

2

A zoo records the average number of fish in a tank, and the average length of the fish.

They plot a scatter graph to show their results.

20-18-16-X average length of fish (cm) 14-× 12-10-8-6-4 2 0 10 2 4 6 8 0

a) Use coordinates from the graph to complete the table.

| Number of fish              | 6  | 8  | 12 | 15 | 16 | २० | 22 |
|-----------------------------|----|----|----|----|----|----|----|
| Average length of fish (cm) | 16 | 13 | 10 | ٩  | ٩  | 7  | 5  |

b) Complete the sentence.

length of the fish.

c) A different fish tank contains ten fish. Estimate the average length in centimetres of the fish in this tank. Circle your answer.

> 17 cm 25 cm

Discuss your answer with a partner.

Five students take part in two different quizzes.

The table shows the results for the five students.

| Student | Quiz 1 | Quiz 2 |
|---------|--------|--------|
| Мо      | 7      | 13     |
| Dora    | 3      | 6      |
| Tommy   | 5      | 9      |
| Annie   | 9      | 12     |
| Ron     | 10     | 18     |

a) Plot the points to draw a scatter graph for the students' results.



b) What do you notice about the scores on the two quizzes?

who Score d on aut

also SCONE Oh Quiz

c) Discuss with a partner what you can understand from the scatter graph.





The \_\_\_\_\_\_\_ fish there are in the tank, the \_\_\_\_\_\_ the



**4 cm** 

- Students are comparing how long they charge their phones for in hours, with the percentage of charge shown on their phones.
- a) Draw a scatter graph to represent the results for these six students.

| Dani (5, 80) | Ron (3, 70)   |
|--------------|---------------|
| Kim (0, 10)  | Eddy (7, 100) |

Nijah (10, 4) Brett (5, 60)



Explain your reasoning.

point showing Nijoh's Choror

is an outlier on the graph

Distance from school against mode of transport to school Is it possible to represent this on a scatter graph? \_\_\_\_\_\_ Talk about your reasoning with a partner.

The owner of a large company wants a scatter graph showing the weekly rent and profit of their shops.

Here is a table showing the information.

| Location      | Weekly rent (£) | Weekly profit (£) |
|---------------|-----------------|-------------------|
| Harrogate     | 7,000           | 500               |
| Knaresborough | 2,000           | 3,000             |
| Wetherby      | 3,500           | 2,000             |
| Skipton       | 5,000           | -1,000            |
| Keighley      | 4,800           | 1,000             |

a) Plot the points on the graph.



b) What is the relationship between the weekly rent paid and the weekly profit?









# Understand and describe linear correlation



3

The table shows the lengths and weights of ten pet mice.

| Length (cm) | 8.4  | 8.7  | 9.5  | 9.6  | 10.4 | 11   | 11.3 | 12.2 | 12.5 | 13.6 |
|-------------|------|------|------|------|------|------|------|------|------|------|
| Weight (g)  | 15.4 | 15.9 | 18.4 | 17.9 | 18.8 | 19.5 | 20   | 20.1 | 20.8 | 21.3 |

a) Plot the information on the graph.

The first point has been plotted for you.





Match each scatter graph to a description.

А В X × X X × × X X



× ×

××

Length of child's foot and their height <u></u>

Length of foot and house number \_\_\_\_\_

Outside temperature and number of snowmen made \_\_\_\_

Here is a scatter graph for the age of a tree and the diameter of its trunk.

10-9-8diameter of tree (inches) 6-5-3-2-1 0 0 9 10 5 8 age of tree (years)

Complete the sentence.

As the age of the tree <u>(ncrease</u>, the diameter of the trunk <u>increase</u>)

This shows <u>Positive</u> correlation.

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a) Tick the graph that shows positive correlation.



**b)** Tick the graph that shows negative correlation.



c) Which graph shows the strongest positive correlation?



5

On a TV quiz, contestants can win an amount of money between £1,000 and £75,000

The table shows the ages of 12 contestants and their winnings.

| Age (years)  | 26     | 30     | 18     | 64     | 44    | 31     |
|--------------|--------|--------|--------|--------|-------|--------|
| Winnings (£) | 5,000  | 17,000 | 75,000 | 1,800  | 2,000 | 32,000 |
|              |        |        |        |        |       |        |
| Age (years)  | 48     | 20     | 35     | 42     | 50    | 21     |
| Winnings (£) | 16,000 | 2,000  | 36,000 | 19,000 | 1,900 | 41,000 |

| Age (years)  | 26     | 30     | 18     | 64     | 44    | 31     |
|--------------|--------|--------|--------|--------|-------|--------|
| Winnings (£) | 5,000  | 17,000 | 75,000 | 1,800  | 2,000 | 32,000 |
|              |        |        |        |        |       |        |
| Age (years)  | 48     | 20     | 35     | 42     | 50    | 21     |
| Winnings (£) | 16,000 | 2,000  | 36,000 | 19,000 | 1,900 | 41,000 |

## a) Draw a scatter graph to represent this information.



- b) Describe the type of correlation shown. No correlation
- c) Can you use your scatter graph to estimate the age of a contestant who won £50,000? Discuss with a partner.









Draw a line of best fit on the scatter graph.

Here is the scatter graph for the age of a tree and the diameter of its trunk. 10· 9-8-7. of tree (inches) 6-5 diameter 4-3. 2-1 0 2 3

3

- a) Use your ruler to draw the line of best fit.
- c) Do you think your line needs to go through the origin? Discuss with a partner.
- d) Use your line of best fit to predict the diameter of a tree that is 7 years old.



b) Does your line have a positive or negative gradient? \_\_\_\_\_\_









- a) Draw the line of best fit.
- **b)** Use your line of best fit to predict when the ice cube will have completely melted.





Are the statements always true, sometimes true or never true? Give an example to support your answer.

a) A line of best fit goes through the origin.

Ometimer - dependo an the data

**b)** A line of best fit goes through every point.

Sometimes - depends on the data



It's not a rave book





Here are three scatter graphs.

2

a) Tick the graphs that do not show linear correlation.



**b)** Match the graphs to the statements.

The points seem to follow a negative trend.

The points seem to follow a negative trend to start with but then a positive trend.

The points start to form a horizontal arrangement later on.

3

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B

Α

C

A cup of tea is cooling.

Mo measures its temperature each minute and records it in the table.

| Time (minutes) | Temperature (°C) |
|----------------|------------------|
| 1              | 21.8             |
| 2              | 21.0             |
| 3              | 19.5             |
| 4              | 18.8             |
| 5              | 18.4             |
| 6              | 18.2             |
| 7              | 18.1             |
| 8              | 18.0             |
| 9              | 18.0             |
| 10             | 18.0             |

## a) Plot the information on the graph.



**b)** Discuss with a partner whether the relationship is linear or non-linear.







horizontal arrangement later on

shows a curve that starts to form









number of books read by students

time it takes to complete a puzzle

how much a sunflower grows in a week

Continuous data rainfall for the mondy height of children time it takes to complete a puzzle how much a sunflow grows in a week.



a) Tick the types of data that each graph or chart can be used to represent.

|               | Qualitative | Discrete      | Continuous |
|---------------|-------------|---------------|------------|
| Bar chart     |             |               |            |
| Pie chart     |             |               |            |
| Pictogram     |             |               |            |
| Scatter graph |             | $\checkmark$  |            |
| Line graph    |             | (dashed lire) |            |

**b)** Draw an example of a chart showing discrete data.



c) Draw an example of a chart showing continuous data.





| netimes true or never true? |
|-----------------------------|
|                             |
| vere e.g £3.52              |
|                             |
| alue can be rounded.        |
|                             |
|                             |
| itative data.               |
|                             |
| t students in her class.    |
| crete and continuous data.  |
| e of data.                  |
|                             |
|                             |
|                             |
|                             |



# Read and interpret ungrouped frequency tables

Huan is sorting shapes.

He has made two tables to record the shapes.

a) Complete the tables.

| Colour | Frequency |
|--------|-----------|
| red    | ٩         |
| blue   | 8         |
| yellow | 2         |

| Shape    | Frequency |
|----------|-----------|
| triangle | 5         |
| square   | ٩         |
| circle   | 5         |

b) Use your tables to complete and label the axes on the graphs.





c) Esther looks at Huan's graphs and says that the most popular shape is a red square.

Is Esther correct? <u>No</u>

Explain your answer.

Red is the most popular colour, square is the most popular

shape but red square writ the most popular, blue square in



2

- Filip and Annie go on a jungle walk
- Here is a table of the animals Filip se

| Animals    | Frequency |
|------------|-----------|
| snakes     | 6         |
| monkeys    | 12        |
| elephants  | 2         |
| crocodiles | 1         |
| parrots    | 6         |

- a) Which animal did Filip see the mos
- b) How many different types of animals did he see?
- c) How many animals did he see altogether?
- d) Which animals did he see with the same frequency?

snakes and parrots

e) Filip wanted to see a tiger, but did not see one. How could he add this to his table?

Add a row for tiger

f) Annie saw twice as many monkeys as Filip. Do you think she saw twice as many snakes? Explain your answer.

Here is a list of shoe sizes in a class. 3, 3, 3, 3, 3, 4, 4, 4, 4, 4, 4, 4, 4, 5, 5, 5, 5, 5, 6, 6 Record the sizes in the blank frequency table. You need to write headings in the table.

| • | e | s |  |
|---|---|---|--|
|   |   |   |  |

| ost?   | Monkeys    |   |
|--------|------------|---|
|        | 3          |   |
| male d | id ha caa? | 5 |

|   | -    |   |                                       |      |  |
|---|------|---|---------------------------------------|------|--|
| 5 | with | 0 | createrin                             | O JO |  |
|   |      |   | · · · · · · · · · · · · · · · · · · · |      |  |

No

27

| Shoe size | Frequency |
|-----------|-----------|
| 3         | 5         |
| 4         | 7         |
| 5         | 5         |
| 6         | 2         |

| 4 |   |  |
|---|---|--|
|   |   |  |
|   | 4 |  |
|   |   |  |

The table shows numbers of passengers in cars recorded one morning outside a school.

| Number of passengers | Number of cars |
|----------------------|----------------|
| 1                    | 3              |
| 2                    | 4              |
| 3                    | 1              |
| 4                    | 5              |
| 5                    | 2              |

- a) Ron is working out the total number of passengers.
  - He gets 15. What mistake has he made?

has added up one of the columns He

b) Scott and Alex are working out the total number of passengers.

| Scott's method      | Alex's method |
|---------------------|---------------|
| 1 + 1 + 1 +         | 1 × 3 +       |
| 2 + 2 + 2 + 2 +     | 2 × 4 +       |
| 3 +                 | 3 × 1 +       |
| 4 + 4 + 4 + 4 + 4 + | 4 × 5 +       |
| 5 + 5               | 5 × 2         |
| = 44                | = 44          |

What is the same and what is different between Scott and Alex's methods?

Scott wrote his calculation in expanded answer form

Same

Which method do you prefer?

6

Students counted how many pencils they have in their pencil case. They recorded the information in a table.

| Number of pencils | Frequency | Total frequency |
|-------------------|-----------|-----------------|
| 0                 | 2         | 0               |
| 1                 | 15        | 15              |
| 2                 | 3         | 6               |
| 3                 | 5         | 15              |
| 4                 | 0         | 0               |
| 5                 | 2         | 10              |

## a) Complete the sentences.

The most number of pencils someone has is



**b)** Find the total number of pencils the students have.

The table shows the numbers of pets some students have. Some information is missing from the table.

| Number of pets | Number of |
|----------------|-----------|
| 0              | 5         |
| 1              | 14        |
| 2              | 8         |
| 3              |           |
| 4              | 4         |

The students have 61 pets in total. How many students have 3 pets?

5









# Read and interpret grouped frequency tables



b) Annie decides to use a grouped table.

She makes the following table.

| Number of hoops<br>scored | Tally  | Frequency |
|---------------------------|--------|-----------|
| 0 to 9                    | Ц      | 2         |
| 10 to 19                  | JHT II | 7         |
| 20 to 29                  | 11 774 | 7         |
| 30 to 39                  | N      | 3         |
| 40 to 49                  | 1      | 1         |

What does 10 to 19 mean?

Any value between 10 and 19 inclusive.

- c) Complete the table to represent the data.
- d) How many players scored between 20 and 29 hoops? Explain how you worked this out.
- e) Annie is trying to work out how many players scored more than 30 hoops.

I used the orginal data and counted how many scored more than 30

Explain a quicker way Annie could have worked out her answer.

She could have added the prequencies for 30 to 39 and

40 to 49

20 players take part in a basketball competition.

They have to score as many hoops as they can in one minute.

The results are shown in the table.

| 11 | 15 | 32 | 26 | 18 | 12 | 5  | 26 | 35 | 8  |
|----|----|----|----|----|----|----|----|----|----|
| 22 | 28 | 31 | 20 | 17 | 10 | 20 | 18 | 24 | 41 |

a) Tom tries to put the data into an ungrouped frequency table.

| Number of<br>hoops scored | Tally | Frequency |
|---------------------------|-------|-----------|
| 0                         |       | 0         |
| 1                         |       | 0         |
| 2                         |       | 0         |
| 3                         |       | 0         |
| 4                         |       | 0         |
| 5                         | 1     | 1         |
|                           |       |           |

Give two reasons it might not be good to use ungrouped data.

It's time consuming.

It's difficult to interpret.





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The table shows the number of laps completed by people who attended a go-kart circuit last Saturday.

| Number of laps | Number of people |
|----------------|------------------|
| 0–19           | 17               |
| 20–39          | 48               |
| 40–59          | 21               |
| 60–79          | 6                |
| 80–100         | 3                |

- a) How many people completed between 20 and 39 laps?
- b) How many people attended the go-kart circuit last Saturday?



d) Why can't you tell exactly how many people completed fewer than 25 laps?

We don't know the exact number of people who civilized

each number of Laps.

48

95

86

Mr Patel goes shopping.

He buys 78 items.

The table shows information about some of the prices.

| Cost of item | Number of items |
|--------------|-----------------|
| £0-£1        | 11              |
| £1.01-£2.00  | 26              |
| £2.01-£4.00  | 32              |
| £4.01-£6.00  | 5               |
| £6.00+       | 4               |

a) What does £6.00+ mean?

More than E6

b) How many items cost between £4.01 and £6.00?

Carrots come in 15 kg bags.

Ron counts the number of carrots in 65 bags.

- 18 bags contain fewer than 20 carrots.
- 36 bags contain fewer than 40 carrots.
- 58 bags contain fewer than 60 carrots.
- The greatest number of carrots in a bag is 83

Complete the table.

| Number of carrots in a bag | 0 to 19 | 20 to 39 | 40 to 59 | 60+ |
|----------------------------|---------|----------|----------|-----|
| Number of bags             | 18      | 8        | ຊຊ       | 7   |







# Represent grouped discrete data

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Here are some lists of numerical data. State whether a grouped or ungrouped table would be most appropriate

a) 1, 1, 1, 2, 3, 3, 3, 4, 5, 6, 6, 6, 6

and explain your answer.

Ungrouped - the range of values is quite small, (5)

- **b)** 1, 1, 1, 2, 3, 5, 7, 7, 11, 15, 18, 18, 18, 22, 22, 25, 30, 31 Grouped - the range of values is 30
- c) 2.4, 2.6, 2.7, 2.7, 2.9, 3.2, 4.0, 4.1, 4.5, 5.2 Grouped - there's lots of different values.

Discuss your answers with a partner.

The amounts spent on 20 online purchases are shown. The amounts have been rounded to the nearest £1 £63 £19 £112 £64 £30 £52 £60 £103 £28 £90 £85 £72 £66 £99 £115 £58 £73 £115 £72 £55 Put the data into this grouped frequency table.

| Amount spent | Tally | Frequency |
|--------------|-------|-----------|
| £0-£20       | ١     | 1         |
| £21-£40      | 11    | 2         |
| £41-£60      | 111   | 4         |
| £61-£80      | JHT I | 6         |
| £81-£100     | 1[]   | 3         |
| £101-£120    | 1111  | 4         |

Here are two tables of data from a survey of some houses in a street.

a) Which is a grouped frequency table? Tick your answer.

| House<br>number | Number of<br>houses | Number of people in house | Number of<br>houses |
|-----------------|---------------------|---------------------------|---------------------|
| 0 to 9          | 3                   | 1                         | 4                   |
| 10 to 19        | 8                   | 2                         | 12                  |
| 20 to 29        | 8                   | 3                         | 9                   |
| 30 to 39        | 9                   | 4                         | 3                   |
|                 |                     | Γ                         | 7                   |

b) How many houses have been surveyed so far?

c) House number 30 is not included in the table.

When this house is surveyed there are 3 people living in it.

Show how the tables will change.

| House<br>number | Number of<br>houses |
|-----------------|---------------------|
| 0 to 9          | 3                   |
| 10 to 19        | 8                   |
| 20 to 29        | 8                   |
| 30 to 39        | 10                  |

| Number of people in house | Number of<br>houses |
|---------------------------|---------------------|
| 1                         | 4                   |
| 2                         | 12                  |
| 3                         | 10                  |
| 4                         | 3                   |

28

Here are the scores for an international singing competition.

| Country        | Total |
|----------------|-------|
| Albania        | 90    |
| Australia      | 284   |
| Azerbaijan     | 302   |
| Cyprus         | 109   |
| Czech Republic | 157   |
| Denmark        | 120   |
| Estonia        | 76    |
| France         | 105   |
| Greece         | 74    |
| Iceland        | 232   |
| Italy          | 472   |

| Country         | Total |
|-----------------|-------|
| Malta           | 107   |
| Netherlands     | 498   |
| North Macedonia | 305   |
| Norway          | 331   |
| Russia          | 370   |
| San Marino      | 77    |
| Serbia          | 89    |
| Slovenia        | 105   |
| Sweden          | 334   |
| Switzerland     | 364   |

a) Put the same data into both of these tables.



| Score   | Tally | Frequency |
|---------|-------|-----------|
| 0–100   | Ш     | 5         |
| 101–200 | ШI    | 6         |
| 201–300 | [l    | 2         |
| 301–400 | ЩΊΙ   | 6         |
| 401–500 | 11    | 2         |

| Score   | Tally     | Frequency |
|---------|-----------|-----------|
| 50–200  | LHT LHT I | 11        |
| 201–400 |           | 8         |

2

401–500

Table 2

b) Which table in part a) is more useful? <u>Table 1</u>

Explain your answer.

You can interpret it more accurately

c) Write one advantage of the grouped data and one disadvantage.

Advantage: it's easier and more exident to record Disaduantage: it's len accurate when you interpret it.

The number of cats spotted in the garden is recorded every day for a year.

| Number of cats | Frequency |
|----------------|-----------|
| 0–2            | 182       |
| 3–5            | 43        |
| 6–10           | 70        |
| 10+            | 29        |

a) Has the whole year been recorded? How do you know?

No, the frequency add up to 324 there's 365 days in a year

3 cats were spotted.

each interval

**c)** the table.

more than 10

The table shows the number of cakes sold in a bakery every day in March. Complete the table using the information provided.

| Number of cakes sold | 0 to 5 |  |
|----------------------|--------|--|
| Number of days       | q      |  |

- On 6 days there were beween 6 and 10 cakes sold.
- On 10 days there were over 15 cakes sold.
- 5 or fewer cakes were sold on 3 more days than between 6 and 10 cakes.

**b)** Explain why you cannot use the table to work out the number of days

We don't know exactly how many cars were seen in

Explain how the maximum number of cats seen cannot be read from

We only know there's more than 10 not how many







## Represent continuous data grouped into equal classes



Here are the heights of 20 plants recorded to 1 decimal place.

| 15.6 cm | 25.4 cm | 13.9 cm | 12.8 cm | 31.1 cm |
|---------|---------|---------|---------|---------|
| 8.6 cm  | 21.6 cm | 20.8 cm | 30.0 cm | 22.0 cm |
| 47.1 cm | 43.5 cm | 27.6 cm | 9.5 cm  | 28.0 cm |
| 20.0 cm | 47.9 cm | 32.5 cm | 4.3 cm  | 17.0 cm |

### a) Complete the table.

| Height, $h$ (cm)   | Tally  | Frequency |
|--------------------|--------|-----------|
| 0 < <i>h</i> ≤ 10  | I)     | 3         |
| 10 < <i>h</i> ≤ 20 | IHT    | 5         |
| 20 < <i>h</i> ≤ 30 | JHT II | 7         |
| 30 < <i>h</i> ≤ 40 | []     | 2         |
| 40 < <i>h</i> ≤ 50 | 111    | 3         |

- b) Use the table to work out how many plants were taller than 20 cm.
- of width 3?

There would be too m was 3

d) Which interval has the highest frequency?  $20 < h \le 30$ 

Tick the statement that matches the following inequality. 10 < *t* ≤ 20

t lies between 10 and 20

t lies between 10 and 20, including 20

t lies between 10 and 20, including 10

t lies between 10 and 20, including 10 and 20

Tommy is recording the times it takes people to complete a race. He wants to put the data into a table.

This is the table he makes to record the results.

| Time taken             | Frequency |
|------------------------|-----------|
| 0 to 1 minute          |           |
| 2 minutes to 3 minutes |           |
| 3 minutes to 4 minutes |           |
| 4 minutes to 5 minutes |           |

a) Suggest two times that would be difficult to put into this table.

3 minutes and 1.5 minutes.

**b)** What advice might you give Tommy on how to change his table?

He needs to ensure any value can be recorded

in the table.



c) Why do you think intervals of width 10 were chosen and not intervals

| an | intervals | ĊL. | the | width |
|----|-----------|-----|-----|-------|
| J  |           |     |     |       |

| The table shows the time of the first goal in 100 football matches | The table shows th | e time of | the first aoal | in 100 football | matches. |
|--|--------------------|-----------|----------------|-----------------|----------|
|--|--------------------|-----------|----------------|-----------------|----------|

| Time of first goal, $t$ (minutes) | Number of matches |
|-----------------------------------|-------------------|
| 0 < <i>t</i> ≤ 15                 | 3                 |
| 15 < <i>t</i> ≤ 30                | 15                |
| 30 < <i>t</i> ≤ 45                | 27                |
| 45 < <i>t</i> ≤ 60                | 32                |
| 60 < <i>t</i> ≤ 75                | 14                |
| 75 < <i>t</i> ≤ 90                | 9                 |

- a) In how many matches was the first goal scored between 15 and 30 minutes, including 30 minutes?
- b) The first goal in one of these matches was scored after exactly 75 minutes.

Which interval does this goal appear in? \_\_\_\_\_

- c) In how many matches was the first goal scored in less than or equal to 45 minutes?
- d) Is it possible to work out in how many matches the first goal was scored in the 30th minute? Explain your answer.

e) Is this statement true or false?

20% of the first goals are scored in the last third of a football match.

The table shows the amount of time taken to complete a walk.

| Time taken, $t$ (hours) | Frequency |
|-------------------------|-----------|
| 2 < <i>t</i> ≤ 4        | 15        |
| 4 < <i>t</i> ≤ 6        | 26        |
| 6 < <i>t</i> ≤ 8        | 38        |
| 8 < <i>t</i> ≤ 10       | 40        |

a) What percentage of people took more than 6 hours?

b) Estimate how many people took between 5 and 8 hours.

My estimate is people.

Explain your reasoning.

c) The longest time anyone took was 9 hours and 18 minutes. Estimate the range of the data.





# Represent data in two-way tables



The masses of 25 melons and pumpkins are shown. 2

| Melons   |         |         |         |         |         |         |
|----------|---------|---------|---------|---------|---------|---------|
| 11.6 kg  | 8.8 kg  | 9.5 kg  | 10.5 kg | 7.8 kg  | 9.2 kg  | 12.8 kg |
| 7.2 kg   | 10.9 kg | 11.0 kg | 9.9 kg  | 10.2 kg | 10.0 kg | 6.8 kg  |
| Pumpkins |         |         |         |         |         |         |
| 16.4 kg  | 18.2 kg | 10.5 kg | 9.5 kg  | 12.8 kg | 14.2 kg | 15.0 kg |
| 17.2 kg  | 11.5 kg | 11 kg   | 10.7 kg |         |         |         |

| 11.6 kg  | 8.8 kg  | 9.5 kg  | 10.5 kg | 7.8 kg  | 9.2 kg  | 12.8 kg |
|----------|---------|---------|---------|---------|---------|---------|
| 7.2 kg   | 10.9 kg | 11.0 kg | 9.9 kg  | 10.2 kg | 10.0 kg | 6.8 kg  |
| Pumpkins |         |         |         |         |         |         |
| 16.4 kg  | 18.2 kg | 10.5 kg | 9.5 kg  | 12.8 kg | 14.2 kg | 15.0 kg |
| 17.2 kg  | 11.5 kg | 11 kg   | 10.7 kg |         |         |         |

## a) Complete the two-way table.

|         | 10 kg or lighter<br>than 10 kg | Heavier than<br>10 kg | Total |
|---------|--------------------------------|-----------------------|-------|
| Melon   | 8                              | 6                     | 14    |
| Pumpkin | l                              | 10                    | LI    |
| Total   | Р                              | 16                    | 25    |

## **b)** Write two things that you can see from the two-way table.

Various answers

in total?

| Look  | at   | the | toto |
|-------|------|-----|------|
| -pump | kin. |     |      |

20 students were asked whether they had a pet.

The results are shown in the table.

| Name      | Year | Yes/No |
|-----------|------|--------|
| Maria     | Y7   | Yes    |
| Nancy     | Y7   | Yes    |
| Amy       | Y7   | Yes    |
| Aisha     | Y8   | No     |
| Dominique | Y7   | No     |
| Lucy      | Y8   | Yes    |
| Hannah    | Y8   | No     |
| Zoe       | ¥7   | Yes    |
| Millie    | Y8   | No     |
| Nima      | Y8   | No     |

| Name    | Year | Yes/No |
|---------|------|--------|
| Tim     | Y7   | Yes    |
| Graeme  | Y7   | Yes    |
| Jeff    | Y8   | No     |
| Harry   | Y7   | No     |
| Hassan  | Y8   | No     |
| Marcus  | Y7   | No     |
| Theo    | Y7   | No     |
| William | Y7   | Yes    |
| Fred    | Y7   | No     |
| Mika    | Y8   | Yes    |

a) Use tallies to complete the two-way table.

|        | Owns a pet | Does not<br>own a pet | Total          |
|--------|------------|-----------------------|----------------|
| Year 7 |            | IHT                   | LHT HT II      |
| Year 8 | 11         | ITTI                  | 114T (11       |
| Total  |            | LITI INT I            | THE IN THE THE |

**b)** Now complete the table of frequencies.

|        | Owns a pet | Does not<br>own a pet | Total |
|--------|------------|-----------------------|-------|
| Year 7 | 7          | 5                     | 12    |
| Year 8 | 2          | 6                     | ଝ     |
| Total  | 9          | lı                    | 20    |

c) How can you tell from the table how many pumpkins were weighed

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The table shows information about 200 people who were in a gym at a particular time.

|         | 60 years old<br>or younger | Over 60<br>years old | Total |
|---------|----------------------------|----------------------|-------|
| Males   | 22                         | 45                   | 67    |
| Females | 19                         | \ <b>(</b> 4         | 133   |
| Total   | 41                         | 159                  | 200   |

- a) Complete the table.
- b) How many males over 60 years were in the gym?
- c) How many males in total were in the gym?

d) How many females were in the gym?

133

67

45

e) How many females over 60 years were in the gym?



- f) What time of the day do you think this data was collected?
  - Give reasons for your answer.

Various answers with correct justification.

The two-way table shows the number of children in a school who have school lunch.

Complete the two-way table.

|                 | Year 4 | Year 5     | Year 6 | Total |
|-----------------|--------|------------|--------|-------|
| School lunch    | 12     | <b>2</b> 4 | 22     | 58    |
| No school lunch | 18     | 8          | 6      | 32    |
| Total           | 30     | 32         | 28     | 90    |

40 people take part in a show. The show is made up of singers, dancers and actors. Here is some information.

- There are 22 males in the show.
- 15 of the males are dancers.
- There are 8 female singers.
- Of the 7 actors, 2 are male.
- a) Draw a two-way table to show this information.

|        | Süngers | Dancers | Actors | Total |
|--------|---------|---------|--------|-------|
| Male   | 5       | 15      | 2      | 22    |
| Female | 8       | 5       | 5      | १८    |
| Total  | 13      | 20      | 7      | 40    |
|        |         |         |        |       |

**b)** How many dancers are in the show?



