

Follow the Trend

Describe changes across a whole line graph

GRADE 4 • 4.PS.1.d.i

4.PS.1.d.i "Analyze data represented in line graphs and communicate results orally and in writing: describe the characteristics of the data represented in a line graph and the data as a whole (e.g...."

NAME _____

DATE _____

READ, COMPARE, EXPLAIN

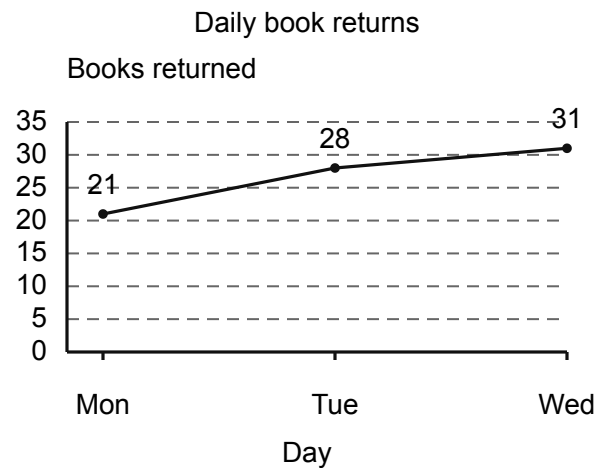
Read time on the bottom axis and the measured amount on the side axis. Dots are observations, joined in time order. Compare neighboring dots for one-period changes. Compare the first and last dots for overall change. Use values and units to support your description.

WORKED EXAMPLE

When did the daily number of books returned increase most?

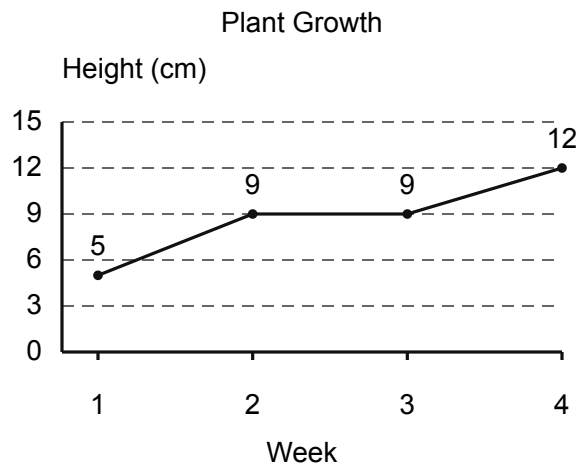
1. Monday to Tuesday: $28 - 21 = 7$ books.
2. Tuesday to Wednesday: $31 - 28 = 3$ books.

Answer: The greatest one-day increase was Monday to Tuesday: 7 books.



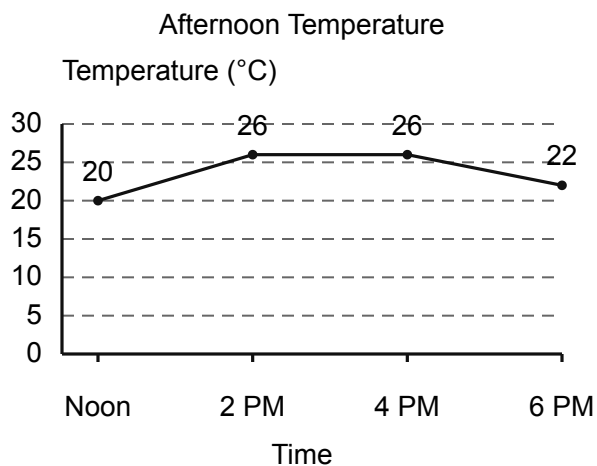
PRACTICE 4 problems

- 1** Use Plant Growth. During which week-to-week interval did the plant grow most? Give the change.



- 2** Use Plant Growth in Practice 1. Describe the whole pattern, including the flat interval and overall change.

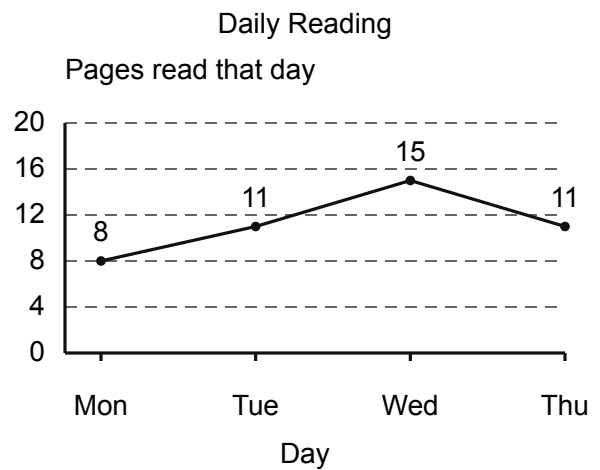
- 3** Use Afternoon Temperature. Describe the pattern and identify the highest observation.



- 4** Use Afternoon Temperature in Practice 3. Find the greatest two-hour increase and greatest two-hour decrease.

APPLY IT Show your work

- 1** Use Daily Reading. Describe each day-to-day change, then state the overall change from Monday to Thursday.



- 2** Use Daily Reading in Apply It 1. Tell a partner whether the daily page count increased every day. Then write your answer with evidence.

CHALLENGE One step up

Use Plant Growth in Practice 1. Sam says the greatest one-week increase was 7 cm because $12 - 5 = 7$. Explain the mistake and give the correct interval and increase.

Require graph-derived values, time intervals and units. Flat means unchanged between recorded observations; it does not mean zero. Distinguish a one-interval increase from first-to-last change. Listen for an oral claim and supporting readings in Apply It 2. Printed dots are recorded observations; connecting segments do not create new measured observations.

PRACTICE 1

Week 1 to Week 2; $9 - 5 = 4$ cm.

PRACTICE 2

It grew from Week 1 to 2, stayed at 9 cm from Week 2 to 3, then grew again. Overall it grew $12 - 5 = 7$ cm.

PRACTICE 3

It rose from noon to 2 PM, stayed at 26°C until 4 PM, then fell. The highest observations were 26°C at 2 PM and 4 PM.

PRACTICE 4

Noon to 2 PM: increase of 6°C . 4 PM to 6 PM: decrease of 4°C .

APPLY IT 1

Mon to Tue: up 3 pages; Tue to Wed: up 4; Wed to Thu: down 4. Overall Thursday was 3 pages more than Monday.

Require the stated evidence and reasoning; accept equivalent correct wording.

APPLY IT 2

No. It increased through Wednesday, but fell from 15 pages on Wednesday to 11 on Thursday.

Require the stated evidence and reasoning; accept equivalent correct wording.

CHALLENGE

Seven centimeters is the overall change across three week-to-week intervals. The greatest single-week increase was 4 cm, from Week 1 to Week 2.