LESSON MAKER PRO

Boxplot Question Lab

Plan surveys that collect numerical data for boxplots.

GRADE 8 · 8.PS.2.a

8.PS.2.a "Formulate questions that require the collection or acquisition of data with a focus on boxplots."

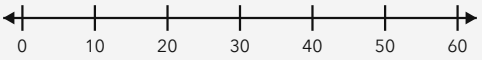
NAME _____ DATE _____

ASK FOR NUMBERS

A boxplot summarizes numerical data, so your question must ask each person for a number. To compare boxplots, name the groups and use the same measurement for every person.

WORKED EXAMPLE

A librarian wants boxplots that compare weeknight reading time. Write one data-collection question. Use the scale.



1. Choose the groups: grade 6 and grade 8 students.
2. Choose one measurement: minutes read on a typical weeknight.
3. Ask every student the same numerical question.

Answer: On a typical weeknight, how many minutes do grade 6 students and grade 8 students read?

PRACTICE 4 problems

1 Which question can make a boxplot? A. What is your favorite music genre? B. How many songs did each student listen to yesterday? C. Do you own headphones?

ANSWER _____

2 Rewrite this question so it collects a number about sports: Which sport do you like best? Ask about time spent practicing last week.

ANSWER _____

3 Write a question that could produce boxplots comparing bus riders and walkers. Measure travel time to school.

ANSWER _____

4 A survey asks, "How satisfied are you with lunch: low, medium, or high?" Explain why these responses cannot make a boxplot.

ANSWER _____

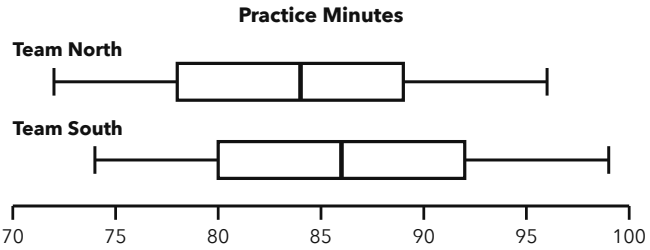
APPLY IT Show your work

1 The robotics club wants to compare sleep for club members and nonmembers. Write one question that would collect data for boxplots. Measure sleep from last night.

WORK SPACE

ANSWER _____

2 The boxplots compare practice minutes for Team North and Team South. Write one survey question that could collect these data.



ANSWER _____

CHALLENGE One step up

A student wants boxplots about phone use and asks, "Do you use a phone often?" Write exactly two sentences. First, rewrite the question to compare students who play a school sport with students who do not. Second, explain why your revision fits boxplots.

WORK SPACE AND ANSWER

ANSWER KEY

Boxplot Question Lab

GRADE 8 · 8.PS.2.a

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Which question can make a boxplot? A. What is your favorite music genre? B. How many songs did each student listen to yesterday? C. Do you own headphones?	**B**
2	Rewrite this question so it collects a number about sports: Which sport do you like best? Ask about time spent practicing last week.	**How many hours did each student practice a sport last week?**
3	Write a question that could produce boxplots comparing bus riders and walkers. Measure travel time to school.	**How many minutes does it take bus riders and walkers to travel to school?**
4	A survey asks, "How satisfied are you with lunch: low, medium, or high?" Explain why these responses cannot make a boxplot.	**The responses are categories, not numerical measurements. A boxplot needs numerical data.**

PART 2 · APPLY IT

1. **How many hours did robotics club members and nonmembers sleep last night?** Students record one numerical sleep amount. Their club membership sorts the data into two groups for comparison.
2. **On a typical practice day, how many minutes does each player on Team North and Team South practice?** Each player gives a numerical time. Team membership creates the two data sets shown by separate boxplots.

CHALLENGE

On a school day, how many minutes do students who play a school sport and students who do not play a school sport spend using their phones? This gives a numerical measurement for each student and allows the groups to be compared with boxplots.

Accept equivalent questions that collect one numerical measurement from each person. For comparison items, accept equivalent wording that clearly identifies both groups and uses the same measurement for each group.