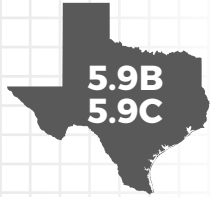


USING SCATTERPLOTS



The student is expected to represent discrete paired data on a scatterplot.

The student is expected to solve one- and two-step problems using data from a frequency table, dot plot, bar graph, and stem-and-leaf plot, or scatterplot.



TELL ME MORE...

A **scatterplot** shows a visual relationship between two sets of data. Points are plotted on a coordinate grid as ordered pairs of numbers from a set of data.

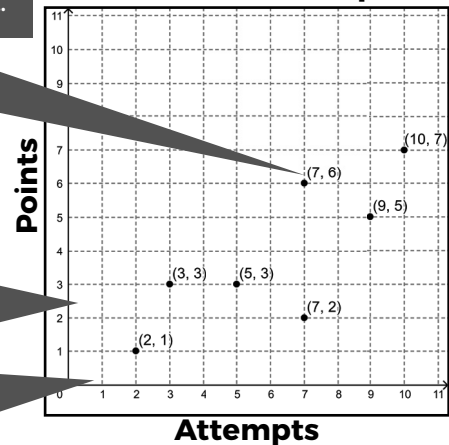
- Each point represents one pair of values from a data set.
- **Ordered pairs** of numbers are presented as (x, y) , where the first number in the ordered pair represents a location along the x -axis and the second number in the ordered pair represents a location along the y -axis.

The graph title tells what the data is about.

Points are plotted as ordered pairs based on a data set.

Axes indicate the input (x) and output (y) values in the data relationship.

Game Points Earned by Number of Attempts



The scatterplot in the figure shows the relationship between the number of points earned and the number of attempts made by different players in a game. The x -value of each ordered pair is the number of attempts and the y -value of each ordered pair is the number of points earned. In table form, each ordered pair forms a column or row in the table.

Attempts	2	3	5	7	7	9	10
Points	1	3	3	2	6	5	7



EXAMPLES

EXAMPLE 1: Jamie is packing peaches into baskets to sell at the farmers market. The table shows the number of peaches in a basket and the weight of the basket. Represent the data using a scatterplot.

Number of Peaches	3	4	5	6	7	7	8
Weight (pounds)	2	2.5	3.5	3	4	4.5	4.5

STEP 1 Determine the values that make up each ordered pair to be plotted.

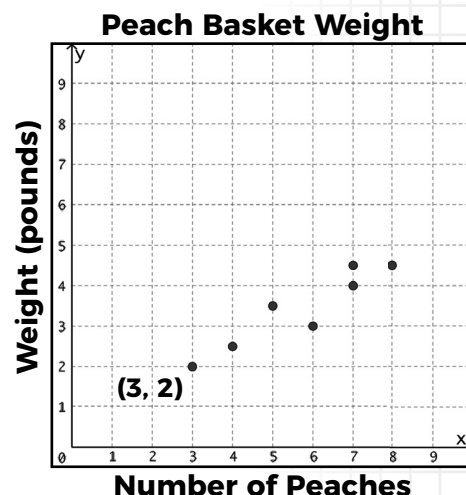
- The plot will represent the relationship between the weight of a peach basket and the number of peaches in the basket.

For each ordered pair, the x -value will be the number of peaches and the y -value will be the corresponding weight of the basket.

STEP 2 Plot the first ordered pair from the table.

- The ordered pairs are of the form (Number of Peaches, Weight).
- Begin with the first ordered pair (3, 2) that represents a basket of 3 peaches with a weight of 2 pounds. Plot a point 3 units in the x -direction and 2 units in the y -direction.

STEP 3 Plot the ordered pairs of values from the table as points to create the scatterplot. Label the x -axis and y -axis based on the information in the table.



EXAMPLE 2: The scatterplot shows the test scores of several students based upon the amount of time, in minutes, each student spent studying. How much more time did the highest scoring student spend studying compared to the lowest scoring student?

STEP 1 Identify what the x -values and y -values of each ordered pair represent.

The x -value is the amount of time spent studying.

The y -value is the test score.

STEP 2 Identify the ordered pair for the highest scoring student and the lowest scoring student.

- The x -axis is labeled in intervals of 10 minutes with a gridline drawn every 5 minutes.
- The y -axis is labeled in intervals of 8 points with a gridline drawn every 4 points.
- The highest scoring student is represented by the point with the greatest y -value.
- The lowest scoring student is represented by the point with the least y -value.

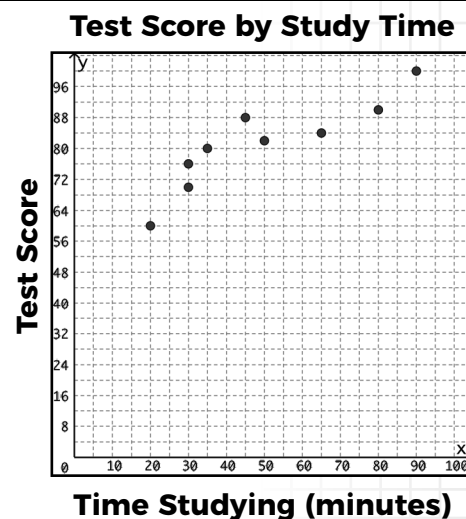
The ordered pair (90, 100) represents the highest scoring student with a test score of 100 who spent 90 minutes studying.

The ordered pair (20, 60) represents the lowest scoring student with a test score of 60 who spent 20 minutes studying.

STEP 3 Subtract the y -values for each of the two ordered pairs.

- The y -values represent the time spent studying.
- The highest student studied 90 minutes and the lowest student studied 20 minutes.
- $90 - 20 = 70$

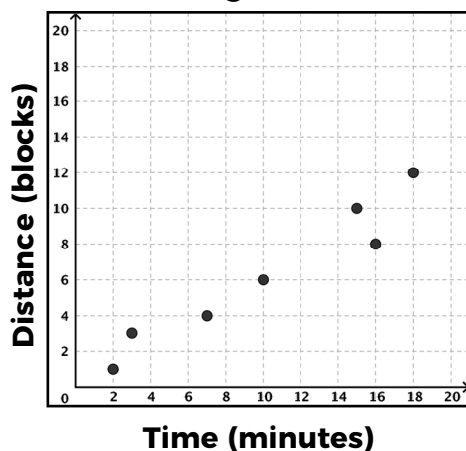
The highest scoring student spent 70 minutes longer studying than the lowest scoring student.



YOU TRY IT!

The scatterplot represents a set of data. Use the plot to answer the question shown.

Walking to School



Two students who walk the farthest to school enter a fundraiser where they will earn \$2.50 per block that they walk. How much will they raise walking to school in one day?

- Locate the points of the two students who walk the farthest (greatest distance):
(____, ____) and (____, ____)
- Add the y -coordinates together to get the total distance walked.
- Multiply the total distance by \$2.50, the amount raised per block walked.

PRACTICE

Use the following information for questions 1 - 3.

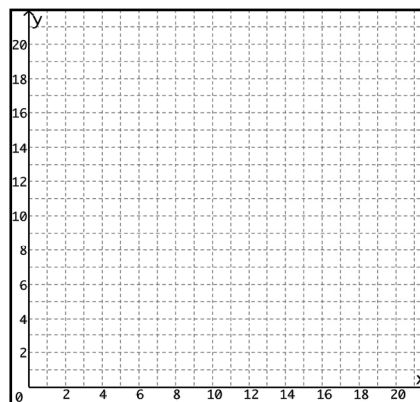
The table shows the number of baby teeth many children have based on age.

Age	Teeth
5	20
6	19
7	15
8	10
9	10
10	8
11	4
12	2

1. Which values are plotted based on the x -axis and y -axis when making a scatterplot of the data?

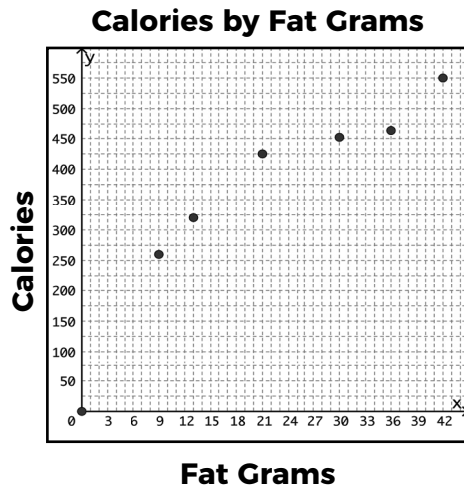
2. Plot the points from the table on the coordinate grid as a scatterplot of the data. Be sure to label the x - and y -axis.

Baby Teeth by Age



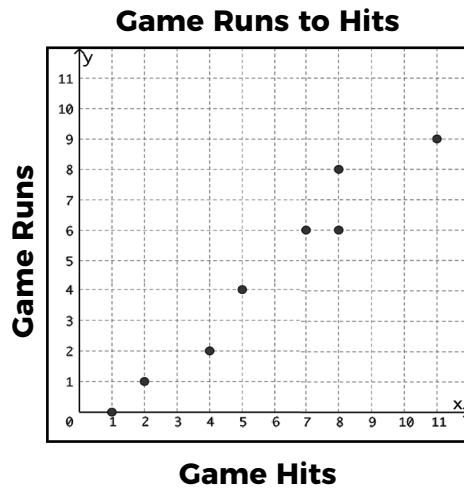
3. How many teeth does a child lose on average from age 5 to age 10? Draw a line between the data points on the scatterplot that show the solution to the question.

4. The scatterplot shows the number of calories and fat grams in certain food items.



What is the difference in the fat grams for the highest and lowest calorie items?

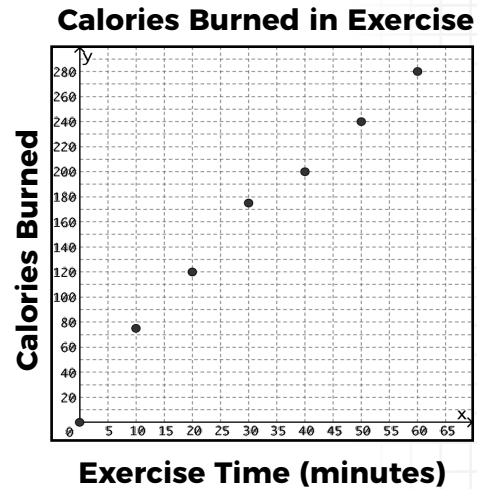
5. The scatterplot shows the hits and runs earned by a softball team for each of the games in the season



How many fewer runs did the team earn than hits made over the season?

- A** 36
B 46
C 10
D 2

6. The scatterplot shows the number of calories Carmen burned based on the time she spends exercising at the gym.



Carmen exercised Monday for 20 minutes and Wednesday for 40 minutes. If Carmen wants to burn a total of 500 calories for the three days, how many calories does she need to burn on Friday?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

			.		
0	0	0		0	0
1	1	1		1	1
2	2	2		2	2
3	3	3		3	3
4	4	4		4	4
5	5	5		5	5
6	6	6		6	6
7	7	7		7	7
8	8	8		8	8
9	9	9		9	9

7. In a sleep study, researchers noted the age and average hours of sleep for 8 individuals.

Age (years)	2	7	12	22	30	35	44	52
Sleep (hours)	14	10	11	9.5	8	7	6.5	5.5

Which scatterplot best represents the data from the study?

