LESSON MAKER PRO

Plot the Pattern

Choose plots and show what the data reveal.

HIGH SCHOOL · MT.CORE.DATA.INT.2

MT.CORE.DATA.INT.2 "Represent the distribution of univariate quantitative data with plots on the real number line, choosing a format most appropriate to the data set, and representing the distribution of bivariate quantitative data with a scatter plot."

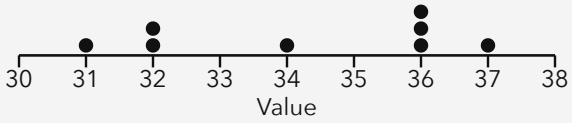
NAME _____ DATE _____

CHOOSE THE VIEW

Use a dot plot to show individual values and a histogram to show counts in intervals. For two quantities measured together, plot each pair as a point on a scatter plot.

WORKED EXAMPLE

Use the dot plot. Which value occurs most often, and how many values are at least 36?



1. Count the dots above each value. The tallest stack has 3 dots.
2. Count the dots at 36 or greater: 3 + 1 = 4.

Answer: 36 occurs most often; 4 values are at least 36.

PRACTICE 4 problems

1 Data: 1, 2, 2, 3, 3, 3, 4, 5, 5, 6. Which better shows individual values, a dot plot or a histogram? Give the mode.

ANSWER _____

2 Data: 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21. Which better shows counts in intervals, a dot plot or a histogram? How many values are from 10 through 14?

ANSWER _____

3 Scatter-plot pairs: (1, 4), (2, 6), (3, 8). Which point has x = 2? Do the points rise or fall from left to right?

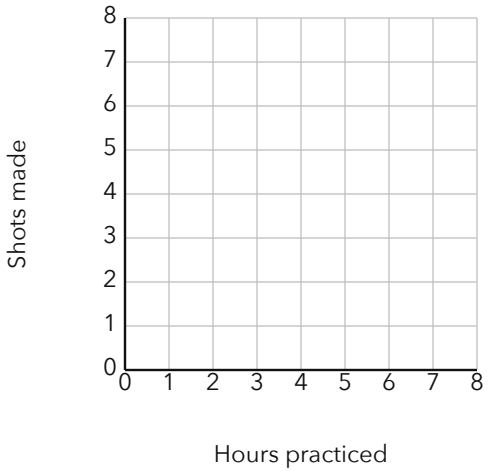
ANSWER _____

4 Match x values 1, 3, 5 with y values 7, 5, 3 in order. List the three scatter-plot points.

ANSWER _____

APPLY IT Show your work

1 At basketball practice, players recorded (hours practiced, shots made): (1, 2), (2, 4), (3, 5), (4, 5), (5, 7). Plot the points. Describe the overall trend.



ANSWER _____

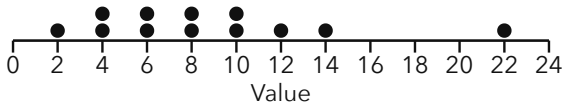
2 A playlist has song lengths, in seconds: 140, 150, 155, 160, 170, 175, 180, 190, 195, 200, 205, 215, 220, 235. Find the histogram counts for 140-159, 160-179, 180-199, 200-219, and 220-239.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Use the dot plot to find the IQR. By the 1.5 × IQR rule, is any value an outlier?



WORK SPACE AND ANSWER

ANSWER KEY

Plot the Pattern

HIGH SCHOOL · MT.CORE.DATA.INT.2

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Data: 1, 2, 2, 3, 3, 3, 4, 5, 5, 6. Which better shows individual values, a dot plot or a histogram? Give the mode.	**Dot plot; mode 3.**
2	Data: 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21. Which better shows counts in intervals, a dot plot or a histogram? How many values are from 10 through 14?	**Histogram; 5 values.**
3	Scatter-plot pairs: (1, 4), (2, 6), (3, 8). Which point has x = 2? Do the points rise or fall from left to right?	**(2, 6); rise.**
4	Match x values 1, 3, 5 with y values 7, 5, 3 in order. List the three scatter-plot points.	**(1, 7), (3, 5), (5, 3).**

PART 2 · APPLY IT

1. **Plot (1, 2), (2, 4), (3, 5), (4, 5), and (5, 7). Shots made generally increase as hours practiced increase.** Check that each ordered pair is plotted at its given coordinates. The pattern rises from left to right.
2. **The bin counts, in order, are 3, 3, 3, 3, 2.** Place each length in its interval. The first four intervals each contain 3 songs, and the last contains 2.

CHALLENGE

Q1 = 5 and Q3 = 11, so IQR = 6. The upper fence is 20, so 22 is an outlier.

For the scatter plot, accept any clear description of a positive trend. For the challenge, quartiles use the medians of the lower and upper six values.