Chapter 15: Data Through Pictures

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Exercise 15.1 — Child TV Reporter — Reading a Tally Table (p. 179–180)

Q1 Samaira and Kabir collected TV-watching data from 35 friends. They recorded the number of children for each time slot in a table. Fill in the table by counting the faces in the notebook picture.

No. of Hours Spent Watching TV | No. of Children
1/2 hour | ___
1 hour | ___
1 1/2 hours | ___
2 hours | ___
More than 2 hours | ___

SOLUTION

Count the faces in the notebook picture, grouping by the label each face shows.

1/2 hour: 9 children
1 hour: 13 children
1 1/2 hours: 7 children
2 hours: 3 children
More than 2 hours: 3 children

Check: 9 + 13 + 7 + 3 + 3 = 35 (matches the 35 friends surveyed) ✓

Answer: 1/2 hour = 9, 1 hour = 13, 1 1/2 hours = 7, 2 hours = 3, More than 2 hours = 3. Total = 35.

Q2 How many children watch TV for more than half an hour?

SOLUTION

Children who watch more than 1/2 hour = those who watch 1 hr, 1 1/2 hr, 2 hr, or more than 2 hr.
= 13 + 7 + 3 + 3 = 26

Answer: 26 children watch TV for more than half an hour.

Q3 How many children watch TV for less than two hours?

SOLUTION

Children who watch less than 2 hours = those who watch 1/2 hr, 1 hr, or 1 1/2 hr.
= 9 + 13 + 7 = 29

Answer: 29 children watch TV for less than two hours.

Q4 The number of children who watch TV for more than two hours is _____.

SOLUTION

From the table: More than 2 hours = 3 children.

Answer: 3

Q5 More children watch TV for two hours than half an hour. (True/False)

SOLUTION

Children who watch 2 hours = 3.
Children who watch 1/2 hour = 9.
3 < 9, so the statement is FALSE.

Answer: False. Only 3 children watch for 2 hours, but 9 children watch for half an hour.

Exercise 15.2 — Stock-Taking in a Shop — Reading a Pictograph (p. 180–181)

Q1 Joseph Uncle's shop has a pictograph where 1 icon = 5 items. The pictograph shows:
- Toys row: 8 train icons
- Board games row: 10 board-game icons
- Sports items row: 12 badminton-racket icons

(1) How many toys does Joseph Uncle have?
(2) How many board games does Joseph Uncle have?
(3) How many total play items does Joseph Uncle have?

SOLUTION

Scale: 1 icon = 5 items.

(1) Toys: 8 icons x 5 = 40 toys
(2) Board games: 10 icons x 5 = 50 board games
(3) Sports items: 12 icons x 5 = 60 sports items
Total = 40 + 50 + 60 = 150 play items

Answer: (1) 40 toys (2) 50 board games (3) 150 total play items

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Q2 Is there any other scale you can use to make the pictograph? Choose your scale and show the same data using a pictograph in your notebook.

SOLUTION

Yes, you can choose a different scale.
Example: use 1 icon = 10 items.

With this scale:
Toys (40 items): 4 full icons
Board games (50 items): 5 full icons
Sports items (60 items): 6 full icons

Draw the icons in a table with three rows, one for each item type.
Write the scale clearly: 1 icon = 10 items.

Answer: Yes. Example: use 1 icon = 10 items. Then Toys = 4 icons, Board games = 5 icons, Sports items = 6 icons. Draw the pictograph in your notebook with this scale shown clearly.

Exercise 15.3 — Two-wheelers on the Road — Reading a Pictograph (p. 181–182)

Q1 Deepti's pictograph shows two-wheelers passing her house in one hour. Scale: 1 icon = 3 two-wheelers.
Monday: 8 icons, Wednesday: 4 icons, Friday: 12 icons.

1. Which day had the most two-wheelers passing her house?

SOLUTION

Monday: 8 x 3 = 24 two-wheelers
Wednesday: 4 x 3 = 12 two-wheelers
Friday: 12 x 3 = 36 two-wheelers

Friday had the most (36 two-wheelers).

Answer: Friday

Q2 How many total two-wheelers did she record over three days?

SOLUTION

Monday: 8 x 3 = 24
Wednesday: 4 x 3 = 12
Friday: 12 x 3 = 36
Total = 24 + 12 + 36 = 72

Answer: 72 two-wheelers in total

Q3 How many fewer two-wheelers were seen on Wednesday than on Monday?

SOLUTION

Monday = 24, Wednesday = 12
Difference = 24 - 12 = 12

Answer: 12 fewer two-wheelers on Wednesday than on Monday

Q4 How many more two-wheelers were seen on Friday than on Wednesday?

SOLUTION

Friday = 36, Wednesday = 12
Difference = 36 - 12 = 24

Answer: 24 more two-wheelers on Friday than on Wednesday

Q5 Choose any other scale and represent the same data using a pictograph in your notebook.

SOLUTION

Choose a different scale, for example: 1 icon = 5 two-wheelers.

With this scale:
Monday (24): 4 full icons + 4 remaining (not clean). Approximately 4.8 icons.
Wednesday (12): 2.4 icons (not clean).
Friday (36): 7.2 icons (not clean).

Tip: Choose a scale that divides your data evenly.
1 icon = 4 two-wheelers: Monday = 6 icons, Wednesday = 3 icons, Friday = 9 icons (all exact — a good choice).
1 icon = 6 two-wheelers: Monday = 4 icons, Wednesday = 2 icons, Friday = 6 icons (also exact).
1 icon = 3 also works: Monday = 8, Wednesday = 4, Friday = 12 (the original scale).

Draw your chosen pictograph in your notebook with the scale clearly written.

Answer: Activity: Choose a scale (e.g. 1 icon = 4 two-wheelers), draw a table with three rows for Monday, Wednesday, Friday, fill in the icons, and write the scale. Monday = 24, Wednesday = 12, Friday = 36 two-wheelers.

Exercise 15.4 — Recording a Day — Reading Pictograph and Bar Graph (p. 182–183)

Q1 Raman's pictograph (1 circle = 1 hour): Sleeping = 9 hr, School = 6 hr, Studying = 2 hr, Eating and playing = 6 hr, Other = 1 hr.
Sheela's bar graph: Sleeping = 8 hr, School = 7 hr, Studying = 4 hr, Eating and playing = 3 hr, Other = 2 hr.

Whose daily routine shows more time spent on sleeping?

SOLUTION

Raman sleeps 9 hours.
Sheela sleeps 8 hours.
9 > 8, so Raman spends more time sleeping.

Answer: Raman (9 hours of sleep vs Sheela's 8 hours)

Q2 Who spends more hours in the school?

SOLUTION

Raman: 6 hours in school.
Sheela: 7 hours in school.
7 > 6, so Sheela spends more time in school.

Answer: Sheela (7 hours vs Raman's 6 hours)

Q3 How many more hours does Sheela spend studying compared to Raman?

SOLUTION

Sheela studies 4 hours.
Raman studies 2 hours.
4 - 2 = 2 more hours.

Answer: 2 more hours (Sheela studies 4 hours, Raman studies 2 hours)

Q4 Is there any activity on which they spend the same amount of time? If yes, name the activity.

SOLUTION

Compare each activity:
Sleeping: Raman 9, Sheela 8 — different
School: Raman 6, Sheela 7 — different
Studying: Raman 2, Sheela 4 — different
Eating and playing: Raman 6, Sheela 3 — different
Other: Raman 1, Sheela 2 — different

No activity has the same number of hours for both.

Answer: No, there is no activity on which they spend the same amount of time.

Q5 Based on their data, whose routine do you think is more balanced? Why?

SOLUTION

A balanced routine gives enough time to sleep, study, eat, play, and do other things without spending too much time on just one activity.

Sheela's routine looks more balanced:
- She sleeps 8 hours (still enough rest).
- She studies 4 hours (more than Raman).
- She has 3 hours for eating and playing.
- Raman spends 9 hours sleeping and only 2 hours studying, which is less study time.

Students may give different answers with their own reasons — any well-explained answer is correct.

Answer: Sheela's routine is more balanced — she sleeps enough (8 hr), studies more (4 hr), and also has time for eating, playing, and other activities. (Answers may vary.)

Exercise 15.5 — Day in My Life — Drawing a Bar Graph (p. 183–184)

Q1 Record your own daily routine (24 hours) in hours, then make a bar graph of the time you spend on different activities (sleeping, time in school, studying, eating, and others).

SOLUTION

This is a hands-on activity. Here is a model routine to guide you:

Activity	No. of Hours
Sleeping	9
Time in school	6
Studying	2
Eating	2
Other	5
Total	24

To draw the bar graph:

1. Draw a horizontal line (x-axis) and label each activity below it.
2. Draw a vertical line (y-axis) and mark equal steps: 0, 1, 2, 3, ... up to the highest number of hours.
3. For each activity, draw a vertical bar reaching the matching number on the y-axis.
4. Give the graph a title like 'My Day in Hours'.

Answer: Activity: Fill in your own hours (must total 24 hr) and draw the bar graph. See the model routine above for an example.

Exercise 15.6 — Whose Index Finger is Longer? — Hands-on Bar Graph Activity (p. 184–185)

Q1 Cut paper strips equal to each friend's index finger length. Paste them in the bar graph. Then answer:
1. Whose index finger is the longest?
2. The length of the longest index finger is ___ cm.
3. The smallest index finger is ___ cm long.
4. It belongs to ___.

SOLUTION

This is a hands-on activity. The answers depend on your own measurements.

How to do it:
1. Give each friend a paper strip of the same width.
2. Each friend marks their index finger length on the strip and tears off the rest.
3. Paste the strips side by side along the horizontal base of the bar graph (each strip = one bar).
4. Read the height of each bar against the cm scale on the y-axis.

Example (your answers will be different):
If the strips measure: Mine = 6 cm, Friend A = 7 cm, Friend B = 5.5 cm, Friend C = 6.5 cm, Friend D = 5 cm,
then: Longest = Friend A (7 cm), Shortest = Friend D (5 cm).

Fill in based on YOUR actual measurements.

Answer: Activity: answers depend on your own and your friends' index finger lengths. Paste the strips, read the bar graph, and write the name with the longest strip, its length, the shortest length, and whose finger it is.

Exercise 15.7 — Food Wastage in the School Canteen — Reading a Bar Graph (p. 185–186)

Q1 The bar graph shows food wasted (in kg) each weekday:
Sandwich (Monday) = 5 kg, Paratha (Tuesday) = 6 kg, Khichdi (Wednesday) = 8 kg, Puri-Sabzi (Thursday) = 7 kg, Idli-Sambar (Friday) = 4 kg.

Which food item had the highest amount of wastage?

SOLUTION

Read the bar heights: Sandwich 5, Paratha 6, Khichdi 8, Puri-Sabzi 7, Idli-Sambar 4.
The tallest bar is Khichdi at 8 kg.

Answer: Khichdi (8 kg wasted on Wednesday)

Q2 Which food item had the least amount of wastage?

SOLUTION

The shortest bar is Idli-Sambar at 4 kg.

Answer: Idli-Sambar (4 kg wasted on Friday)

Q3 How much total food wastage was recorded in these days?

SOLUTION

Total = 5 + 6 + 8 + 7 + 4 = 30 kg

Answer: 30 kg total food wastage over the five days

Q4 If 1 kg of food waste can feed 3 children, how many children could have been fed with the total food wasted?

SOLUTION

Total food wasted = 30 kg.
Children fed = 30 x 3 = 90 children.

Answer: 90 children could have been fed

Q5 _____ day had less food wastage than _____ day.

SOLUTION

Compare any two days where one has less wastage than the other.
For example: Idli-Sambar Friday (4 kg) < Sandwich Monday (5 kg).
So: Friday had less food wastage than Monday.

Other valid examples: Tuesday (6 kg) < Thursday (7 kg), etc.

Answer: Friday (Idli-Sambar, 4 kg) had less food wastage than Monday (Sandwich, 5 kg). (Any valid pair is correct.)

Q6 If the same food items are to be repeated next week, can you predict which food item is likely to be wasted the most?

SOLUTION

Based on this week's data, Khichdi was wasted the most (8 kg on Wednesday).
If the same pattern continues, Khichdi is likely to be wasted the most next week too.

Answer: Khichdi is likely to be wasted the most, since it had the highest wastage (8 kg) this week.

Exercise 15.8 — True or False — Observing a Picture (p. 187)

Q1 Look at the picture of children in uniform carefully. Find which statements are True or False.

(a) All girls are wearing glasses.
(b) More boys are holding books than girls.
(c) The number of children holding books is greater than the number of children wearing caps.
(d) Some children are wearing both glasses and caps.
(e) 10 children are wearing caps on their heads.
(f) More than half of the children are wearing glasses.
(g) The number of boys wearing glasses is greater than the number of girls wearing glasses.
(h) There is no child who has all three items — a cap, a book, and a backpack.

SOLUTION

Observe the picture carefully and count each group.

(a) All girls are wearing glasses.
FALSE — Some girls are not wearing glasses.

(b) More boys are holding books than girls.
FALSE — More girls are holding books than boys.

(c) The number of children holding books is greater than the number wearing caps.
TRUE — More children hold books than wear caps.

(d) Some children are wearing both glasses and caps.
TRUE — You can see children who have both glasses and a cap.

(e) 10 children are wearing caps.
FALSE — The number of children wearing caps is not 10 (it is fewer).

(f) More than half of the children are wearing glasses.
TRUE — More than half the children in the picture wear glasses.

(g) The number of boys wearing glasses is greater than the number of girls wearing glasses.
TRUE — More boys in the picture wear glasses than girls.

(h) There is no child who has all three: a cap, a book, and a backpack.
TRUE — No single child in the picture carries all three at once.

Answer: (a) FALSE (b) FALSE (c) TRUE (d) TRUE (e) FALSE (f) TRUE (g) TRUE (h) TRUE