How to use the mixed-age SOL

In this document, you will find suggestions of how you may structure a progression in learning for a mixed-age class.

Firstly, we have created a yearly overview.

Each term has 12 weeks of learning. We are aware that some terms are longer and shorter than others, so teachers may adapt the overview to fit their term dates. The overview shows how the content has been matched up over the year to support teachers in teaching similar concepts to both year groups. Where this is not possible, it is clearly indicated on the overview with 2 separate blocks.

For each block of learning, we have grouped the small steps into themes that have similar content. Within these themes, we list the corresponding small steps from one or both year groups. Teachers can then use the single-age schemes to access the guidance on each small step listed within each theme.

The themes are organised into common content (above the line) and year specific content (below the line). Moving from left to right, the arrows on the line suggest the order to teach the themes.

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Notes and Guidance

How to use the mixed-age SOL

Here is an example of one of the themes from the Year 1/2 mixed-age guidance.

### Subtraction

**Year 1 (Aut B2, Spr B1)**
- How many left? (1)
- How many left? (2)
- Counting back
- Subtraction - not crossing 10
- Subtraction - crossing 10 (1)
- Subtraction - crossing 10 (2)

**Year 2 (Aut B2, B3)**
- Subtract 1-digit from 2-digits
- Subtract with 2-digits (1)
- Subtract with 2-digits (2)
- Find change - money

In order to create a more coherent journey for mixed-age classes, we have re-ordered some of the single-age steps and combined some blocks of learning e.g. Money is covered within Addition and Subtraction.

The bullet points are the names of the small steps from the single-age SOL. We have referenced where the steps are from at the top of each theme e.g. Aut B2 means Autumn term, Block 2. Teachers will need to access both of the single-age SOLs from our website together with this mixed-age guidance in order to plan their learning.

### Points to consider

- Use the mixed-age schemes to see where similar skills from both year groups can be taught together. Learning can then be differentiated through the questions on the single-age small steps so both year groups are focusing on their year group content.
- When there is year group specific content, consider teaching in split inputs to classes. This will depend on support in class and may need to be done through focus groups.
- On each of the block overview pages, we have described the key learning in each block and have given suggestions as to how the themes could be approached for each year group.
- We are fully aware that every class is different and the logistics of mixed-age classes can be tricky. We hope that our mixed-age SOL can help teachers to start to draw learning together.
<table>
<thead>
<tr>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
<th>Week 7</th>
<th>Week 8</th>
<th>Week 9</th>
<th>Week 10</th>
<th>Week 11</th>
<th>Week 12</th>
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<tbody>
<tr>
<td><strong>Autumn</strong></td>
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<tr>
<td>Number: Multiplication and Division</td>
<td>Measurement: Length, Perimeter and Area</td>
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<tr>
<td>Number: Decimals (including Money)</td>
<td>Measurement: Time</td>
<td>Statistics</td>
<td>Geometry: Properties of Shape (including Y4 Position and Direction)</td>
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</tbody>
</table>

Consolidation
In this section, content from single-age blocks are matched together to show teachers where there are clear links across the year groups. Teachers may decide to teach the lower year’s content to the whole class before moving the higher year on to their age-related expectations. The lower year group is not expected to cover the higher year group’s content as they should focus on their own age-related expectations.

In this section, content that is discrete to one year group is outlined. Teachers may need to consider a split input with lessons or working with children in focus groups to ensure they have full coverage of their year’s curriculum. Guidance is given on each page to support the planning of each block.

The themes should be taught in order from left to right.
Time

Common Content

Converting Time
Year 3 (Sum B2)
- Months and years
- Hours in a day
Year 4 (Sum B3)
- Hours, minutes and seconds
- Years, months, weeks and days

Digital Time
Year 3 (Sum B2)
- Using a.m. and p.m.
- 24-hour clock
Year 4 (Sum B3)
- Analogue to digital- 12-hour
- Analogue to digital- 24-hour

There are many opportunities in this block for Year 4 children to recap their understanding whilst Year 3 visit this learning for the first time, this includes telling the time on an analogue clock and finding and comparing durations.

Both year groups look at digital time and consider how to write and tell the time on both 12-hour and 24-hour clocks.

Analogue time
Year 3 (Sum B2)
- Telling time to 5 minutes
- Telling time to the nearest minute

Finding and comparing durations
Year 3 (Sum B2)
- Finding the duration
- Comparing durations
- Start and end times
- Measuring time in seconds

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

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

Mathematical Talk

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

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

Which month changes when there is a leap year? Are there any other months that change length? Is this year a leap year? When will the next one be? When was the last one?

Varied Fluency

Children should spend time exploring a real calendar. They sort the months into groups, by the number of days in each month, for both a year and a leap year. Children can use the groups to compare - what is the same and what is different?

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

There are _____ days in a year.
There are _____ months in a year.
There are _____ days in a leap year.
There are _____ days in a week.
Leap years happen every _____ years.

Put these dates in order from earliest to latest in a year.

3rd March 2nd March January 31st 1st December
4 children describe their birthdays.

Mo

My birthday is the first day of the second month.

I was born on the 15th of June.

Eva

I was born on the last day of the year!

I was born two days before Mo.

Dora

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

Dora – 30th Jan
Mo - 1st Feb
Teddy - 15th June
Eva - 31st Dec

Whitney asks Rosie and Jack a question.

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

Only February has 28 days.

Every month has 28 days.

They are correct for different reasons. Rosie is correct because only February has exactly 28 days, but Jack is correct because every month has at least 28 days.
Children recap the number of hours in a day and are introduced to language such as ‘noon’, ‘midday’, ‘midnight’. They do not need to know the difference between a.m. or p.m. at this point.

Other facts such as days in a week/month are also reviewed. Attention should be drawn to the difference between a school week and a calendar week and between day-time and a day.

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

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

Why does a clock show 11 o’clock twice in a day?

Does the weekend and the school week split a whole week in half?

Fill in the gaps in the sentence stems.
There are ____ days in a whole week.
There are ____ days in a school week.
There are ____ hours in a day.
There are ____ hours in a school day.

Put the times/events into the correct place on the diagram.

Complete the statements.

1 day = 24 hours   ___ days = 120 hours

2 days = ____ hours   ___ days = 60 hours

___ days = 240 hours   20 days = ____ hours
Mo

Do you agree with Mo?
Explain your answer.

Mo

I get up at 7 o'clock in the morning and go to bed at 7 o'clock at night. This means I have been awake for a full day.

Children should state that they do not agree with Mo because there are 24 hours in a full day. Mo has only been up for 12 hours which is half a day. A full day would be 7am to 7am.

Teddy

Do you agree with Teddy?
Explain your thinking.

Which month could it be?

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

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

In this month, there are no school holidays.

In this month we have to come to school for 31 days.
Sort the activities under the headings depending on the approximate length of time they take to complete.

**One hour**
- Clap
- Run around the playground
- Swimming lesson
- PE lesson
- Tie your shoe laces

**One minute**
- Blink

**One second**

One hour = ____ minutes
Two hours = ____ minutes
Half an hour = ____ minutes

One minute = ____ seconds.
Three minutes = ____ seconds.

Josh reads a chapter of his book in 5 minutes and 28 seconds.
Tom reads a chapter of his book in 300 seconds.
Who reads their chapter the quickest?
Jack takes part in a sponsored silence. He says, If I am silent for five hours at 10p per minute, I will raise £50. Do you agree with Jack? Explain why you agree or disagree.

Dora says, To convert hours to minutes, I multiply the number of hours by 60. Is she correct? Can you explain why?

Jack is incorrect. There are 60 minutes in an hour so

\[ 60 \times 10p = 600p \]

or £6

\[ £6 \times 5 = £30 \]

Dora is correct. For example

1 hour = 60 minutes

\[ 1 \times 60 = 60 \]

2 hours = 120 minutes

\[ 2 \times 60 = 120 \]

Five friends run a race. Their times are shown in the table.

<table>
<thead>
<tr>
<th>Name</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eva</td>
<td>114 seconds</td>
</tr>
<tr>
<td>Dexter</td>
<td>199 seconds</td>
</tr>
<tr>
<td>Teddy</td>
<td>100 seconds</td>
</tr>
<tr>
<td>Whitney</td>
<td>202 seconds</td>
</tr>
<tr>
<td>Ron</td>
<td>119 seconds</td>
</tr>
</tbody>
</table>

Which child finished the race the closest to two minutes?

Ron was the closest to two minutes, as he is one second quicker than 2 minutes (120 seconds).

Fastest time 100 seconds, slowest time 202 seconds.

The difference between the fastest and slowest time is 1 minute and 42 seconds.
Use a calendar to help you complete the sentences.

There are ____ months in a year.

There are ____ days in February.

____ months have 30 days, and ____ months have 31 days.

There are ____ days in a year and ____ days in a leap year.

Complete the table.

<table>
<thead>
<tr>
<th>Number of days</th>
<th>Number of weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>49</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Sally is 7 years and 2 months old.
Macey is 85 months old.
Who is the oldest?
Explain your answer.
Amir, Rosie and Jack describe when their birthdays are.

Amir says, My birthday is in exactly two weeks.

Amir – 2 weeks is equal to 14 days so his birthday is 22\textsuperscript{nd} June.

Rosie says, My birthday is in exactly 2 months.

Rosie – 8\textsuperscript{th} August

Jack says, My birthday is in 35 days.

Jack – there are another 22 days left in June plus 13 in July, so his birthday is 13\textsuperscript{th} July.

Use the clues to work out when their birthdays are if today is the 8\textsuperscript{th} June.

Always, sometimes, never?

There are 730 days in two years.

True or false?

- 3 days > 72 hours. **False**
- \(2 \frac{1}{2}\) years = 29 months **False**
- 11 weeks 4 days < 10 weeks 14 days **True**

Sometimes – if both of the years are not leap years this is true. If one is a leap year then there will be 731 days in the 2 years.
Block 2 – Time

Theme 2- Analogue Time
Children tell the time to the nearest 5 minutes on an analogue clock. They focus on the language of “past” and “to”, and will recognise and use Roman numerals on a clock face.

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

Which of the hands is the minute hand and which is the hour hand?
Is the minute hand past or to the hour?
How many minutes past/to the hour is the minute hand?
If the minute hand is pointing at the 6, how many minutes have passed in this hour?
What do you notice about the clocks?
Which Roman numeral represents the number ____?
Do we ever say “45 minutes to” the hour?

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

What time is shown on each clock?

_____ minutes past _____   _____ minutes to _____

Draw the hands on the clock to show the time:

25 minutes to 6
Dora is correct because it is not 3 o’clock yet, the hour hand will not be exactly on the 3.

Who do you agree with? Explain your thinking.

The time is around half past six. Children may suggest it could be between twenty five to and quarter to seven.

This clock has lost its minute hand. What time could it be? Justify your answer.
Children tell time to the nearest minute using an analogue clock. They use the terms ‘past’ and ‘to’.

When telling time ‘to’ the next hour, children may need to count on to find how many minutes are left in the hour.

Notes and Guidance

- Which hand is the minute hand? Which hand is the hour hand?
- How many minutes is it past the hour?
- How many minutes is it to the next hour?
- When are the minutes to an hour and the minutes past an hour the same?
- If the hour hand is between ___ and ____, which hour is the time referring to?

Mathematical Talk

Varied Fluency

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

- Dora is telling the time from an analogue clock.
- The hour hand is pointing to XI the minute hand is pointing to XII
- What time is it?
**Telling the Time (2)**

**Reasoning and Problem Solving**

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

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

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

The hour hand is past the 3 and has not yet reached the 4. The hand is closer to the three and therefore the children should recognise that the time has not passed half past 3. You could accept any answers between quarter past to half past 3.
Block 2 – Time

Theme 3- Digital Time
Children use ‘morning’, ‘afternoon’, ‘a.m.’ and ‘p.m.’ to describe the time of day.

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

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

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

Sort the times from latest to earliest.

Guided reading at 10:00 a.m.
Home time at 3:30 p.m.
Lunchtime at 12:00 p.m.

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

Ron could be catching the train to Edinburgh or Leeds. Children should explain that analogue clocks give no indication to a.m. or p.m. and since it is 20 past 7, Ron could be catching the 8:20 a.m. train or the 7:35 p.m. train.

Dora is more likely to be correct, because if she sleeps 8 p.m. to 8 a.m., she would be sleeping through the night, and wake up in the morning. Teddy is likely to be incorrect, because he would be sleeping all day and waking up at 8 p.m. (in the evening)
Children are introduced to telling the time on a 24-hour digital clock for the first time.

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

Using the 12-hour clock, is the time an a.m. or a p.m. time?

What will the number representing the hour be in 24-hour clock time? How do you know if it will be less than 12 or more than 12?

What will the minutes be in 24-hour time? Where can you count from? When does the number of minutes become 0 again on a 24-hour clock display?

Varied Fluency

Create a diary using pictures to show your day from waking up to going to bed. Label these events using both 12-hour clock and 24-hour clock times.

Match the times to the clocks showing the same time.

Complete the times.

13 : 45 Quarter to two in the ____________ 17 : 45 Quarter past three in the afternoon
11 : 20 Twenty past eleven in the ________ 17 : ______ Twenty-five to six in the evening
15 : 50 Ten to four in the _____________ 17 : ______ Twenty to 9 in the morning
Eva says the clocks are showing the same time of day.

Is she correct?
Explain how you know.

**8:20**

Eva could be correct. The clocks are both showing twenty past 8. However, children should recognise that the analogue clock does not show whether the time is a.m. or p.m., so this could be showing 8:20 a.m. or 8:20 p.m.

Is Teddy correct?
Prove it.

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

Teddy

Teddy is not correct. Children should give examples to show this is incorrect. For example: 18:00, 8:30, 10:38 etc.
The time is ________ past 10
This can also be written as ___ minutes past 10
The digital time is ___ : ___

Write each of these times in the digital format.

Record the time of each activity in digital format.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time</th>
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<tbody>
<tr>
<td>Netball</td>
<td>p.m.</td>
</tr>
<tr>
<td>Football</td>
<td>a.m.</td>
</tr>
<tr>
<td>Rock climbing</td>
<td>p.m.</td>
</tr>
<tr>
<td>Roller disco</td>
<td>a.m.</td>
</tr>
</tbody>
</table>

Alfie looks at his digital watch and sees this time. What could he be doing at this time?

01:00 p.m.
Annie converts the analogue time to digital format. Here is her answer.

22 : 02

Explain what Annie has done wrong. What should the digital time be?

12 : 21

On a 12 hour digital clock, how many times will the time be read the same forwards and backwards?

Annie has recorded the minutes past the hour first instead of the hour. The time should be 02 : 22

Jack arrives at the train station at the time shown in the morning.

Which trains could he catch?

<table>
<thead>
<tr>
<th>Destination</th>
<th>Departs</th>
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<tbody>
<tr>
<td>York</td>
<td>07 : 10 a.m.</td>
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<tr>
<td>New Pudsey</td>
<td>09 : 25 a.m.</td>
</tr>
<tr>
<td>Bramley</td>
<td>09 : 42 a.m.</td>
</tr>
<tr>
<td>Leeds</td>
<td>10 : 03 a.m.</td>
</tr>
</tbody>
</table>

How long will Jack have to wait for each train?

Children can work systematically to work this out. For example, 12:21, 01:10, 02:20, 03:30 etc.

Jack could catch the train to Bramley or Leeds.

He would have to wait 7 minutes to go to Bramley and 28 minutes to go to Leeds.
Exploring an interactive 12 and 24 hour digital clock with the children.

Compare what happens when the time reaches 1 o’clock in the afternoon. Move the 24 hour clock on to 2 o’clock. Plot the times above a 0-24 number line.
What do you notice?
Record these times using 24 hour digital format.
4 pm 8 pm 11 pm

Match the analogue and digital times.

Sally leaves school at the time shown.
She arrives home 1 hour later.
What will the time be on a 24 hour digital clock?

Mathematical Talk

What do you notice about the time 1 o’clock in the afternoon on a 24 hour digital clock?
How will the time be shown for 3 o’clock in the morning/afternoon? How do you know?
What time is the analogue clock showing?
Why is it important to know if it is a.m. or p.m.?
What time does she leave school on a 24 digital clock?
Three children are meeting in the park.

Rosie says,

We are meeting at 14:10.

Teddy says,

We are meeting at 02:10 p.m.

Eva says,

We are meeting at ten to two.

Will all the children meet at the same time?
Explain your answer.

Annie has recorded the minutes past the hour first instead of the hour.
The time should be 02:22 a.m.

Jack says,

To change any time after midday from 12 hours to 24 hours digital
time just add 12 to the hours.

Will this always be true? Are there any examples where this isn't the case?

Can you match the time dominoes together so that the touching times are the same?

Children can work systematically to work this out. For example, 12:21, 01:10, 02:20, 03:30 etc.

Can you create your own version for your partner?

Sometimes true
You need to add 12 to the hour, but not if it is 12 in the hours e.g. 12:04 p.m.

Children may find more than one way to solve this.
Children find the durations of events using both analogue and digital clocks. They should be given opportunities to practically work out durations of time using clocks with moveable hands. Number lines are also a useful model.

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

**Mathematical Talk**

When did ___ start, and when did it finish?

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

Do we need to count each individual minute?

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

**Varied Fluency**

Calculate the duration of the TV programmes.

<table>
<thead>
<tr>
<th>TV Programme</th>
<th>Start Time</th>
<th>Finish Time</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pals</td>
<td>06:30</td>
<td>07:30</td>
<td></td>
</tr>
<tr>
<td>Dennis the explorer</td>
<td>15:15</td>
<td>18:15</td>
<td></td>
</tr>
<tr>
<td>The football show</td>
<td>12:00</td>
<td>14:00</td>
<td></td>
</tr>
<tr>
<td>An adventure</td>
<td>10:40</td>
<td>12:40</td>
<td></td>
</tr>
</tbody>
</table>

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

Rosie started running at 7:20 a.m. and stopped at 8:45 a.m. Rosie ran for _____ minutes.

Tommy started running at 09:10 and stopped at 09:55. Tommy ran for _____ minutes.

Amir gets on a bus at 15:23. It arrives at 16:22. How long was the bus journey? How many ways can you find to work out the answer?
Eva starts playing her piano at 11:30
She plays for 45 minutes before having a half an hour break.
She then plays for another 15 minutes.
What time did she finish?

Eva finishes at 13:00 or 1 o’clock

Lunchtime begins at:
Lunchtime ends at:
1:10

Teddy and Rosie are working out how long lunchtime lasts for.

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

Eva finishes at 13:00 or 1 o’clock

Both children’s methods are correct.

Rosie has found the duration by noticing that one hour after the start of lunch it will be 1:15, so she needs to take 5 minutes from 1 hour to also give 55 minutes.

Whose method is correct?

I did three quarters of an hour then added 10

I did 1 hour take away 5 minutes

Year 3 | Summer Term | Week 4 to 5 – Measurement: Time

Finding the Duration

Reasoning and Problem Solving
Children compare durations of time using analogue and digital clocks. They could use empty number lines to model the situations as these will assist with bridging over hours.

They use their knowledge of addition and subtraction, and that there are 60 minutes in an hour, to compare the length of time taken by particular events or tasks.

Which is the longest amount of time?
Which is the shortest amount of time?
Is _____ longer or shorter than ____?
How much longer was _____?
How much shorter was _____?

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

Use the symbols <, > and = to compare the following durations.

2:00 p.m. – 6:00 p.m.  08:00 a.m. – 12:00 p.m.
07:30 a.m. – 09:30 a.m.  11:40 a.m. – 02:40 p.m.
03:30 a.m. – 05:00 p.m.  03:30 p.m. – 05:00 a.m.

Complete the sentence about the duration of the train journeys.

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

Which journey takes the least amount of time?
Comparing the Duration

Reasoning and Problem Solving

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

Is Eva correct? Explain how you know.

Eva is incorrect. Eva took longer to finish the race therefore she finished after Mo. The winner of a race is the person who finishes in the shortest amount of time.

I won because I got a higher time.

Jack’s school starts at ten to 9 and finishes at quarter past 3.

He uses the number line to calculate how long the school day is.

Jack works out the school day is 5 hours and 35 minutes long. Jack is incorrect.

Explain his mistake.

Jack has worked out the time from 3:15 p.m. until ten to 9 in the evening. He should start at 8:50 a.m. and work through noon to 3:15 p.m.
Children find start and end times to the nearest minute using both analogue and digital times. They could use real clocks with moveable hands whilst learning how to add and subtract times, and then move to number lines to help calculate start and end times. Part-whole models could also be used to split longer intervals.

Mathematical Talk

Which hand do you need to move?
Do you need to move the hand clockwise or anti-clockwise?
What time should the number line start at?
Will you jump forwards or backwards?
How many intervals will you break the duration into?
Would a part-whole model help?

Notes and Guidance

Varied Fluency

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

We can use a number line to work out the end time.
Use this method to work out:
• The end time of a 25 minute lesson starting at 2.15 p.m.
• The start time if a 1 hour 10 minute journey ended at 4 o’clock.

Which activity ends the latest?

Gymnastics starts at 15:30 and lasts 1 hour 15 minutes.
Football starts at 16:05 and lasts 45 minutes.
Tommy is halfway through watching his favourite TV programme. He looks at his watch and it shows this time. The show is less than 1 hour long. What could the start and end time be? How many different start and end times can you find?

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

Amir says, 

It’s 20 minutes to 3 o’clock, so school finishes at 3:25 p.m.

Whitney says, 

School ends at 2:85

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

Possible answers include:

Start at 15.20 and end at 16.10
Start at 15.25 and end at 16.05
Start at 15.30 and end at 16.00
Start at 15.35 and end at 15.55
Start at 15.40 and end at 15.50

It's 20 minutes to 3 o'clock, so school finishes at 3:25 p.m.

The show is less than 1 hour long.

What could the start and end time be?

How many different start and end times can you find?

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

Possible answers include:

Start at 15.20 and end at 16.10
Start at 15.25 and end at 16.05
Start at 15.30 and end at 16.00
Start at 15.35 and end at 15.55
Start at 15.40 and end at 15.50

Who do you agree with? Explain why.
Measuring Time in Seconds

Notes and Guidance

Children measure and compare durations of time in seconds. It is important for children to have a realistic sense of what time in seconds feels like, as they often count in seconds too quickly. They could use a stopwatch to compare, for example, counting to 10 seconds in their heads with the actual timed duration. They recognise that there are 60 seconds in one minute and use this to write durations of time in different ways e.g. 80 seconds is the same as 1 minute and 20 seconds.

Mathematical Talk

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

Varied Fluency

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

Match the times in words to the times shown on the stopwatches.

Two minutes five seconds
10 seconds less than 2 minutes
Two minutes 50 seconds
150 seconds

Complete the table.

<table>
<thead>
<tr>
<th>Time in minutes</th>
<th>Time in seconds</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 minutes</td>
<td>100 seconds</td>
</tr>
<tr>
<td>3 minutes 20 seconds</td>
<td></td>
</tr>
</tbody>
</table>
Dora works out how many seconds there are in 4 minutes 15 seconds.

She says, That’s easy, it is 415 seconds.

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

That’s easy, it is 415 seconds.

Dexter uses a bar model to help him.

Who is correct?

True or False?

• 3 minutes 5 seconds < 190 seconds  **TRUE**
• 4 minutes = 204 seconds  **FALSE**
• 170 seconds > 2 minutes 50 seconds  **FALSE**

Each minute has 60 seconds. So it’s 4 lots of 60 plus 15.

Who is correct?