





Steps to Success

Lockdown Learning - DT

Date	26.2.21
Subject/s	Maths
Learning Objective 	To solve problems using timetables

SA 	TA 
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Success Criteria 	I can retrieve information from a timetable		
	I can convert between units of time		
	I can find totals and differences		
Support	Independent	Adult Support ()	Group Work

Pre-task:

Look at the timetable below, then answer the questions.

	Bus A	Bus B	Bus C	Bus D
Chester	06:45	07:15	07:45	08:15
Capenhurst	06:50	07:20	07:50	08:20
Hooton	07:05	07:35	08:05	08:35
Eastham	07:15	07:45	08:15	08:45
Bromborough	07:20	07:50	08:20	08:50
Liverpool	07:45	08:15	08:55	09:15

- 1) On bus B, how long does it take to get from Hooton to Liverpool?
- 2) Which takes longer to get from Chester to Liverpool, bus C or D?
- 3) On bus A, How much longer does it take to get from Capenhurst to Liverpool, than to get from Chester to Hooton?

Pre-task Answers

- 1) 40 minutes
- 2) Bus C
- 3) 35 minutes

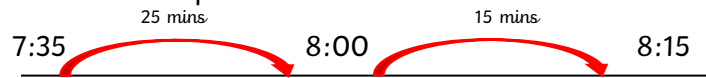
Teacher Led

I'm going to go through the pre-task to explain how to solve problems involving timetables.

	Bus A	Bus B	Bus C	Bus D
Chester	06:45	07:15	07:45	08:15
Capenhurst	06:50	07:20	07:50	08:20
Hooton	07:05	07:35	08:05	08:35
Eastham	07:15	07:45	08:15	08:45
Bromborough	07:20	07:50	08:20	08:50
Liverpool	07:45	08:15	08:55	09:15

Question 1: On bus B, how long does it take to get from Hooton to Liverpool?

First I need to retrieve the information. Look at the column for bus B and the times for Hooton to Liverpool. Then I need to find the difference between them. Column subtraction will not help because time is not decimal, there are 60 minutes in one hour. Instead I will use a timeline to help me.



$$25 + 15 = 35 \text{ minutes}$$

	Bus A	Bus B	Bus C	Bus D
Chester	06:45	07:15	07:45	08:15
Capenhurst	06:50	07:20	07:50	08:20
Hooton	07:05	07:35	08:05	08:35
Eastham	07:15	07:45	08:15	08:45
Bromborough	07:20	07:50	08:20	08:50
Liverpool	07:45	08:15	08:55	09:15

Question 2: Which takes longer to get from Chester to Liverpool, bus C or D?

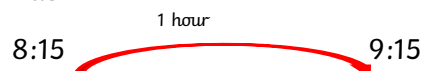
For this question, I need to do the same as before, but for bus C and bus D. Then I can compare them.

Bus C:



This time, instead of going to 8.00 first, I went to 8.45 because I could count 1 hour.

Bus D



Bus C takes 1 hour and 10 minutes

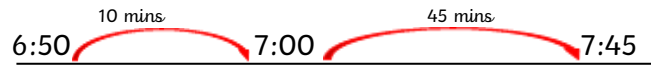
Bus D takes 1 hour

Bus C takes longer.

	Bus A	Bus B	Bus C	Bus D
Chester	06:45	07:15	07:45	08:15
Capenhurst	06:50	07:20	07:50	08:20
Hooton	07:05	07:35	08:05	08:35
Eastham	07:15	07:45	08:15	08:45
Bromborough	07:20	07:50	08:20	08:50
Liverpool	07:45	08:15	08:55	09:15

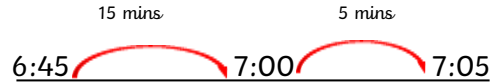
Question 3: On bus A, How much longer does it take to get from Capenhurst to Liverpool, than to get from Chester to Hooton?

First, I need to work out the times for each.
Capenhurst to Liverpool



$$10 + 45 = 55 \text{ minutes}$$

Chester to Hooton



$$15 + 5 = 20 \text{ mins}$$

The question asks how much longer, so I need to find the difference

$$55 - 20 = 35 \text{ minutes longer}$$

Fluency

Use the timetable to answer the questions.

	Bus A	Bus B	Bus C	Bus D
Huddersfield	06:00	06:50	08:10	09:15
Emley	06:15	07:20	08:25	09:30
Flockton	06:20	07:25	08:30	09:35
Overton	06:25	07:30	08:35	09:40
Wakefield	06:45	07:40	08:55	10:00

- How long does it take to get from Huddersfield to Flockton on Bus A?
- How long does it take to get from Emley to Wakefield on Bus C?
- How long does it take to get from Huddersfield to Overton on Bus B?
- Which bus takes the longest to get from Huddersfield to Wakefield?
- On Bus A, how much longer does it take to get from Emley to Wakefield than to get from Huddersfield to Emley?
- Complete the missing times in this train timetable:

Harrogate	10:05	12:15	13:25	
Knaresborough	10:25		13:45	14:55
Farnham	10:35		13:55	
Copgrove		13:00		15:20
Ripon	11:00	13:10	14:20	

Fluency Answers

1) 20 minutes

(2) 30 minutes

(3) 40 minutes

(4) B

(5) 15 minutes

6)

Harrogate	10:05	12:15	13:25	14:35
Knaresborough	10:25	12:35	13:45	14:55
Farnham	10:35	12:45	13:55	15:05
Copgrove	10:50	13:00	14:10	15:20
Ripon	11:00	13:10	14:20	15:30

Problem Solving and Reasoning

Three trains travel from Halifax to Leeds on the same morning: the express train, the slow train and the cargo train.



Use it!



The express train leaves Halifax 10 minutes after the slow train, but arrives at Leeds 10 minutes before it.

The slow train takes 50 minutes to reach Leeds and arrives at 10:33

The cargo train leaves 20 minutes before the slow train and arrives at Leeds 39 minutes after the Express.

What time does each train leave Halifax and what time does each train arrive at Leeds Station?

Make a timetable of your school day.
Calculate how many hours each week you spend on each subject.
Can you convert this into minutes?
Seconds?

Use it!



Problem Solving and Reasoning Answers

The slow train leaves Halifax at 9:43 and arrives in Leeds at 10:33 The express train leaves Halifax at 9:53 and arrives in Leeds at 10:23 Goods train leaves Halifax at 9:23 and arrives in Leeds at 11:02

Answers will vary

