A project English and Mathematics

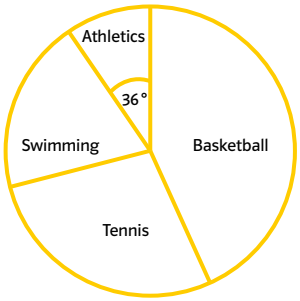
Step 1: Thinking about surveys and data

Surveys are a way of collecting information. The information is often about how people spend their lives, or what they think about a topic. The information that is collected is called data.

Have you ever done, read about or taken part in a survey? What did it try to find out?

Step 2: Looking at pie charts

When data has been collected in a survey, it can be shown as a pie chart.



a) *One summer the 30 students of an eighth grade class were allowed to choose what they did in their PE lessons. Look at this pie chart which shows what they chose. What was the most popular sport?*

b) *How many students did athletics? How did you find out? If you aren't sure, look at Step 3.*

Step 3: Drawing a pie chart

To show results as a pie chart, we need to put in each piece of data as a proportion of 360, because that is how many degrees there are in a circle. In a survey about food, if 20 out of 90 people say their favorite meal is pizza, this will be (20 ÷ 90) x 360 = 80 degrees of the pie chart.

TIP

+ = plus
− = minus
÷ = divided by
x = times

a) *Calculate the proportions of the pie chart for each of these results.*

Survey of the favorite meals of 90 middle school students

spaghetti / other pasta meals: 38

pizza: 20

hamburger with French fries: 17

other: 15

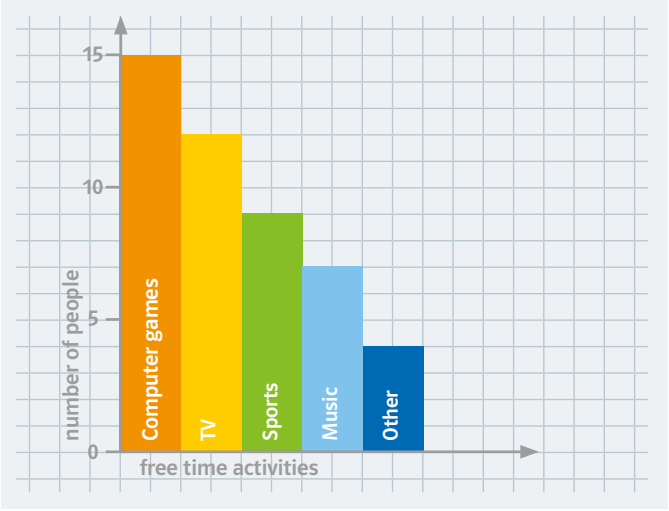
b) *Now draw the pie chart to show the results. You will need to measure the angles with a protractor. Before you draw, remember to check that the parts add up to 360°!*

data ['deitə] – *Daten,* pie chart ['paɪ ˌtʃɑ:t] – *Tortendiagramm,* proportion [prə'pɔ:ʃən] – *Anteil,* degree [dɪ'gri:] *Grad,* to calculate ['kælkjəleɪt] – *berechnen,* plus [plʌs] – *plus,* minus ['maɪnəs] – *minus,* divided by [dɪ'vaɪdɪd baɪ] – *geteilt durch,* times [taɪmz] – *mal,* to measure ['meʒə] – *messen,* angle ['æŋgl] – *Winkel,* protractor [prə'træktə] – *Winkelmesser, Geometrie-Dreieck*

Step 4: Bar charts

Data that has been collected can also be shown as a bar chart.

a) *Look at this bar chart with the results of another survey.*
How many people took part in the survey?



TIP

You should always label the axes of your bar chart. This means that you should say what is shown by the x-axis (in this example, the activities) and the y-axis (here, the number of people).

If you aren't sure of the answer, think what the chart is telling you.
Fifteen people did the first activity, twelve did the second activity, nine …

15 + 12 + 9 + . . . + . . . + . . . = . . .

b) *Now put these results from another survey into a bar chart. Remember to label the axes.*

Ages of guests who stayed at the Rose Motel on a Saturday night in May.

Age	Under 21	21-30	31-40	41-60	Over 60
Number of guests	8	15	18	12	7

Step 5: Your turn: A survey

a) *Think of a topic for your own survey. Here are some ideas:*

the styles of music people listen to • the TV channels people watch • the countries people would like to visit • …

b) *Do your survey and collect the data. You should ask twenty people or more.*

c) *Show your data as a pie chart or a bar chart.*

bar chart ['bɑ: ˌtʃɑ:t] – *Balkendiagramm,* to label ['leɪbl] – *beschriften, kennzeichnen,*
axis, pl. axes ['æksɪs, 'æksi:z] – *Achse*