Planning Overview
Year 5 Measures – Time

Solve problems involving converting between units of time.

	Teaching and Learning
Introduction	Children should be confident at telling the time to the nearest minute using analogue and digital clocks. If this is not secure, then they will need to track back to the Year 3 time plan to address this gap in their learning. When talking about time children should be confident with using both am and pm times and both 12 and 24 digital clocks. If this is not secure then they will need to track back to the Year 4 time plan to address this gap in their learning. An elicitation activity like this one from mathsframe.co.uk might give you a good idea of how secure children are with the above concepts 
Solve problems involving being able to tell the time	If children are confident with all of the elements above relating to being able to tell the time, allow them to tackle questions around reasoning about time. e.g. If the clock in my car was 7 minutes fast and it told me that I got to school at 7.54am what time did I actually get to school? If my passenger needed to make a phone call at 8.15am what time would they need the car clock to say?

Stefan's watch shows five minutes past nine.

The watch is twelve minutes fast

What is the correct time?

These are all times on the same morning.

A 7:56 am

B quarter to eight

C six minutes to eight

D half past seven

Write the letters for the times in order, starting with the earliest.

Here are the sunrise and sunset times for some days in July.

Date	Sunrise	Sunset
7th	04:53	21:18
14th	05:00	21:12
21st	05:09	21:05
28th	05:18	20:55

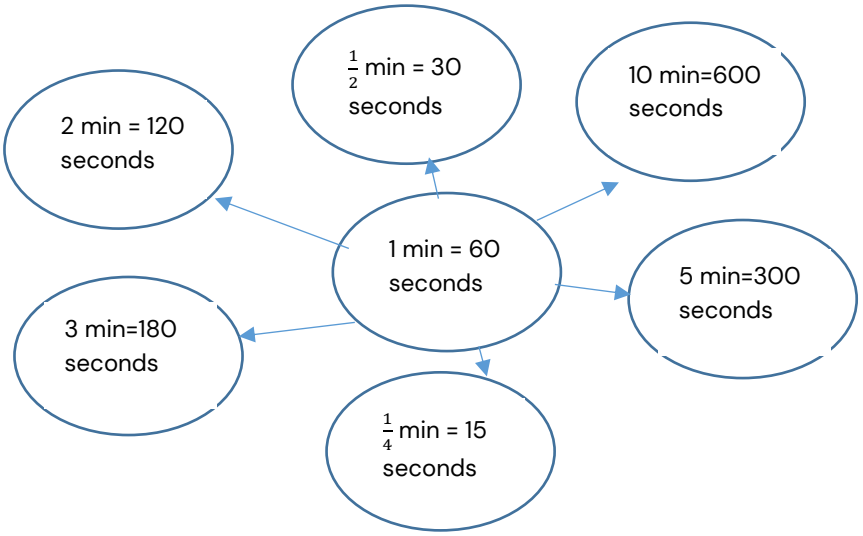
How many minutes earlier is the **sunset** on 28th July than on 7th July?

minutes

Solve problems involving converting between units of time	From previous work on time the children should be able to recall basic time conversions 1 minute = 60 seconds 1 hour = 60 minutes 24 hours = 1 day 365 days = 1 year

They should also have some way of recalling how many days there are in each month of the year.

Using those basic conversions ask children to create a connections map of other conversions that they can easily establish.

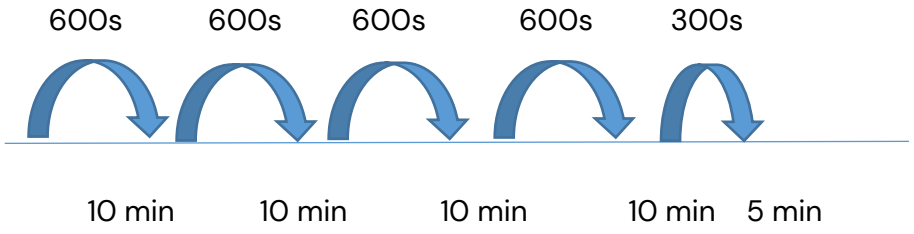


Ask children to think about a lesson during the school day. If this lesson is 45 minutes long, how many seconds would that be?

How could any of the information in the above diagram help them?

If we know how many seconds 10 minutes is then we can multiply that by 4 to find out how many seconds there would be in 40 minutes. We can then use the fact about there being 600 seconds in 10 minutes to work out the number of seconds in 5 minutes and add that on to find the total.

A blank number line or bar model might help children with this.



45 minutes = 2,700 seconds

45 minutes				
10 minutes	10 minutes	10 minutes	10 minutes	5 min
600 sec	600 sec	600 sec	600 sec	300 sec
2,700 seconds				

Ask children to calculate the length of other part of the school day or time they spend at clubs or sports in seconds.

Ask children to apply this understanding to work out how many minutes they spend at school each school day? Each week? In a given month? Across a half term?

Children to tackle SATs questions involving the conversion of time. In the question below children will need to decide what the common unit will be. Will children convert all of the times to seconds or all of the times to minutes and seconds?

The table shows the time taken for school teams to complete the relay race.

Team	Time taken
Red	203 seconds
Blue	2 minutes 5 seconds
Yellow	1 minute 50 seconds
Green	130 seconds

Which team finished first?

1 mark

Which team finished last?

1 mark

What is 444 minutes in hours and minutes?

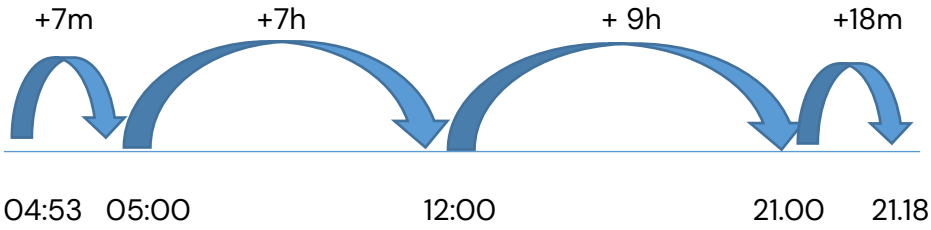
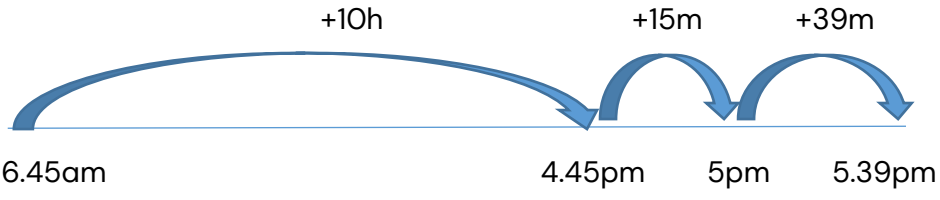
hours **minutes**

Write the missing numbers.

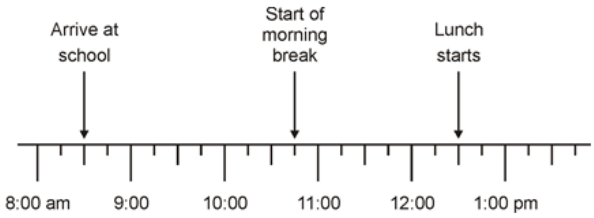
60 months = years

72 hours = days

84 days = weeks

To calculate duration of events	Collect some data around the sun rise and sun set time for a day in December, April, July and September. Ask children to work out how many hours of daylight there were for each of those days Show children how to use a blank number line to help support them to bridge  Ask children if they notice anything about the amount of sunlight at different times of the year. Give children a sunrise time for a day in March. Also give them the amount of daylight for that particular day. Ask the children to work out what time the sun would have gone down on that day. Again, model how to use a blank number line to support. Sunrise – 6:45 Daylight amount 10 hours 54 minutes Children may want to break the 10 hours and 54 minutes down in order to add them on in different ways. This is only one way that we could do this. Do children prefer to record in the 24-hour clock or am/pm?  Give children problems where they are given the sun set time and the total amount of daylight and ask them to calculate the sun rise time. Apply their understanding of calculating duration of events to tackle SATs questions

Jamie makes a time-line of part of his day.



What time does Jamie's morning break start?

am

1

Lunch lasts for three-quarters of an hour.

What time does lunch **finish**?

pm

Here are the times of some television programmes.

Channel 1	
7.00	Cartoon
7.15	Film
9.00	News
9.30	Weather
9.35	Sport
10.20	Drama

Channel 2	
7.00	Local News
7.45	Quiz Show
8.30	Comedy
9.00	Hospital Drama
10.00	Pop Chart
10.40	Film

The film on **Channel 2** starts at **10.40**

It lasts for **one and a half hours.**

At what time does the film **end**?

1 mark

Here are the **start** and **finish** times of some children doing a sponsored walk.

	Start time	Finish time
Claire	9.30	10.55
Ruth	9.35	11.05
Dan	9.40	11.08
Tim	9.45	11.05

How much longer did Claire take than Tim?

minutes

Apply telling the time and calculating duration of events to reading timetables	Reading charts and tables appears in the Year 5 statistic unit. You may want to look at reading timetables within that unit or add reading other charts and tables to the end of this objective within the time unit. Look at this timetable from a past SATs paper William wants to travel to Paris by train. He needs to arrive in Paris by **5:30 pm**. Circle the **latest time** that William can leave London. **Leaves London** / **Arrives Paris** 12:01 / 15:22 12:25 / 15:56 13:31 / 16:53 14:01 / 17:26 14:31 / 17:53 15:31 / 18:53 16:01 / 19:20 Ask children what the key pieces of information that they need to know? The latest time to get to Paris is 17:30. We need to leave London as late as we can. Ask children to highlight all the trains that will arrive in Paris before 5.30pm (Children will need to convert to 24-hour time) What is the latest time that we can arrive in Paris and still be there before 5.30pm? What time did that train leave London? Ask children to repeat this process with the question below. What is the key piece of information that we know? What do we need to know? Highlight the trains from Maylands that stop at Success Hill. Now identify which of those is the earliest train. Here is part of the morning train timetable from Perth to Midland in Australia. Perth: 07:11 / 07:20 / 07:27 / 07:35 / 07:43 / 07:55 Maylands: – / 07:28 / 07:33 / 07:43 / 07:49 / 08:03 Ashfield: – / – / 07:38 / – / 07:54 / – Success Hill: 07:25 / – / 07:41 / – / 07:57 / – Midland: 07:32 / 07:41 / 07:48 / 07:56 / 08:05 / 08:16 What time is the first train from Maylands that stops at Success Hill? : 1 mark Mr Evans is in Perth and wants to be in Midland by 08:00 What is the time of the **latest** train he can take from Perth? : 1 mark

Mastery

	Bus Timetable					
Highway Rd	06:50		07:25	08:45	09:10	09:45
Rain Rd	07:00	07:25	07:41	08:55	09:19	09:53
Coldcot Rd	07:11	07:41	07:51	09:04	09:28	10:02
Westland Rd	07:18	07:59	07:59	09:11	09:38	10:11
Bod Rd	07:29	08:12	08:09	09:16	09:47	10:16
Kingswell Rd	07:33	08:15	08:14	09:20	09:53	10:21
Long Rd	07:45	08:30	08:30		10:05	10:40

Use the bus timetable to answer the following questions:

On the 6:50 bus how long does it take to get from Highway Rd to Westland Rd?

Can you travel to Long Rd on the 8:45 bus?

Which journey between Rain Rd and Kingswell Rd takes the longest time, the bus that leaves Rain Rd at 7:25 or the bus that leaves Rain Rd at 7:41?

Explain your reasoning.

Mastery with Greater Depth

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Coldcot Rd	07:11	07:41	07:51	09:04	09:28	10:02
Westland Rd	07:18	07:59	07:59	09:11	09:38	10:11
Bod Rd	07:29	08:12	08:09	09:16	09:47	10:16
Kingswell Rd	07:33	08:15	08:14	09:20	09:53	10:21
Long Rd	07:45	08:30	08:30		10:05	10:40

Use the bus timetable to answer the following questions:

If you needed to travel from Coldcot Rd and arrive at Kingswell Rd by 8:20, which would be the best bus to catch?

Explain why.

Which journey takes the longest time?