UNIT 8 · STANDARD 6.SP.4

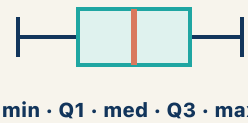
Display Data: Box Plots

Lesson 8-5

Name: Type your name **Date:** Today's date **Class:** Class period

Key Vocabulary Level 2 Standard

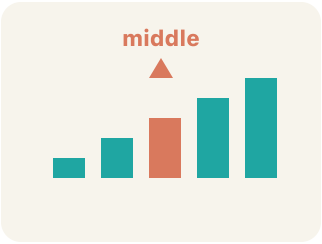
Picture first, then the word, then a plain-language meaning. Say each word out loud.



A box from Q1 to Q3 with a line at the median, and whiskers from min to max

Box Plot

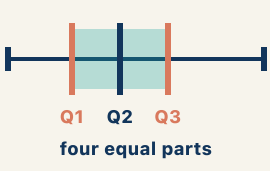
Write the definition:



Data: 10, 15, 20, 25, 30 → median is 20 (the 3rd value)

Median

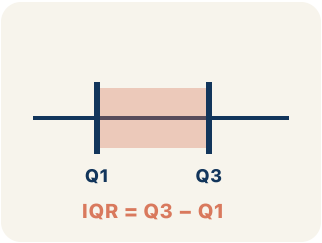
Write the definition:



Data: 2, 4, 6, 8, 10, 12, 14 → Q1 = 4 (median of lower half), Q3 = 12 (median of upper half)

Quartile

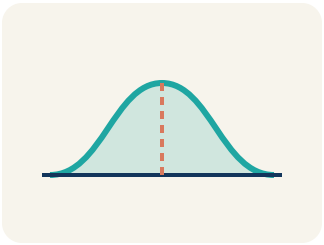
Write the definition:



If Q1 = 12 and Q3 = 20, then IQR = 20 − 12 = 8 — the middle 50% spans 8 units

Interquartile Range

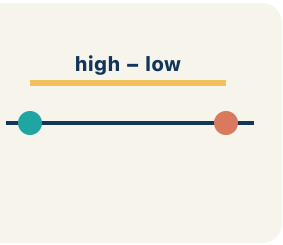
Write the definition:



A box plot where the median is centered in the box shows symmetric distribution

Data distribution

Write the definition:



Small IQR = low variability in the middle 50%. Large IQR = high variability

Variability

Write the definition:

Guided Notes Level 2 Standard

🎯 **WHAT WE'RE LEARNING TODAY**

I can make and read a box plot to summarize a data set.

✏️ **Fill in each blank as we go. Use the Word Bank to help you.**

📚 **WORD BANK — FILL EACH BLANK WITH THE BEST WORD**

Box Plot | Median | Quartile | Interquartile Range | Data distribution | Variability

☝️ *Tap any word to see what it means and a picture.*

1 A graph that shows data with a box and whiskers based on the five-number summary is a _____.

2 The middle value of the data, shown as a line inside the box, is the _____.

3 A value that divides the data into four equal parts is a _____.

4 The distance between the first and third quartiles, showing the middle 50% of data, is the _____.

5 The way data values are spread out is the _____.

6 How spread out the data values are is the _____.

🧱 Watch & Try — Worked Examples

See the notes in action: watch one worked all the way through, then try the next with the same steps.

👀 **I do — watch**

Follow each step as your teacher solves it.

Problem: A box plot shows: Min = 10, Q1 = 15, Median = 20, Q3 = 28, Max = 35. What is the interquartile range (IQR)?

A. 13

B. 25

C. 10

D. 20

Step 1 IQR = Q3 − Q1 = 28 − 15 = 13.

✅ **Answer:** A. 13

🤝 **We do — together**

Solve this one with your class using the same steps.

Problem: On a box plot, what does the line inside the box represent?

A. The median

B. The mean

C. The mode

D. The range

Step 1 _____

Step 2 _____

Answer: _____

✏️ **You do — your turn**

Now try one on your own. Show every step.

Problem: What percentage of data falls between Q1 and Q3 on a box plot?

A. 50%

B. 25%

C. 75%

D. 100%

Show your work:

Try It

Solve on your own. Check the answer key when you are done.

1. The Comets scored 6, 10, 14, 18, 22, 26, 30, 34 across 8 games. After ordering, what are Q1 and Q3?

A. Q1 = 12, Q3 = 28

B. Q1 = 10, Q3 = 30

C. Q1 = 14, Q3 = 26

D. Q1 = 20, Q3 = 34

Show your work:

2. A box plot for the Rockets shows Min = 8, Q1 = 15, Median = 22, Q3 = 30, Max = 38. The middle 50% of their scores falls between which two values?

A. Between 15 and 30

B. Between 8 and 38

C. Between 8 and 22

D. Between 22 and 38

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

Two basketball teams played 9 games each. Team A: 40, 42, 44, 46, 48, 50, 52, 54, 56. Team B: 30, 35, 40, 45, 48, 50, 55, 60, 65. Find the five-number summary and IQR for each team. Which team is more consistent? Which has a wider spread in the middle 50%?

Sentence starter: Team A: Min=___, Q1=___, Median=___, Q3=___, Max=___, IQR=___. Team B: Min=___, Q1=___, Median=___, Q3=___, Max=___, IQR=___. Team ___ is more consistent because its IQR is ___.

Show your work:

Reflect — Exit Ticket

A box plot has Q1 = 20 and Q3 = 36. What is the IQR and what does it represent?

A. IQR = 16; it is the spread of the middle 50% of the data

B. IQR = 56; it is the total of Q1 and Q3

C. IQR = 28; it is the median between Q1 and Q3

D. IQR = 36; it is the value of Q3

Your answer: