

Track the Change

Read, compare, and use line graph data.

GRADE 4 • 4.PS.1

4.PS.1 "The student will apply the data cycle (formulate questions; collect or acquire data; organize and represent data; and analyze data and communicate results) with a focus on line graphs..."

NAME _____

DATE _____

LINE GRAPH CLUES

A line graph shows how data change over time. Give the graph a clear title, put time on the horizontal axis, and put the measured amount on the vertical axis. Use equal whole-number steps on the axes.

WORKED EXAMPLE

A line graph shows a frog's jumps:
Monday 12, Tuesday 15, Wednesday 18. How many more jumps did it make on Wednesday than Monday?

1. Read Wednesday: 18 jumps.
2. Read Monday: 12 jumps.
3. Subtract: $18 - 12 = 6$.

Answer: 6 more jumps

PRACTICE 5 problems

- 1** PRACTICE 1. A line graph shows birds seen: Monday 4, Tuesday 7, Wednesday 5. What is the greatest number of birds seen?

ANSWER _____

- 2** PRACTICE 2. A line graph shows a plant's height: Monday 2 cm, Tuesday 5 cm, Wednesday 9 cm. How much did the plant grow from Monday to Wednesday?

ANSWER _____

- 3** PRACTICE 3. A line graph shows bike riders: Saturday 4, Sunday 9, Monday 2. How many riders were there on Saturday and Sunday altogether?

ANSWER _____

- 4** PRACTICE 4. Write a question that a line graph of your piano practice minutes each day could answer.

ANSWER _____

- 5** PRACTICE 5. A line graph shows pages read each day. What should the horizontal axis and vertical axis be labeled?

ANSWER _____

APPLY IT Show your work

- 1** APPLY 1. A game club's line graph shows points earned in a contest: Friday 8, Saturday 13, Sunday 9. How many more points were earned on Saturday than Sunday?

WORK SPACE

ANSWER _____

- 2** APPLY 2. At basketball camp, a line graph shows free throws made: Monday 5, Tuesday 7, Wednesday 8, Thursday 9. Add Tuesday and Thursday. Then find how many more that total is than Monday.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

CHALLENGE. A seedling's line graph shows these heights: Monday 1 cm, Tuesday 5 cm, Wednesday 9 cm, Thursday 13 cm. Predict its height on Friday. Explain your reasoning.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	PRACTICE 1. A line graph shows birds seen: Monday 4, Tuesday 7, Wednesday 5. What is the greatest number of birds seen?	7 birds on Tuesday
2	PRACTICE 2. A line graph shows a plant's height: Monday 2 cm, Tuesday 5 cm, Wednesday 9 cm. How much did the plant grow from Monday to Wednesday?	7 cm
3	PRACTICE 3. A line graph shows bike riders: Saturday 4, Sunday 9, Monday 2. How many riders were there on Saturday and Sunday altogether?	13 riders
4	PRACTICE 4. Write a question that a line graph of your piano practice minutes each day could answer.	Sample answer: How do my piano practice minutes change from day to day?
5	PRACTICE 5. A line graph shows pages read each day. What should the horizontal axis and vertical axis be labeled?	Horizontal axis: days. Vertical axis: pages read.

PART 2 • APPLY IT

1. **4 more points** Subtract the Sunday points from the Saturday points: $13 - 9 = 4$.
2. **16 free throws total, which is 11 more than Monday** Add $7 + 9 = 16$. Then subtract 5 from 16 to get 11.

CHALLENGE

17 cm. The height increases by 4 cm each day.

Accept any clear, measurable question in Practice 4 that asks about piano practice minutes over time. For axis labels, accept equivalent wording such as time or day for the horizontal axis and number of pages for the vertical axis.