

How long does it take?

Mathematics learning objective

Framework:

- **HD:** Answer a question by collecting, organising and interpreting data; use tally charts, frequency tables, pictograms and bar charts to represent results and illustrate observations; use ICT to create a simple bar chart.

NC: Ma4, 1a; Ma4, 2b-c


English learning objectives (NC)

- **En2, 3a:** Scan texts to find information.
- **En2, 3c:** Obtain specific information through detailed reading.

Vocabulary

Bar chart, table

Resources

- Clock faces
- **CD-ROM:**  Activity sheets: 'Train timetables' (also p45), 'From Worcestershire to London', 'Journey timetable' and 'Journey timetable (blank)'
- Image: 'Train station'
- Interactive tables: 'Train timetable' 1 and 2
- Bar chart tool
- Word® files: 'Journey timetable' and 'From Worcestershire to London'

Introduction

Reveal the image of a busy train station and display the interactive table 'Train timetable – 1' from the CD-ROM. Ask the children to read the first row. Now ask:

- *How long does the journey take from Greenbank to Greyhill?*
 - *How did you work that out?*
- Type the journey time into the table. (See the activity sheet 'Train timetables' or p45 for correct journey times.) Repeat this for the other three journeys. Now ask questions such as:
- *Does the journey from Greenbank to Greyhill take the same time as the journey from Greyhill to Greenbank?*
 - *Does the journey from Sandy Cove to Marton take the same time as the journey from Marton to Sandy Cove?*

Discuss how train journeys do not all take the same time as trains will stop at more or fewer stations depending on the time of day.

Display the interactive table 'Train timetable – 2' from the CD-ROM. Ask questions, such as:

- *How long does the journey take from Marchbank to Bluebell Wood?*
- *How did you work that out?*

Discuss other combinations of journeys.

Children's task

Provide the activity sheets 'From Worcestershire to London' and 'Journey timetable'. Read 'From Worcestershire to London' through together. Explain that this sheet contains information about a number of possible train journeys that the Singh family could take from Worcestershire in order to get to London. The children should pull out the relevant information about train times and fill this in on the activity sheet or Word® file 'Journey timetable'. As the train journeys are real times, the times are to the nearest minute, so children may find it useful to have a clock face to help them.

Differentiation

More confident: Challenge the children to use the internet to find further train times for these journeys.
Less confident: Provide clock faces and, if necessary, simplify the train times on the activity sheet 'From Worcestershire to London', using the editable Word® version of the page.

Review

Reveal the bar chart tool. Explain to the children that the train-journey times can be put into a graph. Ask them to work in pairs to calculate how many minutes each journey takes. Use a clock face to demonstrate how to count the time in minutes. For example, 1 hour and 23 minutes is the same as 60 add 23, or 83 minutes.

- Now input the data for each journey. Ask:
- *What scale shall we use? (1:10 would work well)*
 - *Why do you think this is a good scale to use?*
- Input all the data and make the bar chart. Now ask:
- *Which journey would you choose? Why?*
 - *Who would prefer a different journey? Why?*

Now try this...

Ask the children to investigate other journeys.

Train timetables

Timetable 1

From	To	Start time	Arrive time	Journey time
Greenbank	Greyhill	9.50am	10.30am	40 min
Greyhill	Greenbank	11.25am	12.15pm	50 min
Sandy Cove	Marton	3.15pm	4.05pm	50 min
Marton	Sandy Cove	6.20pm	7.05pm	45 min

Timetable 2

From	To	Start time	Arrive time	Journey time
Marchbank	Sandy Bay	8.30am	9.12am	42 min
Sandy Bay	Bluebell Wood	10.05am	10.55am	50 min
Bluebell Wood	Fishers Cove	11.00am	11.35am	35 min
Fishers Cove	Smugglers Haunt	12.20pm	1.05pm	45 min



CD-ROM follow-up material

Children can use the activity sheet 'Journey timetable (blank)' or the 'Journey timetable' Word® file to input data about other journeys of their own or some they have made up.