LESSON MAKER PRO

# Find the Trend

*Sketch a line and judge how well it fits.*

**GRADE 8 · 8A.DSP.A.35**

**8A.DSP.A.35** "Given a scatter plot that suggests a linear association, informally draw a line to fit the data, and assess the model fit by judging the closeness of the data points to the line."

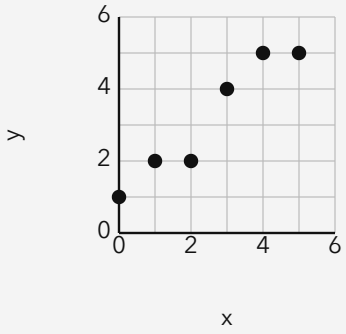
NAME _____ DATE _____

### A LINE THAT FITS

Sketch a straight line through the middle of a scatter plot, near as many points as possible. To judge the fit, compare each point's height with the line's height at the same x-value. Smaller differences mean a closer fit.

**WORKED EXAMPLE**

Sketch a line near the points. Give its equation and describe how close the points are.




1. Sketch a line through (0, 1) and (4, 5).
2. The line rises 1 for each step right, so its equation is y = x + 1.
3. Four points are on the line. Two are 1 unit below it.

**Answer: y = x + 1; every point is within 1 unit of the line.**

## PRACTICE 4 problems

**1** A line predicts 6, but the observed value is 8. How far apart are they vertically?

**ANSWER** _____

**2** Line A has point-to-line distances of 0, 1, 1, 0. Line B has distances of 2, 1, 2, 1. Which line fits more closely?

**ANSWER** _____

**3** A line predicts 4 at x = 2 and 8 at x = 6. What is its slope?

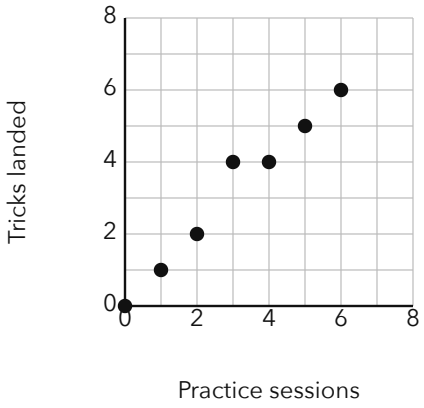
**ANSWER** _____

**4** A line predicts 3 at x = 0 and 7 at x = 4. Write its equation.

**ANSWER** _____

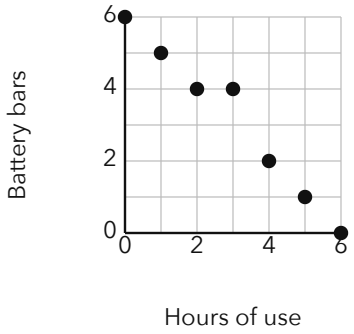
## APPLY IT Show your work

**1** The plot shows practice sessions and tricks landed. Sketch a fit line. Predict the number of tricks landed after 7 sessions, and judge the fit.




**ANSWER** _____

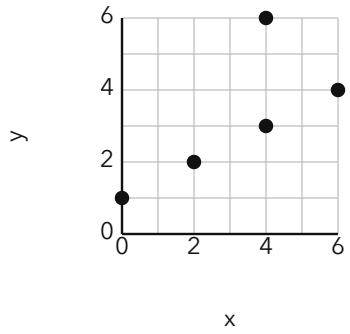
**2** The plot shows a phone's battery bars over time. Sketch a fit line. Predict the bars after 5 hours, and judge the fit.




**ANSWER** _____

## CHALLENGE One step up

Sketch a line that fits most points. Give its equation and explain why it does not fit every point closely.




WORK SPACE AND ANSWER

**ANSWER KEY**

# Find the Trend

**GRADE 8 · 8A.DSP.A.35**

## PART 1 · PRACTICE

| # | PROBLEM | ANSWER |
|---|---|---|
| 1 | A line predicts 6, but the observed value is 8. How far apart are they vertically? | **2 units** |
| 2 | Line A has point-to-line distances of 0, 1, 1, 0. Line B has distances of 2, 1, 2, 1. Which line fits more closely? | **Line A** |
| 3 | A line predicts 4 at x = 2 and 8 at x = 6. What is its slope? | **1** |
| 4 | A line predicts 3 at x = 0 and 7 at x = 4. Write its equation. | **y = x + 3** |

## PART 2 · APPLY IT

1. **A line such as y = x predicts 7 tricks. It fits closely: every point is within 1 trick of the line.** The line y = x passes through six points. The remaining point is 1 unit above it.
2. **A line such as y = 6 - x predicts 1 bar. It fits closely: every point is within 1 bar of the line.** The line y = 6 - x passes through six points. The remaining point is 1 unit above it.

## CHALLENGE

**y = x/2 + 1 fits four points exactly. At x = 4, the line predicts 3, but one point is at 6, which is 3 units away.**

Accept other reasonable sketched lines and nearby predictions when students justify the fit by comparing points with their line.