Unit 11
Time

Mastery Expert tip! "Look for real-life learning opportunities. Ask children to write the timetable of all Year 3 classes using 12- and 24-hour time, and to ask the teachers which they prefer and why. They can then discuss why they think one is more popular than the other."

Don't forget to watch the Unit 11 video!

WHY THIS UNIT IS IMPORTANT

This unit is important because it will help to develop children's understanding of the length of a day, and their awareness of times of day of which they may have little real-life experience. These concepts will be used for reading, estimating and measuring time, and in problem-solving contexts.

WHERE THIS UNIT FITS

- Unit 10: Fractions
- **Unit 11: Time**
- Unit 12: Angles and properties of shape

In this unit, children will begin by recapping their understanding of time from Year 2. They will develop a deeper understanding of the length of a year, a month, a day, an hour, a minute and a second, and will use this to solve problems involving reading and measuring time.

Before they start this unit, it is expected that children:

- know the number of minutes in an hour, and read and write time on a clock to five minutes
- know the months of the year and key dates (including everyday usage)
- have some prior knowledge of everyday usage of time and o'clock times that occur throughout the day
- are familiar with moving from a start time through a duration to an end time.

ASSESSING MASTERY

Children who have mastered this unit know the number of days and months in a year, and the number of days in each month. They can explain what a leap year is and apply this in different contexts. They understand that there are 24 hours in a day, 60 minutes in an hour and 60 seconds in a minute, and can use this to estimate times. Children can tell time on analogue clocks to 5 minutes and to the nearest minute. They use am and pm appropriately and can read 12-hour and 24-hour analogue and digital clocks, including Roman numerals.

COMMON MISCONCEPTIONS	STRENGTHENING UNDERSTANDING	GOING DEEPER
Children think that one day begins when they wake up and ends when they go to bed.	Discuss how sunrise and sunset differ between countries. When is it light/dark in the evenings? Does it change in the summer holidays?	Ask children to discuss if they notice the sunset and sunrise times changing during the different seasons. Give children four clocks with just the hour hand showing four different times within an hour. Children should put the clocks in order. Ask: *Where could the minute hand be?* Look at a local bus timetable. Ask: *Where can you travel to if you leave now and need to arrive at another stop before X am?*
Children may think that the hour hand always points directly to a number.	Show four school activities. Children draw minute and hour hands on clocks to match and put the activities in order.	
Children try to find end time by adding duration to start time minutes to the next hour; for example, start: 12 minutes to 4, duration: 10 minutes, end: 22 minutes to 4.	Provide real examples of duration (such as cooking instructions). Ask children what the end time might be, given a specific start time.	

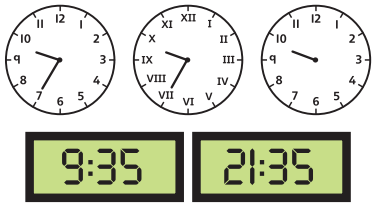
Unit II: Time

WAYS OF WORKING

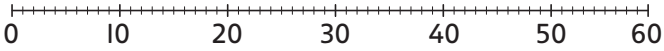
Go through the unit starter pages of the **Textbook** and introduce the unit focus. Use the characters to explore different ways of working.

STRUCTURES AND REPRESENTATIONS

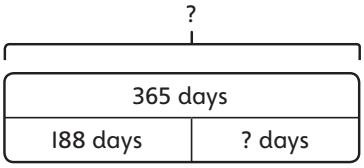
Analogue and digital clock: These models are used regularly to represent 12-hour times; some analogue clocks use Roman numerals and digital clocks can also show 24-hour times. Children will also complete analogue clock faces with no hands, to demonstrate their understanding.



Number line: This model helps children to visualise the order of numbers. It can help them to count on and back in minutes from a given start time, and to identify patterns within the count. In this unit, the number line will be used to represent minutes within an hour, so will go from 0 to 60.



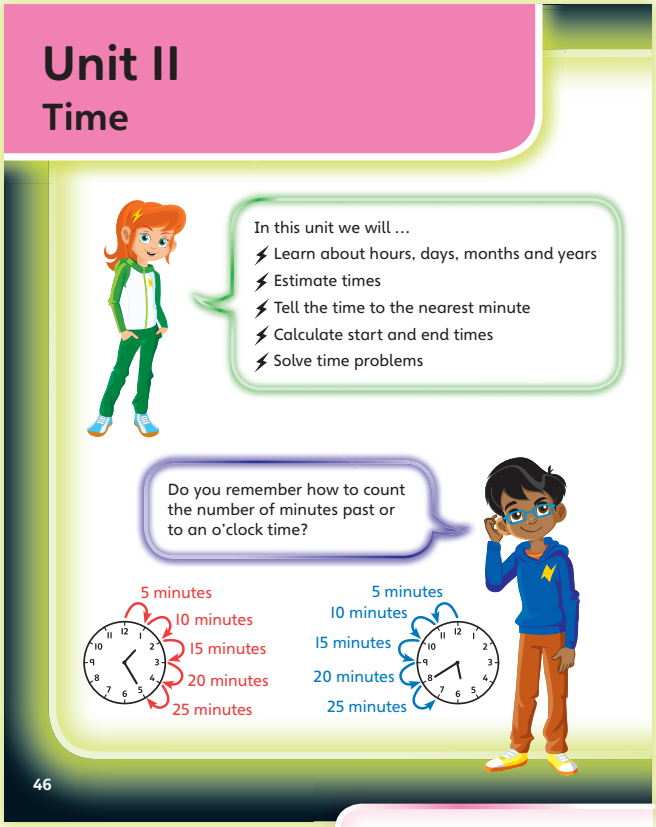
Bar model: This model helps children to find the time left in problem-solving questions.



KEY LANGUAGE

There is some key language that children will need to know as part of the learning in this unit.

- month, year, leap year
- January, February, March, April, May, June, July, August, September, October, November, December
- day, hour, minute, second
- midnight, midday/noon
- hour hand, minute hand, past, to, half past, o'clock, quarter past, quarter to, Roman numerals
- longer, shorter, the same, units, last, convert, how long, left, passed, fastest, slowest
- 12-hour clock, 24-hour clock
- start time, end time, duration, time taken, finish, forwards, backwards, twice
- daytime, night time, around the clock, am, pm
- morning, afternoon, evening, night.



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Months and years

Learning focus

In this lesson, children will learn what a year is and explain what a leap year is. They will learn the number of days in each month.

Small steps

- Previous step: Problem solving – fractions of measures
- **This step: Months and years**
- Next step: Hours in a day

NATIONAL CURRICULUM LINKS

Year 3 Measurement

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

ASSESSING MASTERY

Children know the number of days and months in a year and can say the number of days in each month. Children can explain what a leap year is and apply the concept in different contexts.

COMMON MISCONCEPTIONS

Children may not see the difference between calendar facts that are fixed each year (months in the year, days in each month – apart from February) and those that change (the days of the week that individual dates fall on). Ask:

- *True or false? 1. All years have 365 days. 2. All years have 12 months.*

STRENGTHENING UNDERSTANDING

If children cannot remember how many days are in each month, ask them to make fists of both hands. From the left, point to knuckles and dips between knuckles as we say the months (ignore the thumbs). Any month we say when we point to a knuckle has 31 days; other months have 30 days, apart from February (28, or 29 if it is a leap year).

GOING DEEPER

Ask children to find if a year is a leap year. If it can be divided by 4 but not 100, it is a leap year. If it can be divided by 4 and by 100, it is also a leap year. If it can be divided by 100, but not 400, it is not a leap year.

KEY LANGUAGE

In lesson: month, year, day, week, calendar, January, February, March, April, May, June, July, August, September, October, November, December, leap year, adjust

Other language to be used by the teacher: common year

STRUCTURES AND REPRESENTATIONS

bar model

RESOURCES

Mandatory: calendars

In the eTextbook of this lesson, you will find interactive links to a selection of teaching tools.

Before you teach

- Can children name the months of the year?
- Can children name the days of the week?

Discover

WAYS OF WORKING Pair work

ASK

- Question 1 a): *What does the picture show? How many months are shown in the picture?*

IN FOCUS Question 1 a) brings attention to the number of days in each month. The picture should encourage children to look for the date of the last day in each month, as this will show how many days are in that month. For example, January's last day is Wednesday the 31st. January has 31 days.

PRACTICAL TIPS Make sure each pair or group has a copy of the same calendar, so they can discuss the number of days in each month.

ANSWERS

Question 1 a): There are 12 months in a year.
January, March, May, July, August, October and December have 31 days. April, June, September and November have 30 days. February has 28 days.

Question 1 b): There are 365 days in a year.

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Share

WAYS OF WORKING Whole class teacher led

ASK

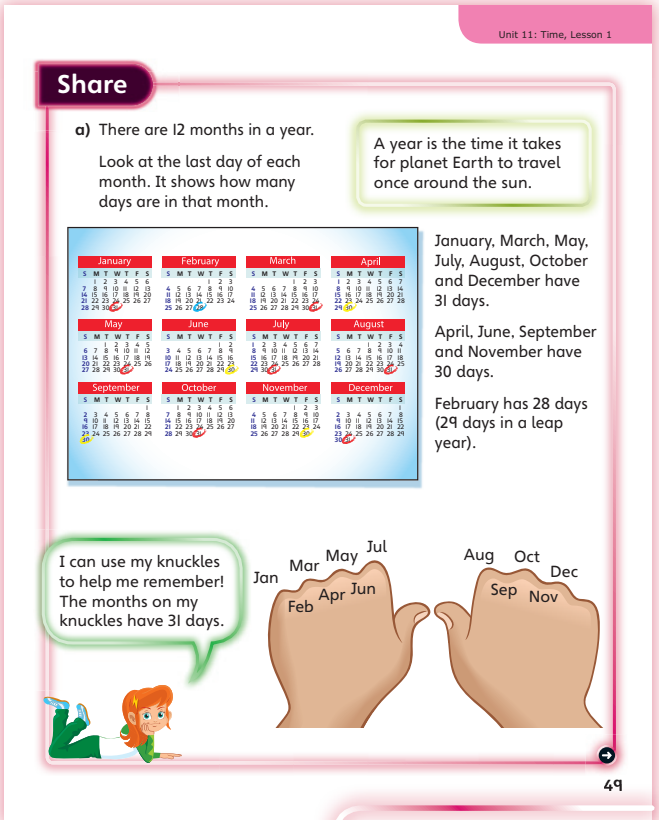
- Question 1 a): *Do you know any of the months of the year? What order do they come in? Try counting the months along your knuckles. Do you notice a pattern? How can you check how many days there are in one year?*

IN FOCUS This may be a good opportunity to clarify any misconceptions that children have.

Ensure children are confident that every year has 12 months, and every week has 7 days. Some children may think they need to count the number of days in each of the 12 months individually. Remind them that the calendar makes it clear how many days are in each month. Ensure children understand that leap years have 366 days, as February has an extra day (29 days) in these years.

STRENGTHEN Discuss special days. Ask: *What dates of the year are special to you?* Talk to children about dates they look forward to every year. Ask: *Can you find these dates in the calendar?* Provide a printout of a calendar for children to explore. Ask them to circle the last day of each month in the calendar. Then ask them to write how many days each month has, next to the name of the month. Ask: *What do you notice?*

Provide children with calendars for different years. Include a calendar for a leap year, for example 2016 or 2020. Ask: *If the years are different, what do you notice? Is this year a leap year?*



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Think together

WAYS OF WORKING Whole class teacher led (I do, We do, You do)

ASK

- Question 1: *How many days are there in a week? If today is Monday 1st, what date will the next Monday be? If today is the 20th, what date is it tomorrow? What date was it yesterday?*
- Question 2: *How many days are there in a common year? How can you use the bar model to work out how many days are left?*

IN FOCUS In question 2, highlight the link between the number of days in the year and the bar model.

Question 3 asks children to use their knowledge of fractions to explain why leap years usually occur every 4 years. The bar model provides a visual connection between four $\frac{1}{4}$s and one whole.

STRENGTHEN For questions 2 and 3, strengthen children's understanding of what a year is by showing a picture of Earth travelling around the Sun, so that children can visualise the journey.

365$\frac{1}{4}$ days is not exact, so some adjustments are made in deciding when there is a leap year and when there is not. If a year does not end in '00' and is a multiple of 4, then it is a leap year (for example 2212).

If a year ends in '00', to be a leap year the first 2 digits must be a multiple of 4. For example, 2400 is a leap year because 24 is a multiple of 4. However, 2100 is not a leap year because 21 is not a multiple of 4.

DEEPEN When children have solved question 3, deepen their understanding by asking them to predict years that are leap years, and years that are not. Encourage them to explain their reasoning clearly.

ASSESSMENT CHECKPOINT Children know the number of days in a year. They can identify which months have 30 days and which have 31 days. They can differentiate between a leap year and a common year.

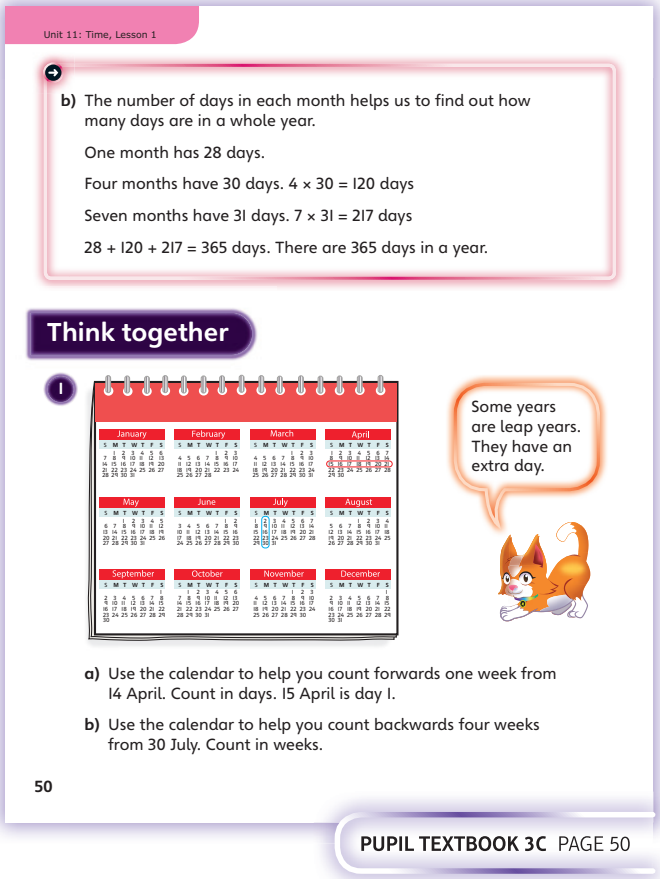
ANSWERS

Question 1 a): 15 April, 16 April, 17 April, 18 April, 19 April, 20 April, 21 April

Question 1 b): 23 July, 16 July, 9 July, 2 July

Question 2: There are 177 days left in the year.

Question 3: Four $\frac{1}{4}$ days make 1 whole day. So one extra day is added to the year in every leap year (29 February).



Unit 11: Time, Lesson 1

b) The number of days in each month helps us to find out how many days are in a whole year.

One month has 28 days.

Four months have 30 days. 4 × 30 = 120 days

Seven months have 31 days. 7 × 31 = 217 days

28 + 120 + 217 = 365 days. There are 365 days in a year.

Think together

1

a) Use the calendar to help you count forwards one week from 14 April. Count in days. 15 April is day 1.

b) Use the calendar to help you count backwards four weeks from 30 July. Count in weeks.

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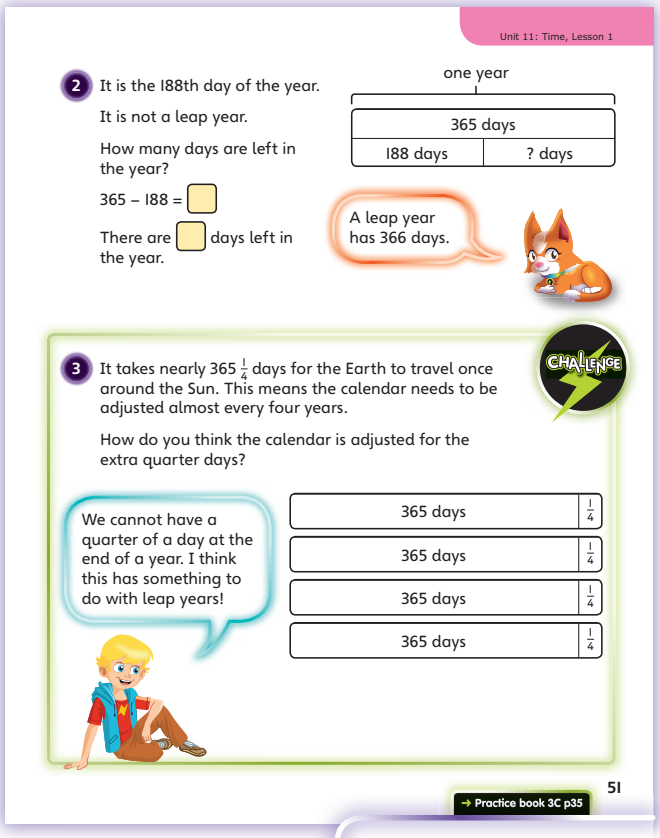

Unit 11: Time, Lesson 1

2 It is the 188th day of the year.

It is not a leap year.

How many days are left in the year?

365 – 188 = ☐

There are ☐ days left in the year.

3 It takes nearly 365 $\frac{1}{4}$ days for the Earth to travel once around the Sun. This means the calendar needs to be adjusted almost every four years.

How do you think the calendar is adjusted for the extra quarter days?

CHALLENGE

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Practice

WAYS OF WORKING Independent thinking

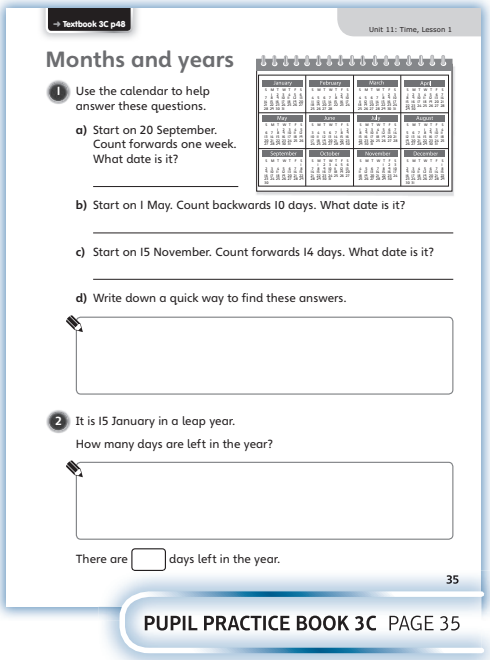
IN FOCUS When working independently on the questions in this section, children should continue to secure their understanding of how many days there are in a week, month and year. In question 1, encourage children to circle the starting date. Some children may find it helpful to have access to a number line to help them count backwards and forwards to find the date in 1 week, 10 days and 14 days from a given date.

STRENGTHEN If children are finding it difficult to calculate how many days are left in question 2, ask them to use a bar model similar to the one used in the lesson. Ask: *How many days are there in a leap year? Where in the bar model will you write that number?*

DEEPEN When children are working on question 5, ask them to find two different solutions depending on the year. Ask: *Will the answer be the same in a leap year and in a common year? Can you predict what the difference will be?*

ASSESSMENT CHECKPOINT Children's knowledge of the number of days in each month should be secure. Children can relate the number of days in a year to the journey of the Earth orbiting the Sun, and understand why leap years exist.

ANSWERS Answers for the **Practice** part of the lesson appear in the separate **Practice and Reflect answer guide**.



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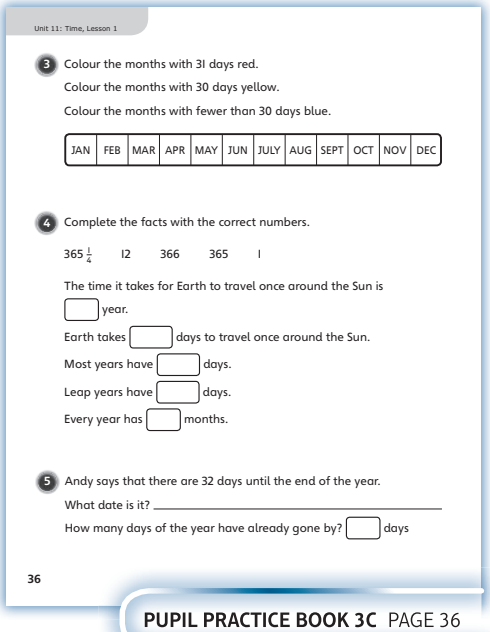

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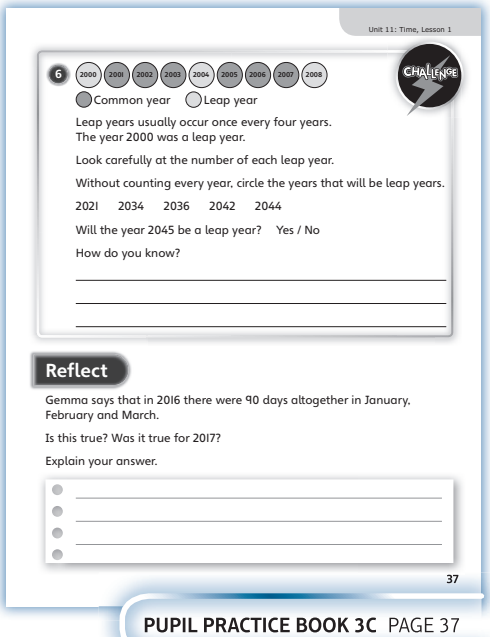
Reflect

WAYS OF WORKING Pair work

IN FOCUS Give children time to discuss with their partner whether the statement is true or not. Ask: *How can you be certain that the statement is true or false? Is there a way to check?* Once children have discussed their methods, give them time to write their explanations.

ASSESSMENT CHECKPOINT Look for clarity in children's explanations. They should make reference to the fact that leap years have an extra day, as February has 29 days in a leap year. Additionally, they may give examples of years that are leap years, and years that are not leap years.

ANSWERS Answers for the **Reflect** part of the lesson appear in the separate **Practice and Reflect answer guide**.



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After the lesson

- Do children know how many days there are in each month?
- Do children know how many days there are in a leap year?
- Can children explain why there are leap years and common years?

Hours in a day

Learning focus

Children will be introduced to 24 hours in a day including noon and midnight. They will learn how many days in a week, as part of a month.

Small steps

- Previous step: Months and years
- **This step: Hours in a day**
- Next step: Estimating time

NATIONAL CURRICULUM LINKS

Year 3 Measurement

- 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, am/pm, morning, afternoon, noon and midnight.
- Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.

ASSESSING MASTERY

Children understand that there are 24 hours in a day and that a day runs from midnight until midnight. Children are able to apply this in different contexts.

COMMON MISCONCEPTIONS

Some children think one day is only during daytime, or begins when they wake up and ends when they go to bed. Ask:

- *How many hours in a day? How many hours have you counted? Do these two amounts match up?*

Some children think that the hour hand goes around the clock once a day. Ask:

- *When does your birthday start? How many hours are you asleep? How many hours are you at school?*

STRENGTHENING UNDERSTANDING

Give opportunities to discuss how sunrise and sunset differ from winter to summer, and in other countries. Ask: *When is it light/dark in the evenings? Do your school days change? Does it change in the summer holidays?*

Encourage discussion about how 'one day' is not linked with sunlight or daytime.

GOING DEEPER

Ask children to investigate how many hours are between sunrise and sunset today. Draw a timeline from midnight to midnight labelling each hour. Emphasise that there are 24 hours in a day including noon and midnight. Ask children to think of 24 activities, one that could happen each hour in one day, and place them on their timeline.

KEY LANGUAGE

In lesson: day, hour, midnight, midday/noon, morning, night, hour hand, minute hand

Other language to be used by the teacher: sunset, sunrise, afternoon, evening, twice, night time, duration

STRUCTURES AND REPRESENTATIONS

bar model, number line

RESOURCES

Optional: analogue clock manipulatives, pictures of sunset and sunrise, laminated pictures of clock faces, 24 pictures of activities linked with each hour in the day, soft toys for role play

In the eTextbook of this lesson, you will find interactive links to a selection of teaching tools.

Before you teach

- Do children use o'clock times to describe events?
- How can you give real-life experiences of time?

Discover

WAYS OF WORKING Pair work

ASK

- Question 1 a): *What does the picture show? Which of the children is correct?*

IN FOCUS The answers the children give offer an opportunity to discuss when the day starts and ends, and how many hours there are in a day. Emphasise that one of the children says the day ends at midnight the next day, to encourage children to realise that 24 hours have passed.

PRACTICAL TIPS Try to give each pair or group access to an analogue clock. Provide pictures of motorway workers, street cleaners, nurses and doctors. Ask: *What time are their working hours?* Include examples of working hours throughout a 24-hour day.

ANSWERS

Question 1 a): The start of the day is 12 o'clock at night. This is called midnight. The end of the day is the next midnight. This is when a new day begins.

Question 1 b): There are 24 hours in one day.

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Share

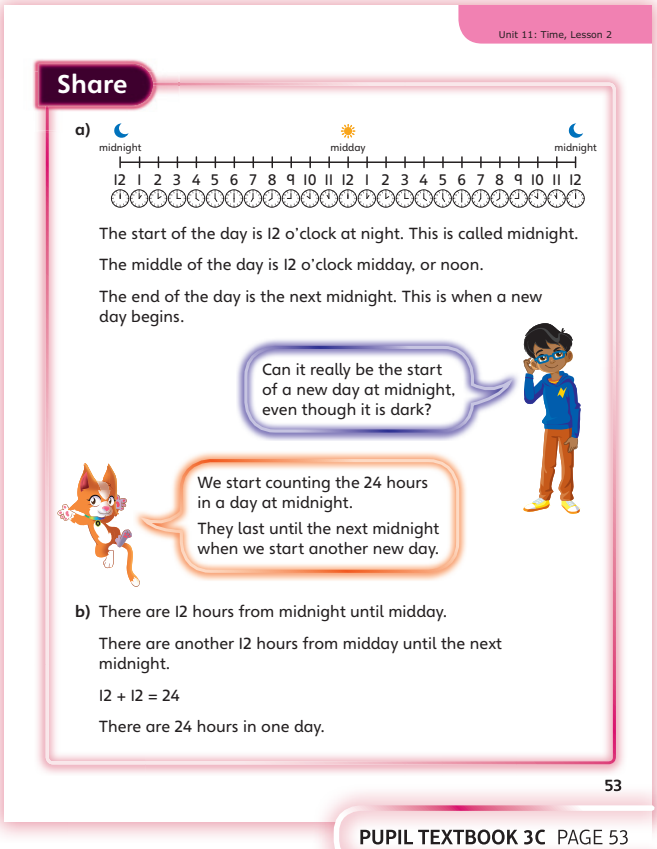
WAYS OF WORKING Whole class teacher led

ASK

- *Where have you come across the idea of 24 hours before?*
- *Can you think of an example from real-life concerned with a new day beginning at midnight? (For example, New Year's Eve, the fairy tale Cinderella)*

IN FOCUS Use this opportunity to correct potential misconceptions and give children the opportunity to show their understanding of the hours in a day. Ask them to explain where each child has gone wrong with their reasoning. What real-life examples can children give to justify their answers?

STRENGTHEN Challenge children to explore hints from everyday life that show there are 24 hours in a day. For example, a 24-hour petrol station, a 24-hour emergency care vet.



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Think together

WAYS OF WORKING Whole class teacher led (I do, We do, You do)

ASK

- Question 1: *How do you know when to start counting in hours? How do you know when to stop counting in hours?*
- Question 2: *To move through 24 hours, how many times will the hour hand travel around the clock?*

IN FOCUS Questions 1 and 2 offer a good opportunity to reinforce the understanding that a day is made up of 24 hours, which is twice round the clock. Use a model to show how the hands move around a clock face. Encourage children to use analogue clocks to move through 24 hours, counting the hours as they do so. Ask children to think about the number of minutes in an hour. Ask: *How many times does the minute hand go around the clock in one day? What about the hour hand?*

STRENGTHEN In question 3, if children are finding it difficult to work out the number of hours, ask them to use the information from the previous two questions. Provide them with three clock faces. The first clock represents Tuesday at 1 o'clock, the second clock represents Wednesday at 1 o'clock and the third clock represents Wednesday at 3 o'clock. Ask: *How can you make it easier to compare the times? How many hours are there from Tuesday at 1 o'clock to Wednesday at 1 o'clock? Which of the clocks represents Wednesday at 1 o'clock?*

DEEPEN Ask children to think about the number of days in one week and the number of hours in one day. They could use a bar model to show how to work out the number of hours in one week and why. Ask: *How many hours from 1 o'clock in the morning on Tuesday, to 3 o'clock in the morning next week on Wednesday? How did you come to that solution?*

ASSESSMENT CHECKPOINT Children should be confident that there are 24 hours in a day and 7 days in a week. They should use their knowledge of hours and time to recognise and explain how they can find 24 hours from a given time. Children are confident that the day starts at 12 o'clock midnight and ends at 12 o'clock midnight the day after.

ANSWERS

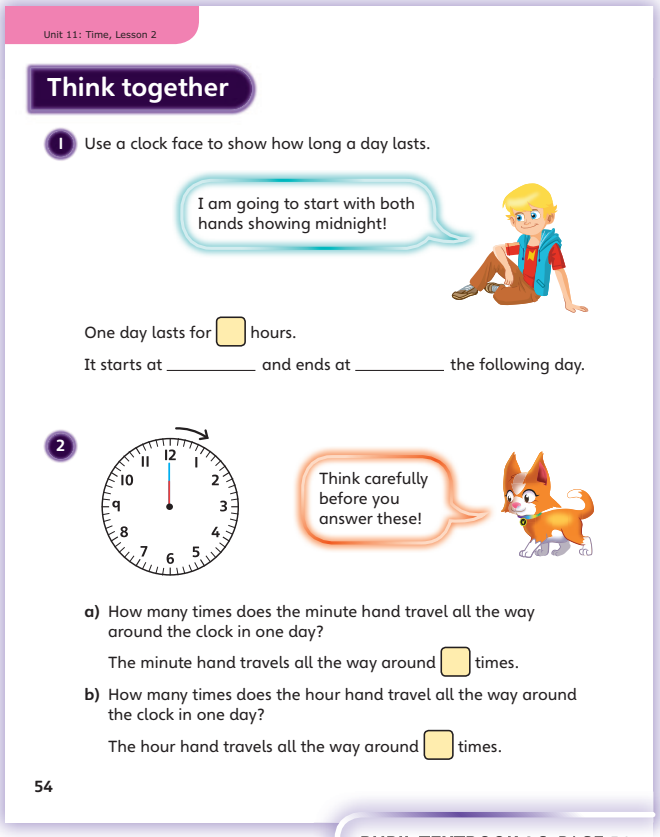
Question 1: One day lasts for 24 hours. It starts at 12 o'clock midnight and ends at 12 o'clock midnight the following day.

Question 2 a): 24 times

Question 2 b): 2 times

Question 3 a): 26 hours

Question 3 b): 168 hours



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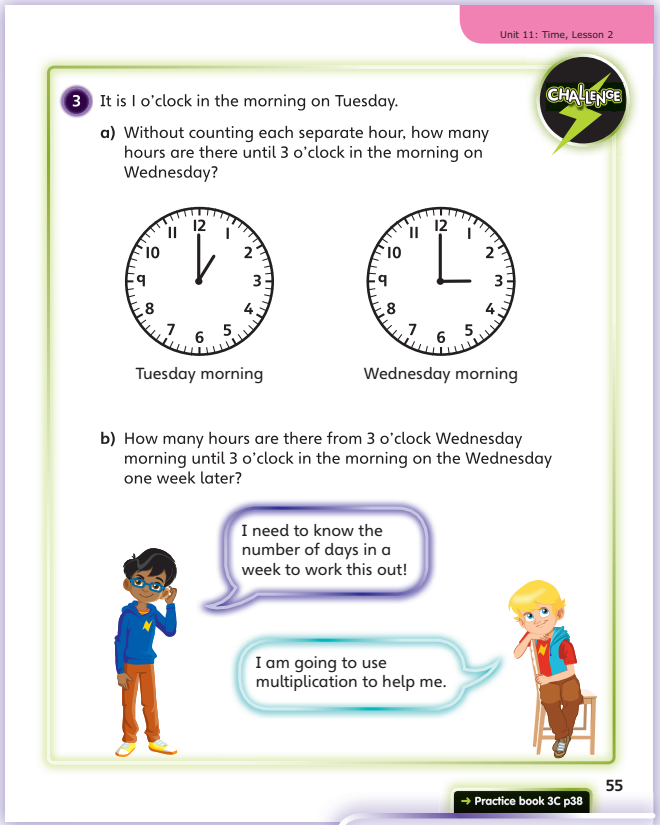

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Practice

WAYS OF WORKING Independent thinking

IN FOCUS Question 1 gives children a pictorial representation of the time to scaffold their independent learning. Provide plastic clocks or laminated clock pictures to support children's work.

Question 2 revisits the potential misconception that the day lasts from 12 midnight until 12 noon.

STRENGTHEN Some children may find the amount of information in question 2 challenging, and identifying what they need to do. Discuss the question prior to the task. If any children are still unsure, offer them a timeline with the hours of the day recorded on it. Ask children to explain each other's answers and clarify any misconceptions. Encourage children to use the correct vocabulary.

DEEPEN When solving question 6, deepen children's reasoning. After colouring the first activity, ask: *How many hours are left? What fraction of the day have you spent in total?*

THINK DIFFERENTLY Question 4 links fractions and time by using grids of 24. Children are used to linking time with a clock face. This question offers the opportunity for children to think of the day as a unit made of 24 equal parts. Ask children to think of different ways to represent a 24-hour day. Choose different representations and show them to the whole class. Ask: *How do they differ? What do they have in common?*

ASSESSMENT CHECKPOINT Children should be able to confidently explain that there are 24 hours in a day. They should be able to find the time 24 hours in the future and explain how the time stays the same and the day changes. Children should be able to solve simple problems confidently using their knowledge of hours in a day and days in a week.

ANSWERS Answers for the **Practice** part of the lesson appear in the separate **Practice and Reflect answer guide**.

Reflect

WAYS OF WORKING Pair work

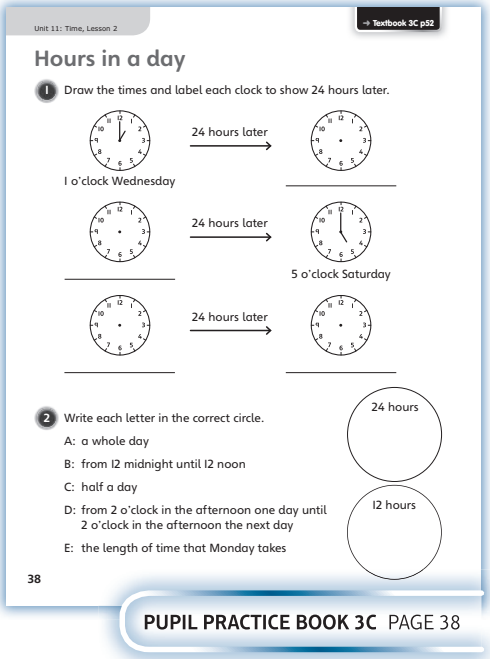
IN FOCUS Once children have discussed the mistake that Olivia has made, ask them: *What advice would you give Olivia to correct her mistake? How would you prove that Olivia is wrong? How would you prove to her that the day begins at 12 o'clock midnight, and ends at 12 o'clock midnight the day after?*

ASSESSMENT CHECKPOINT Children should recognise that there can be confusion over when the day starts and ends. Children should be able to explain to Olivia that different people get up and go to bed at different times. Even she may go to bed and wake up at different times throughout the year. Children may use different representations to show that there are 24 hours in a day, and that the length of a day does not depend on our sleeping patterns.

ANSWERS Answers for the **Reflect** part of the lesson appear in the separate **Practice and Reflect answer guide**.

After the lesson

- Are children confident that there are 24 hours in a day?
- How did you challenge children's assumptions about times they were not familiar with?
- Are children confident that the day starts at 12 o'clock midnight and ends at 12 o'clock midnight the day after?



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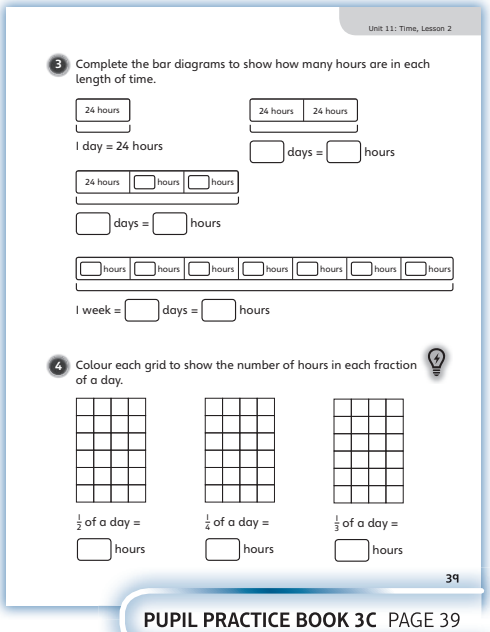

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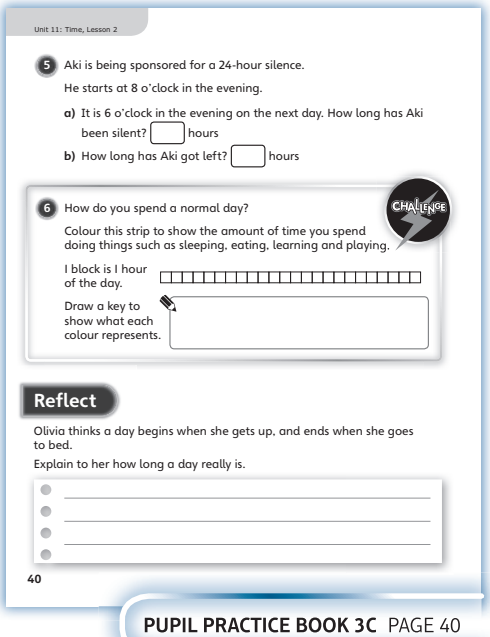

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Estimating time

Learning focus

In this lesson, children estimate the time just by looking at the hour hand.

Small steps

- Previous step: Hours in a day
- **This step: Estimating time**
- Next step: Telling time to 5 minutes

NATIONAL CURRICULUM LINKS

Year 3 Measurement

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

ASSESSING MASTERY

Children know that there are 60 minutes in 1 hour. They can use this information to estimate times where only the hour hand is shown.

COMMON MISCONCEPTIONS

Children may think they need both clock hands to tell the time, not recognising that they can use just the hour hand. Ask:

- *Is the hour hand pointing right at the number? Where is it pointing?*

Children may think that the hour hand points directly to a number (for example, at quarter past 8, it points directly at the 8). Ask:

- *Compare some times. What number is the hour hand pointing to? What is the minute hand pointing to?*

STRENGTHENING UNDERSTANDING

Provide pictures of four different clocks, each showing the time of an activity in the school day (such as registration, lesson, break, lunch). Ask children to draw the minute and hour hands on blank clock-faces and put the activities in order. By drawing the hands themselves, children will notice that they do not always point directly at the numbers.

GOING DEEPER

Provide four different clocks with just the hour hand, showing times within an hour (such as quarter past 9, half past 9, quarter to 10 and 10 o'clock). Ask children to put the clocks in order. Ask: *Where could the minute hand be?* This will develop their ability to recognise times. It also links time with fractions, and awareness of quarter or half or three quarters of the journey that the hour and minute hands travel in an hour.

KEY LANGUAGE

In lesson: time, estimate, hour hand, minute hand, o'clock, half past, half-way, quarter to

Other language to be used by the teacher: quarter past, analogue

RESOURCES

Mandatory: analogue clock manipulatives, flash cards (o'clock', 'half past', 'quarter past', 'quarter to')

In the eTextbook of this lesson, you will find interactive links to a selection of teaching tools.

Before you teach

- Can children easily see the time in the classroom?
- Can they access a variety of analogue clocks?

Discover

WAYS OF WORKING Pair work

ASK

- Question 1: *How many minutes are there in an hour?*
- Question 1 a): *How many minutes does it take for the hour hand to move between two numbers?*
- Question 1 b): *Where is the hour hand pointing? What number has the hour hand passed? What number is it trying to reach?*
- Question 1 b): *Can you estimate what the time may be?*

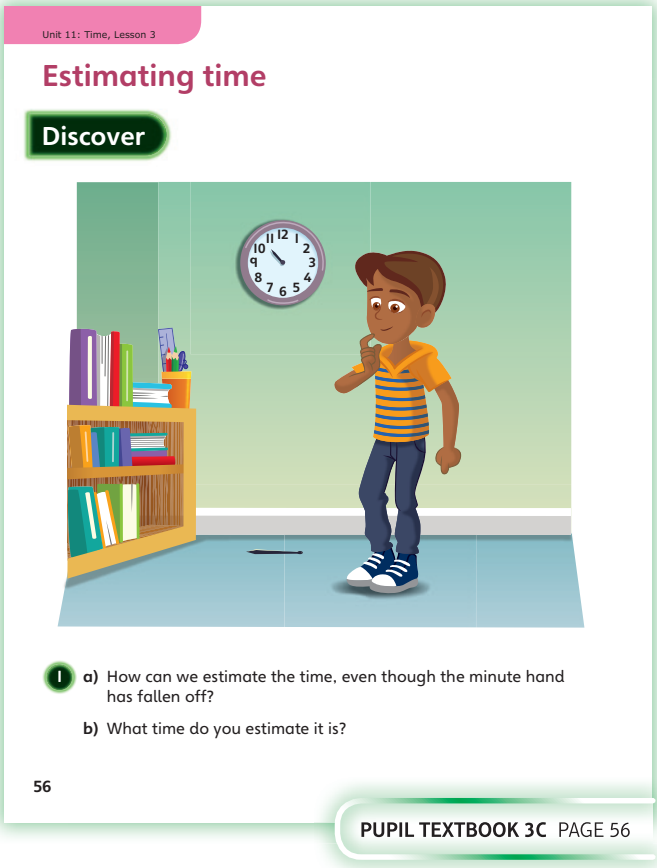
IN FOCUS Use the picture to recap and briefly assess children's current understanding. Begin by reinforcing that the hour hand does not jump from hour to hour, but travels between the numbers gradually.

PRACTICAL TIPS Unscrew the minute hand from the classroom clock if possible, or use a clock that has only the hour hand. Challenge children to estimate the time throughout the day, just by looking at the hour hand.

ANSWERS

Question 1 a): We can use the position of the hour hand to help estimate the time. At an o'clock time, the hour hand points directly at a number. At a half-past time, it points half-way between two numbers.

Question 1 b): We can estimate that the time is about half past 10.



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Share

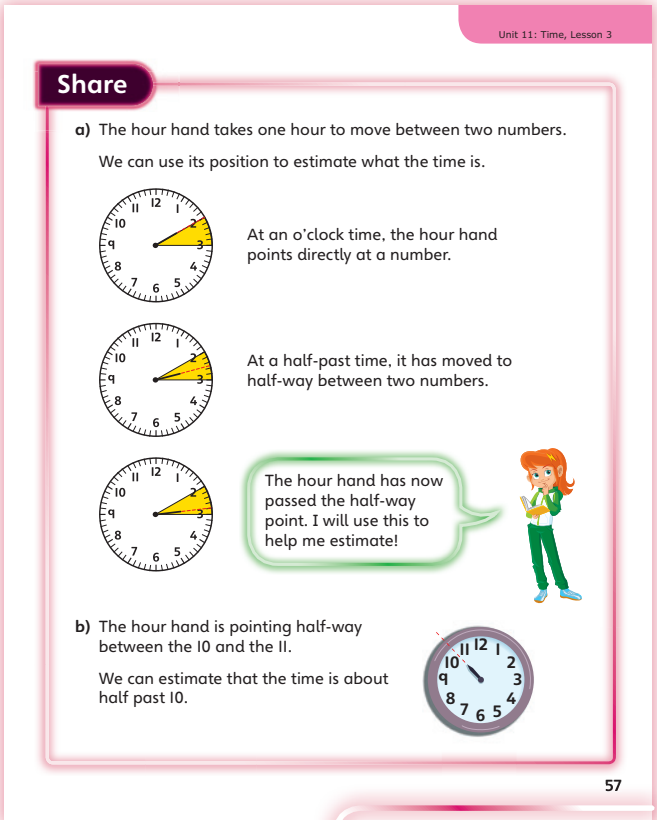
WAYS OF WORKING Whole class teacher led

ASK

- Question 1 a): *How many minutes are there in half an hour? Quarter of an hour?*
- Question 1 a): *How many minutes does it take for the hour hand to move half-way between two numbers? To move a quarter of the way between two numbers?*
- Question 1 a): *Does the hour hand move quickly or slowly?*
- Question 1 b): *What time do you think the clock face shows? Is this the actual time or an estimate? Why?*

IN FOCUS Children need to be confident with estimating. Clarify the misconception that both hands are needed to tell the time. Get children to estimate times on clocks. Ask them to draw times onto blank clock faces.

STRENGTHEN Children need to be confident with the concept that 1 hour is 60 minutes, 15 minutes is a quarter of an hour and 30 minutes is half an hour. They need to know that at quarter past 2, the hour hand has moved $\frac{1}{4}$ of the way from number 2 to number 3; and that at quarter to 4, the hour hand is $\frac{3}{4}$ of the way past the number 3, and $\frac{1}{4}$ away from the number 4. Ask: *If we can estimate the time without the minute hand, why do we even need a minute hand?* Discuss where estimating can be used in real life and where using the exact time is necessary.



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Think together

WAYS OF WORKING Whole class teacher led (I do, We do, You do)

ASK

- Question 1: *If you continue the line the hour hand makes, where will it point? Has it reached half-way between 6 and 7? What is the time if it points half-way? What could the time be if it points less than half-way? More than half-way?*
- Question 2: *Why do we say a quarter to 4? What does this mean? Where would the minute hand have been? Has the hour hand passed the number 4? How do you know? How can you find a quarter of something?*

IN FOCUS Questions 1 and 2 give children the opportunity to practise their recognition of 'half past', 'quarter past' and 'quarter to' times. Discuss the clues they can use to recognise what the time could be. Children have the opportunity to scaffold their knowledge of fractions in estimating the time accurately.

STRENGTHEN For all the questions in this section, ask children to make the times shown. Some children find it difficult to find 'a quarter to 4' using a clock that has 60 minutes marks. They think they need to find a quarter of the 5 notches between the numbers 3 and 4. Provide clocks without minute marks to begin with. Once children are confident in estimating, and to extend, provide clocks with different type of face to develop fluency.

DEEPEN Deepen question 3, by allowing children to explore that 1 hour is made of 60 minutes. Give each child a circle and ask them to turn it into a clock. Ask: *Imagine you will be teaching younger children what a clock looks like. You need to be very clear when describing it. How can you show that the clock is made of 60 minutes? How can you show that all the minutes are the same? How many minutes are there from one number to the next?* Children may use the part-whole model (where the whole is made of 12 equal parts and each of the parts has 5 minutes) to explain that 1 hour has 60 minutes.

ASSESSMENT CHECKPOINT Children should be confident in their understanding that there are 60 minutes in one hour. They should know that the numbers around the clock do not link directly with the number of minutes in an hour.

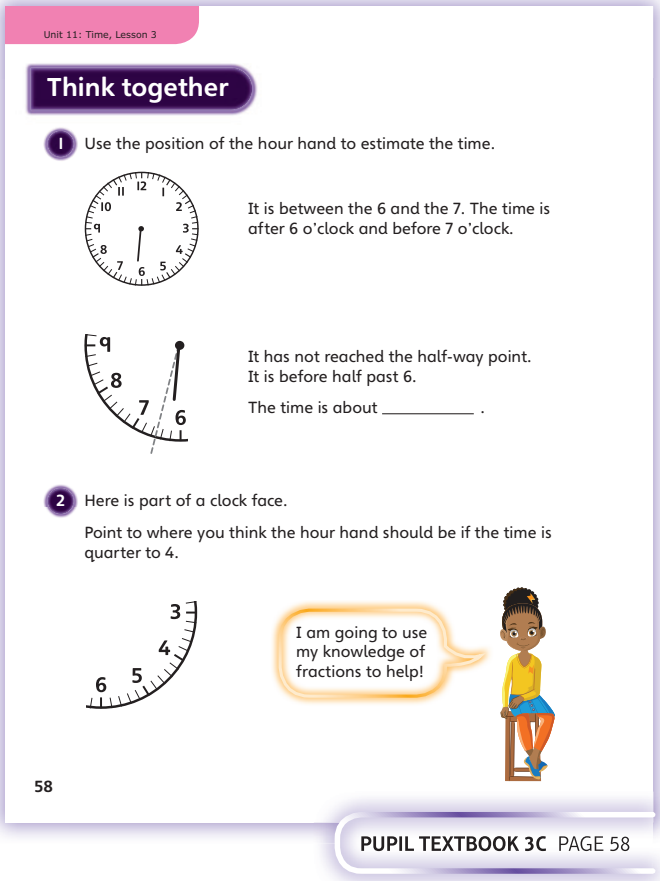
ANSWERS

Question 1: The time is about quarter past 6.

Question 2: The hour hand should be $\frac{3}{4}$ of the way past the number 3 and $\frac{1}{4}$ away from the number 4.

Question 3 a): There are 60 minutes in one hour.

Question 3 b): Each small mark is worth 12 minutes.



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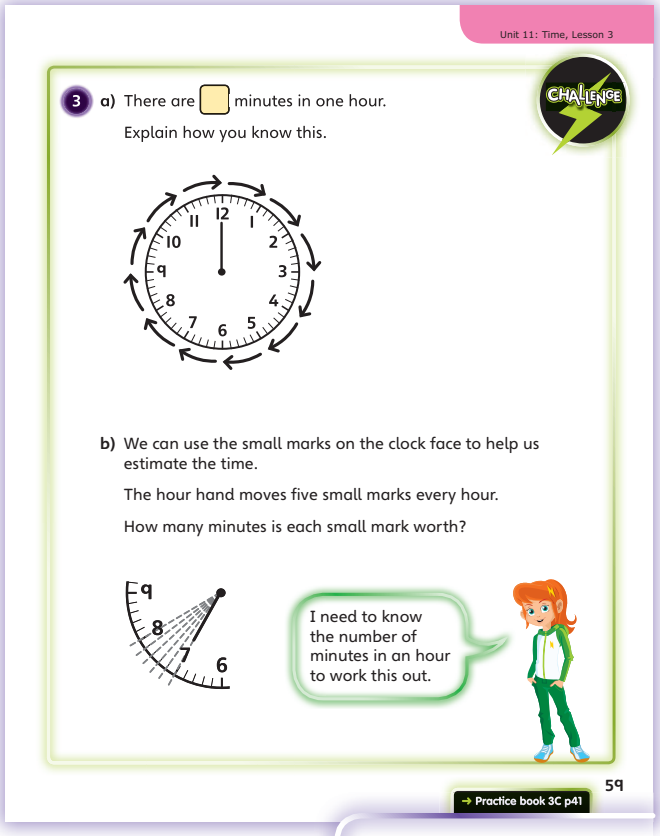


PUPIL TEXTBOOK 3C PAGE 59

Practice

WAYS OF WORKING Independent thinking

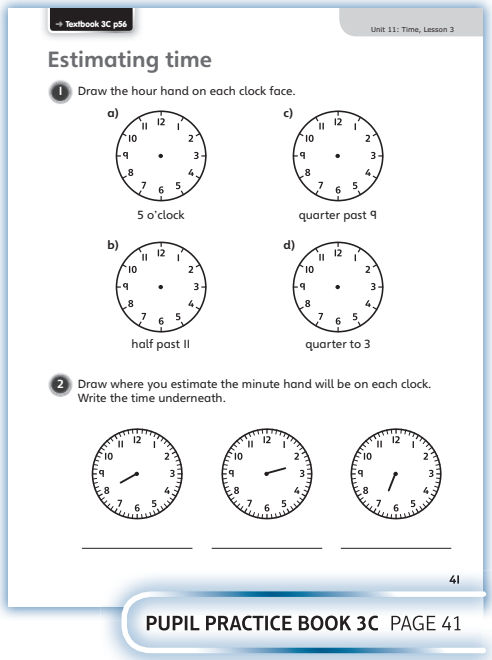
IN FOCUS Questions 1, 2 and 3 practise vocabulary relating to times children know. Children can visualise the position of the hour and minute hands (use flash cards). Ask: *What is different between 'o'clock', 'half past', 'quarter past' and 'quarter to'. Can you describe the position of the minute hand? What about the hour hand?*

STRENGTHEN Question 5 strengthens 'half past', 'quarter past' and 'quarter to'. Time is linked with fractions. Ask: *How many minutes in an hour? How can you use this to work out the number of minutes in $\frac{1}{2}$ an hour? How many minutes in $\frac{1}{4}$ of an hour?*

DEEPEN Question 4 revisits a misconception that both clock hands are needed to estimate the time. If children recognise that Emma is wrong, they can write some advice using pictures and appropriate vocabulary.

ASSESSMENT CHECKPOINT Children understand the role of the hour hand in an analogue clock. They explain clearly how the hour hand looks for an o'clock time, half past, quarter past and quarter to. Children should confidently estimate these times. They can draw times on blank clocks themselves or make them using manipulatives.

ANSWERS Answers for the **Practice** part of the lesson appear in the separate **Practice and Reflect answer guide**.



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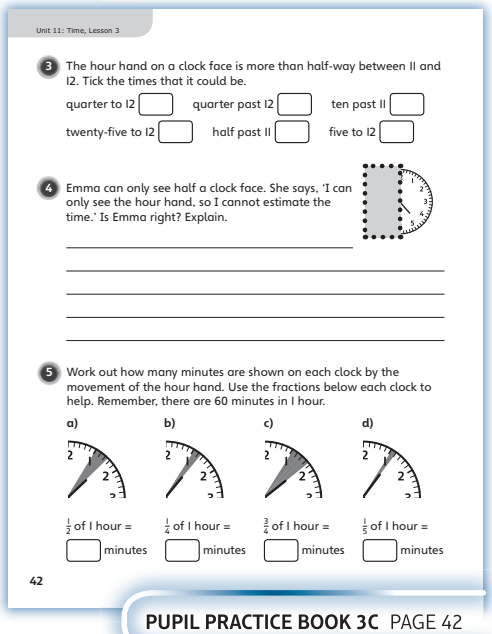


PUPIL PRACTICE BOOK 3C PAGE 42

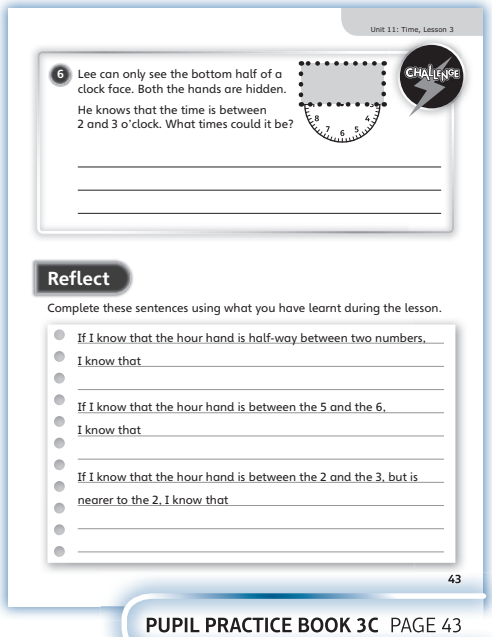
Reflect

WAYS OF WORKING Pair work

IN FOCUS This question allows children to reason and justify how they can estimate the time by looking at the position of the hour hand.

ASSESSMENT CHECKPOINT Children can estimate the time by thinking about the position of the hour hand only. Listen to their discussion and reasoning as they describe differences between an o'clock time, a half-past time, minutes past and minutes to.

ANSWERS Answers for the **Reflect** part of the lesson appear in the separate **Practice and Reflect answer guide**.



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After the lesson

- Are children able to estimate time?
- How will you build in more opportunities for them to practise the skills they have learnt throughout the school day?
- What advice can you give them to practise time outside school?

Telling time to 5 minutes

Learning focus

Children will continue to develop their ability to tell the time to 5 minutes and link this to prior knowledge of reading analogue clocks by reading the 5-minute intervals.

Small steps

- Previous step: Estimating time
- **This step: Telling time to 5 minutes**
- Next step: Telling time to the minute (1)

NATIONAL CURRICULUM LINKS

Year 3 Measurement

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

ASSESSING MASTERY

Children can tell times displayed on analogue clocks to 5 minutes (including all 5 minutes past and to the hour). Children will be able to transfer this knowledge when using clocks with Roman numerals.

COMMON MISCONCEPTIONS

Some will mix up the roles of the hour and minute hands. They think '10 to' means the hour hand points to the number 10. Ask:

- *It is 10 o'clock. Where is the hour hand? Where is the minute hand? What do they show us?*

STRENGTHENING UNDERSTANDING

Show children an analogue clock and ask them to read around the clock in steps of 5 minutes, for example, *5 past, 10 past,* etc. Change the time on the clock. Repeat with a mixture of 'past' and 'to' times.

GOING DEEPER

Ask: *What different activities can you do within an hour?* For example, wake up, brush teeth, get ready for school, have breakfast. Show these as multiples of 5-minute times on the analogue clock. Begin with times past the hour, then times to the hour. Ask: *Can you make a timetable of the activities you chose?*

KEY LANGUAGE

In lesson: hour hand, minute hand, minutes to, o'clock, Roman numerals

Other language to be used by the teacher: minutes past, quarter past, quarter to, half past

RESOURCES

Mandatory: analogue clock manipulatives, flash cards (o'clock', 'half past', 'quarter past', 'quarter to'), analogue clock and written time flash cards

In the eTextbook of this lesson, you will find interactive links to a selection of teaching tools.

Before you teach

- Are children confident in counting in 5s?
- What other practical resources will you provide?

Discover

WAYS OF WORKING Pair work

ASK

- Question 1 a): *What time does the clock show? What time is 1 hour before the time shown? What time is 1 hour later than the time shown?*
- Question 1 b): *What time would the train have arrived if it had got there five minutes later? What time would the train have arrived if it got there five minutes earlier?*

IN FOCUS Use the picture to recap and briefly assess children's current understanding. Make sure they know that the numbers on the clock are for the hours, and not the minutes shown by the minute hand.

PRACTICAL TIPS Show examples of simple bus or train timetables. Ask: *Why is it important for trains and buses to leave at the same time each weekday? Why is it useful to know that they leave at the same time?*

ANSWERS

Question 1 a): It has been 55 minutes since the last train left.

Question 1 b): It will be 5 minutes until the next train leaves.

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Share

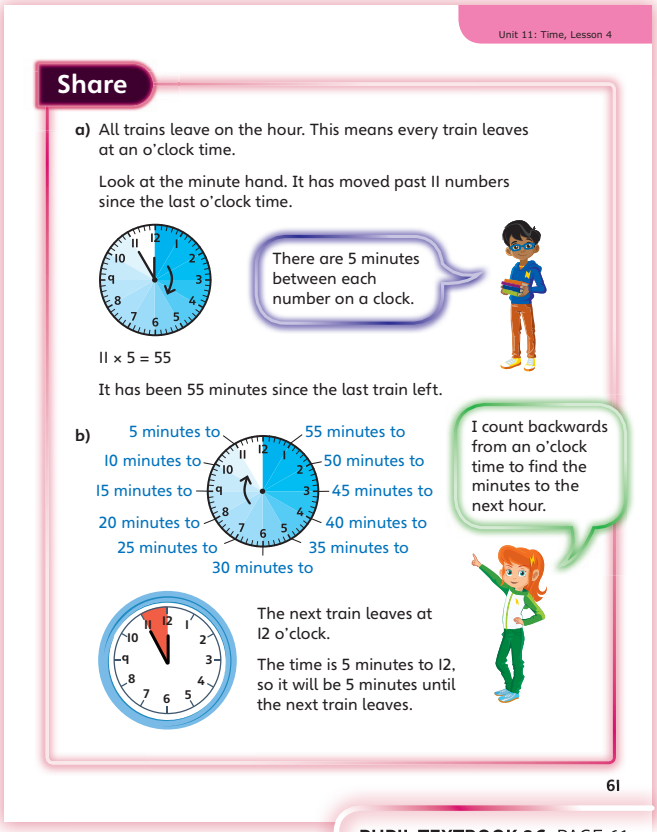
WAYS OF WORKING Whole class teacher led

ASK

- Question 1 a): *Do you know what 'on the hour' means? Why do you think we say this to mean 'at each o'clock time'?*
- Question 1 a): *I think 45 minutes past 8, quarter to 9, and 15 minutes to 9 are all the same time. Is this true or false? How would you choose to say this time?*

IN FOCUS Use this opportunity to correct potential misconceptions. Point out times to five minutes during the lesson. Allow children to show the times on clock manipulatives, or get them to draw times onto blank clock faces, or call out times when shown different clocks. Ask: *What was the last five-minute time? What will be the next five-minute time? What will it look like?*

STRENGTHEN Point at each number around a clock face, starting at 1. First, ask children to say each number as you point to it. Repeat, this time asking children to count up in 5s as you go around the clock face, from 5 to 60. Repeat again, but now ask children to say *five past, ten past, quarter past, … , half past, twenty-five to, … , quarter to, ten to, … o'clock*. Continue until they can get all the way round the clock with no mistakes.



PUPIL TEXTBOOK 3C PAGE 61

Think together

WAYS OF WORKING Whole class teacher led (I do, We do, You do)

ASK

- Question 1: *Compare a clock face with Roman numerals, with a clock face with standard numbers. How do they differ?*
- Question 1: *If X = 10, V = 5 and I = 1, why do you think VIII = 8 and IX = 9?*
- Question 1: *Is the time closer to 3 or 4 o'clock?*
- Question 1: *How can you count backwards from 4 o'clock?*
- Question 2: *What could you count to make it easier to read the minutes?*

IN FOCUS Questions 1 and 2 will help scaffold children's counting in 5-minutes intervals. Children are counting backwards from a number. Ask children to match the picture with an analogue clock face (with standard numbers and showing all the minute divisions).

STRENGTHEN You could draw out a large clock in the playground and ask children to walk around it, counting the 5-minute intervals. Make sure to reinforce the 'past' and 'to' elements of the clock face. In question 3, children's understanding will be strengthened if they draw all the times they can think of. Ask: *Where would the minute hand be? Where would the hour hand be? How do you know you are correct?*

DEEPEN Challenge children in question 3 by asking them to find as many answers as they can within 5 minutes. This will help them practise reading the time. It will also give them an opportunity to estimate and get a sense of what 5 minutes could be. To deepen their understanding even further, ask them to draw the times on a clock that uses Roman numerals.

ASSESSMENT CHECKPOINT At this point in the lesson, children should be more confident in telling the time to 5 minutes, by counting forwards and backwards in 5-minute intervals. They should be increasingly fluent in using 'minutes past' and 'minutes to' and reading the time using analogue clocks (including those with Roman numerals).

ANSWERS

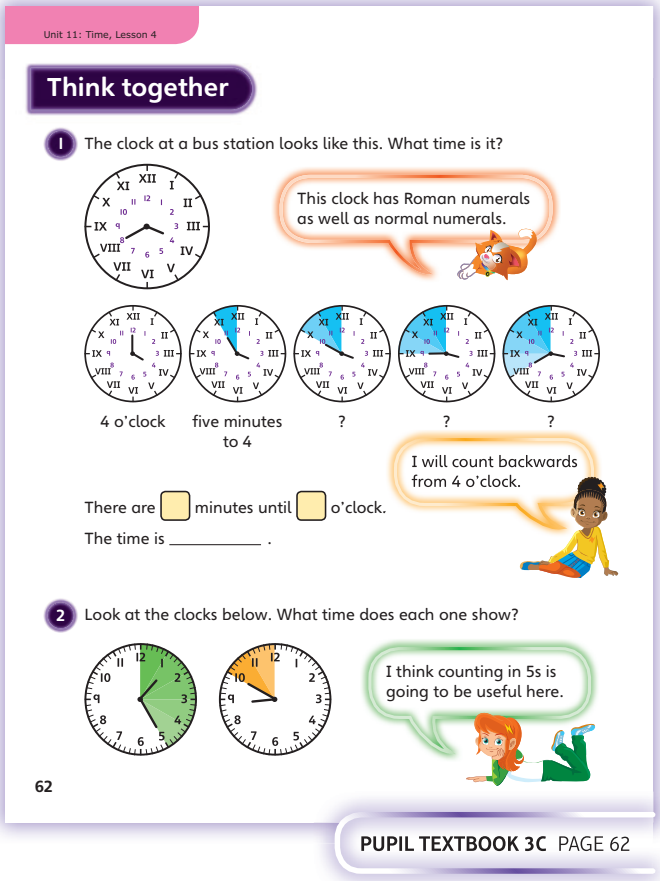
Question 1: There are 20 minutes until 4 o'clock. So, the time is twenty to 4.

Question 2: 25 minutes past 1, 10 minutes to 9

Question 3 a): Answers will vary, but should refer to the minute hand being in the first half of the clock, and the hour hand pointing between the 6 and the 7.

Question 3 b): Answers will vary, but should refer to the minute hand being in the second half of the clock, and the hour hand pointing between the 9 and the 10.

Question 3 c): Answers will vary, but should refer to the minute hand pointing to the '8' on the clock, and the hour hand pointing more than half-way between any two numbers.



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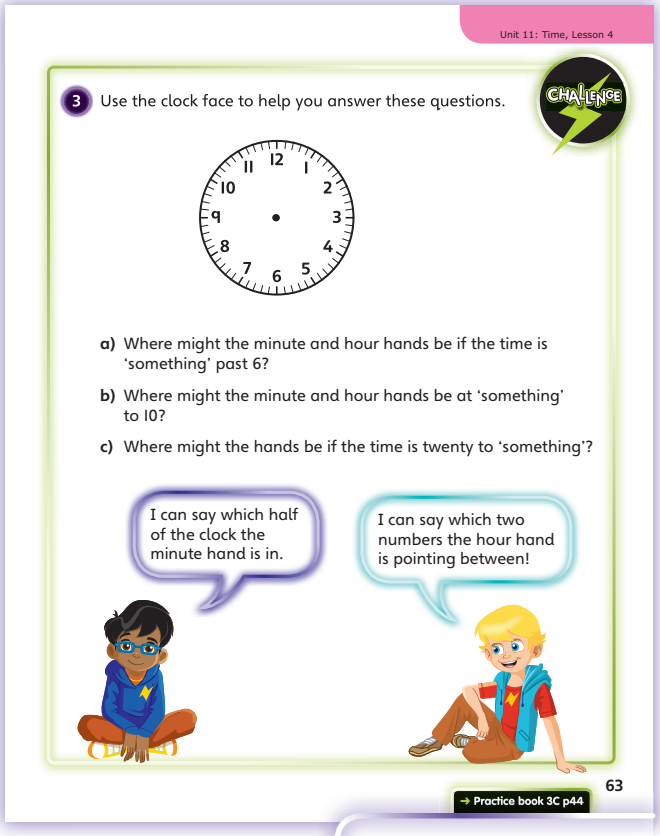


PUPIL TEXTBOOK 3C PAGE 63

Practice

WAYS OF WORKING Independent thinking

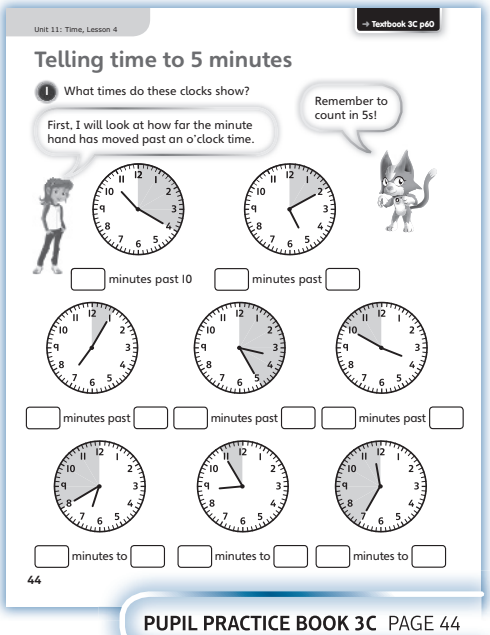
IN FOCUS Questions 1 and 2 scaffold children's understanding of reading an analogue clock in 5-minute intervals. It will help children to develop their fluency if you also use shaded representations of time, and clocks with Roman numerals and standard numbers.

STRENGTHEN For children finding question 4 challenging, it may help to use a clock with moving hands. Children could make 6 o'clock, then move the minute hand a full turn. Ask: *What happens to the hour hand? Does it move? Is the time more than 6 o'clock? How do you know?*

DEEPEN Use question 3 to deepen children's explanation and reasoning skills. Ask: *What part of the lesson did Lexi not understand? What would you say to explain her mistake? What should the answer have been? Can you shade the clock to show the journey of the minute hand?*

ASSESSMENT CHECKPOINT Children should be able to tell the time confidently, and not just by reading the numbers the minute and hour hands point to. They should be able to recognise and record different times on an analogue clock, including clocks with Roman numerals.

ANSWERS Answers for the **Practice** part of the lesson appear in the separate **Practice and Reflect answer guide**.



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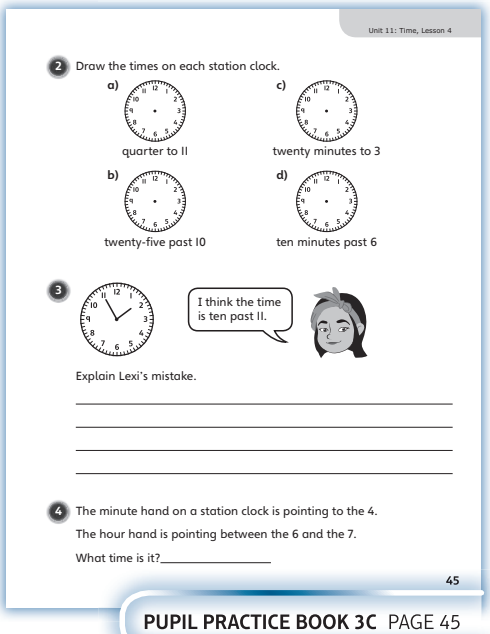

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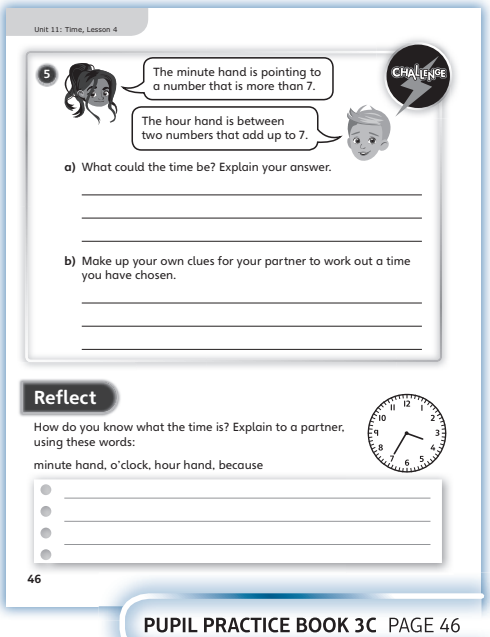
Reflect

WAYS OF WORKING Pair work

IN FOCUS Pay particular attention to children's reasoning when it comes to 'twenty-five past' and 'twenty-five to'. Ask: *Does a clock showing twenty-five minutes to 4 also show twenty-five minutes past 4? Can you draw both times? Can you explain how these times differ?*

ASSESSMENT CHECKPOINT Children should recognise that at 'twenty-five to', the minute hand points to the 7. Children should be able to explain their reasoning clearly. They may use a concrete representation or picture to justify their answer.

ANSWERS Answers for the **Reflect** part of the lesson appear in the separate **Practice and Reflect answer guide**.



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After the lesson

- Have children recognised how the concepts they have learnt in the past four lessons link together?
- How will you reinforce this link?

Telling time to the minute (1)

Learning focus

In this lesson, children will tell the time using 'minutes past' and 'minutes to' and using the 12-hour analogue clock. They will read and describe times to the nearest minute.

Small steps

- Previous step: Telling time to 5 minutes
- **This step: Telling time to the minute (1)**
- Next step: Telling time to the minute (2)

NATIONAL CURRICULUM LINKS

Year 3 Measurement

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, am/pm, morning, afternoon, noon and midnight.

ASSESSING MASTERY

Children can tell times displayed on analogue clocks to the minute. Children recognise that there are 60 minutes in an hour, and are able to use this information when giving times past and to the hour.

COMMON MISCONCEPTIONS

Children may think that the minute hand moves straight from number to number. Ask:

- *How many minutes in an hour? How does the minute hand show this?*

Children may read 'five to 3' as' five to 2' because the hour hand is between the 2 and the 3. Ask:

- *What o'clock time has just happened? What o'clock time will come next?*

STRENGTHENING UNDERSTANDING

Show '50 minutes past 3' on an analogue clock. Ask: *What time is it? Show me the time 10 minutes later. Has the hour hand moved?*

GOING DEEPER

Compare two clocks showing 'five to' times, with one hour difference. Ask: *What times do they show? Which is later? How do they differ*? Repeat for 6 o'clock, half past 12, quarter past 9 and quarter to 3. Encourage children to use 'minutes past' and 'minutes to', and to describe the position of the hour hand and minute hand.

KEY LANGUAGE

In lesson: time, past, to, o'clock

Other language to be used by the teacher: hour hand, minute hand, analogue

STRUCTURES AND REPRESENTATIONS

number line

RESOURCES

Mandatory: analogue clock manipulatives

Optional: analogue clock flash cards, written time and hoops, number cards from 1 to 12, large pieces of paper

In the eTextbook of this lesson, you will find interactive links to a selection of teaching tools.

Before you teach

- Can children see the time easily in the classroom?
- Can you provide a variety of analogue clocks?

Discover

WAYS OF WORKING Pair work

ASK

- Question 1 a): *What does the picture show? What do the hands mean on the clock? How many minutes are there in an hour?*
- Question 1 b): *If the minute hand was at number 6, what would the time have been? How many minutes past number 6 is the minute hand showing?*

IN FOCUS Use the picture to recap and briefly assess children's understanding. Begin by reinforcing the idea that the minute hand does not jump from one number to the next, but travels gradually around the clock.

PRACTICAL TIPS Place a large hoop on the floor, on a large piece of paper. Ask children to place number cards from 1 to 12 inside the hoop to make a clock. Using a pen, divide the gap between each pair of numbers into five, so that there are 60 divisions altogether on the clock. Children can make their own clocks. Encourage them to put the numbers in the correct places. They can set their own clock-based problems, telling the time to the nearest minute.

ANSWERS

Question 1 a): The photo was taken at 33 minutes past 10.

Question 1 b): Another way to say this time is 27 minutes to 11.


Unit 11: Time, Lesson 5

Telling time to the minute 1

Discover

1 a) How many minutes past 10 was this photo taken?

b) Is there another way to say this time?

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Share

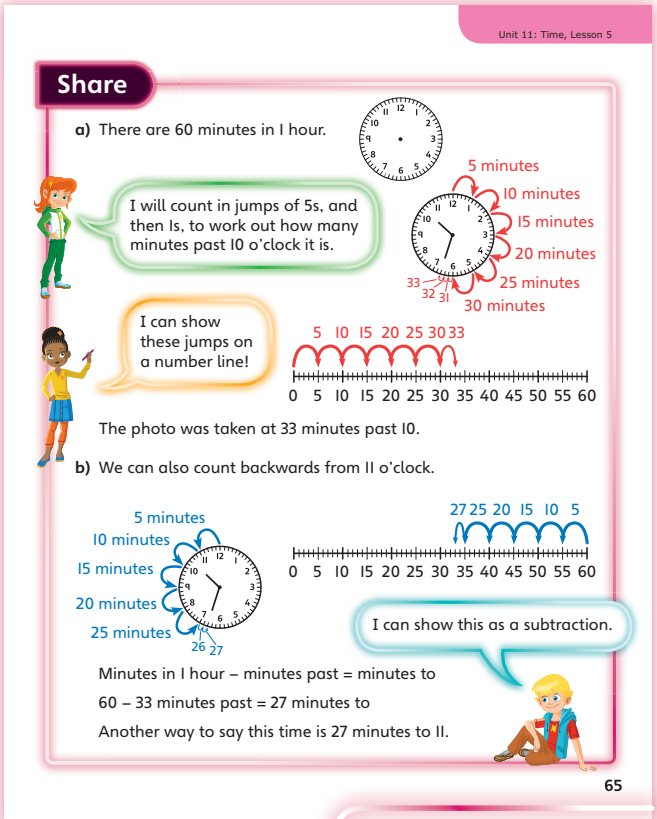
WAYS OF WORKING Whole class teacher led

ASK

- Question 1 a): *Can you use a clock face to prove that there are 60 minutes in an hour? How?*
- Question 1 a): *There are 60 minutes in an hour. If 35 minutes have gone by since the last o'clock time, how many minutes until the next hour? How many minutes have gone by if it is ten minutes to the hour?*
- Question 1 b): *How can we say the time in two different ways? Which is the more common way?*

IN FOCUS Use this opportunity to address the misconception that the hands jump from one number to the next. Allow children to show their understanding of times – for example, by using clock manipulatives, drawing times on blank clock faces or calling out times when shown different clocks.

STRENGTHEN Provide two large classroom clocks that children can see clearly during the day; one clock should show the individual minutes, while the other does not. Ask children to read the time from each clock. Ask one group to read the time approximately (*It's about …*). Ask another group to read it exactly to the nearest minute (*It's exactly …*). Ask: *Do all clocks show each individual minute on their clock face? What do you notice? Is it easier to read the time to the minute with or without the minute marks?*


Unit 11: Time, Lesson 5

Share

a) There are 60 minutes in 1 hour.

5 minutes
10 minutes
15 minutes
20 minutes
25 minutes
30 minutes

I will count in jumps of 5s, and then 1s, to work out how many minutes past 10 o'clock it is.

I can show these jumps on a number line!

5 10 15 20 25 30 33

0 5 10 15 20 25 30 35 40 45 50 55 60

The photo was taken at 33 minutes past 10.

b) We can also count backwards from 11 o'clock.

5 minutes
10 minutes
15 minutes
20 minutes
25 minutes

27 25 20 15 10 5

0 5 10 15 20 25 30 35 40 45 50 55 60

I can show this as a subtraction.

Minutes in 1 hour – minutes past = minutes to

60 – 33 minutes past = 27 minutes to

Another way to say this time is 27 minutes to 11.

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PUPIL TEXTBOOK 3C PAGE 65

Think together

WAYS OF WORKING Whole class teacher led (I do, We do, You do)

ASK

- Question 1: *Why are we counting in 5s and 1s? How can you tell what hour it is? Which hand should you look at?*
- Question 2: *What is different about the clocks in a) and b)? What would you be doing at these times in the afternoon?*

IN FOCUS Questions 1 and 2 give children an opportunity to practise their recognition of 'minutes past' and 'minutes to'. Discuss with children the clues they use to identify whether the clock is showing 'minutes past' or 'minutes to'. Ask: *Has the minute hand gone past the number 6 (half-way through an hour)? Has the hour hand gone past the number 4 or is it travelling towards the number 4?* Encourage discussion and share ideas.

STRENGTHEN For these questions, encourage children to make and to write in words all the times shown. Ask: *Can you think of two ways to say this time?* Questions 1, 2 and 3 provide opportunities for children to estimate time. Ask and discuss: *Why is estimating time important in everyday life? Do you think you are more likely to hear 'about twenty to 3' or '21 minutes to 3' in real life? Does that mean reading the time exactly is not important?*

DEEPEN Ask children to organise the times they have seen in this lesson into two groups: 'minutes to' and 'minutes past'. Ask: *In which group will this time go? How do you know you have organised the times correctly? Can you draw a clock showing this time?*

ASSESSMENT CHECKPOINT Children should be able to identify clocks that show 'minutes to' and clocks that show 'minutes past'. Assess if children can recognise and explain how the position of the hour hand changes as the time moves from one hour to the next.

ANSWERS

Question 1 a): 18 minutes past 5

Question 1 b): 21 minutes to 12

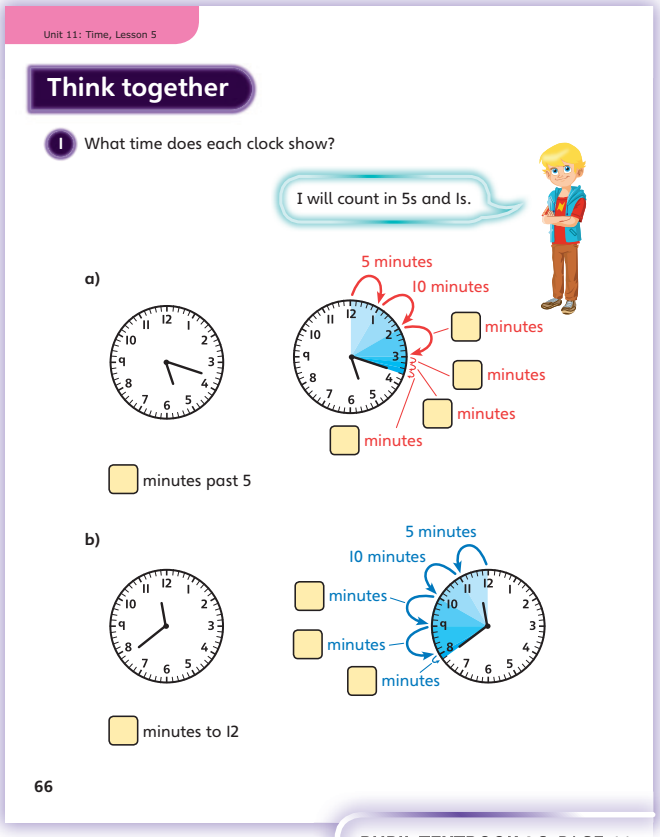
Question 2 a): 9 minutes past 4

Question 2 b): 12 minutes to 5

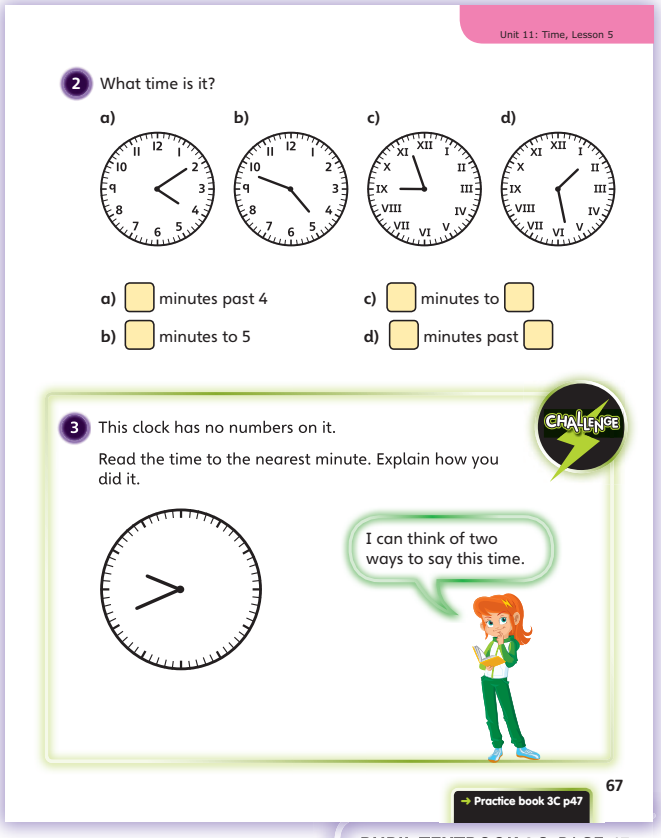
Question 2 c): 3 minutes to 9

Question 2 d): 28 minutes past 1

Question 3: 41 minutes past 9 or 19 minutes to 10



PUPIL TEXTBOOK 3C PAGE 66



PUPIL TEXTBOOK 3C PAGE 67

Practice

WAYS OF WORKING Independent thinking

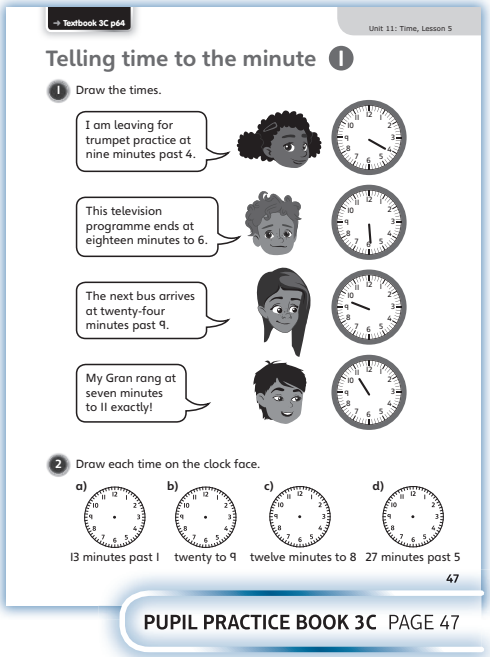
IN FOCUS Question 1 links the concepts from this lesson with children's real life experiences. It may be beneficial to provide blank clock faces and the statements written on slips of paper so children can draw the right time on each clock and match it with the corresponding activity. Question 2 gives children the opportunity to develop fluency in recognising and recording different times.

STRENGTHEN For children struggling to match the 'minutes past' with the 'minutes to' in question 3, it may be beneficial to use a number line. Ask: *How many minutes have gone by? How many minutes are there until the next hour?*

DEEPEN Use question 4 to deepen children's reasoning and explanation skills. Ask children what part of the lesson they think Kate did not understand. Ask: *What would you say to help her understand? Can you explain where she went wrong? Can you use a resource or picture to help explain the mistake to her?*

ASSESSMENT CHECKPOINT At this point in the lesson, children should be able to confidently recognise and record times to the nearest minute. They should be able to use 'minutes past' and 'minutes to' and fluently describe the times they read.

ANSWERS Answers for the **Practice** part of the lesson appear in the separate **Practice and Reflect answer guide**.



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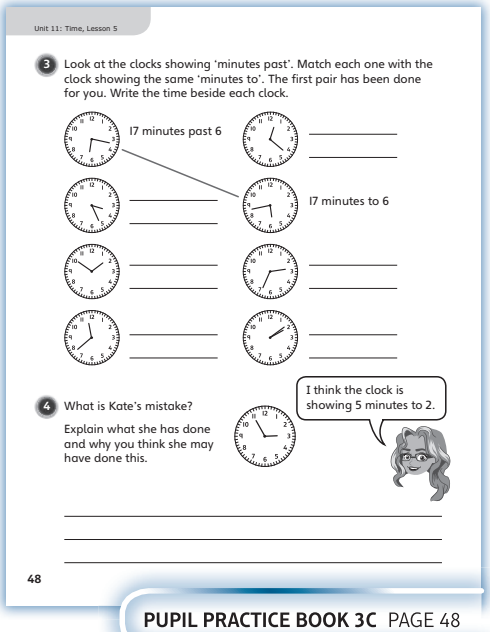


PUPIL PRACTICE BOOK 3C PAGE 48

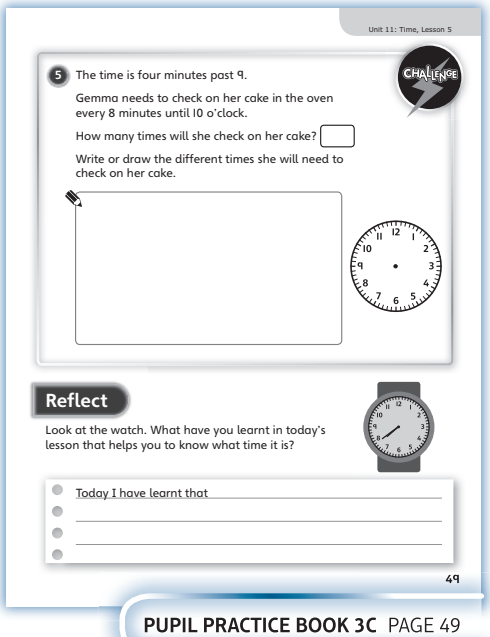
Reflect

WAYS OF WORKING Independent thinking

IN FOCUS Give children an opportunity to develop their own line of thinking. They should be able to link the vocabulary they have learnt in the past with the vocabulary in this lesson to justify their reasoning.

ASSESSMENT CHECKPOINT Children should show a confident understanding of estimating and reading time to the nearest minute. They should be able to confidently and accurately explain the importance of being able to estimate time, and of being able to read the time to the nearest minute.

ANSWERS Answers for the **Reflect** part of the lesson appear in the separate **Practice and Reflect answer guide**.



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After the lesson

- Are children able to confidently estimate time?
- Are children able to read the time accurately?
- How will you build in more opportunities to practise these skills throughout the school day?

Telling time to the minute 2

Learning focus

Children will read times using analogue and digital clocks. They will recap their learning about measuring time and describe time using am and pm, or morning and afternoon/evening.

Small steps

- Previous step: Telling time to the minute (1)
- **This step: Telling time to the minute (2)**
- Next step: Telling time to the minute (3)

NATIONAL CURRICULUM LINKS

Year 3 Measurement

Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight.

ASSESSING MASTERY

Children can read times displayed on analogue clocks to the minute and use the terms am and pm appropriately. Children can read 12-hour digital times and make links between digital and analogue times.

COMMON MISCONCEPTIONS

Children may think that digital clock numbers are the same as analogue clock numbers – for instance, that 3:10 means the hour hand points to the 3, and the minute hand points to the 10. Ask:

- *What does the analogue clock show? What does this mean? How many hours? How many minutes?*

Children may think that am means daylight and pm means night time. Ask:

- *Is it sometimes dark at 7 am? Is it ever dark at 1 pm?*

STRENGTHENING UNDERSTANDING

Offer children opportunities to look at pictures of the same clock at different times in one hour (for example, 9 o'clock, 9:15, 9:20, 9:30, 9:40, 9:45, 9:55 and 10 o'clock). Ask them to describe the journey of the minute hand within this one hour, and then to describe the journey of the hour hand within this one hour.

GOING DEEPER

Challenge children to look at one channel in an online TV guide. Ask them to record each programme in a table with two columns: am and pm. Give children a set amount of time to do this, for example, 15 minutes. This will develop their ability to recognise the times, and will also help to develop their awareness of how long a certain number of minutes is.

KEY LANGUAGE

In lesson: past, to, **digital**, digit, **am**, **pm**, midday, midnight, morning, evening, time, minute, hour

Other language to be used by the teacher: hour hand, minute hand, o'clock, consecutive, analogue

RESOURCES

Mandatory: analogue clock manipulatives, digital clock

Optional: analogue clock and written time and written time flash cards

In the eTextbook of this lesson, you will find interactive links to a selection of teaching tools.

Before you teach

- Are children confident using am and pm?
- Can children easily see the time in the classroom?

Discover

WAYS OF WORKING Pair work

ASK

- Question 1 a): *What clocks can you see in this picture? How many minutes are there in an hour? Is the time shown closer to 8 o'clock or 9 o'clock?*
- Question 1 b): *What information can we use to decide whether it is morning or afternoon/evening?*

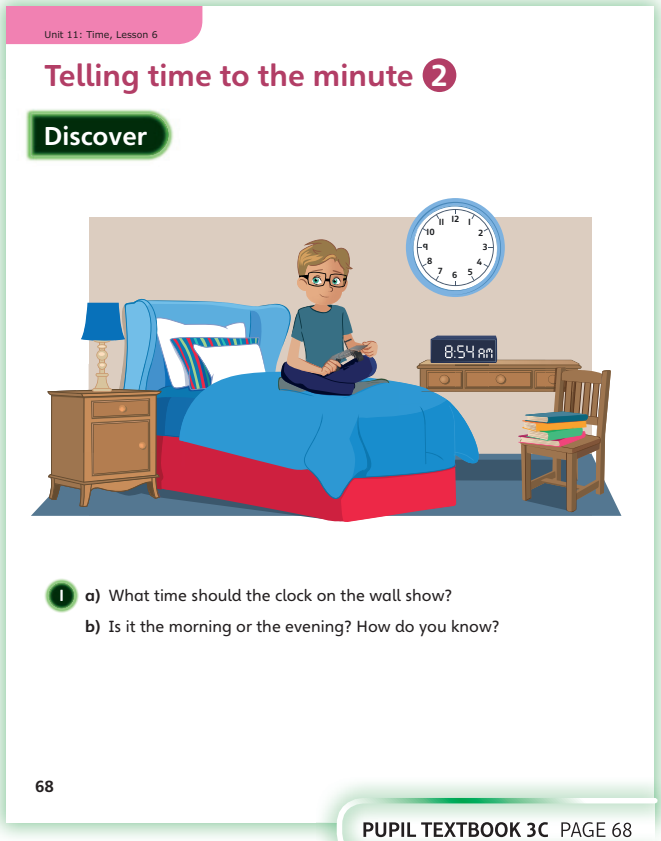
IN FOCUS This picture provides children with experience of using different representations of time. Use this picture as an opportunity to discuss similarities and differences between digital and analogue time. Address the potential misconception that the hour and minute hand point to the numbers shown on a digital clock, to ensure children do not think this later.

PRACTICAL TIPS If possible, provide a digital and an analogue clock on each table, so children can observe how the time changes throughout the day. At regular intervals, ask children to tell the time on both clocks. Ask: *How do they differ?*

ANSWERS

Question 1 a): The clock on the wall should show 54 minutes past 8, or 6 minutes to 9

Question 1 b): It is morning because the digital clock says 'am'.



PUPIL TEXTBOOK 3C PAGE 68

Share

WAYS OF WORKING Whole class teacher led

ASK

Revisit different times throughout the day.

- *Where would the minute hand point at 35 minutes past 2? What about the hour hand?*
- *The whole hour is 60 minutes. Can you use this to find out how many minutes until the hour is complete?*
- *Can you count around the clock face and show where the minute hand should be? How would this time look on a digital clock?*
- *How do you decide whether it is going to be am or pm?*

IN FOCUS Give children different times in the day, and ask them to think of activities they might be doing at these times. Reinforce what am and pm mean. Ask children to think of mistakes that they think might happen when using am and pm, such as linking them to daylight and night time. Clarify any misconceptions.

STRENGTHEN Have a class 'Clock day' where children can bring a clock from home. Also have different types of watches and clocks in the classroom. Ask: *Which one do you prefer? Why? How do they differ?* Ask children throughout the day to find what the time is.

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Think together

WAYS OF WORKING Whole class teacher led (I do, We do, You do)

ASK

- Question 1: *How will you read the analogue clocks? How will you read the digital clocks? What clues can you look for when reading the time on each clock?*
- Question 2: *Is it am or pm in the evening? Where is the hour hand pointing on the analogue clock?*

IN FOCUS Questions 1 and 2 make the link between analogue and digital times. Make sure children are confident when reading a digital time and are able to decide whether the time shown is morning or afternoon/evening.

STRENGTHEN In question 3, strengthen the link between the times shown on the page; and the correct use of the mathematical vocabulary 'am', 'pm', 'minutes past' and 'minutes to' when reading the time. Ask children to explain how they will use the fact that there are '60 minutes in one hour' to help solve the problem.

DEEPEN Encourage children to use previous learning and the number line to help solve question 3. Ask: *Can you think of a way to prove that your answer is right?*

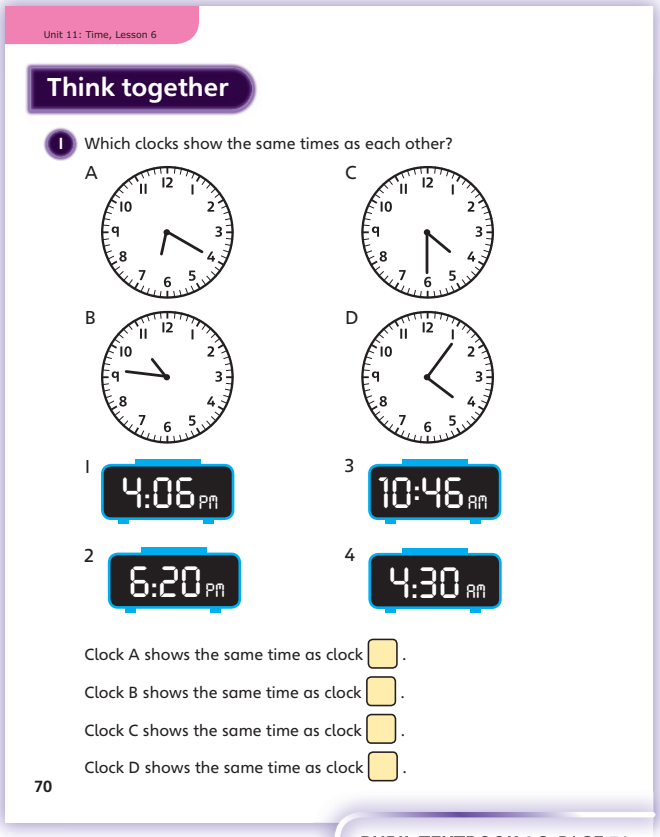
ASSESSMENT CHECKPOINT At this point in the lesson, children should be more confident in reading analogue and digital times and explaining when to use 'minutes past' and 'minutes to'. Look for a confident and fluent understanding and use of 'am' and 'pm'.

ANSWERS

Question 1: Clock A shows the same time as clock 2.
Clock B shows the same time as clock 3.
Clock C shows the same time as clock 4.
Clock D shows the same time as clock 1.

Question 2: The clock face shows 7 minutes past 8.
Evening is shown by the letters 'pm'. Digital clock D shows the same time as the clock face.

Question 3: The time is 11 minutes to 1.



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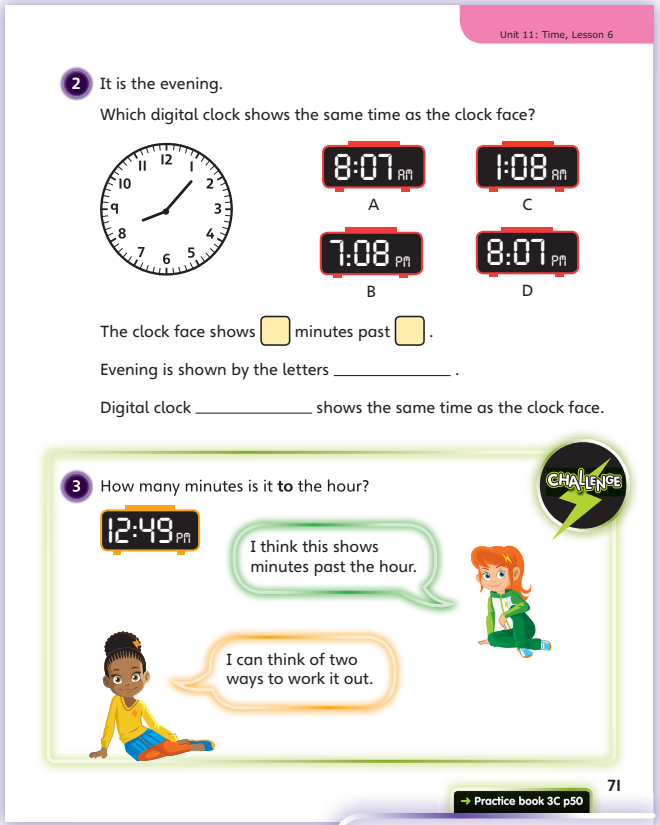

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Practice

WAYS OF WORKING Independent thinking

IN FOCUS In questions 1 and 2, children need to draw digital times on analogue clock faces and vice-versa. Check that they understand what each number in a digital clock time represents and how this will be shown on an analogue clock. Ask: *Does this time show 'minutes past' or 'minutes to'? How will you write/draw that? Which half of the clock will the minute hand be in?* Explain that we do not show 'am' or 'pm' on analogue clocks.

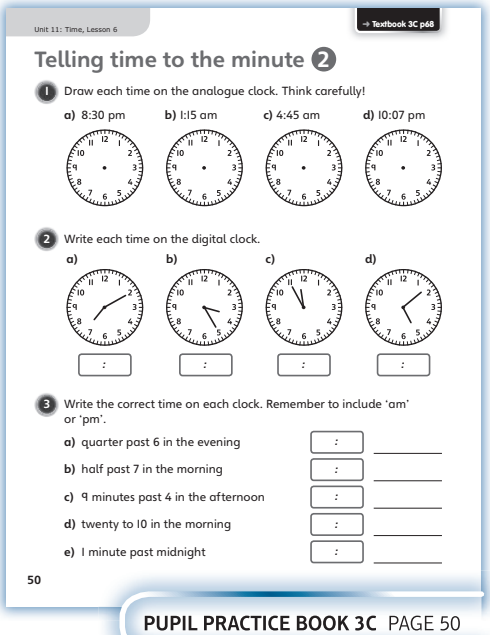
STRENGTHEN Question 3 requires children to practise recording the vocabulary of time. Remind them to draw on what they have learnt in previous lessons.

DEEPEN In question 7, ask children to prove their ideas using evidence. Ask children to draw digital and analogue clocks and show the different times that it could be.

THINK DIFFERENTLY In question 6, children have to think of consecutive digits in digital clock times. Ask them to show you how they have worked systematically to find all possible answers. Can they order their answers throughout the day?

ASSESSMENT CHECKPOINT Children should be showing a confident understanding of what 'am' and 'pm' mean. They should be able to read the time clearly using a digital or analogue clock. They should be able to clearly explain how to read the time using 'minutes past', and how to calculate 'minutes to' if the time shown is more than half past the hour.

ANSWERS Answers for the **Practice** part of the lesson appear in the separate **Practice and Reflect answer guide**.


Unit 11: Time, Lesson 6

→ Textbook 3C p68

Telling time to the minute 2

1 Draw each time on the analogue clock. Think carefully!

a) 8:30 pm b) 1:15 am c) 4:45 am d) 10:07 pm

2 Write each time on the digital clock.

a) b) c) d)

3 Write the correct time on each clock. Remember to include 'am' or 'pm'.

a) quarter past 6 in the evening

b) half past 7 in the morning

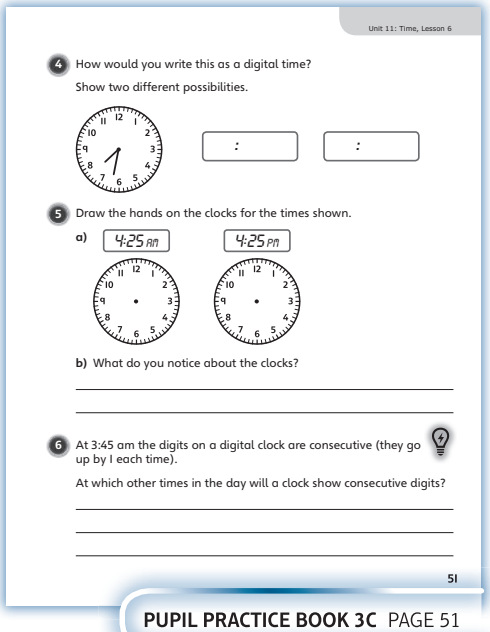
c) 9 minutes past 4 in the afternoon

d) twenty to 10 in the morning

e) 1 minute past midnight

50

PUPIL PRACTICE BOOK 3C PAGE 50


Unit 11: Time, Lesson 6

4 How would you write this as a digital time?

Show two different possibilities.

5 Draw the hands on the clocks for the times shown.

a) 4:25 AM 4:25 PM

b) What do you notice about the clocks?

6 At 3:45 am the digits on a digital clock are consecutive (they go up by 1 each time).

At which other times in the day will a clock show consecutive digits?

51

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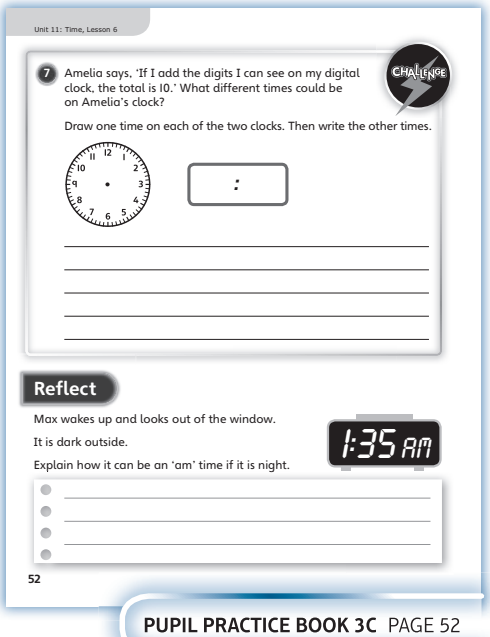
Reflect

WAYS OF WORKING Pair work

IN FOCUS Children can think of their own ideas about when to use 'am' and 'pm', and share their ideas with their partner. Ask: *If you have different ideas, can you explain each other's ideas? Why did your partner think that?*

ASSESSMENT CHECKPOINT Children should clearly refer to the fact that 'am' and 'pm' are not related to whether it is dark or light outside. They should draw on previous knowledge that the day starts at 12 o'clock midnight and is 24 hours long.

ANSWERS Answers for the **Reflect** part of the lesson appear in the separate **Practice and Reflect answer guide**.


Unit 11: Time, Lesson 6

7 Amelia says, 'If I add the digits I can see on my digital clock, the total is 10.' What different times could be on Amelia's clock?

CHALLENGE

Draw one time on each of the two clocks. Then write the other times.

Reflect

Max wakes up and looks out of the window.

It is dark outside.

Explain how it can be an 'am' time if it is night.

1:35 AM

52

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After the lesson

- Are children able to confidently explain the differences between 'am' and 'pm'?
- Are children able to confidently explain how analogue and digital clocks differ?
- How will you build in more opportunities to practise reading the time throughout the school day?

Telling time to the minute 3

Learning focus

In this lesson, children will tell the time using the 24-hour clock. They will learn how to convert the time from 12-hour clock to 24-hour clock.

Small steps

- Previous step: Telling time to the minute (2)
- **This step: Telling time to the minute (3)**
- Next step: Finding the duration

NATIONAL CURRICULUM LINKS

Year 3 Measurement

- 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, am/pm, morning, afternoon, noon and midnight.

ASSESSING MASTERY

Children can read times on analogue clocks using the 24-hour clock. Children can fluently estimate and read the time to the nearest minute.

COMMON MISCONCEPTIONS

Children may add 12 to all 12-hour clock times to get 24-hour clock times. Ask:

- *How does the 24-hour clock help us to tell the difference between 'am' and 'pm'?*

Children may 12:5 for 5 minutes past 12, or 9:23 instead of 09:23. Ask:

- *How many digits must a 24-hour clock time have?*

Children may think that 12:00 and 00:00 show the same time, rather than noon and midnight. Ask:

- *Is this an 'am' time or a 'pm' time? How can you tell?*

STRENGTHENING UNDERSTANDING

Show 10:00 on a 24-hour digital clock. Change the display as children count up in hours, and then minutes. Explain that we read 13:45 as 'thirteen forty-five'. Ask: *Why do we use 24-hour clocks? Can you describe the way the time is recorded? Does this look like anything you have seen before? How is it similar to what you have seen? How is it different?*

GOING DEEPER

Challenge children to look at a train timetable which uses the 24-hour clock. Ask them to divide the train times into two groups: 'before midday' and 'after midday'. Ask children to discuss how they know that their answers are correct.

KEY LANGUAGE

In lesson: morning, afternoon, evening, 12-hour clock, 24-hour clock, digital clock, midday, time, hour, minute

Other language to be used by the teacher: analogue

RESOURCES

Mandatory: 24-hour clocks, digital clock

Optional: analogue clock manipulatives, analogue clock flash cards

In the eTextbook of this lesson, you will find interactive links to a selection of teaching tools.

Before you teach

- Are children confident in using 'am' and 'pm'?
- Do children have access to 24-hour digital clocks?

Discover

WAYS OF WORKING Pair work

ASK

- Question 1: *What clocks can you see in the picture?*
- Question 1: *Are there any new ways of showing the time? How are they different to ones you have seen before?*
- Question 1: *How many hours are there in the day?*
- Question 1 a): *What information can we use to decide whether it is morning or afternoon/evening?*
- Question 1 b): *What time does the analogue clock show?*

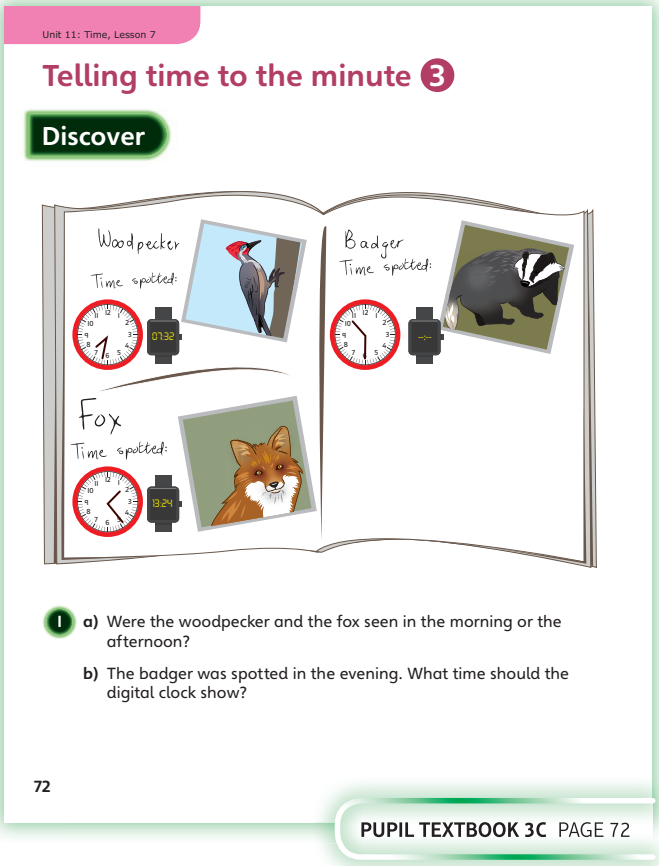
IN FOCUS This picture will give children their first experience of the 24-hour clock in this unit. Use this opportunity to discuss how this representation of time is different to what children have seen before. Question 1 a) draws attention to the way time is recorded using an analogue clock and a 24-hour digital clock. Show the time on the analogue clock and point out the equivalent time on the 24-hour digital clock. Ask: *What is different?* Look out for children who say that 12 is added to the number of hours to give the 24-hour clock time.

PRACTICAL TIPS Use two digital clocks, one with the 24-hour setting, the other with the 12-hour setting. Use the clocks to show the times that are included in the activity. Set both clocks to 12:00, then move the hour forward. Ask children to compare the two representations. Ask: *How can you tell the time is after midday on each of the clocks?*

ANSWERS

Question 1 a): The woodpecker was seen in the morning.
The fox was seen in the afternoon.

Question 1 b): The digital clock should show 22:30.



PUPIL TEXTBOOK 3C PAGE 72

Share

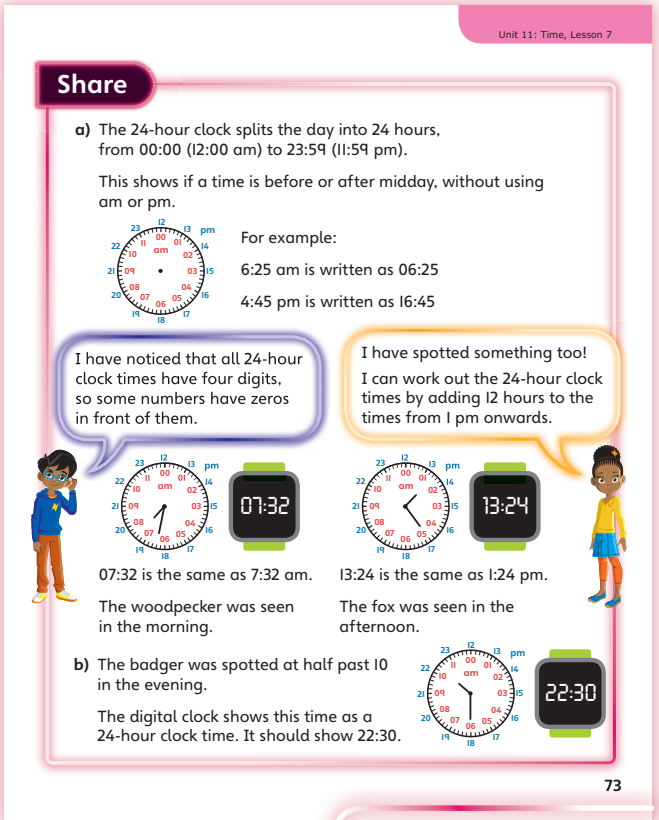
WAYS OF WORKING Whole class teacher led

ASK

- *What do you notice about the times the animals were spotted? Can you see anything unusual about them?*
- *When do you think the time 07:32 is? When do you think the time 13:24 is? When might 13 hours be? If 1pm is 13:00, what is 2pm/3pm/4pm, etc? Can you spot a quick way to remember times in 24-hour clock notation?*

IN FOCUS At this point in the lesson, it is important to make sure children are confident with 24-hour clock notation and understand that the hours can be counted beyond 12 o'clock, noon. Be very clear about the link between 'am' and 'pm' and 24-hour clock times before or after midday.

Ask: *Why do you think we have 24-hour clock times?* Revisit concepts and listen to children's reasoning. Discuss the characteristics of the 24-hour clock. Clarify any misconceptions. Allow children to compare the different ways that time can be represented and discuss the characteristics of each method.



PUPIL TEXTBOOK 3C PAGE 73

Think together

WAYS OF WORKING Whole class teacher led (I do, We do, You do)

ASK

- Question 1: *Did Mo spot the robin in the morning or the afternoon? How do you know? How can you change the 12-hour clock to 24-hour clock?*
- Question 2: *What does am mean? What about pm? How many digits do all 24-hour clock times have? When do you use a zero as the first digit?*

IN FOCUS Questions 1 and 2 give children the opportunity to practise changing 12-hour times to 24-hour times. Discuss with children the clues they can use to identify whether the time is before midday or after midday.

STRENGTHEN For all questions in this section, encourage children to show the times by drawing the minute and hour hands on blank analogue clock faces.

DEEPEN Use question 3 to deepen children's reasoning and explanation skills. Revisit the potential misconceptions from the beginning of the lesson. Ask: *What would you say to Richard to help him understand his mistake? What would the answer be?* Listen for children who know that we use four digits to record the 24-hour time.

ASSESSMENT CHECKPOINT At this point in the lesson children should be confident in recognising and recording 24-hour clock times. They should be able to describe when and how to record the time before midday and after midday.

ANSWERS

Question 1: 4 + 12 = 16. The robin was spotted at 16:46.

Question 2: 09:16

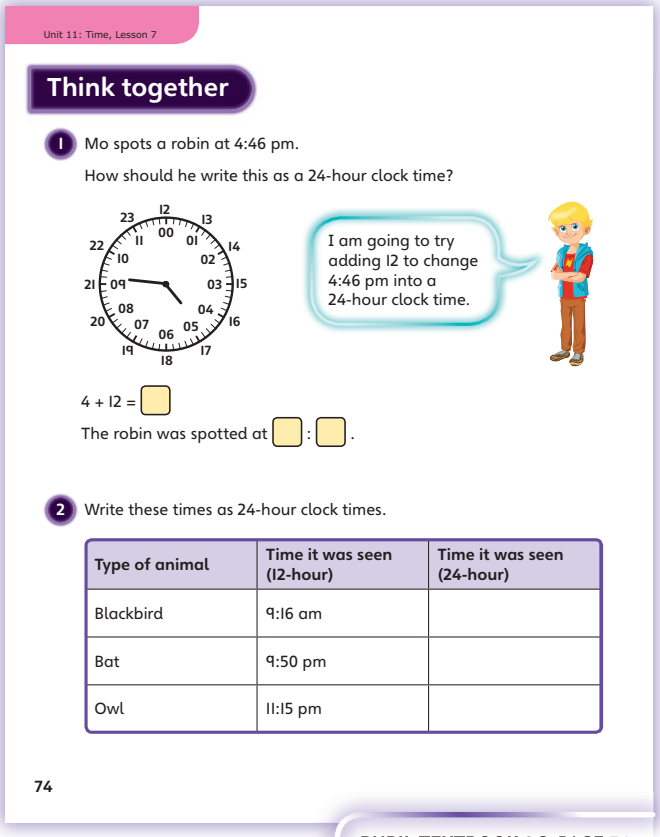
21:50

23:15

Question 3: Ambika is right. 14:50 is the same as 2:50 pm.

Richard is wrong as he is adding 12 to change it to 24-hour time, even though it is not yet 1 pm.

Jamila is wrong as she has forgotten to put 0 at the start of the time. The time should be 08:25.



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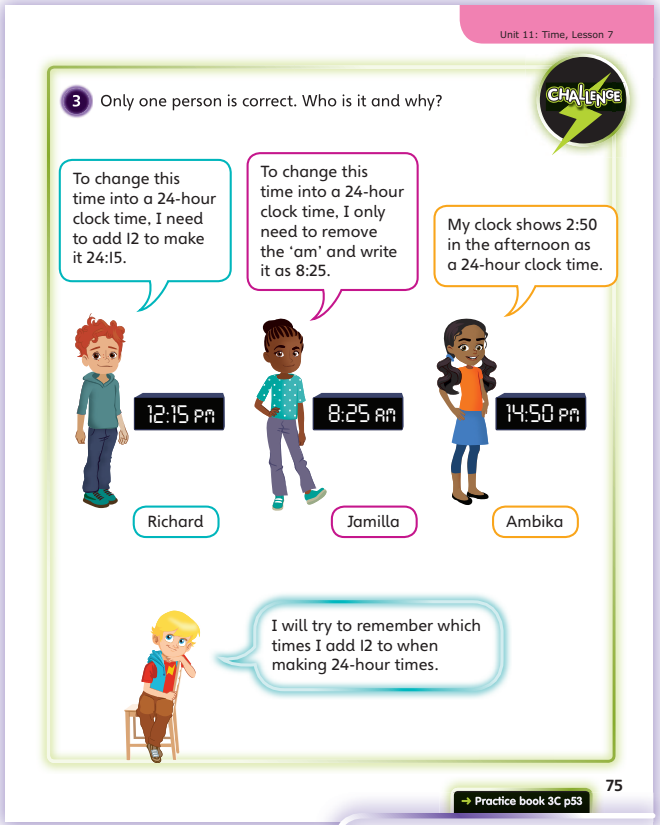


PUPIL TEXTBOOK 3C PAGE 75

Practice

WAYS OF WORKING Independent thinking

IN FOCUS Question 1 offers the opportunity for children to recognise 24-hour times and represent them on analogue clocks. Question 2 is more abstract and checks whether children know how to convert 12-hour times to 24-hour times. Ask: *What clues can you use to work out whether it is before midday or after midday?* Question 3 requires children to summarise what they have learnt in the lesson.

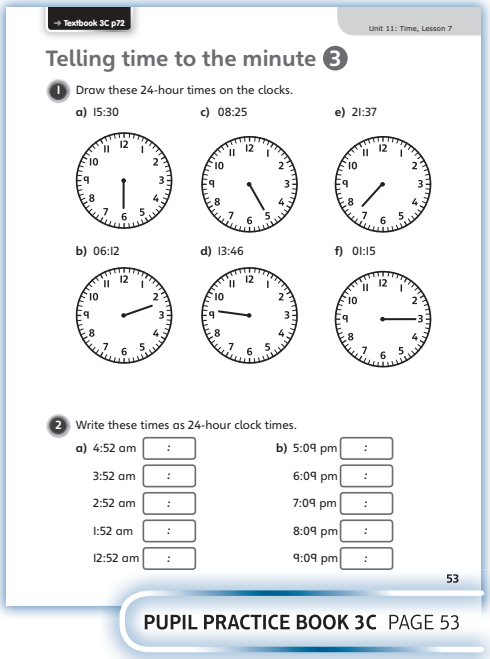
STRENGTHEN If children struggle with question 2, remind them that the time does not stop at 12 o'clock midday, but the hours continue as 13, 14 … up to 00. Draw a timeline from midday to midnight and mark 13:00 and 1 pm inat the correct point. Then ask children to complete the rest of the times.

DEEPEN When solving question 6, deepen children's reasoning by discussing any potential misconceptions. Encourage children to explain Spark's comments. What else do they know about 24-hour time? Ask: *What is the latest time you can make using these digits? What is the earliest?*

THINK DIFFERENTLY Question 5 asks children to problem solve. If they are unsure what to do, ask them to describe the information given in the question. Ask: *What is the smallest number you could use? What is the biggest? What does 'total' mean? What does 'multiple of 5' mean?* Ask children to draw [ ] [ ] : [ ] [ ] and fill in the blanks.

ASSESSMENT CHECKPOINT Children should be confident when converting 12-hour time to 24-hour time and vice versa.

ANSWERS Answers for the **Practice** part of the lesson appear in the separate **Practice and Reflect answer guide**.



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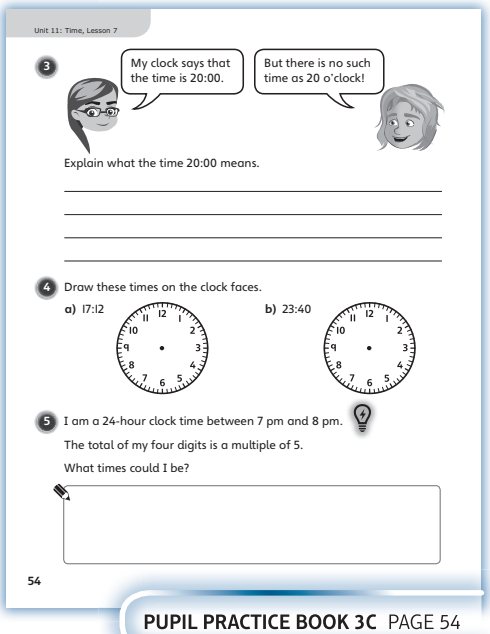


PUPIL PRACTICE BOOK 3C PAGE 54

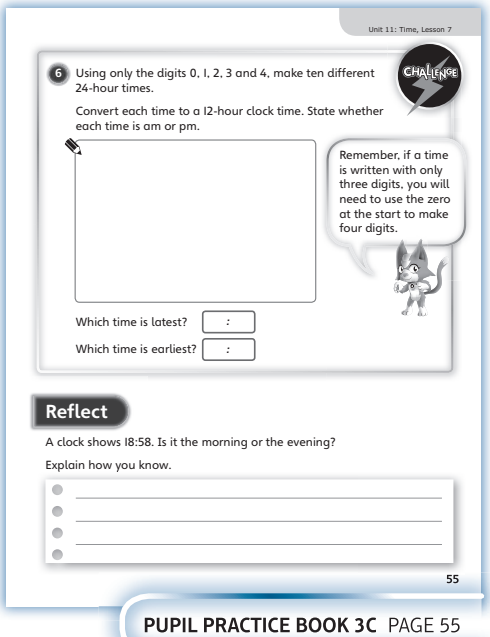
Reflect

WAYS OF WORKING Independent thinking

IN FOCUS This question checks whether children can explain how 24-hour time is used instead of writing am or pm to tell us whether it is morning or evening.

ASSESSMENT CHECKPOINT Children should recognise that hours can be counted beyond 12:00 midday. They should be able to explain and show how they know that 18:58 is in the evening as it is after midday (12:00).

ANSWERS Answers for the **Reflect** part of the lesson appear in the separate **Practice and Reflect answer guide**.



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After the lesson

- Are children confident when the 24-hour clock is being used?
- Are children secure when converting from the 12-hour clock to the 24-hour clock?

Finding the duration

Learning focus

In this lesson, children will learn to find a duration between two times, including using the 24-hour clock.

Small steps

- Previous step: Telling time to the minute (3)
- **This step: Finding the duration**
- Next step: Comparing duration

NATIONAL CURRICULUM LINKS

Year 3 Measurement

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, am/pm, morning, afternoon, noon and midnight.

ASSESSING MASTERY

Children are able to confidently find the duration between two times, either by counting forwards or backwards from one time to the other. Children should find durations to the nearest minute, including 24-hour times.

COMMON MISCONCEPTIONS

Children may add the number of minutes each time (for example, if the start time is '12 minutes to 4' and the duration is 10 minutes, they add 10 to 12 and get an end time of '22 minutes to 4'). Ask:

- *Will the end time be before or after the start time?*

Children may be unsure how to find durations when they cross the hour boundary. Ask:

- *How many minutes to the next hour? How many more minutes after that?*

STRENGTHENING UNDERSTANDING

Give children a clock with moving hands, and cards with numbers of minutes (such as 5 minutes, 10 minutes, 15 minutes, 20 minutes). Children work in pairs and take it in turns to pick a card. This is the number of minutes that the minute hand has to travel. They show the new time on the clock and draw it. Children score 3 points if they correctly say the original time, the new time and how many minutes the minute hand has travelled.

GOING DEEPER

Challenge children to look at a local bus timetable. Ask: *Where can you travel in less than 20 minutes? In less than one hour?*

KEY LANGUAGE

In lesson: start time, end time, **duration**, finish

Other language to be used by the teacher: amount, time taken

STRUCTURES AND REPRESENTATIONS

number line

RESOURCES

Mandatory: analogue clock manipulatives, digital clock

Optional: analogue clock and written time flash cards

In the eTextbook of this lesson, you will find interactive links to a selection of teaching tools.

Before you teach

- Are children confident counting around the clock?
- Can children link a number line with a clock face?

Discover

WAYS OF WORKING Pair work

ASK

- Question 1 a): *Where can you look to find how long the farmer takes to plough the field?*
- Question 1 a): *What clocks are shown in the picture?*
- Question 1 a): *What time did the farmer start? What time did he finish ploughing?*
- Question 1 b): *How can you work out how long the farmer waits before he has a cup of tea?*

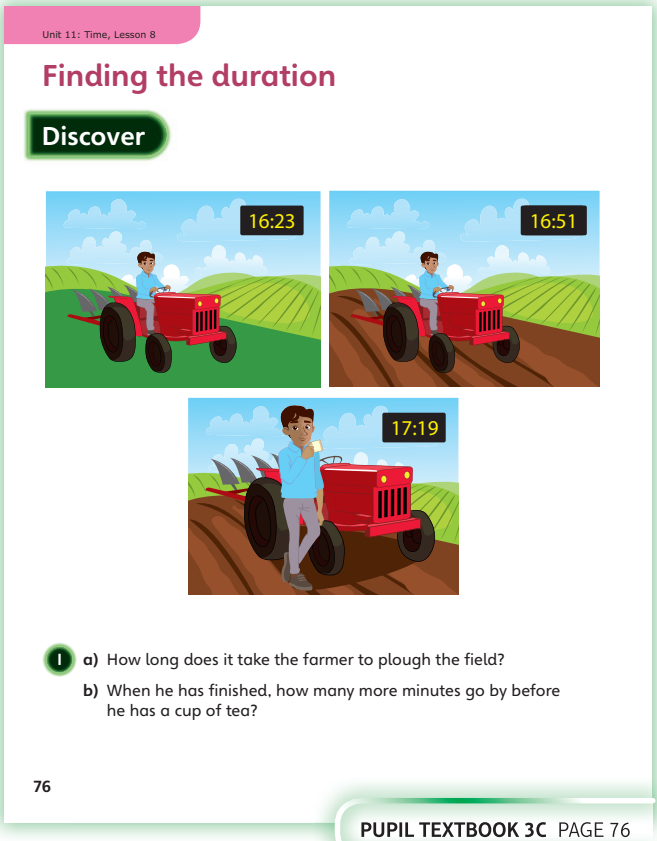
IN FOCUS Use the pictures to discuss the duration of some activities or clubs that children do. For example, ask: *When does choir practice start and finish? How long is it? What other things could we find the duration of time for?*

PRACTICAL TIPS A number line and clock faces will help children to calculate the length of time. It will be useful to revisit how the number line can be used and to remind children that 1 hour = 60 minutes, not 100 minutes.

ANSWERS

Question 1 a): It takes the farmer 28 minutes to plough the field.

Question 1 b): Another 28 minutes go by before the farmer has a cup of tea.



Finding the duration

Discover

1 a) How long does it take the farmer to plough the field?

b) When he has finished, how many more minutes go by before he has a cup of tea?

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Share

WAYS OF WORKING Whole class teacher led

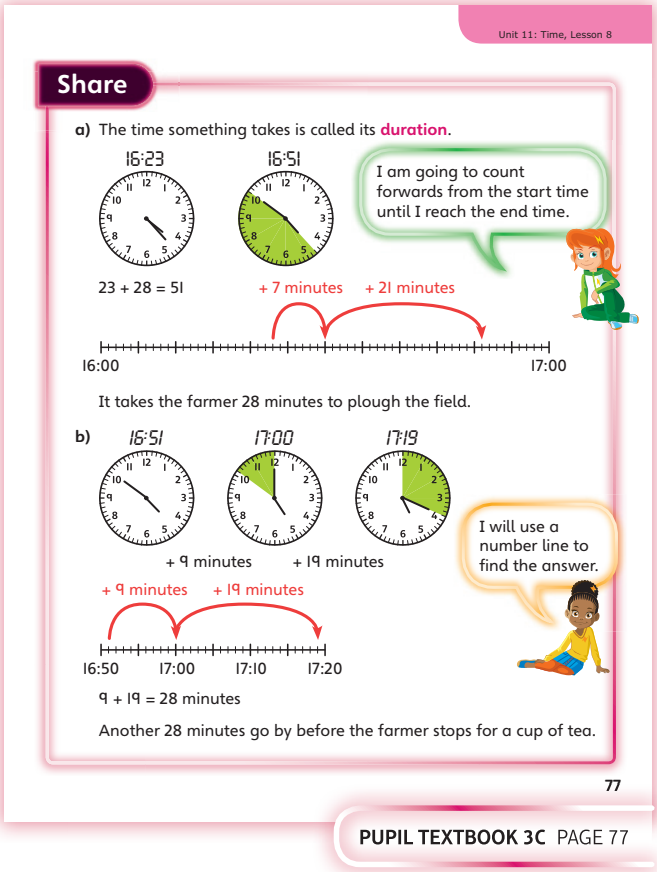
ASK

- *What does 'duration' mean?*
- *To work out the duration of something, what information do we need to know?*

IN FOCUS Although children may have been introduced to duration in Year 2, this was non-statutory guidance, so do not assume they have done it or will remember it. It is important to scaffold children's use of the term 'duration' through your questioning and support. Providing concrete or pictorial representations of analogue and digital clocks will help children. Do not go into full conversion of minutes and hours, as this is covered in Year 4.

STRENGTHEN Set up two clocks at the front of the class. Ask one child to make any time on the first clock, and another to make any time on the second clock. The class works out the duration between the two times.

Show children a TV guide where the start and end times of programmes are given. Ask children to devise their own duration questions based on what they see.



Share

a) The time something takes is called its **duration**.

It takes the farmer 28 minutes to plough the field.

b)

9 + 19 = 28 minutes

Another 28 minutes go by before the farmer stops for a cup of tea.

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Think together

WAYS OF WORKING Whole class teacher led (I do, We do, You do)

ASK

- *What is the start time? What is the end time? What does the shaded clock face show?*
- *How will you count the duration of time between the start and finish times?*
- *How can you show the duration using a number line?*
- *How will you record how many minutes the duration is? Could you record it in a different way?*

IN FOCUS Question 1 scaffolds children's ability to find the duration within an hour. Question 2 asks children to find a duration less than 60 minutes long, but crossing the hour boundary. Question 3 progresses to finding a duration that is greater than 60 minutes and crosses the hour.

STRENGTHEN If children are unsure of how to complete questions 1 and 2, provide blank clock faces and ask children to mark the start and end times. They can then count the steps between the two times to measure the duration of time.

DEEPEN In question 3, provide children with a number line showing two hours from 16:00 to 18:00, with each hour split into 60 minutes. Ask children to show how long the farmer took to collect the eggs on the number line.

ASSESSMENT CHECKPOINT At this point in the lesson, children should be able to calculate 'duration' by calculating the length of time between two points. Children should also recognise how and why a measurement of duration can be different to the number of minutes mentioned in the question or that the clock is showing.

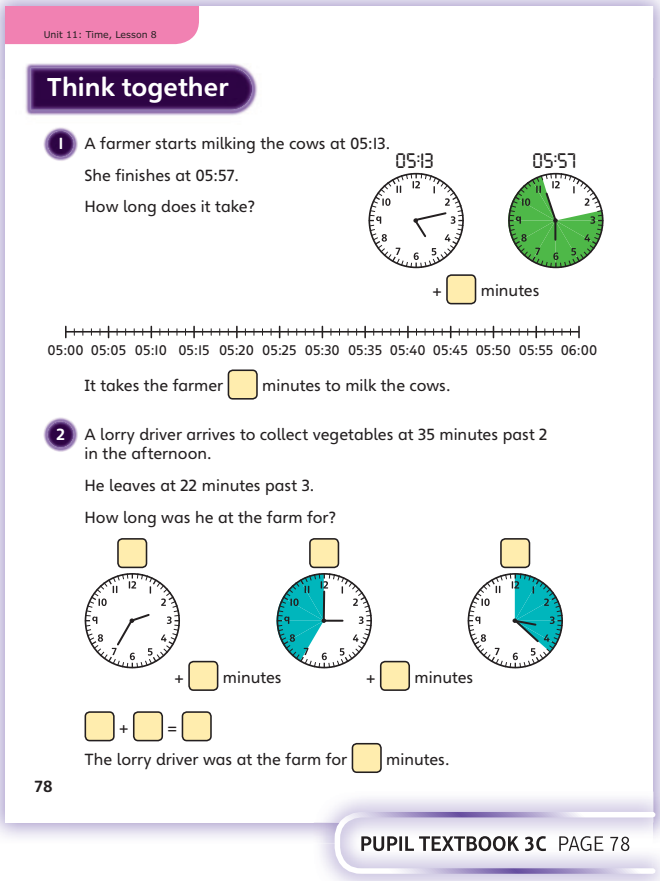
ANSWERS

Question 1: It takes the farmer 44 minutes to milk the cows.

Question 2: 25 + 22 = 47

The lorry driver was at the farm for 47 minutes.

Question 3: It takes the farmer 1 hour 23 minutes or 83 minutes.



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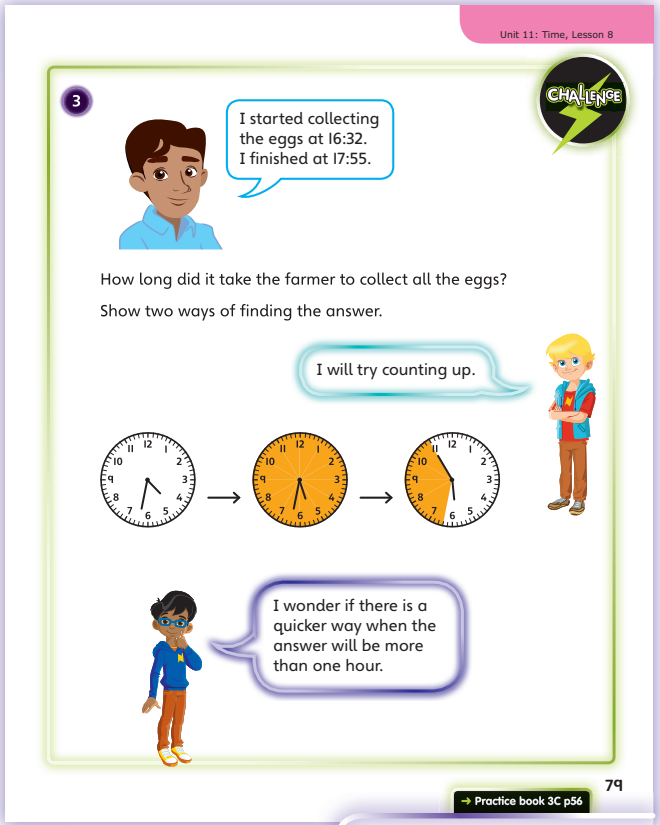

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Practice

WAYS OF WORKING Independent thinking

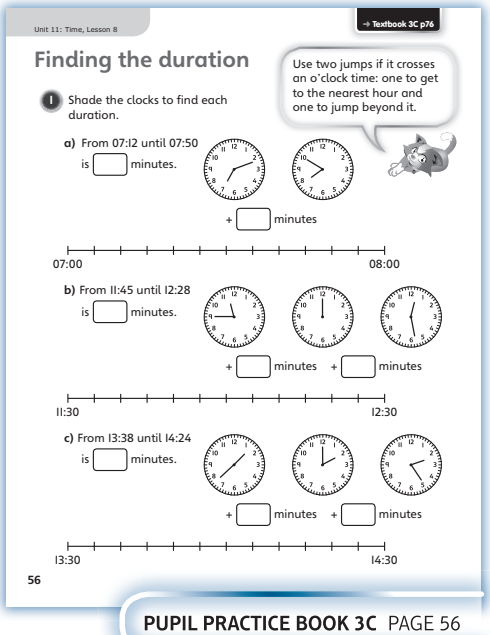
IN FOCUS In question 1, children work with pictorial representations of time to find a duration of time. Question 2 offers a procedural variation in finding the length of time. Encourage children to use shaded pictures in or a number line in question 2, to calculate the duration of time. An analogue clock may also help them.

STRENGTHEN For question 4, encourage children to use an analogue clock, number line, or both, to find the duration of time. Remind them to consider the number of hours and minutes, not only the minutes.

DEEPEN If children are confident in finding the length of time in question 5, deepen their ability by asking them to find different ways to show their answer. In question 6, children are provided with the opportunity to work on an open-ended investigative question. Children can choose the best representations to prove their ideas.

ASSESSMENT CHECKPOINT At this point in the lesson children should be confident in finding durations of time. They should be able to use multiple representations to find and visually demonstrate durations of time. Look for children explaining how they found durations that cross the hour boundary and using this understanding to solve real-life problems involving time independently.

ANSWERS Answers for the **Practice** part of the lesson appear in the separate **Practice and Reflect answer guide**.


Unit 11: Time, Lesson 8

→ Textbook 3C p76

Finding the duration

Use two jumps if it crosses an o'clock time: one to get to the nearest hour and one to jump beyond it.

1 Shade the clocks to find each duration.

a) From 07:12 until 07:50
is ☐ minutes.

+ ☐ minutes

07:00 08:00

b) From 11:45 until 12:28
is ☐ minutes.

+ ☐ minutes + ☐ minutes

11:30 12:30

c) From 13:38 until 14:24
is ☐ minutes.

+ ☐ minutes + ☐ minutes

13:30 14:30

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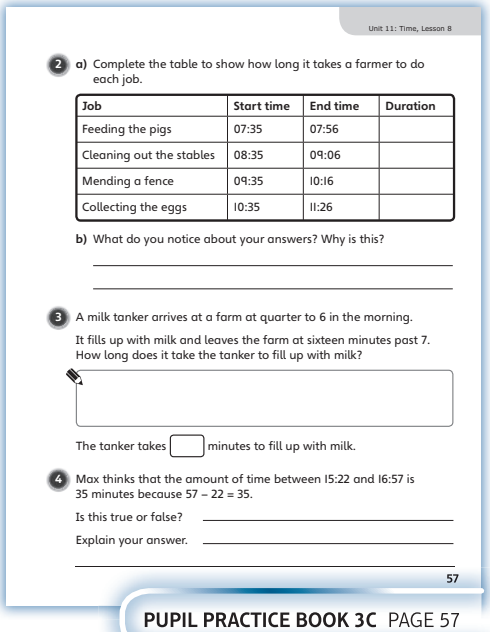
Unit 11: Time, Lesson 8

2 a) Complete the table to show how long it takes a farmer to do each job.

Job	Start time	End time	Duration
Feeding the pigs	07:35	07:56	
Cleaning out the stables	08:35	09:06	
Mending a fence	09:35	10:16	
Collecting the eggs	10:35	11:26	

b) What do you notice about your answers? Why is this?

3 A milk tanker arrives at a farm at quarter to 6 in the morning.
It fills up with milk and leaves the farm at sixteen minutes past 7.
How long does it take the tanker to fill up with milk?

The tanker takes ☐ minutes to fill up with milk.

4 Max thinks that the amount of time between 15:22 and 16:57 is 35 minutes because 57 – 22 = 35.
Is this true or false?
Explain your answer.

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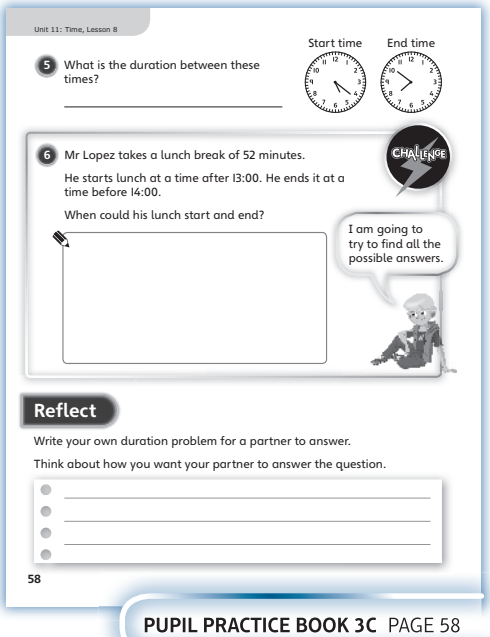
Reflect

WAYS OF WORKING Pair work

IN FOCUS Give children an opportunity to develop their reasoning independently. Can they answer their own duration problem? What method do they prefer to use? Ask: *Why did you choose this method?* Encourage children to compare their method with a partner's. Ask: *Whose method is more efficient?*

ASSESSMENT CHECKPOINT Children should be able to identify a start and end time, and find the duration of time between them. Children should be using different types of representation fluently. Do they use different representations when the duration is within an hour, or when the duration crosses an hour boundary? Listen to children's reasoning as to why they have chosen a particular representation.

ANSWERS Answers for the **Reflect** part of the lesson appear in the separate **Practice and Reflect answer guide**.


Unit 11: Time, Lesson 8

Start time End time

5 What is the duration between these times?

6 Mr Lopez takes a lunch break of 52 minutes.
He starts lunch at a time after 13:00. He ends it at a time before 14:00.
When could his lunch start and end?

CHALLENGE

I am going to try to find all the possible answers.

Reflect

Write your own duration problem for a partner to answer.
Think about how you want your partner to answer the question.

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After the lesson

- Are children confident in using the vocabulary they have learnt in the lesson?
- Can children confidently find a duration that crosses the hour?
- Can children choose different representations to independently solve problems?

Comparing duration

Learning focus

In this lesson, children will learn to compare durations of time.

Small steps

- Previous step: Finding the duration
- **This step: Comparing duration**
- Next step: Finding start and end times

NATIONAL CURRICULUM LINKS

Year 3 Measurement

- 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, am/pm, morning, afternoon, noon and midnight.
- Compare durations of events [for example to calculate the time taken by particular events or tasks].

ASSESSING MASTERY

Children confidently compare given durations, and can derive durations to compare. Children use their knowledge of place value and units of measurement to say whether a duration is a longer or shorter time. They can order durations, including working with digital times, 24-hour time and to the nearest minute.

COMMON MISCONCEPTIONS

Children may think that a duration that ends later, takes longer (when it may have started later and be shorter). Ask:

- *Would you rather play games between twenty-five to 4 and quarter past 4, or between five to 4 and twenty-five past 4? Why?*

STRENGTHENING UNDERSTANDING

Before the lesson, ask children to compare break time with lesson time. Ask: *Which is longer? Which is shorter?*

GOING DEEPER

Challenge children with a local bus timetable. Ask: *Where can you travel in less than 20 minutes? In one hour?*

KEY LANGUAGE

In lesson: duration, longer, longest, shortest, finish

Other language to be used by the teacher: amount, time taken, start time, end time, how long, shorter

STRUCTURES AND REPRESENTATIONS

number line

RESOURCES

Mandatory: analogue clock manipulatives, digital clock

Optional: analogue clock and written time flash cards

In the eTextbook of this lesson, you will find interactive links to a selection of teaching tools.

Before you teach

- Are children confident in counting around a clock?
- Are children confident in using am and pm?
- Can children link a number line with a clock face?

Discover

WAYS OF WORKING Pair work

ASK

- Question 1 a): *What word do we use to describe the length of time that something takes?*
- Question 1 a): *What times are shown in the picture? How can we use the times to find the answer?*

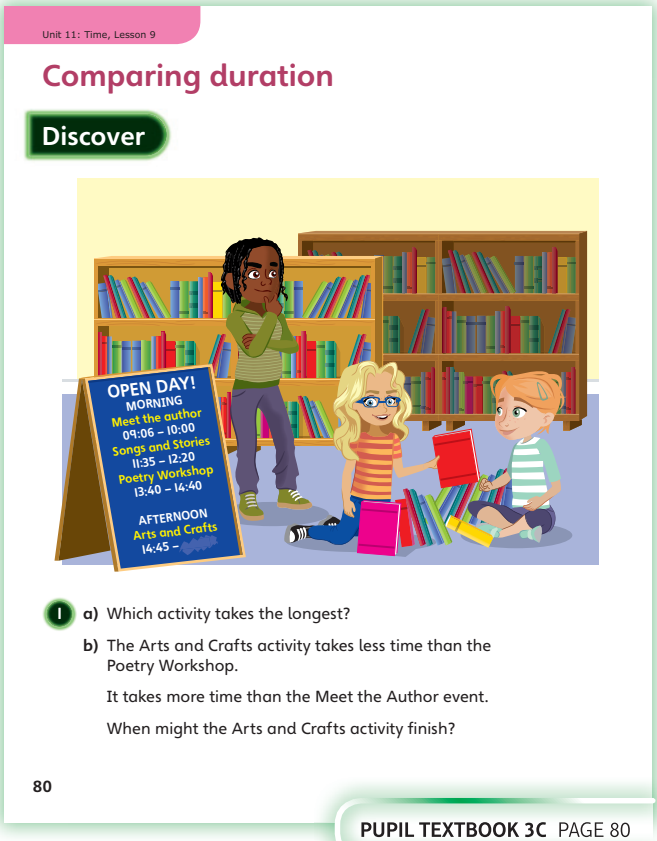
IN FOCUS Use the picture to recap and briefly assess children's current understanding. Begin by discussing the duration of some of the activities in the school day. For example, does the morning assembly take more or less time than registration?

PRACTICAL TIPS Displaying the schedule of a normal school day will help children to visualise how their day is split and which activities take more time than the others. Using a number line may help children to see which number is larger or smaller and to compare durations of activities.

ANSWERS

Question 1 a): The Poetry Workshop takes the longest.

Question 1 b): The Arts and Crafts activity will end between 15:40 and 15:44.



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Share

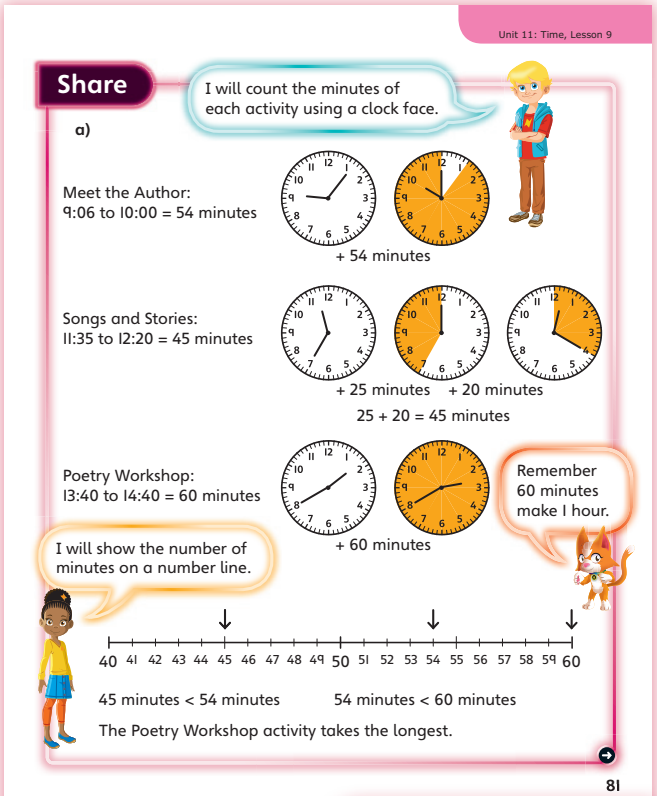
WAYS OF WORKING Whole class teacher led

ASK

- *What information do we need to work out the duration of an event?*
- *How can you tell whether something takes a longer or shorter length of time?*

IN FOCUS Use this opportunity to recap the previous lesson and to scaffold what duration actually means. Providing concrete or pictorial representations of analogue and digital clocks will help children to find a duration. Encourage children to be systematic in their approach. To compare durations, they first need to find each one. Give children the opportunity to show their understanding of times and what duration means. Encourage them to justify which activity takes longest, rather than guessing or shouting out.

STRENGTHEN Address the misconception that a duration that ends later always takes longer (when in fact it may have started later and be shorter in duration). Set up two clocks at the front of the class. Ask one child to make the start time of the first library activity on the first clock, and the end time on the second clock. The class works out the duration between the two times. Repeat for all three activities. Set up a number line and ask children to place the duration of each activity on the number line. Ask: *Which number is largest? What does this mean?*



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Think together

WAYS OF WORKING Whole class teacher led (I do, We do, You do)

ASK

- Question 1: *What is the start time? What is the end time? How will you count the duration of time between the start and end times?*
- Question 2: *How can you tell whether something takes a longer or shorter length of time?*
- Question 2: *How will you record how many minutes the duration is? Could you find and record the duration in a different way?*
- Question 3: *Do you always have to work out each duration to be able to compare them? What resources could you use to help compare the durations?*

IN FOCUS It is important for children to make the distinction between question 1 and other questions that they have met so far. In question 1, the times of both events are very similar but the second event starts 5 minutes later than the first one, and finishes 2 minutes later than the first. Ask children how they can use this information to work out which event is longer.

STRENGTHEN When working on question 2, provide children with a number line that they can use to calculate the difference in duration between the times. In parts a) and b), children may subtract the end and start minutes from each other. In part c), remind children that there are 60 minutes in 1 hour (not 100). Provide laminated clock faces to draw on. Look for children who find the duration from 8:28 to 9:00, and 9:00 to 9:03 and add their answers.

DEEPEN Once children have demonstrated that they can solve question 3, deepen their understanding of this kind of problem by challenging them to create a similar question for a partner. Ask: *What times would you use to make the question easier? How can you make the question harder? What resources could help to answer the question?*

ASSESSMENT CHECKPOINT At this point in the lesson, children should have demonstrated that they are able to confidently measure durations of time in minutes and hours. Children should be able to compare durations of time, explaining which is longer or shorter and giving their reasoning.

ANSWERS

Question 1: Story Time = 29 minutes, Make a Book = 26 minutes. Story Time takes longer.

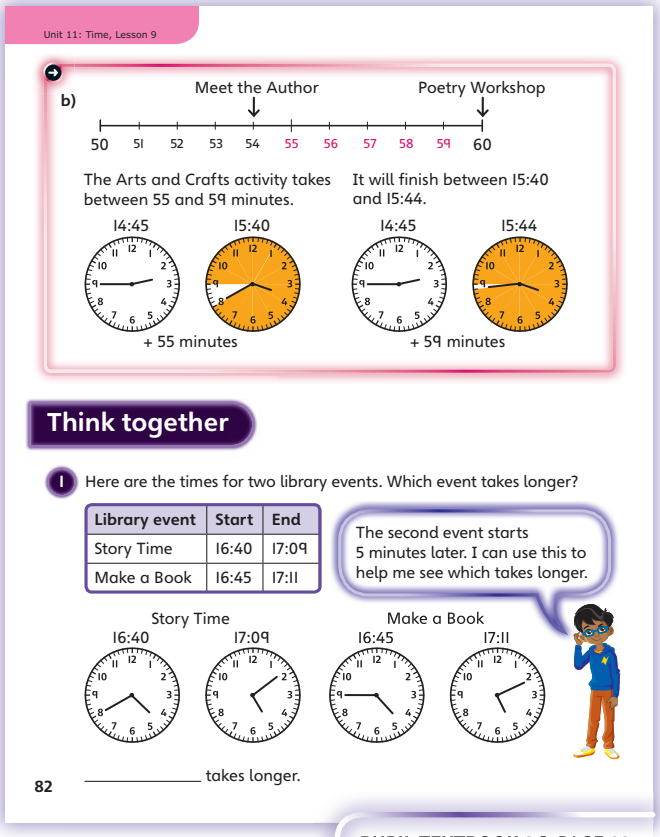
Question 2: 8:12 am until 8:48 am = 36 minutes

8:43 am until 8:57 am = 14 minutes

8:28 am until 9:03 am = 35 minutes

a) 36 minutes is the longest.

Question 3: D (63 minutes), B (64 minutes), C (65 minutes), A (67 minutes)



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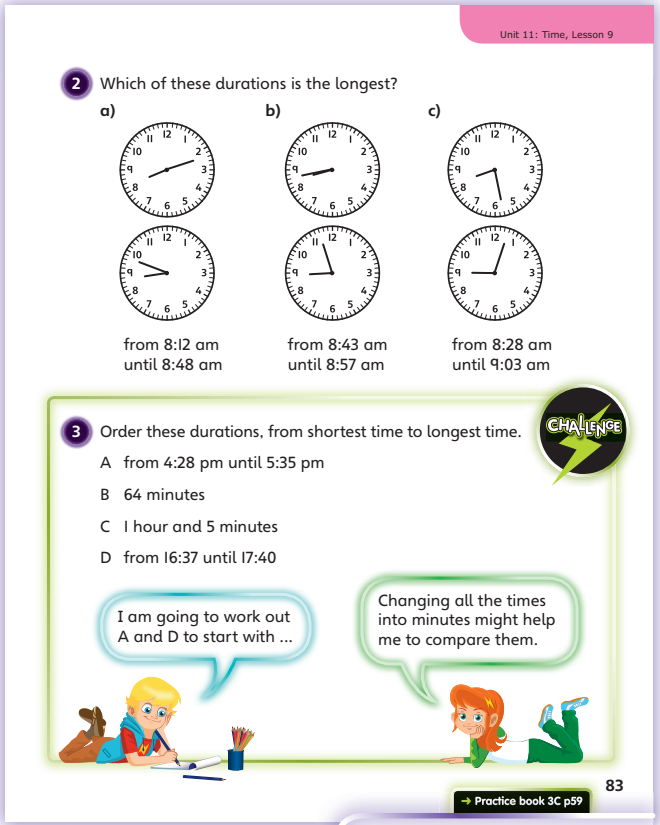

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Practice

WAYS OF WORKING Independent thinking

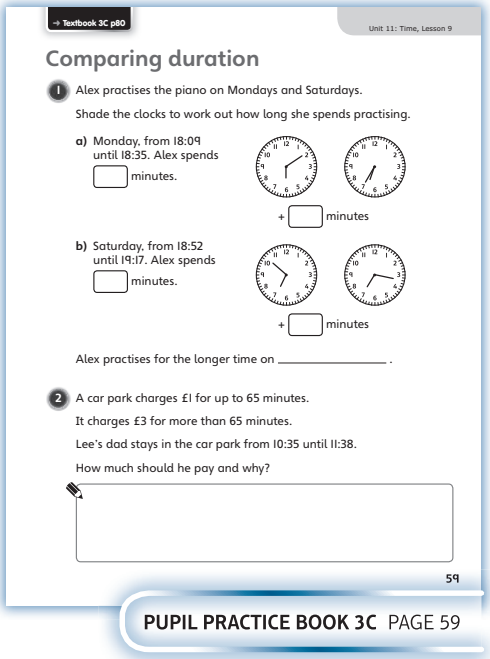
IN FOCUS Children colour the segments of time in question 1 to cement the process of counting a duration of time. Questions 2 and 3 encourage children to use their understanding of duration of time to solve problems. In question 4, children should notice that to compare the times, they either need to convert both times to minutes, or convert them both to hours and minutes.

STRENGTHEN If children are struggling with question 2, encourage them to re-read the question. Ask: *Can you describe it? What is it about?* The time is represented in an abstract way. Ask: *How could you represent the times?* It is important for children to notice that the fee of £1 is for 65 minutes rather than 1 hour. Ask: *Think of car park fees that you may have seen. How much would it cost to leave the car there for 2 hours? 3 hours?*

DEEPEN When working on question 5, encourage children to explain their reasoning. Ask children to prove that they have found all possible solutions. To deepen their understanding, ask: *Does the order of the chosen activities matter? When answering the question, is it easier to use minutes, or hours and minutes?*

ASSESSMENT CHECKPOINT Children should be able to fluently measure durations of time in minutes and hours. They should be confident in comparing durations of time and using their understanding to solve mathematical problems.

ANSWERS Answers for the **Practice** part of the lesson appear in the separate **Practice and Reflect answer guide**.



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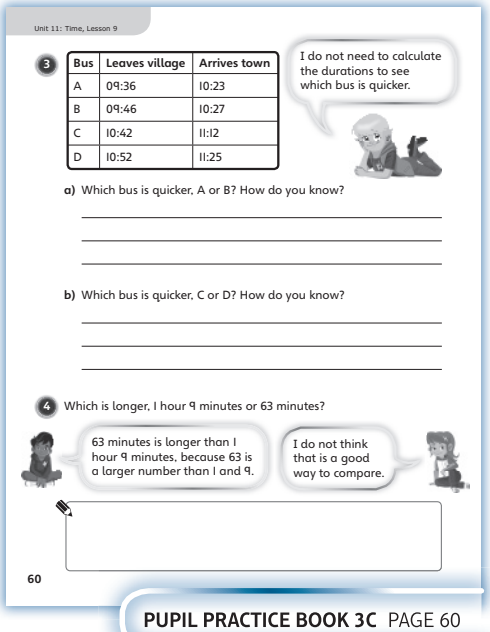

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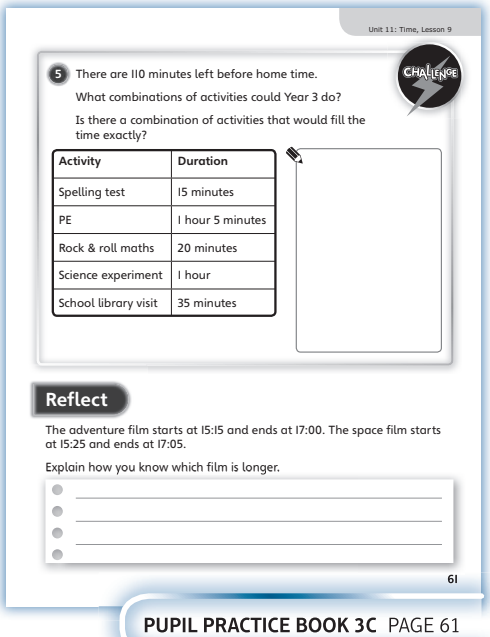
Reflect

WAYS OF WORKING Independent thinking

IN FOCUS Give children the opportunity to record their methods. Ask: *What method do you prefer to use? Why?* Encourage children to compare their method with a partner's. Ask: *Whose method is more efficient?*

ASSESSMENT CHECKPOINT Look for clarity in children's explanations. They should be systematic in their approach and compare the lengths of time accurately. They should be able to use the appropriate vocabulary to explain how to compare durations of time.

ANSWERS Answers for the **Reflect** part of the lesson appear in the separate **Practice and Reflect answer guide**.



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After the lesson

- Are children confident in using the vocabulary learnt in this lesson?
- Can children confidently find a duration that crosses an hour?
- Are they confident in choosing different representations to solve problems independently?

Finding start and end times

Learning focus

In this lesson, children will learn to find start and end times to the minute for different events.

Small steps

- Previous step: Comparing duration
- **This step: Finding start and end times**
- Next step: Measuring time in seconds

NATIONAL CURRICULUM LINKS

Year 3 Measurement

- 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, am/pm, morning, afternoon, noon and midnight.
- Compare durations of events [for example to calculate the time taken by particular events or tasks].

ASSESSING MASTERY

Children can find the start or end time to the nearest minute, when given an end or start time and a duration, including using digital notation.

COMMON MISCONCEPTIONS

Children may add the number of minutes each time, for example, if the start time is '12 minutes to 4' and the duration is 10 minutes, they add 10 to 12 and get the end time of '22 minutes to 4'. Ask:

- *Will the end time be before or after the start time?*

Children may be unsure how to find durations when they cross the hour boundary. Ask:

- *When do you arrive at school if you leave at '12 minutes to 8' and the journey lasts 15 minutes?*

STRENGTHENING UNDERSTANDING

Before the lesson, discuss real-life examples of duration (for example, TV guides). Ask: *Why might it be useful to know the start time, end time or duration of an event?*

GOING DEEPER

Challenge children to look at a local bus timetable. Ask: *Where can you travel to if you leave now and need to arrive at another stop before X am?*

KEY LANGUAGE

In lesson: start time, end time, duration

Other language to be used by the teacher: amount, finish, forwards, backwards, time taken

STRUCTURES AND REPRESENTATIONS

number line

RESOURCES

Mandatory: analogue clock manipulatives, laminated pictures of clock faces, digital clock

Optional: number lines

In the eTextbook of this lesson, you will find interactive links to a selection of teaching tools.

Before you teach

- Can children use the vocabulary of sequence?
- What real-life experiences could you provide?

Discover

WAYS OF WORKING Pair work

ASK

- Question 1 a): *What time is it at the moment? How do you know? Can you say the time another way? What would the time on a digital clock be? Is it am or pm? How do you know?*
- Question 1 b): *What does queuing time mean? Is the time on the clock the start time or the end time?*

IN FOCUS Children have already explored finding durations, so they should be familiar with the idea of moving from a start time through a duration to an end time. Now that they are in Year 3, children will apply these concepts to times given to the nearest minute (and including digital notations).

PRACTICAL TIPS Provide children with real-life examples of duration, such as cooking instructions on food items. Ask children to consider what the end times might be, given a specific start time (or vice versa).

ANSWERS

Question 1 a): Max will get on the dodgems at 2:53 pm or 7 minutes to 3.

Question 1 b): Olivia should start queuing at 3:35 pm, or 25 minutes to 4.

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Share

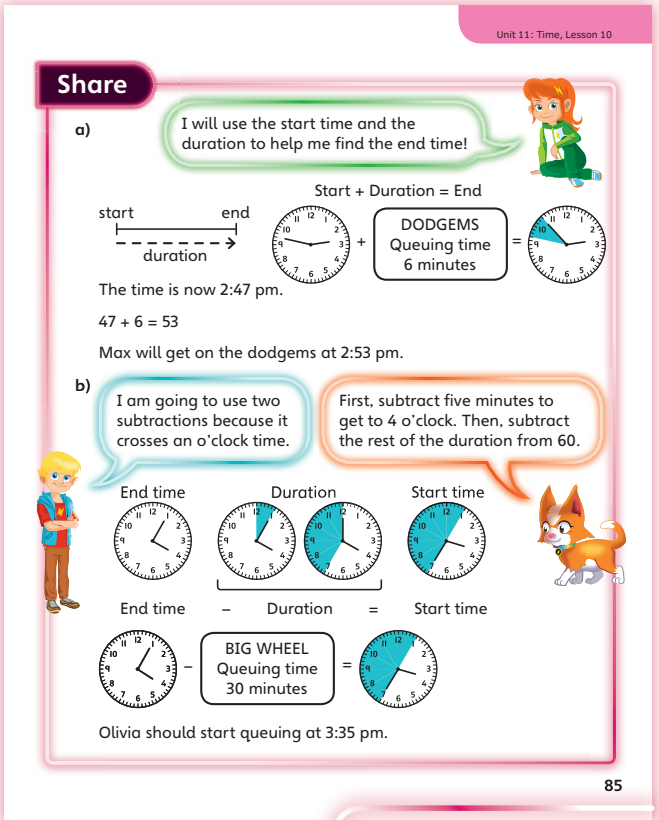
WAYS OF WORKING Whole class teacher led

ASK

- Question 1 a): *What time is it in the picture?*
- Question 1 a): *What will the clock look like when Max goes on the dodgems?*
- Question 1 a): *If you know the start time and the duration, how can you find the end time? Is it forwards or backwards in time?*
- Question 1 b): *If you know the end time and the duration, how can you find the start time? Is it forwards or backwards in time?*
- Question 1 b): *Why does Sparks subtract 5 minutes first, then subtract 25 minutes to find the start time?*

IN FOCUS Ensure children are clear what they are being asked to do in this task. They should understand the difference between start time, duration and end time, and how they link together. Provide real clocks to help children visualise the problem. Draw their attention to how this question is similar to those in previous lessons.

STRENGTHEN Provide examples of problems where children have to find the start time, the duration or the end time. Encourage children to discuss what they need to find and the method they will use. Ask: *Do you add or subtract?* Ask children to work with durations that cross the hour. For example, ask: *Find the end time, if the start time is 4:48 and the duration is 25 minutes. Find the start time, if the end time is 3:16 and the duration is 55 minutes.*



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Think together

WAYS OF WORKING Whole class teacher led (I do, We do, You do)

ASK

- Question 1: *How will you use the start time and the duration to find the end time?*
- Question 2: *How will you use the end time and the duration to find the start time?*
- Question 2: *What do the shaded clock faces show?*
- Question 3: *How can you use the number line to show how you found the end time?*

IN FOCUS Question 1 scaffolds children's understanding of using the start time and duration to find the end time within an hour. Question 2 asks children to find a start time, where the end time and the duration are known. Use the model that they learnt in the lesson and subtract the time in two stages: first they go back 9 minutes to 10 o'clock, then they go back another 16 minutes. Make sure children understand how to cross the hour to find the start and end time. This will enable them to work more efficiently, using more easily-recorded visual representations of time.

STRENGTHEN When children are working on questions 1 and 2, emphasise the link between the analogue clocks and a number line. In Year 2, children will have used a number line to find an end time. Strengthen their understanding by using a number line to find the end and start times. This will prepare children for question 3 and increase their familiarity with the different visual representations of time.

DEEPEN In question 3, deepen children's ability to reason, by asking: *What time will Bella go on the ride if the queue takes 22 minutes?* Pay attention to children who can model crossing the hour using the number line. Encourage children to use analogue clocks to answer the question as well. Ask: *Which method do you prefer? Why?*

ASSESSMENT CHECKPOINT At this point in the lesson, children should be able to calculate the start or end time, recognising the relationship that exists between start time, duration and end time. Children should be more confident in calculating the start or end time when crossing the hour.

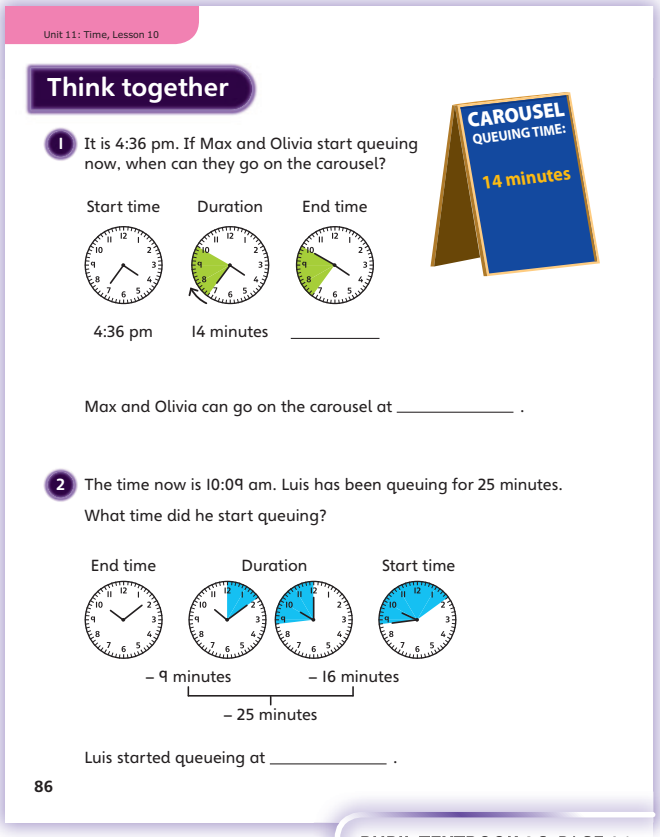
ANSWERS

Question 1: We can go on the carousel at 4:50 pm.

Question 2: Luis started queuing at 9:44 am.

Question 3 a): Bella will go on the helter-skelter at 4 minutes past 3 (or 15:04 or 3:04 pm).

Question 3 b): They will get home at 6:34 pm.



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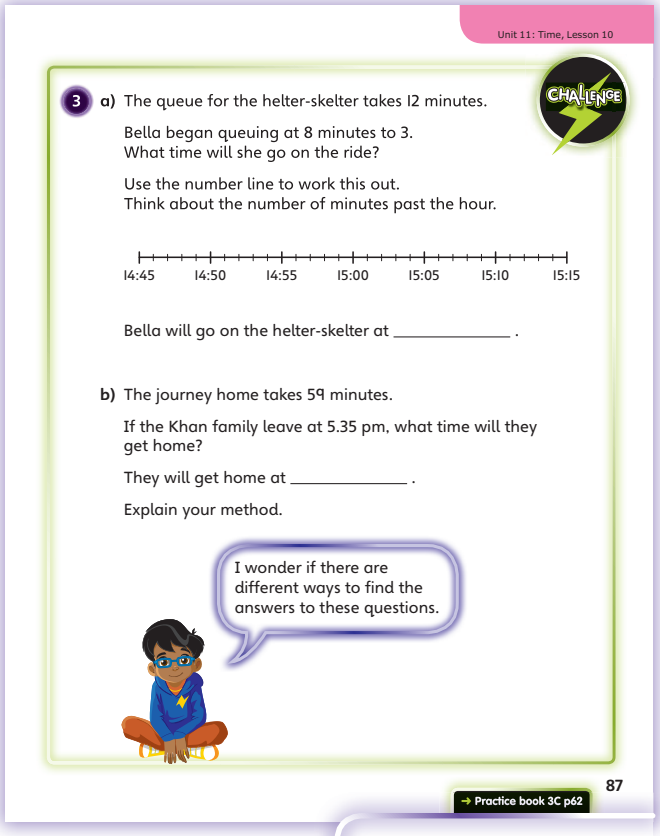

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Practice

WAYS OF WORKING Independent thinking

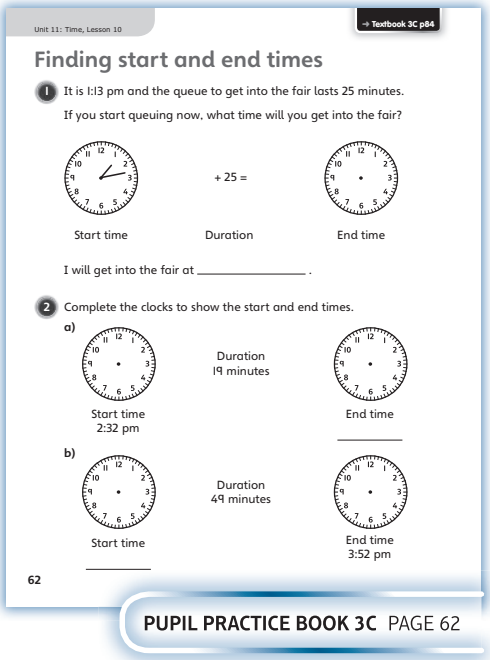
IN FOCUS When working independently on questions 1 and 2, children should continue to secure their understanding of the link between start time, duration and end time. Question 3 requires children to calculate the start time when crossing the hour. A manipulative analogue clock can be provided to support their thinking.

STRENGTHEN When children are working on question 4, support them in identifying whether they have to move forward to find the end time, or backwards to find the start time. Make sure they understand that the end time will always be after the start time, and use this to check and correct any errors that arise.

DEEPEN If children are confident in finding the length of time in question 5, deepen their ability by asking: *Can you find different ways to show your answer?* In question 6, children are provided with the opportunity to work with an open-ended investigative question. Children can choose the best representations to prove their ideas.

ASSESSMENT CHECKPOINT Children should be confident in finding durations of time. They should be able to use various representations to find and demonstrate durations of time visually. Get children to explain how they worked out the durations that cross the hour boundary. They should use this understanding to solve real-life problems independently.

ANSWERS Answers for the **Practice** part of the lesson appear in the separate **Practice and Reflect answer guide**.


Unit 11: Time, Lesson 10

→ Textbook 3C p84

Finding start and end times

1 It is 1:13 pm and the queue to get into the fair lasts 25 minutes.
If you start queuing now, what time will you get into the fair?

Start time + Duration = End time

I will get into the fair at _____ .

2 Complete the clocks to show the start and end times.

a) Start time 2:32 pm — Duration 19 minutes — End time _____

b) Start time _____ — Duration 49 minutes — End time 3:52 pm

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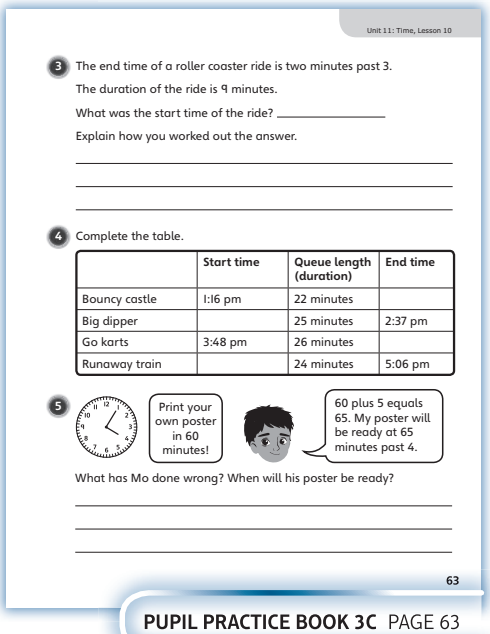
Unit 11: Time, Lesson 10

3 The end time of a roller coaster ride is two minutes past 3.
The duration of the ride is 9 minutes.
What was the start time of the ride? _____
Explain how you worked out the answer.

4 Complete the table.

	Start time	Queue length (duration)	End time
Bouncy castle	1:16 pm	22 minutes	
Big dipper		25 minutes	2:37 pm
Go karts	3:48 pm	26 minutes	
Runaway train		24 minutes	5:06 pm

5 Print your own poster in 60 minutes!

60 plus 5 equals 65. My poster will be ready at 65 minutes past 4.

What has Mo done wrong? When will his poster be ready?

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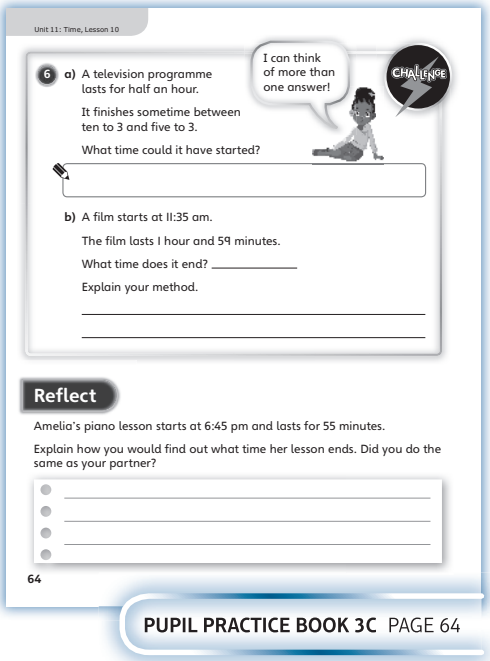
Reflect

WAYS OF WORKING Pair work

IN FOCUS Give children an opportunity to develop their reasoning independently. Ask: *Which method do you prefer to use? Why did you choose this method?* Encourage children to compare their method with a partner. Ask: *Whose method is more efficient?*

ASSESSMENT CHECKPOINT Children should be able to identify a start and end time, and find the duration of time between them. Children should be using different types of representation fluently. Ask: *Do you use different representations when the duration is within an hour, to when the duration is across the hour?* Listen to children's reasoning as to why they chose a particular representation.

ANSWERS Answers for the **Reflect** part of the lesson appear in the separate **Practice and Reflect answer guide**.


Unit 11: Time, Lesson 10

6 a) A television programme lasts for half an hour.
It finishes sometime between ten to 3 and five to 3.
What time could it have started?

I can think of more than one answer!

CHALLENGE

b) A film starts at 11:35 am.
The film lasts 1 hour and 59 minutes.
What time does it end? _____
Explain your method.

Reflect

Amelia's piano lesson starts at 6:45 pm and lasts for 55 minutes.
Explain how you would find out what time her lesson ends. Did you do the same as your partner?

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After the lesson

- Are children confident in using the lesson's vocabulary?
- Can children confidently find a duration across the hour?
- Are they confident in choosing different types of representation to solve problems independently?

Measuring time in seconds

Learning focus

In this lesson, children will learn to measure events (such as a race) in seconds.

Small steps

- Previous step: Finding start and end times
- **This step: Measuring time in seconds**
- Next step: Turns and angles

NATIONAL CURRICULUM LINKS

Year 3 Measurement

- 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, am/pm, morning, afternoon, noon and midnight.
- Compare durations of events [for example to calculate the time taken by particular events or tasks].

ASSESSING MASTERY

Children know how long a second is and how many seconds equal 1 minute. They can apply the information to estimate 1 minute, and time activities in seconds.

COMMON MISCONCEPTIONS

Children may think 1 second is any fast period of time, and that however quickly they count to 60, it is 1 minute. Ask:

- *How long does the second hand take to move once? Is it always the same?*

Children may mix up the three clock hands or the numbers on digital clocks, and so cannot identify seconds. Ask:

- *What part of the clock helps us count seconds? How can you tell?*

STRENGTHENING UNDERSTANDING

Give children a stopwatch and cards with numbers of seconds (such as 5 seconds, 15 seconds, 30 seconds, 45 seconds, 60 seconds). Children work in pairs, taking turns to pick up a card. One child starts the stopwatch, the other says 'Stop' when they think the time has passed. The child who gets closest wins 1 point.

GOING DEEPER

Show 100 m race results from a school race, county race and the Olympics. Ask: *How many seconds did the winners take? Estimate how long you might take. Have a race. How do the results compare with the estimates?*

KEY LANGUAGE

In lesson: measure, **seconds**, minutes, stopwatch

Other language to be used by the teacher: amount, time taken

STRUCTURES AND REPRESENTATIONS

bar model

RESOURCES

Mandatory: analogue and digital clocks that show hours, minutes and seconds

Optional: stopwatch

In the eTextbook of this lesson, you will find interactive links to a selection of teaching tools.

Before you teach

- Do children know that a minute is 60 seconds?
- Have children seen a stopwatch in real life?

Discover

WAYS OF WORKING Pair work

ASK

- Question 1 a): *Where might you use seconds every day (hint: timers)? Where can you see the number of seconds on this clock?*
- Question 1 a): *Can you use a clock face to prove that there are 60 seconds in a minute? How?*
- Question 1 a): *There are 60 seconds in 1 minute. How many seconds until the end of a minute if 18 seconds have gone by?*

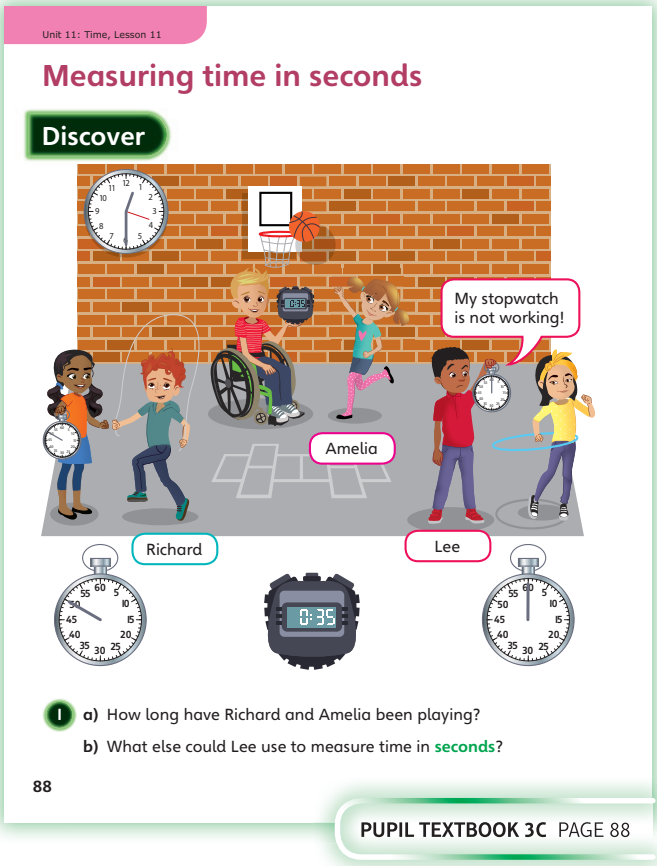
IN FOCUS Use the pictures to discuss some instances where a stopwatch may be used (for example, measuring the time in a race).

PRACTICAL TIPS Play a minute game in class. Say '*Go!*' and time 1 minute. Each child should close their eyes and silently use their own method to count in seconds; when they think 1 minute is up, they put their hand up. Keep looking at the clock and make a note of the children whose estimates are closest to 1 minute. Ask them to share their methods. Ask: *Can you improve your estimate?*

ANSWERS

Question 1 a): Richard has been playing for 50 seconds. Amelia has been playing for 35 seconds.

Question 1 b): Lee could measure seconds using the clock on the wall, by counting the marks as the second hand moves.



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Share

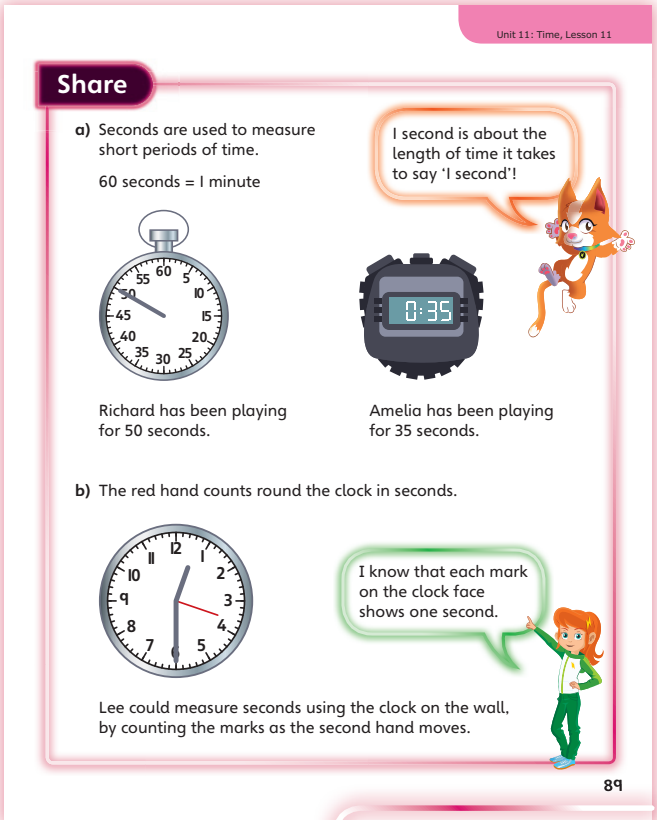
WAYS OF WORKING Whole class teacher led

ASK

- *What are seconds used for?*
- *How many seconds are there in 1 minute?*
- *Why do we use a stopwatch? How could we measure seconds if we didn't have a stopwatch?*
- *How do the two stopwatches in the picture differ?*
- *Do all clocks have a second hand? Why? Why not?*

IN FOCUS Ensure children are confident reading the stopwatches in the picture. Make sure children understand that there are 60 seconds in 1 minute, and they can show how this is measured on a stopwatch and an analogue clock. Ask: *How do a stopwatch and an analogue clock differ?*

STRENGTHEN Some children may not have enough experience measuring in seconds. You could ask them to check their heart rate for 30 seconds. Can they predict what their heart rate will be in 1 minute? Ask children to think of activities that could happen in 1 minute and how they can measure them (for example, the number of steps they could walk or the number of sit-ups they could do). Encourage children to set up their own tasks and record their findings.



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Think together

WAYS OF WORKING Whole class teacher led (I do, We do, You do)

ASK

- Question 1: *What is the start time? What is the end time?*
- Question 1 a): *What does the shaded face show?*
- Question 1 a): *How will you count the duration of time between the start and end times?*
- Question 1 b): *How can you calculate the duration?*
- Question 2: *How can you use the bar model to calculate the time left?*
- Question 2: *Could you record it in a different way?*

IN FOCUS Questions 1 and 2 give children pictorial representations of measuring seconds, to scaffold their learning of start time, end time and duration. Provide plastic clocks or laminated stopwatch pictures to support their learning.

STRENGTHEN To strengthen understanding of question 1, ask children to mark the start times and the end times. Ensure they understand that each mark on the stopwatch in part a) shows one second. Ask children to think about how this question differs from other questions they have solved in previous lessons. Ask: *What do you know? What do you have to find out?*

DEEPEN When solving question 3, deepen children's understanding by asking them to show two different ways to work out the answers, for example counting up in multiples of 30 seconds.

ASSESSMENT CHECKPOINT Children should be able to recognise that there are 60 seconds in 1 minute. They should be confident converting minutes into seconds by using different representations including the bar model.

ANSWERS

Question 1 a): Star jumps take 37 seconds,

Question 1 b): Running takes 43 seconds

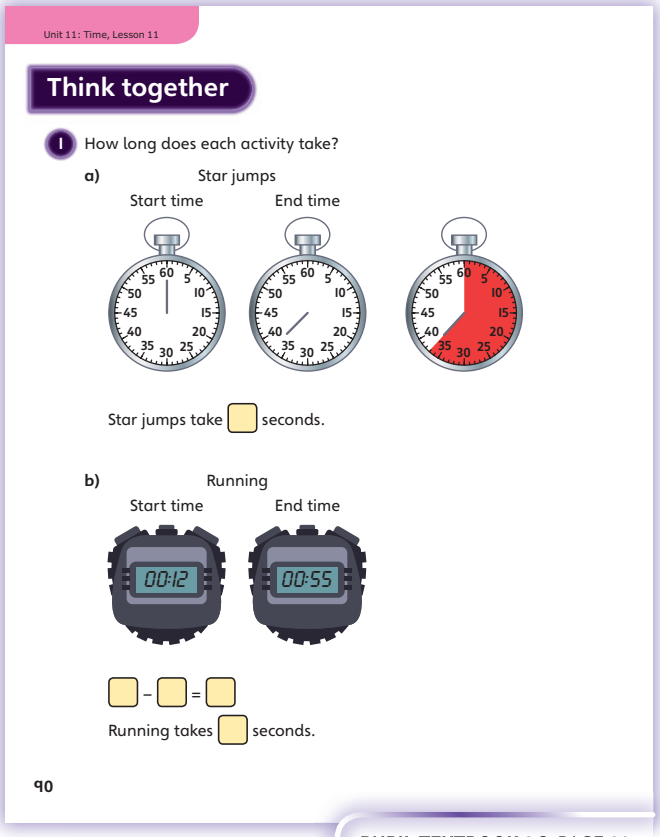
Question 2: 60 – 48 = 12

There are 12 seconds left.

Question 3 a): 30 seconds

Question 3 b): 90 seconds

Question 3 c): 150 seconds



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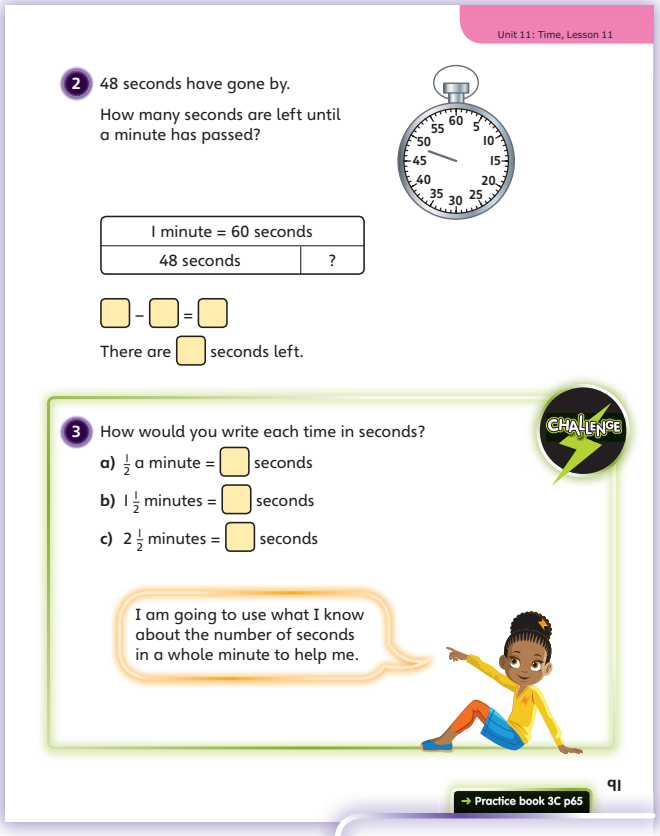


PUPIL TEXTBOOK 3C PAGE 91

Practice

WAYS OF WORKING Independent thinking

IN FOCUS Question 1 gives children the opportunity to work with pictorial representations of time to develop their ability to measure time in seconds. Ask: *Which picture do you find the easiest to read? Which picture is the trickiest?*

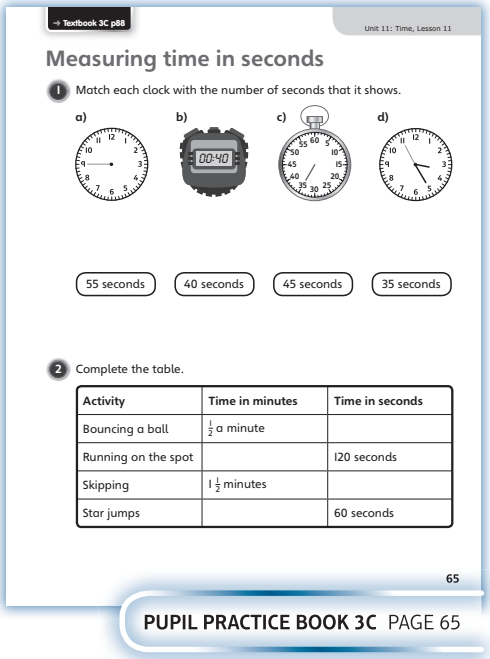
Children should be familiar with the different ways used to measure seconds.

STRENGTHEN Question 2 offers concrete examples of measuring time in seconds. Children use their knowledge of fractions to convert between minutes and seconds. If children are struggling with the abstract representation of time, provide the concrete and pictorial representations that they have been using before.

DEEPEN Provide children with blank stopwatch faces and ask them to show each of the times included in question 4. Repeat with an analogue clock.

ASSESSMENT CHECKPOINT At this point in the lesson children should be confident in estimating time in seconds and should know that there are 60 seconds in 1 minute. Children are able to convert minutes to seconds and vice versa. Look for children using the concrete and pictorial representations they have worked with to support their learning.

ANSWERS Answers for the **Practice** part of the lesson appear in the separate **Practice and Reflect answer guide**.



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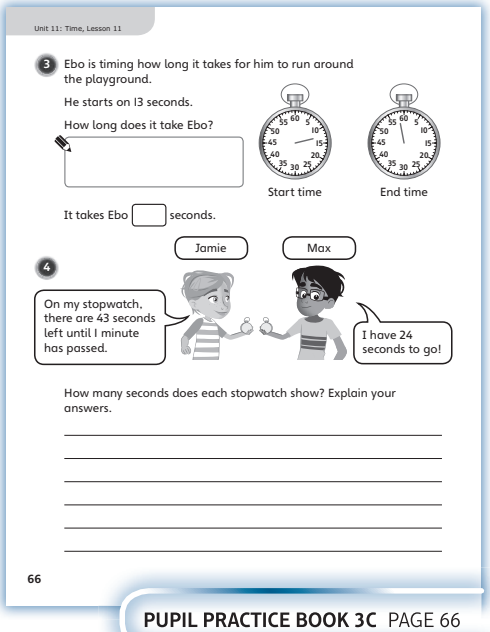

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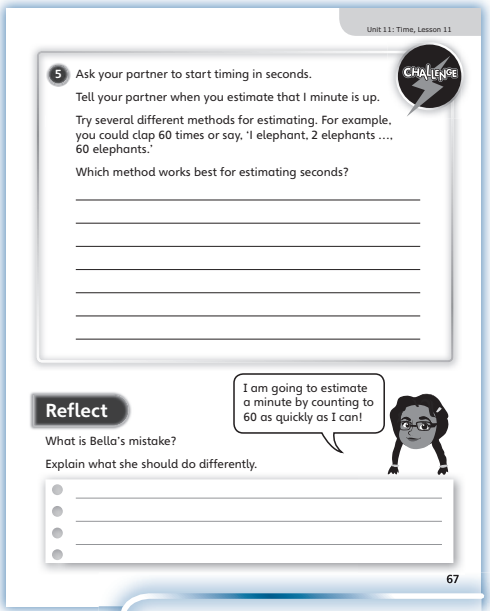

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Reflect

WAYS OF WORKING Pair work

IN FOCUS The question revisits the misconception that counting to 60 is 1 minute, regardless of how slow or fast. Give children time to discuss with their partner how they would help Bella overcome her misconception. Provide children with a stopwatch or analogue clock and ask them to use these to justify their answers.

ASSESSMENT CHECKPOINT Children should recognise that there are 60 seconds in 1 minute. They should be able to estimate with confidence a minute, and understand that 1 minute is made of 60 equal intervals which are called seconds.

Children explore different ways of estimating 1 minute. Listen to children's reasoning as to why they chose the methods they did.

ANSWERS Answers for the **Reflect** part of the lesson appear in the separate **Practice and Reflect answer guide**.

After the lesson

- Are children confident of how many seconds are in 1 minute?
- Can children confidently estimate 1-minute intervals?
- Are they secure in converting from minutes to seconds and from seconds to minutes?

End of unit check

Don't forget the *Power Maths* unit assessment grid on p26.

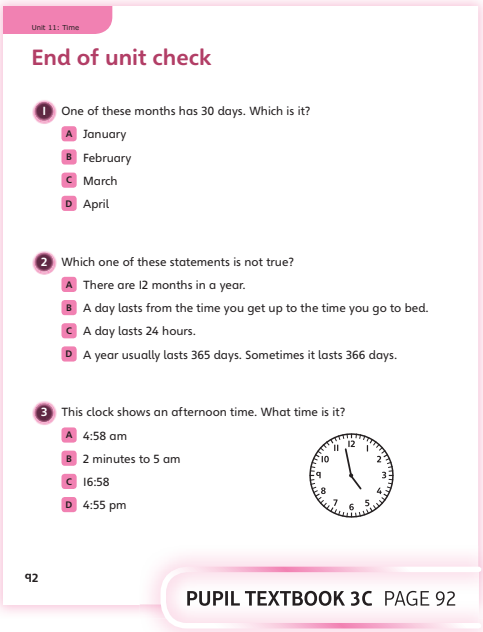
WAYS OF WORKING Group work adult led

IN FOCUS

- Question 1 assesses children's ability to recognise the months that have 30 days. Ask: *How do you remember which months have 30 days and which months have 31 days?*
- Question 2 assesses children's ability to recognise the number of months in a year, the number of days in a year and the number of hours in a day. Ask: *What is a leap year?*
- Question 3 assesses children's ability to tell the time in different ways such as 'am' and 'pm', minutes past, minutes to, 12-hour and 24-hour time. It also provides an opportunity to discuss similarities and differences between times such as 16:58, and '2 minutes to 5' am. Ask: *How are these times the same and different?*
- Question 4 assesses children's ability to find the end time when given the start time and duration, and to use different representations to record the time. Ask: *What is the start time/end time? What does duration mean?*
- Question 5 assesses children's ability to recognise that there are 60 seconds in 1 minute, and to convert minutes into seconds. Ask: *How many seconds are there in 1 minute?*

ANSWERS AND COMMENTARY

Children will demonstrate mastery by knowing how many days there are in each month. Children use different ways to record the time, including using the 12-hour clock and 24-hour clock, digital and analogue clock, am and pm.



Unit 11: Time

End of unit check

1 One of these months has 30 days. Which is it?
- A January
- B February
- C March
- D April

2 Which one of these statements is not true?
- A There are 12 months in a year.
- B A day lasts from the time you get up to the time you go to bed.
- C A day lasts 24 hours.
- D A year usually lasts 365 days. Sometimes it lasts 366 days.

3 This clock shows an afternoon time. What time is it?
- A 4:58 am
- B 2 minutes to 5 am
- C 16:58
- D 4:55 pm

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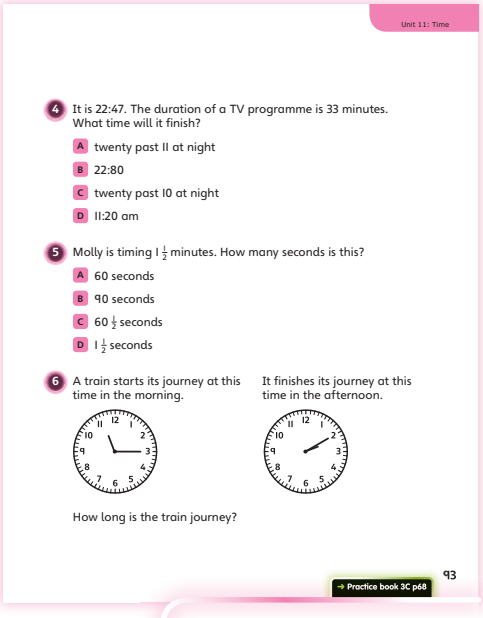

Unit 11: Time

4 It is 22:47. The duration of a TV programme is 33 minutes. What time will it finish?
- A twenty past 11 at night
- B 22:80
- C twenty past 10 at night
- D 11:20 am

5 Molly is timing 1 $\frac{1}{2}$ minutes. How many seconds is this?
- A 60 seconds
- B 90 seconds
- C 60 $\frac{1}{2}$ seconds
- D 1 $\frac{1}{2}$ seconds

6 A train starts its journey at this time in the morning.

It finishes its journey at this time in the afternoon.

How long is the train journey?

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→ Practice book 3C p68

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Q	A	WRONG ANSWERS AND MISCONCEPTIONS	STRENGTHENING UNDERSTANDING
1	D	Choosing A, B or C may indicate a lack of understanding about the number of days in each month.	To help children gain fluency in their understanding and use of time: • Make sure there are calendars in the classrooms showing clearly all the months of the year. • Clearly label all representations of analogue and digital clocks around the classroom. • Give access to 12-hour and 24-hour clocks throughout the day. • Provide train and bus timetables and TV guides. Use these to: find start/end times or durations of TV programmes; convert 12-hour time to 24-hour time and vice versa; and find the duration of journeys.
2	B	Choosing A, C or D may indicate a lack of understanding about time.	
3	C	Choosing A or B may indicate a lack of understanding as to what am means. Choosing D may indicate that children are not able to read time to the nearest minute.	
4	A	Choosing B or C may indicate that children lack experience in working with duration across an hour.	
5	B	Choosing A may indicate children have for misread the question. C and D indicate a lack of understanding of how to find half of 1 minute in seconds.	
6	2 h 55 m	Other answers may indicate that children do not understand durations crossing one or more hours – for example, they may have added the start and end time hours and/or minutes.	

My journal

WAYS OF WORKING Independent thinking

ANSWERS AND COMMENTARY

Question **1**:

For each time, children may record answers such as those shown below:

a) I know that the time is 25 minutes to 3 because:
- the hour hand has passed the 2 and is travelling towards the 3
- the minute hand is in the 'to' section of the clock.
- the minute hand is pointing at 7 which means 35 minutes past
- I can count 25 minutes to 3.

b) I know that the time is 17 minutes past 8 because:
- the minute hand is pointing 2 minutes away from 15 minutes past, so it is
- 17 minutes past 8
- the minute hand is in the 'past' section of the clock.

c) I know that the time is 9 minutes to 5 because:
- the minute hand is in the 'to' section of the clock
- the minute hand is pointing at 1 minute away from '10 minutes to'.

Encourage children to give reasons. Ask:
- *Where is the minute hand pointing to? Can you count the minutes?*
- *What part of the clock is the minute hand in, 'to' or 'past'? How do you know?*
- *What do the hour hands tell you on each clock face?*

Question **2**:

Answers should demonstrate that children can draw times on analogue clock faces and write the corresponding times in words.

Power check

WAYS OF WORKING Independent thinking

ASK
- *What did you know about reading and writing time before this unit?*
- *What new ideas and words have you learnt?*
- *How confident do you feel about reading and recording the time?*
- *Do you think you could look at a TV schedule at home and tell how long a programme lasts? What time does it start? What time does it end?*

Power play

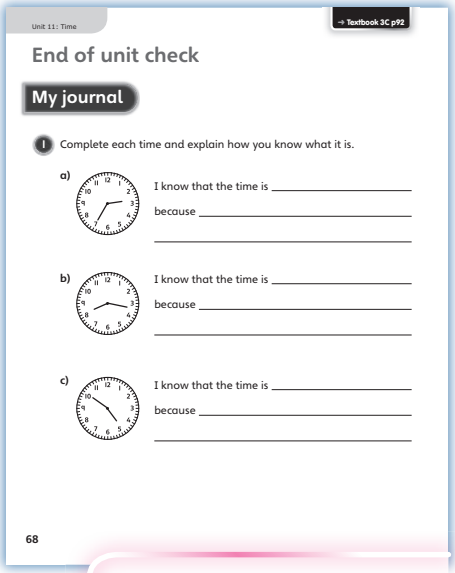
WAYS OF WORKING Independent thinking or Pair work

IN FOCUS This game will assess children's ability to recognise times presented in different ways, and to identify the start and end times of 23-minute durations. It may help them to have the representations used in this unit at hand.

ANSWERS AND COMMENTARY If children are unable to follow the route accurately, give them opportunities to practise matching written times with pictorial and concrete representations of an analogue clock and a digital clock.

After the unit

- How will you encourage children to measure time beyond this unit? For example, using time in role play, etc.
- Is your classroom/school a 'time-rich' environment? Is there a calendar/digital clock/analogue clock in each room? How could resources be improved to deepen children's fluency and use of time?


Unit 11: Time

→ Textbook 3C p92

End of unit check

My journal

1 Complete each time and explain how you know what it is.

a) I know that the time is _____ because _____

b) I know that the time is _____ because _____

c) I know that the time is _____ because _____

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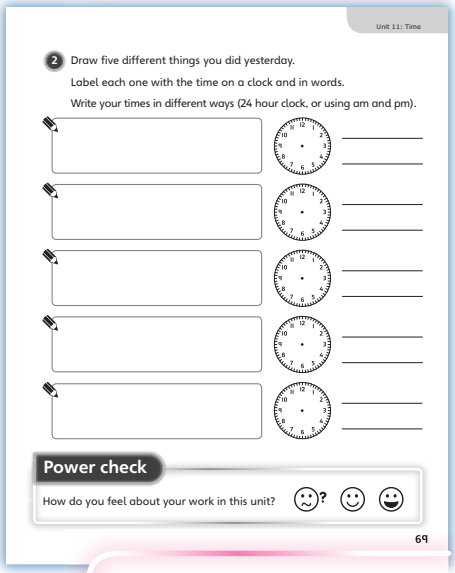
PUPIL PRACTICE BOOK 3C PAGE 68


Unit 11: Time

2 Draw five different things you did yesterday.
Label each one with the time on a clock and in words.
Write your times in different ways (24 hour clock, or using am and pm).

Power check

How do you feel about your work in this unit?

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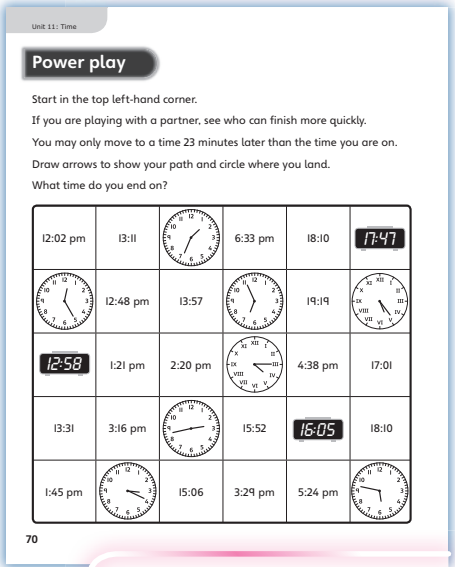
Unit 11: Time

Power play

Start in the top left-hand corner.
If you are playing with a partner, see who can finish more quickly.
You may only move to a time 23 minutes later than the time you are on.
Draw arrows to show your path and circle where you land.
What time do you end on?

12:02 pm	13:11		6:33 pm	18:10	17:47
	12:48 pm	13:57		19:19	
12:58	1:21 pm	2:20 pm		4:38 pm	17:01
13:31	3:16 pm		15:52	16:05	18:10
1:45 pm		15:06	3:29 pm	5:24 pm	

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Strengthen and **Deepen** activities for this unit can be found in the *Power Maths* online subscription.