LESSON MAKER PRO

Units Tell the Story

Use labels, scales, and starting values to make sense of quantities.

HIGH SCHOOL · HSN-Q.A.1

CCSS.Math.Content.HSN-Q.A.1 "Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays."

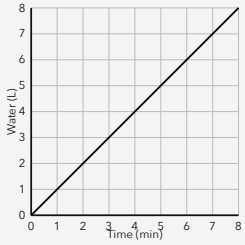
NAME _____ DATE _____

TRACK EVERY UNIT

Treat units like labels that travel with numbers. In a formula, multiply or divide units along with the numbers. For example, (miles/hour) * hours gives miles. Before reading a graph, check each axis label, its scale, and where it starts.

WORKED EXAMPLE

The graph shows water entering a container. How much water is in the container after 6 min?



1. Find 6 on the time axis.
2. Move to the line, then read 6 on the water axis.
3. Match the units: liters after minutes.

Answer: 6 L

PRACTICE 4 problems

1 A drone travels 110 m in 11 s. Find its speed.

ANSWER _____

2 A charger has power 17 W for 19 s. Find the energy transferred.

ANSWER _____

3 A tank fills at 21 L/min for 9 min. How much water is added?

ANSWER _____

4 A club collects $55 per day for 14 days. What quantity does 55 * 14 represent?

ANSWER _____

APPLY IT Show your work

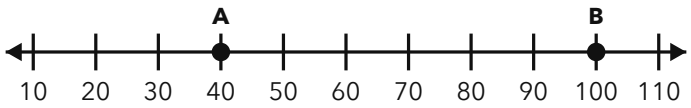
1 The table shows points earned in a study app. Find the rate in points per minute. Then find the points earned in 48 min.

STUDY APP POINTS

Minutes	Points
12	18
24	36
36	54

ANSWER _____

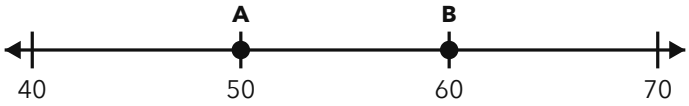
2 The number line shows kilometer markers for a pickup, A, and a concert, B. A driver travels from A to B at 20 km/h. How long is the trip?



ANSWER _____

CHALLENGE One step up

The number line is the vertical scale, in students, for bars A and B. How many more students does B show? Explain why a bar graph using this scale can make the difference look large.



WORK SPACE AND ANSWER

ANSWER KEY

Units Tell the Story

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A drone travels 110 m in 11 s. Find its speed.	**10 m/s**
2	A charger has power 17 W for 19 s. Find the energy transferred.	**323 J**
3	A tank fills at 21 L/min for 9 min. How much water is added?	**189 L**
4	A club collects $55 per day for 14 days. What quantity does 55 * 14 represent?	**$770 collected**

PART 2 · APPLY IT

1. **3/2 point per minute; 72 points** Divide 18 points by 12 minutes to get 3/2 point per minute. Multiply 48 by 3/2 to get 72 points.
2. **3 h** The distance is 100 km - 40 km = 60 km. Divide 60 km by 20 km/h.

CHALLENGE

B shows 10 more students. The scale starts at 40, not 0, so the visible bar heights are 10 and 20 and the difference can look larger.

Accept equivalent unit forms, such as m/s or meters per second. For the challenge, accept any accurate explanation that the nonzero origin exaggerates the visual comparison.