

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 what one square or one picture stands for. To make a graph, divide each amount by the scale to find how many squares or pictures to draw.

WORKED EXAMPLE

Draw a bar graph for fruit picked.
Use 1 square = 6 fruits. Apples: 24,
Pears: 30, Plums: 42.

1. Write the title and the three fruit names.
2. Mark the scale: 1 square = 6 fruits.
3. $24/6 = 4$, $30/6 = 5$, and $42/6 = 7$.
4. Draw bars that are 4, 5, and 7 squares long.

Answer: Apples: 4 squares; Pears: 5 squares; Plums: 7 squares.

PRACTICE 5 problems

- 1** Draw a bar graph for toy vehicles. Use 1 square = 2 vehicles. Cars: 4, Trucks: 8, Buses: 10.

ANSWER _____

- 2** Draw a picture graph for game tickets. Use 1 circle = 4 tickets. Maya: 8, Luis: 16, Chen: 20.

ANSWER _____

- 3** Snack votes, 1 square = 4 votes: Popcorn: 5 squares; Pretzels: 2 squares; Apples: 4 squares. How many more votes did Popcorn get than Pretzels?

ANSWER _____

- 4** Recycling graph, 1 square = 7 cans: Class A: 4 squares; Class B: 5 squares; Class C: 7 squares. How many fewer cans did Class A collect than Classes B and C together?

ANSWER _____

- 5** Draw a picture graph for jump-rope turns. Use 1 star = 8 turns. Ava: 16, Ben: 24, Nia: 32.

ANSWER _____

APPLY IT Show your work

- 1** At the school game room, a bar graph uses 1 square = 5 players. Board games have 5 squares, puzzles have 8 squares, and card games have 6 squares. How many more players chose puzzles than board games?

WORK SPACE

ANSWER _____

- 2** At a book fair, a bar graph uses 1 square = 10 books. Comics have 2 squares, mysteries have 5 squares, and animal books have 4 squares. How many fewer comics were sold than mysteries and animal books together?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A club-points bar graph uses 1 square = 9 points. Art Club has 3 squares and Music Club has 5 squares. Drama Club has enough points so all three clubs have 99 points. How many squares should the Drama Club bar have? Explain your reasoning.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Draw a bar graph for toy vehicles. Use 1 square = 2 vehicles. Cars: 4, Trucks: 8, Buses: 10.	Cars: 2 squares; Trucks: 4 squares; Buses: 5 squares.
2	Draw a picture graph for game tickets. Use 1 circle = 4 tickets. Maya: 8, Luis: 16, Chen: 20.	Maya: 2 circles; Luis: 4 circles; Chen: 5 circles.
3	Snack votes, 1 square = 4 votes: Popcorn: 5 squares; Pretzels: 2 squares; Apples: 4 squares. How many more votes did Popcorn get than Pretzels?	12 votes
4	Recycling graph, 1 square = 7 cans: Class A: 4 squares; Class B: 5 squares; Class C: 7 squares. How many fewer cans did Class A collect than Classes B and C together?	56 cans
5	Draw a picture graph for jump-rope turns. Use 1 star = 8 turns. Ava: 16, Ben: 24, Nia: 32.	Ava: 2 stars; Ben: 3 stars; Nia: 4 stars.

PART 2 • APPLY IT

- 15 players** Puzzles: $8 \times 5 = 40$ players. Board games: $5 \times 5 = 25$ players, so $40 - 25 = 15$.
- 70 books** Mysteries and animal books total $50 + 40 = 90$ books. Comics total 20 books, so $90 - 20 = 70$.

CHALLENGE

3 squares. Art and Music have $27 + 45 = 72$ points. Then $99 - 72 = 27$, and $27/9 = 3$ squares.

Accept correctly labeled graphs with the stated scale and the correct number of equal-sized squares or pictures. For the challenge, accept an equivalent correct explanation showing 27 points and 3 squares.