

Using data in line graphs to solve problems

National Curriculum attainment target

- Solve comparison, sum and difference problems using information presented in a line graph

Lesson objective

- Solve comparison, sum and difference problems using information presented in a line graph

Previous related lesson

Unit 7, Week 3, Lesson 1; Unit 7, Week 3, Lesson 2

Prerequisites for learning

Pupils need to:

- interpret and present continuous data in line graphs

Vocabulary

horizontal axis, vertical axis, line graph, scale

Future related lesson

Unit 12, Week 3, Lesson 3

Success criteria

Pupils can:

- interpret and present discrete data in line graphs
- solve comparison, sum and difference problems using data presented in line graphs



Getting Started

- Choose an activity from Statistics.

Teach



- Display: Slide 1 showing the line graph for Monthly sales of cars.

- Say: **This line graph shows the sales of cars month by month at Scott Motors.**

- Ask: **What can you tell me about the scale on the y-axis?** (alternate gridlines are marked in multiples of 20)

- Ask: **What do the letters on the x-axis represent?** (the names of the months)

- Ask: **How many cars were sold in January?** (20) **How many were sold in April?** (30) **How did you work out your answer?**

- Ask: **In which month was the highest/lowest sales of cars recorded?** (October/December)

- Ask: **Without reading the actual sales figures, how can you tell when Scott Motors had the greatest drop in sales?** (the gradient of the line indicating a fall in sales is steepest between March and April)

- Ask: **Why do you think that December had the lowest sales of cars?** (people are not inclined to buy a new car when the weather is bad, people are spending money on Christmas purchases)

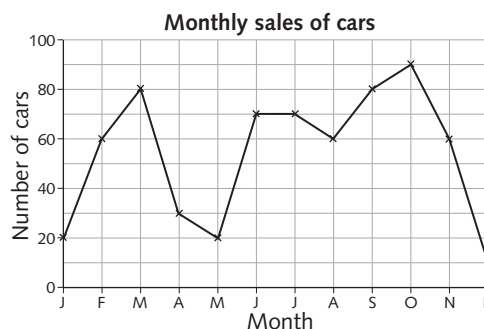
- Ask: **In which months did Scott Motors sell 60 cars?** (February and August)

- Say: **Tell your partner how many months had sales of more than 60 cars.** (5)

- Ask: **In which two consecutive months were the same number of cars sold?** (June and July)

- Ask: **Who can think of a reason why the sales figures fell in August?** (potential customers are on holiday)

- Ask: **How many more cars were sold in June than in May?** (50) **How many fewer cars were sold in December than in October?** (80)



Collins
Connect

Year 5, Unit 12,
Week 3





- Say: **In the last 2 weeks in February, Scott Motors featured on television in a sales promotion of their cars.**
- Ask: **In what way did the sales promotion on television affect the sales of cars? Can you justify your answer?** Take feedback. Focus on the fact that the sales for February and March (140 cars) was double that for January, April and May (70 cars).
- Point to where the line in the graph joining the points for January and February intersects the gridline for 40 cars. Elicit that intermediate points on a graph such as this one have no meaning because the sales are recorded on a month by month basis.
- Ask pairs to make up a question about the graph for the class to solve.

Individualised Learning

Refer to Activity 1 from the Learning activities on page 474.

Pupil Book 5C: – Page 92: Bookshop sales

Resources: 1 cm squared paper (per child); ruler (per child)

Progress Guide 5: – Support, Year 5, Unit 12, Week 3, Lesson 1: At the chemist's shop

Plenary



- Discuss the importance of working out what scale has been used before you begin to interpret the line graph, and of deciding whether or not the intermediate readings will have any value.
- Display: Slide 1, showing the line graph used in the Teach part of the lesson.
- Ask: **How many cars were sold in the first 3 months of the year? (160) How many cars were sold in the last 3 months of the year? (150) What was the difference in sales for these two quarters of the year? (10)**
- Ask pairs to find how many more cars were sold in July, August and September than in April, May and June. ($210 - 120 = 90$)
- Ask: **Who can see a quick way to work this out?** Elicit that as June and July have identical sales of cars we only need to find the total number of cars sold in April and May (50) and compare this with the figures for August and September (140) to give the difference of 90 cars.



Homework Guide 5

Year 5, Unit 12, Week 3, Lesson 1: Landing the catch