LESSON MAKER PRO

Trends Under Test

Predict from data, then question the claim.

GRADE 8 · 8.DS.A.1

8.DS.A.1 "Evaluate predictions and conclusions drawn from bivariate data. Determine whether observed associations in sample data justify generalizations about a broader population..."

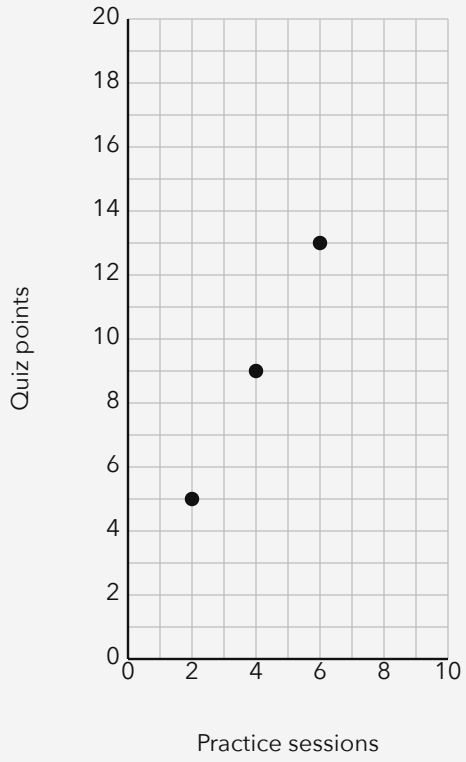
NAME _____ DATE _____

READ THE TREND

To find a constant rate, divide the change in y by the change in x. A prediction is less certain beyond the observed x-values. Before applying a trend to a larger group, ask whether the sample represents that group.

WORKED EXAMPLE

The plot shows practice sessions and quiz points. If the pattern continues at a constant rate, predict the points after 8 sessions.



1. From (2, 5) to (4, 9), y rises 4 while x rises 2.
2. Rate: 4 / 2 = 2 points per session.
3. At 8 sessions: 13 + 2(8 - 6) = 17.

Answer: 17 points

PRACTICE 4 problems

1 A scatter plot includes (1, 11) and (3, 15). If the pattern stays linear, predict y at x = 7.

ANSWER _____

2 For (1, 12) and (3, 18), how much does predicted y change when x rises by 1?

ANSWER _____

3 For (11, 21) and (15, 33), predict y at x = 19 using a constant rate.

ANSWER _____

4 Observed x-values run from 11 to 15. Is a prediction at x = 31 inside or outside that range? Why is it less certain?

ANSWER _____

APPLY IT Show your work

1 Four gaming-club volunteers reported the data shown. Predict reading minutes for a student who games 15 hours a week. Can these data support a claim about all eighth graders? Explain.

WEEKLY HABITS

Gaming hours	Reading minutes
1	39
3	35
7	27
11	19

ANSWER _____

2 Dance-team members recorded the data shown. Predict steps recalled after 23 minutes of practice. Why might this prediction not fit all students?

DANCE PRACTICE

Practice minutes	Steps recalled
11	51
15	63
19	75

ANSWER _____

CHALLENGE One step up

A game club surveys 30 members. At 11 hours of play per week, the average game score is 23. At 15 hours, it is 31. Predict the average score at 19 hours using a constant rate. Give two limits on claiming this prediction fits every eighth grader.

WORK SPACE AND ANSWER

ANSWER KEY

Trends Under Test

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A scatter plot includes (1, 11) and (3, 15). If the pattern stays linear, predict y at x = 7.	**23**
2	For (1, 12) and (3, 18), how much does predicted y change when x rises by 1?	**3**
3	For (11, 21) and (15, 33), predict y at x = 19 using a constant rate.	**45**
4	Observed x-values run from 11 to 15. Is a prediction at x = 31 inside or outside that range? Why is it less certain?	**Outside. The data do not show whether the trend continues that far.**

PART 2 · APPLY IT

1. **11 reading minutes. No, four gaming-club volunteers may not represent all eighth graders.** Reading drops 2 minutes per extra gaming hour, so 19 - 2(15 - 11) = 11. The prediction also goes beyond the observed gaming hours.
2. **87 steps. Dance-team members may not represent all students.** Steps recalled rise 3 per minute, so 75 + 3(23 - 19) = 87. The prediction is also beyond the observed practice times.

CHALLENGE

39. The prediction is beyond the observed hours, and game-club members may not represent all eighth graders.

Accept equivalent wording for extrapolation and sample bias. Predictions assume the observed rate stays constant.