

Graph Detective

Use scales to draw and compare data.

GRADE 3 • 3.MD.B.3

CCSS.Math.Content.3.MD.B.3 "Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. For example..."

NAME _____

DATE _____

READ THE SCALE

A scale tells how many objects each interval or picture represents. A bar graph labels a number axis with equal intervals. A picture graph needs a key, such as one circle = 4 tickets. Multiply the number of intervals or symbols by the scale before comparing counts.

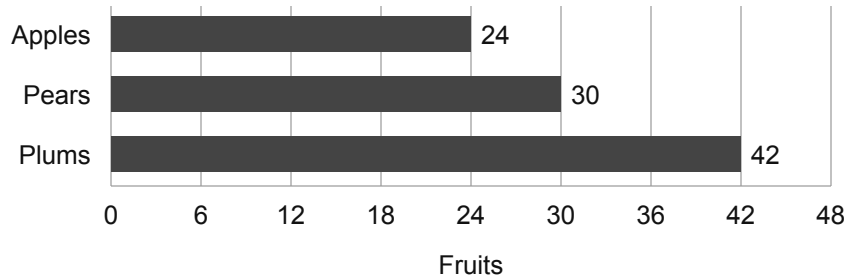
WORKED EXAMPLE

Read the fruit graph. The scale increases by 6. How does the graph show 42 plums?

1. Start at 0 and count by 6: 6, 12, 18, 24, 30, 36, 42.
2. The plum bar spans 7 intervals: $7 \times 6 = 42$ fruits.

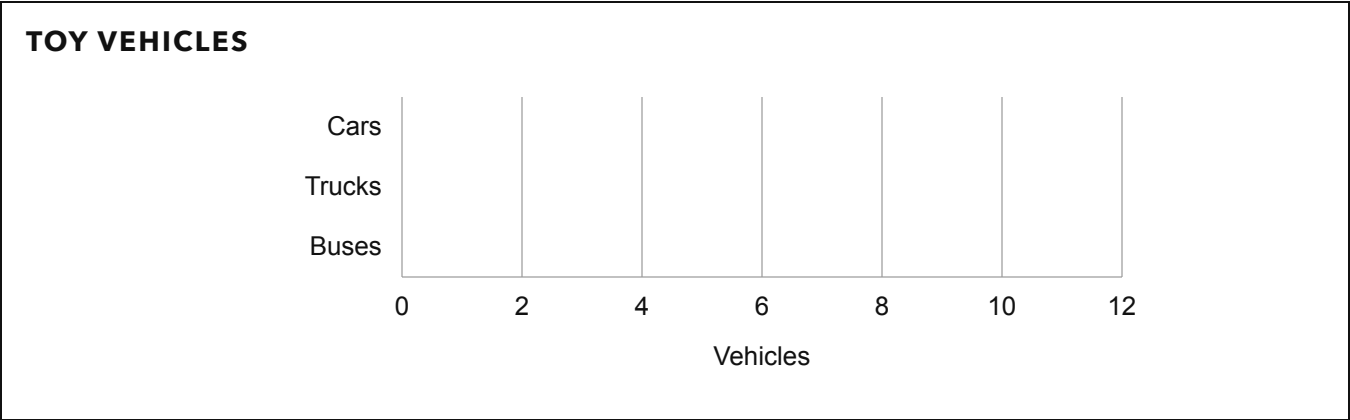
Answer: The bar ends at 42 fruits, or 7 intervals of 6.

FRUIT PICKED



PRACTICE 4 problems

1 Draw a bar graph: Cars 4, Trucks 8, Buses 10. Use the scale of 2 vehicles per interval.



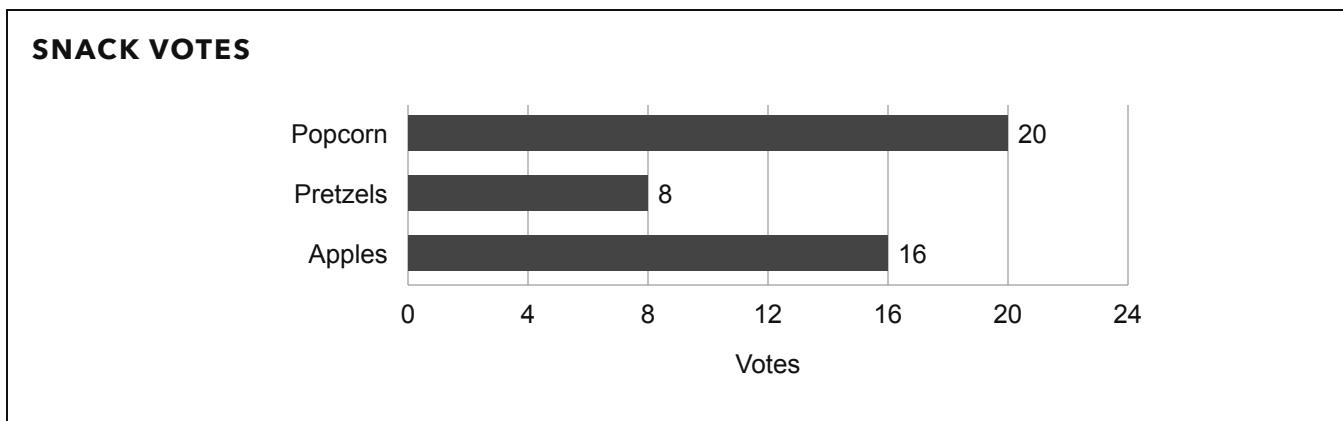
ANSWER _____

2 Draw a picture graph for tickets: Maya 8, Luis 16, Chen 20. Use one circle = 4 tickets. Include a title, names and key.



ANSWER _____

- 3** Read the snack graph. How many more votes did Popcorn get than Pretzels? Show your work.



ANSWER _____

- 4** Use the snack graph in Practice 3. How many fewer votes did Popcorn get than Pretzels and Apples together? Show two steps.

ANSWER _____

APPLY IT Show your work

- 1** Use the snack bar graph from Practice 3. Four more students vote for Pretzels. Would Pretzels now tie Popcorn? Show the new count and compare.

WORK SPACE

- 2
- Read the jump-rope picture graph. How many more turns did Nia have than Ava? Show how the key gives each count.

Jump-rope turns

Ava	• •
Ben	• • •
Nia	• • • •

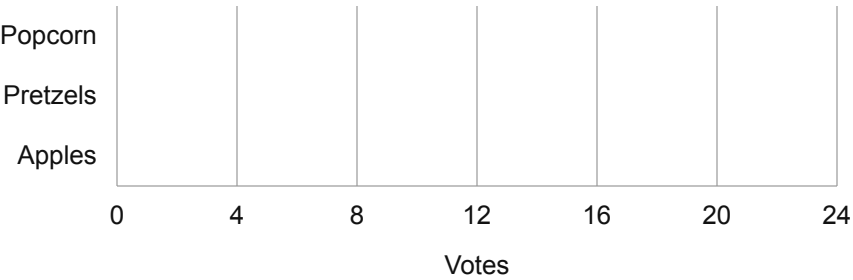
Key: • = 8 turns

CHALLENGE

One step up

A new snack vote has Popcorn 12, Pretzels 16 and Apples 20. Draw a scaled bar graph using 4 votes per interval. How many fewer votes did Apples get than the other two together?

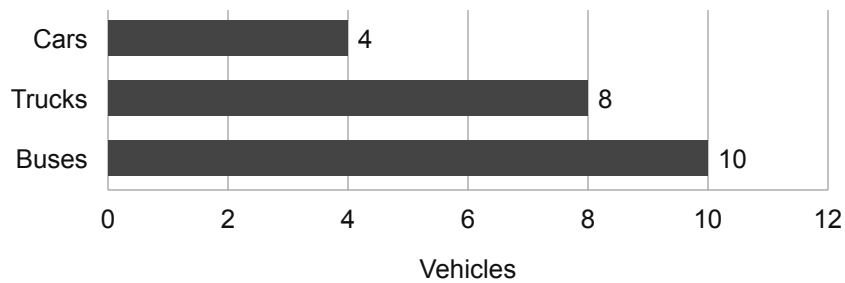
NEW SNACK VOTE



PRACTICE 1

Draw a bar graph: Cars 4, Trucks 8, Buses 10. Use the scale of 2 vehicles per interval.

Cars ends at 4, Trucks at 8 and Buses at 10.

TOY VEHICLES**PRACTICE 2**

Draw a picture graph for tickets: Maya 8, Luis 16, Chen 20. Use one circle = 4 tickets. Include a title, names and key.

Maya: 2 circles; Luis: 4; Chen: 5. Key: one circle = 4 tickets.

Game tickets

Maya	● ●
Luis	● ● ● ●
Chen	● ● ● ● ●

Key: ● = 4 tickets

PRACTICE 3

Read the snack graph. How many more votes did Popcorn get than Pretzels? Show your work.

$20 - 8 = 12$ more votes.

PRACTICE 4

Use the snack graph in Practice 3. How many fewer votes did Popcorn get than Pretzels and Apples together? Show two steps.

$8 + 16 = 24$; $24 - 20 = 4$ fewer votes.

APPLY IT 1

No. Pretzels would have 12 votes, still 8 fewer than Popcorn.

Read Pretzels as 8 and Popcorn as 20. Add 4: $8 + 4 = 12$. Then $20 - 12 = 8$ votes.

APPLY IT 2

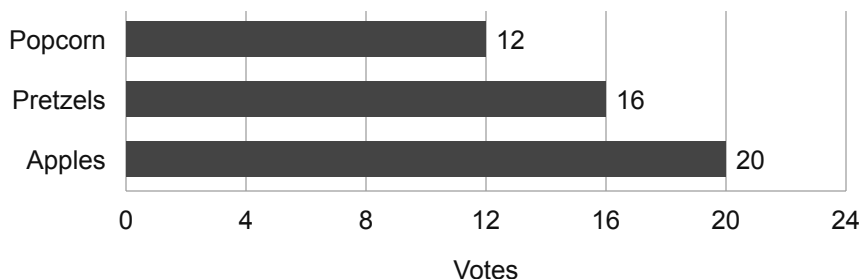
Nia had 16 more turns than Ava.

$4 \times 8 = 32$; $2 \times 8 = 16$; $32 - 16 = 16$ turns.

CHALLENGE

Bars end at 12, 16 and 20. $12 + 16 = 28$; $28 - 20 = 8$ fewer votes.

NEW SNACK VOTE



All datasets are invented for practice. Picture-graph models show whole circles; the key applies to every circle. Check that student symbols have consistent size and spacing. For bar graphs, read the labeled number axis rather than counting intervals as individual objects. Complete graphs belong on the teacher key only for construction tasks.