possible results based on their memories of the matches.

Match	Number of goals
1	
2	
3	
4	
5	
6	



There were 3 more goals in match 1 than there were in match 3



1 less goal was scored in match 6 than match 2



There were at least double the goals scored in match 4 as there were in match 3

Georgia creates a pictogram to show how many chocolate eggs each class won during a fayre.

Class	Number of eggs
1	
2	
3	
4	
5	
6	

Joe creates a table to show Georgia's results.

Class	Number of eggs
1	30
2	30
3	40
4	30
5	20
6	35

Georgia is not happy with Joe's table. Can you explain why?

Which would be more suitable to represent this information, a bar chart or a pictogram? Explain why.

Charity	Amount raised in a year (£)
Donkey Rescue	2,790
Save the Rhinos	5,650
Money for Meerkats	3,000
Collecting for Cats	4,430



Summer 2 Year 3

The table shows which sport children play.

	Lottie	John	Chris	Ann	Joanne	Jack
Football	✓		✓	✓		✓
Rugby			✓		✓	
Tennis	✓	✓		✓		✓
Cricket			✓		✓	
Basketball		✓	✓	✓		✓

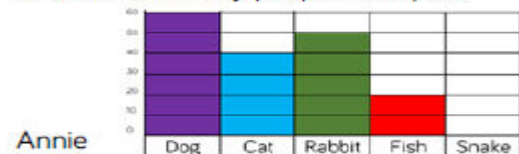
- Which children play football and tennis?
- Which is the most popular sport?
- Which is the least popular sport?
- Who plays the most sport?

The table shows the increase of bus ticket fairs.

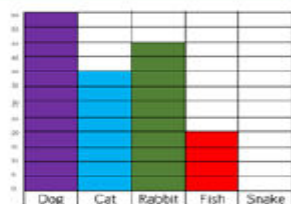
1 st January	
2016	2017
44p	49p
56p	60p
64p	69p
76p	85p
85p	93p
98p	£1.03
£1.05	£1.11

- The cost of Joel's new ticket is 85p. How much has his fare increased be?
- What was the largest increase in price of any ticket?
- What was the smallest increase in price of any ticket?

Annie and Chris have drawn bar charts to show how many people have pets.



I asked more people because my scale goes up in larger jumps.



I asked more people because my bars are taller.

Who is correct? Explain why.

Ann and Lily have created a table to show how many boys and girls took part in after school clubs last week.

Day	Boys	Girls
Monday	11	9
Tuesday	18	12
Wednesday	13	11
Thursday	8	8
Friday	9	7

Ann says,



106 boys took part in after school clubs last week.

Lily disagrees with Ann.

Is Ann correct?

Explain why.

How many questions can you create for your partner for this set of data?

Day	Number of hours a shop is open for
Monday	8
Tuesday	8
Wednesday	4
Thursday	10
Friday	7
Saturday	12



Summer 2 Year 3

Week 2 and 3

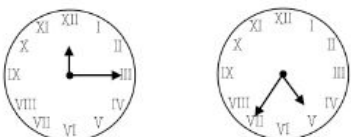
Children may not know the relationship between facts of time.
Children may not understand what a clock face represents and how to read it.
Children may struggle with identifying when they are past an hour or going to an hour.
Children may struggle to recognise that the time on an analogue clock could be am or pm depending on the time of day.
Children may struggle to see that 24-hour time (pm) continues between 13:00- 24:00.

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

- To know how to tell the time on an analogue clock.
- To develop the skill of telling the time on an analogue clock.
- To understand how to tell the time on an analogue clock.
- To know how to write the time reading an analogue clock.
- To develop the skill of writing the time from an analogue clock.
- To know how to write the time in 12-hour notation.
- To know how to write the time in 24-hour notation.
- To develop the skill of writing the time in 24-hour notation.

Fluency

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.



What time is shown on each clock?

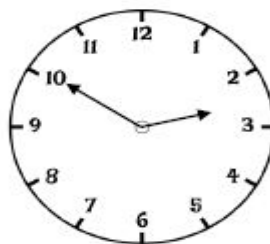
_____ minutes past _____ minutes to _____

Draw the hands on the clock to show the time:

25 minutes to 6



Reasoning



The clock shows ten minutes to 3

Ruby

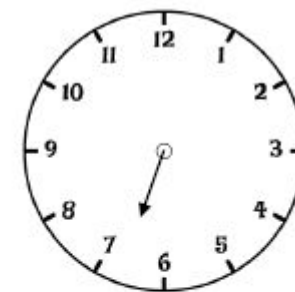


The minute hand is not quite pointing to the 3, so it must be ten to 2

Huzayl

Who do you agree with?
Explain your thinking.

Problem Solving



This clock has lost its minute hand.

What time could it be?
Justify your answer.

Summer 2 Year 3

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.

Draw the hands on the clock from the following times.



24 minutes to 8 24 minutes past 8 Four minutes to 4

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?

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.

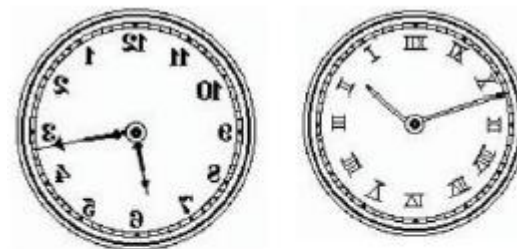
13:45	Quarter to one in the _____	__:15	Quarter past three in the afternoon.
11:20	Twenty past eleven in the _____	17:__	Twenty five to six in the evening.
15:50	Ten to four in the _____	__:__	Twenty to 9 in the morning.

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



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

12:45



The clocks above have been reflected in a mirror.
 Can you work out what time they show?

Is Ralph correct?
 Prove it.



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

Week 4 and 5

Same as week 2 and 3.

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.

- To know key time facts.
- To develop the skill of applying key time facts.

- To know the difference between a.m and p.m.
- To know how to measure and read time.
- To develop the skill of measuring and reading time.
- To know how to calculate durations of time.
- To know how to compare duration of time.

Fluency

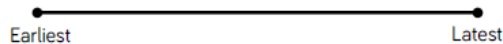
Children should spend time exploring a real calendar, looking at the number of months in a year and days in each month. Compare with a calendar from a leap year (2016) What is the same? What is different?

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. 366 12
 Leap years happen every _____ years. 366 12

Put these dates in order from earliest to latest.

3rd March 2nd March January 31st 1st December



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 ___ days = 120 hours
 2 days = ___ hours ___ days = 60 hours
 ___ days = 240 hours 20 days = ___ hours

Reasoning

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?

Problem Solving

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.

Summer 2 Year 3



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.		10:00
Home time is at half past 3 in the afternoon.		3:30
Lunchtime is at 12 o'clock midday.		12:00

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	

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

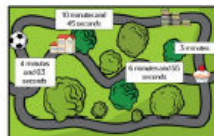
Martha started running at 13:20 and stopped at 13:45.

Martha ran for _____ minutes.

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

Xander ran for _____ minutes.

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?



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.

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.

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?



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.



Summer 2 Year 3

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

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

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.

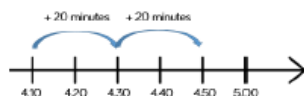
The journey to _____ is less than the journey to London.

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?



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:

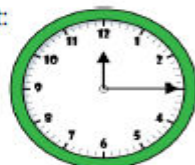
- The end time of a 25 minute lesson starting at 2.15 p.m.
- The start time if a 1 hour 10 minute journey ended at 4 o'clock.

Which activity ends the latest?

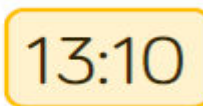
Gymnastics starts at **15.30** and lasts 1 hour 15 minutes

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

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?

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.

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?

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.

Summer 2 Year 3

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.

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**

Convert the times given in the table.

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



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.

Jill takes 153 seconds to skip around the playground.



Tom takes 2 minutes 23 seconds.

Who is the quickest?
Explain how you know.

True or False?

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

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?

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?

Summer 2 Year 3

Fluency	Reasoning	Problem Solving
Week 7	Consolidation	
Fluency	Reasoning	Problem Solving
Week 8	Consolidation	
Fluency	Reasoning	Problem Solving