Teacher's notes

Interpret tables, charts and graphs (2)

Warm up

Brainstorm different types of visual representation. Write them on the board as students call them out. You could ask students to suggest what each type of representation would be used for.

Using the Factsheet

There are three possible ways to use the Factsheet:

1 Give students the Factsheet before the lesson, so they can read it at home and come to the lesson prepared to do the Worksheet. If you use this approach, start the lesson by checking that all students have read and understood the Factsheet, and answer any questions.
2 Give students the Factsheet at the beginning of the lesson and start by working through it with the students.
3 Focus on the Worksheet in the lesson, then give students the Factsheet at the end of the lesson so they can take it home and keep it as a reference or revision tool.

Theory to practice

Possible answers

1 a More people use the underground (52%) than other forms of transport (48%).

b Yes – the numbers of beds and patients are exactly equal.

c The main trends are that, between 2015 and 2018, there was a significant decrease in the number of employees travelling to work by car and a significant increase in the number travelling by train. This might be because a new railway line opened, or because the company decided to subsidize (give employees money for) train travel.

d China's ranking would rise to #2, and the UK would drop to #3. France (new ranking #6) and Japan (new ranking #7) would switch places. (France and Germany won an equal number of medals, so their ranking could be decided on the number of gold medals; alternatively they could be placed jointly at #5.) Likewise, Australia and South Korea would switch places. The new rankings would be:

# Rank	Country	Gold	Total medals
1	USA	46	121
2	China	26	70
3	UK	27	67
4	Russia	19	56
5	Germany	17	42
6	France	10	42
7	Japan	12	41
8	Australia	8	29
9	Italy	8	28
10	South Korea	9	21

e First, the coffee beans are picked. Then they are dried. Next, they are shipped to the roasters and roasted. After that, they are packaged. Finally, they are shipped to shops.

2 **Students' own answers**

Using the Worksheet

Practice

1 **Match each feature with types of visual representation from the box.**

- Students should work directly in pairs. Ideally, use the board to clarify with visuals as you check matches.

Answers

a bar chart / line graph
b bar chart
c table
d flow chart
e pie chart
f flow chart
g line graph
h bar chart / line graph / pie chart

2 **Study the bar chart (Figure 6) and answer the questions.**

- Refer students to the figure. Ideally, show it electronically on the board and draw attention to features as you read through the questions with the class. If this isn't possible, give students the time they need to study the chart and answer the questions individually. Note that the questions check students' ability both to read individual pieces of information from the chart and also to draw conclusions about some overall trends – it is important that they grasp both angles. Do not check answers at this stage – students will check in pairs in Exercise 3.

3 **In pairs, check your answers to the questions in Exercise 2. Then write three more sentences about the bar chart.**

- Allow time for students to compare answers. Monitor and help as necessary. You can decide whether to check the answers before or after they write their own sentences. Select a few students to read out their sentences or write them on the board. Ideally, display the chart on the board to round up.

Possible answers

a the number of gold medals won by the USA and China at various Olympic Games
b USA gold medals / China gold medals
c the years of each Olympic games / the number of gold medals won
d USA
e 2008
f China

4 **Study the pie chart (Figure 7) and answer the questions.**

- Work through as with Exercise 2, ideally displaying the pie chart on the board to deal with uncertainties. If necessary, you can explain the notion of jury service; you may also need to explain the symbols **>** and **≤**. If students are unsure about expressing percentages, take a few minutes to practise – write some percentages on the board for students to practise saying. Point out that the percentages in the segments of a pie chart always add up to 100.

5 **In pairs, check your answers to the questions in Exercise 4. Then write three more sentences about the pie chart.**

- Work through as with Exercise 3. When it comes to writing sentences, students could write simple sentences stating single percentages, or stretch themselves by using comparative or superlative forms.

Answers

a men's behaviour
b reasons for taking time off work
c sickness of three days or less
d a doctor's visit
e 5%

6 Study the line graph (Figure 8) on the following page and answer the questions.

- Work through as with Exercises 2 and 4.

7 In pairs, check your answers to the questions in Exercise 6. Then explain what the graph shows in your own words.

- After students have compared answers, instead of writing, they summarize what the graph shows orally. At this point, they should attempt to do so in English. Monitor to check fluency and accuracy, and then elicit some ideas. You could select a student or students to summarize for the class.

Answers

a all women (in the USA)
b years (in intervals of a decade) / the percentage of women in work in each group
c different age groups
d 25–54
e 16–24
f 65+
g It fell noticeably.

8 Study the table (Figure 9). In pairs, ask and answer questions as in the examples.

- Read the instructions with the class and check the example exchanges. Prepare some more possible questions, for example:

  Who has the lowest score in …?
  What was Lisa's score in …?
  Did … score higher or lower in … than …?

  The output here is simple, and students will hopefully enjoy producing the language. However, the real aim is to show they understand the table and can quickly retrieve information. Monitor to check performance as a formal feedback phase will be repetitive.

9 In pairs, discuss the best visual representation for each set of information.

- Read the instructions with the class and make sure students understand that the aim now is to select the best form of visual representation for each kind of information. You could work through an example, trying different possible representations on the board to get students thinking. Give them time to read and think individually before discussing ideas in pairs. Some use of L1 might be advantageous here. There is often more than one possible way of displaying the data well; to some extent, of course, the 'best' way depends on the context.

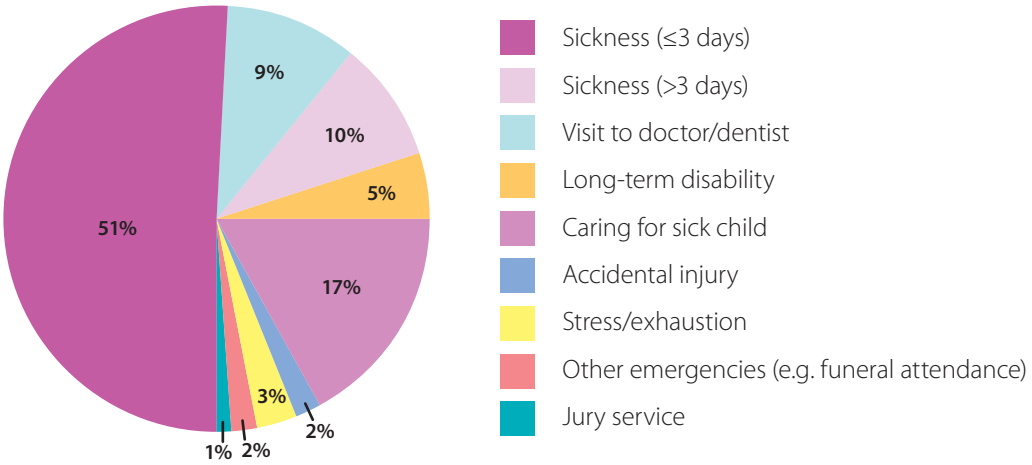
Suggested answers

a line graph
b pie chart
c table / line graph
d bar chart

10 **Work with a partner. Look at Figure 7 again. Design a pie chart to show the reasons for women's absences from work.**

- This production stage should be enjoyable and will hopefully give students more confidence. Read the instructions with the class and focus them by asking which of the segments they think will be different. Try to prioritize women's voices. Then set a time limit of about five minutes. If you wish, you can then show Figure 10 (the pie chart from the Answers section below) on the board and clarify the main differences, perhaps asking for explanations. See what students think of the differences: did they predict them correctly? What do the differences show about society?

Figure 10: Women's reasons for absence from work



Note: These figures exclude holidays and parental leave.

11 **Design a table or chart to show to show which types of film (romance, comedy, horror, etc.) are popular among your classmates.**

- This creative task should be enjoyable and will demonstrate whether students have absorbed the advice. It might be fairly time-consuming, however, as there will need to be a planning stage, a design stage and a survey stage. You will need to decide how useful it is. Monitor closely and assist students with each stage to maximize the benefits.

Reflect

12 **Discuss the questions.**

- Have a whole-class discussion about what students learnt in the lesson. You might prefer to do this in L1. Answer any questions. Students could think about the Reflect questions later at home.

Learning outcome

By the end of the lesson, students should:

- understand why tables, charts and graphs are used to support texts
- be better able to read various types of visual representation
- understand why each type of figure is appropriate to the information it shows
- have learnt some typical language used to describe information shown in a chart or graph