Unit 9 · Graphs, Measurement Data, and Line Plots Cheat Sheet

Unit 9 focus: scaled picture graphs and bar graphs

1 Big Idea

In a scaled graph, one picture or one grid space stands for more than 1. Use the key or the scale, then add or subtract to compare.

2 Important Vocabulary

picture graph	A graph that uses pictures to show data.	each ★ = 5 votes
key	Tells what each picture in a picture graph stands for.	★ = 4 votes
bar graph	A graph that uses bars to show data.	bars for each day of the week
scale	The numbers along a bar graph that count by the same amount.	0, 5, 10, 15, 20

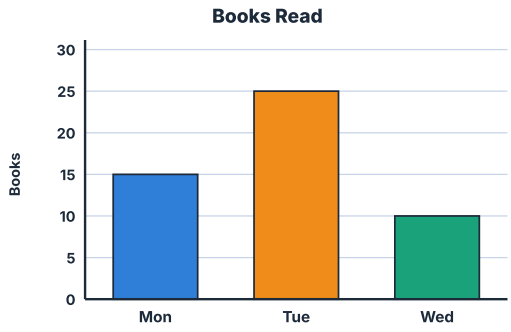
3 How It Works

Key: each ★ = 4. Red has 5 ★ and Blue has $3\frac{1}{2}$ ★. How many more for Red?

Example: Use the key
Red: $5 \times 4 = 20$
Blue: $3 \times 4 + 2 = 14$
Compare: $20 - 14 = 6$

Answer: 6 more

4 Visual Model



Scale counts by 5s. Tuesday has 10 more than Monday.

5 ★ Remember This · Watch Out!

★ Remember this

- Half a picture = half the key.
- "How many more/fewer" means subtract.

⚠ Watch out!

- **Counting pictures as 1:** use the key
- **Bars between lines:** read the halfway value

6 Try It!

1. Key ■ = 10. A row has 4 ■. How many?
   Answer: 40
2. Bars: 35 and 15. How many fewer is 15?
   Answer: 20

Answers are printed upside down. Turn the page to check!

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More practice: measuring to half and quarter inches and making line plots

1 Big Idea

Line up the object with 0. Find the last whole inch, then count half-inch or quarter-inch marks. Show many measurements on a line plot with an X for each.

2 Important Vocabulary

line plot	A number line with an X for each data value.	lengths of pencils
half inch	$\frac{1}{2}$ of an inch on a ruler.	$2\frac{1}{2}$ inches
quarter inch	$\frac{1}{4}$ of an inch on a ruler.	$3\frac{1}{4}$ inches
data	Facts or numbers that are collected.	votes for favorite fruit

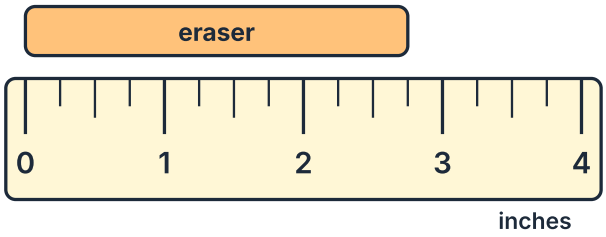
3 How It Works

Make a line plot of 2, $2\frac{1}{2}$, 3, $2\frac{1}{2}$, $2\frac{1}{2}$ inches.

Example: Scale in halves from 2 to 3
Mark: 2, $2\frac{1}{2}$, 3
X marks: 2 → 1, $2\frac{1}{2}$ → 3, 3 → 1

Answer: 3 X marks above $2\frac{1}{2}$

4 Visual Model



Start at 0. The eraser ends 3 quarter inches past 2: $2\frac{3}{4}$ inches.

5 ★ Remember This · Watch Out!

★ Remember this

- 4 quarter inches = 1 inch.
- 2 quarter inches = 1 half inch.

⚠ Watch out!

- **Starting at 1:** start at 0, or subtract the start
- **Missing values:** label every mark on the line plot scale

6 Try It!

1. A key goes from 1 to $3\frac{1}{2}$ on a ruler. How long?
   Answer: $2\frac{1}{2}$ inches
2. How many quarter inches in 2 inches?
   Answer: 8

Answers are printed upside down. Turn the page to check!