DATA AROUND US

Discover the stories hidden in everyday information

TABLES	GRAPHS	SURVEYS	INSIGHTS

Inside this pack: 12 hands-on activities, data tables, graph-reading challenges, mini investigations and a complete answer key.

COLLECT • ORGANISE • REPRESENT • DISCOVER

Name: _____ Date: _____

Welcome, Data Detective!

Data is information we collect about the world around us. It can tell us which fruit people like best, how the weather changes, how a team performs or how we spend our time. In this pack, you will collect, organise, display and interpret data.

Remember: Read titles and labels carefully. Check the scale on a graph. When you make a graph, give it a clear title and label both axes where needed.

YOUR DATA TOOLKIT

tally marks	Quick marks used to count responses
frequency table	A table showing how often each answer appears
bar graph	Bars compare amounts in different categories
line graph	Shows how values change over time
pictograph	Pictures or symbols represent quantities; check the key
mode	The value or category that appears most often

A useful check: The total of all frequencies should match the number of responses collected.

1. The Class Survey

A group of 20 children voted for their favourite after-school activity. The results are below.

DATA DETECTIVE • LOOK CLOSER

Data: Reading – 5 votes; drawing – 4 votes; playing outdoors – 7 votes; music – 4 votes.

1. Which activity received the most votes?

_____

2. Which two activities received the same number of votes?

_____

3. How many votes were cast altogether?

_____

4. How many more votes did playing outdoors receive than drawing?

_____

5. If 3 more children voted for reading, what would its new total be?

_____

MINI CHALLENGE

Create a simple bar graph using the results. Give it a title and label the categories and number of votes.

_____

_____

2. Shopping Data Detective

A shop recorded the number of reusable water bottles sold over five days.

DATA DETECTIVE • LOOK CLOSER

Data: Monday – 12; Tuesday – 18; Wednesday – 15; Thursday – 21; Friday – 24.

1. On which day were the most bottles sold?

_____

2. How many bottles were sold on Monday and Tuesday combined?

_____

3. How many more bottles were sold on Friday than Monday?

_____

4. Find the total number of bottles sold during the five days.

_____

5. What is the average number sold per day?

_____

MINI CHALLENGE

Draw a bar graph for the five days. Use a scale that counts in 3s or another sensible equal step.

_____

_____

3. Weather Watchers

A weather station recorded the afternoon temperature during one week.

DATA DETECTIVE • LOOK CLOSER

Data: Monday 22°C; Tuesday 24°C; Wednesday 23°C; Thursday 27°C; Friday 26°C; Saturday 28°C; Sunday 25°C.

1. Which day was the warmest?

_____

2. Which day was the coolest?

_____

3. What is the difference between the highest and lowest temperatures?

_____

4. How many days had a temperature of 25°C or higher?

_____

5. Find the total of all seven temperatures.

_____

MINI CHALLENGE

Draw a line graph to show the temperatures across the week. Join the points in order.

_____

_____

4. Sports Statistics

A school team scored the following number of goals in six matches.

DATA DETECTIVE • LOOK CLOSER

Data: Match 1 – 2; Match 2 – 1; Match 3 – 4; Match 4 – 3; Match 5 – 2; Match 6 – 6.

1. How many goals were scored in all?

_____

2. In which match did the team score the most goals?

_____

3. How many matches had 2 or more goals?

_____

4. What was the difference between the highest and lowest scores?

_____

5. What was the most common score?

_____

MINI CHALLENGE

Create a bar graph of the goals scored in each match. What does your graph make easy to notice?

_____

_____

5. Pet Popularity Poll

A neighbourhood survey asked 30 people which pet they liked best.

DATA DETECTIVE • LOOK CLOSER

Data: Cats – 12; dogs – 10; fish – 5; birds – 3.

1. Which pet was the most popular?

_____

2. How many people chose cats or dogs?

_____

3. How many more people chose cats than birds?

_____

4. What fraction of the people chose fish?

_____

5. How many people did not choose dogs?

_____

MINI CHALLENGE

Make a pictograph. Use one symbol to represent 1 person and include a clear key.

_____

_____

6. Travel Data Tracker

A family recorded the time taken for four journeys.

DATA DETECTIVE • LOOK CLOSER

Data: Journey A – 35 minutes; Journey B – 50 minutes; Journey C – 40 minutes; Journey D – 65 minutes.

1. Which journey took the longest?

_____

2. Which journey took the shortest?

_____

3. Find the difference between the longest and shortest journeys.

_____

4. What was the total time for all four journeys?

_____

5. What was the average journey time?

_____

MINI CHALLENGE

Arrange the journey times from shortest to longest and display them in a bar graph.

_____

_____

7. The Weekly Time Survey

A person recorded time spent on different activities in one day.

DATA DETECTIVE • LOOK CLOSER

Data: Sleep – 8 hours; school/work – 7 hours; hobbies – 2 hours; screen time – 3 hours; meals and other activities – 4 hours.

1. How many hours are recorded altogether?

_____

2. Which activity takes the most time?

_____

3. How many hours are spent on hobbies and screen time together?

_____

4. How much more time is spent sleeping than on screen time?

_____

5. What percentage of the 24-hour day is spent sleeping?

_____

MINI CHALLENGE

Create a bar graph showing the hours spent on each activity. Write one observation about the data.

_____

_____

8. Fruit & Vegetable Market

A stall counted the number of items sold in one morning.

DATA DETECTIVE • LOOK CLOSER

Data: Apples – 28; bananas – 35; oranges – 21; carrots – 16; tomatoes – 25.

1. Which item sold the most?

_____

2. Which item sold the least?

_____

3. How many apples and oranges were sold altogether?

_____

4. How many more bananas than carrots were sold?

_____

5. Find the total number of items sold.

_____

MINI CHALLENGE

Group the fruit and vegetables separately. Which group has the greater total? Show your calculation.

_____

_____

9. Read the Graph Challenge

A library recorded the number of books borrowed by four groups in one week.

DATA DETECTIVE • LOOK CLOSER

Data: Group A – 18 books; Group B – 24 books; Group C – 15 books; Group D – 27 books.

1. How many books were borrowed altogether?

_____

2. Which group borrowed the most books?

_____

3. How many more books did Group D borrow than Group C?

_____

4. If Group A borrowed 6 more books next week, what would its total be?

_____

5. Arrange the groups from fewest to most books borrowed.

_____

MINI CHALLENGE

Sketch a bar graph from the information. Check that your scale includes the largest value.

_____

_____

10. The Mystery Table

A survey asked 20 people how they travelled to a local park. Some table entries are missing.

DATA DETECTIVE • LOOK CLOSER

Data: Walking – 6; bicycle – 4; bus – 5; car – ?; total – 20.

1. How many people travelled by car?

_____

2. Which method was used by the most people?

_____

3. How many people used walking or bicycle?

_____

4. How many more people travelled by bus than by bicycle?

_____

5. If 2 people who travelled by car had walked instead, what would the new walking total be?

_____

MINI CHALLENGE

Complete the frequency table and write one question of your own that can be answered from it.

_____

_____

11. Probability & Predictions

A bag contains 5 red counters, 3 blue counters and 2 yellow counters. One counter is picked without looking.

DATA DETECTIVE • LOOK CLOSER

0. How many counters are in the bag altogether?

_____

1. Which colour is most likely to be picked?

_____

2. Which colour is least likely to be picked?

_____

3. What is the probability of picking a blue counter? Write it as a fraction.

_____

4. What is the probability of picking a green counter?

_____

5. If one red counter is added, how many counters will be in the bag?

_____

MINI CHALLENGE

Predict the colour you might pick most often in 20 tries. Then test your prediction by doing 20 draws, replacing the counter each time, and recording results.

_____

_____

12. Create Your Own Data Story

Become a data researcher! Choose a simple question that you can ask family members or friends.

DATA DETECTIVE • LOOK CLOSER

0. Write your survey question. Make sure it has clear answer choices.

_____

_____

1. Ask at least 5 people and record each response in a tally or frequency table.

_____

_____

2. Which answer appeared most often? Which appeared least often?

_____

_____

3. Create a bar graph or pictograph to show your results.

_____

_____

4. Write three facts you learned from your data.

_____

_____

_____

MINI CHALLENGE

Give your data story a title. Make sure your table, graph and written observations all match.

_____

_____

ANSWER KEY

Use these suggested answers to check the activities. For graph-making tasks, answers should match the supplied data, have a suitable scale and include a clear title and labels. Open-ended investigations will vary.

CHECK YOUR DATA

1. The Class Survey

1. Playing outdoors

2. Reading and music

3. 20 votes

4. 3 votes

5. 8 votes

6. Bar heights: 5, 4, 7, 4.

2. Shopping Data Detective

1. Friday

2. 30 bottles

3. 12 bottles

4. 90 bottles

5. 18 bottles per day

6. Bars: 12, 18, 15, 21, 24.

3. Weather Watchers

1. Saturday

2. Monday

3. 6°C

4. 4 days

5. 175°C total (average 25°C)

6. Line graph points should follow Monday to Sunday in order.

4. Sports Statistics

1. 18 goals

2. Match 6

3. 5 matches

4. 5 goals

5. 2 goals

6. Bar heights: 2, 1, 4, 3, 2, 6.

5. Pet Popularity Poll

1. Cats

2. 22 people

3. 9 people

4. 5/30 = 1/6

5. 18 people

6. One symbol per person; cats 12, dogs 10, fish 5, birds 3.

6. Travel Data Tracker

1. Journey D

2. Journey A

3. 30 minutes

4. 190 minutes (3 hours 10 minutes)

5. 47.5 minutes

6. 35, 40, 50, 65 minutes.

7. The Weekly Time Survey

1. 24 hours

2. Sleep

3. 5 hours

4. 5 hours

5. 8/24 = 1/3 = 33■%

6. Graph bars: 8, 7, 2, 3, 4 hours.

8. Fruit & Vegetable Market

1. Bananas

2. Carrots

3. 49 items

4. 19 items

5. 125 items

6. Fruit total = 84; vegetables total = 41. Fruit has the greater total.

9. Read the Graph Challenge

1. 84 books

2. Group D

3. 12 books

4. 24 books

5. C, A, B, D

6. Graph bars: 18, 24, 15, 27.

10. The Mystery Table

1. 5 people

2. Walking

3. 10 people

4. 1 person

5. 8 people

6. Frequency totals: 6 + 4 + 5 + 5 = 20.

11. Probability & Predictions

1. 10 counters

2. Red

3. Yellow

4. 3/10

5. 0 (impossible)

6. 11 counters

7. Results of the 20 trials will vary.

12. Create Your Own Data Story

1. Answers vary. Check that the survey question is clear, responses are counted accurately, the graph matches the table and observations are supported by the data.

WELL DONE, DATA DETECTIVE!

You collected information, spotted patterns, compared results and told stories with data. Keep asking questions and looking for the maths hidden in everyday life!