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8th Grade Worksheet Bundle:

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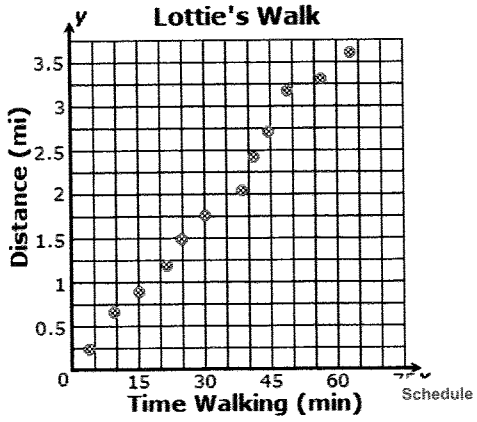
Study Island 8th Grade Math - Scatter Plots

Question 1 .

The scatter plot below shows the distances Lottie traveled on different morning walks.



Which type of association best describes the relationship between the times Lottie walked and the distances she traveled?

A. positive and negative association

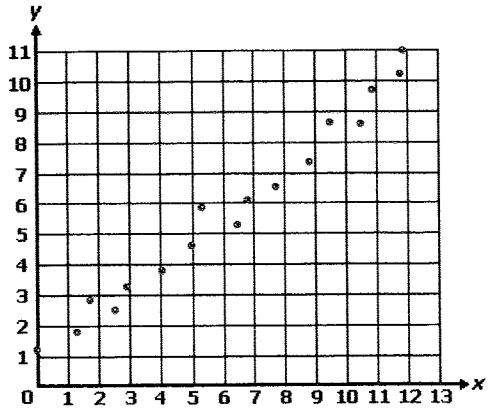
B. positive association

C. negative association

D. no association

Question 2 .

Which of the following best describes the relationship between the variables on the scatter plot below?



A. nonlinear association

B. linear and nonlinear association

C. linear association

D. no association

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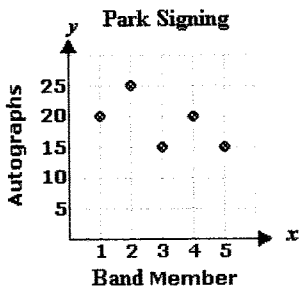
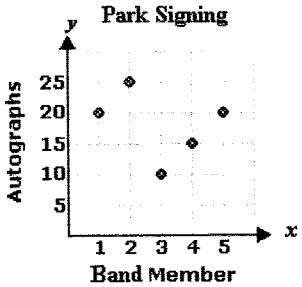
Question 3 .

Five members of a punk band were at the local skatepark, signing autographs. The table below shows the number of autographs signed by each band member during the first hour. Which scatter plot matches the table?

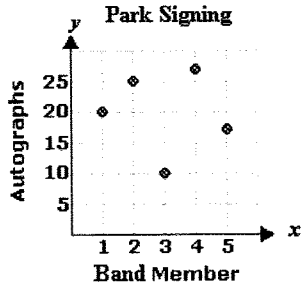
Band Member	Autographs
1	20
2	25
3	15
4	20
5	15



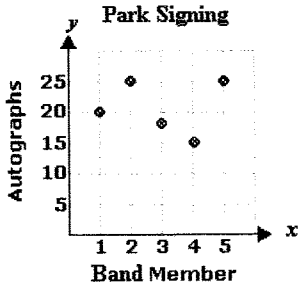
W.



X.



Y.



Z.

A. W

B. Z

C. Y

D. X

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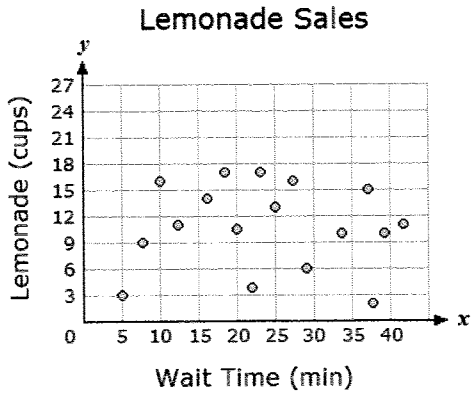
Question 4 .

At an amusement park, a lemonade stand was next to a roller coaster.

Throughout the day, people who got off the ride and purchased lemonade were asked how long they had to wait in line for the roller coaster. The results are shown in the scatter plot below.



Which statement is supported by the data in the scatter plot?

A. As the wait time increases, the number of cups of lemonade sold tends to increase.

B. There is no relationship between the wait time and the number of cups of lemonade sold.

C. As the wait time increases, the number of cups of lemonade sold tends to stay the same.

D. As the wait time increases, the number of cups of lemonade sold tends to decrease.

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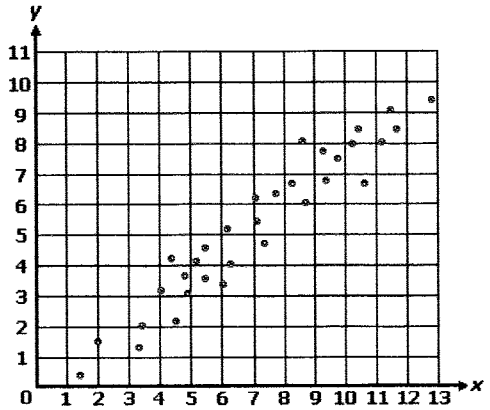
Question 5 .

Which of the following best describes the relationship between the variables on the scatter plot below?



A. non-linear association

B. linear and non-linear association

C. linear association

D. no association

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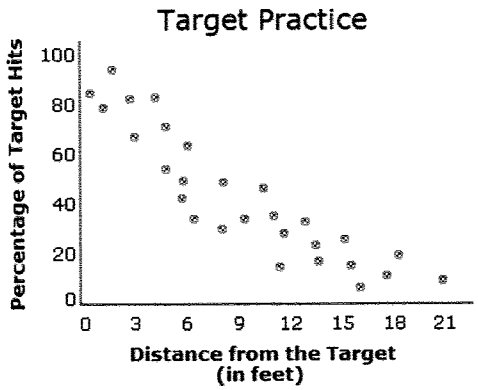
Question 6 .

At a children's archery camp, the percentage of target hits at different distances from the target for several students were recorded. The data is shown in the scatter plot below.



Which of the following can be interpreted from this data?

A. There is both a positive and a negative association between the distance from the target and the percentage of target hits.

B. There is no association between the distance from the target and the percentage of target hits.

C. There is a negative association between the distance from the target and the percentage of target hits.

D. There is a positive association between the distance from the target and the percentage of target hits.

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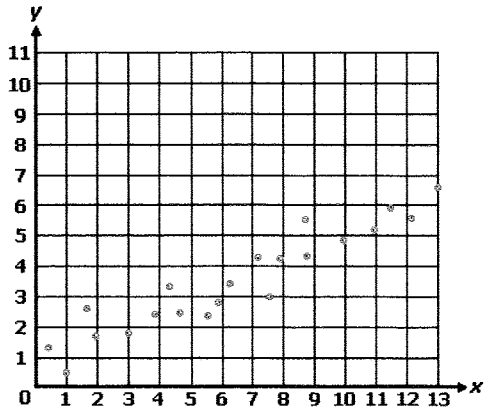
Question 9 .

Which of the following best describes the relationship between the variables on the scatter plot below?



A. positive association

B. positive and negative association

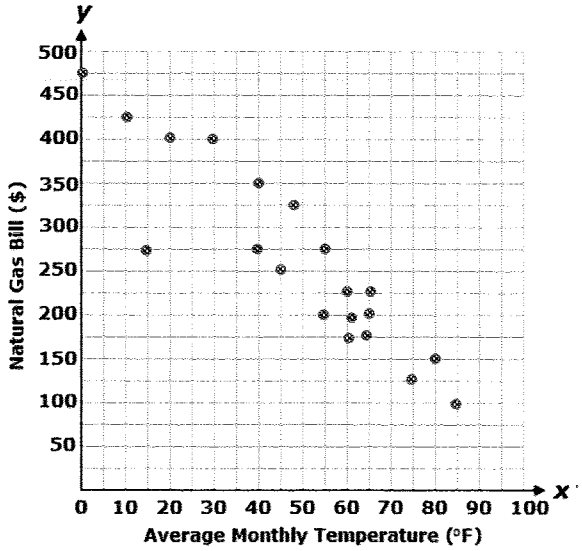
C. no association

D. negative association

Question 10 .

Directions: Select the correct text in the table.

The scatter plot shows the average monthly temperature outside and the cost of the natural gas bill for a business over 20 months.



Decide whether the statement in each row is true or false.

There is a cluster around the point (60 , 200).	True	False
There is an outlier at the point (15 , 275).	True	False
The data shows a positive association between the average monthly temperature and the natural gas bill.	True	False
The scatter plot shows a non-linear association between the average monthly temperature and the natural gas bill.	True	False

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Explanations: Math - Scatter Plots

1. If a best-fit line were drawn to represent the data in the scatter plot, it would show that as the times Lottie walked increased, the distances she traveled increased.

   So, there is a **positive association** between the times she walked and distances.

2. The data in the scatter plot follows the shape of a line.

   Therefore, there is a **linear association** between the variables on the scatter plot.

3. To determine which scatter plot matches the table, choose any of the points from the table and plot them on the graphs. The *Band Member* will be the x-value and the *Autographs* will be the y-value.

   For example, choose the points (1, 20), (2, 25), (3, 15), and (4, 20).

   The only scatter plot that contains these points is **W**.

4. The length of the wait time is shown on the x-axis. The number of cups of lemonade is shown on the y-axis.

   There is no trend in this graph. The dots do not appear to make a line in one direction or another.

   Therefore, **there is no relationship between the wait time and the number of cups of lemonade sold**.

5. The data in the scatter plot follows the shape of a line.

   Therefore, there is a **linear association** between the variables on the scatter plot.

6. Distance from the target (in feet) is shown on the horizontal axis. Percentage of target hits is shown on the vertical axis. As the distance from the target increased, the percentage of target hits decreased.

   The dots on the scatter plot go down and to the right. This indicates a negative association.

   Therefore, **there is a negative association between the distance from the target and the percentage of target hits**.

7. Age is shown on the x-axis. Amount of time spent watching television is on the y-axis. As the numbers increase on the x-axis, the numbers decrease on the y-axis.

   Therefore, it can interpreted from the scatter plot that **the older a person gets, the less television he or she watches**.

8. To determine which scatter plot matches the table, choose any of the points from the table and plot them on the graphs. The *Class Periods* will be the x-value and the *Number of Students* will be the y-value.

   For example, choose the points (1, 20), (2, 15), (3, 26), and (4, 12).

   The only scatter plot that contains these points is **W**.

9. As the x-values of the data set increase, the y-values of the data set tend to increase.

   Therefore, there is a **positive association** between the variables on the scatter plot.

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10. A cluster is data that are grouped closely together. There is a group of data points grouped closely around (60 , 200). So, the first statement, "there is a cluster around the point (60 , 200)", is **true**.
An outlier is a point that is far away from the rest of the data. Thus, the second statement, "there is an outlier at the point (15 , 275)", is **true**.
Based on the data, as the average monthly temperature increases, the business's natural gas bill decreases. So, the data shows a negative association. Therefore, the third statement that "the data shows a positive association between the average monthly temperature and the natural gas bill" is **false**.
In the given scatter plot, the graph of best fit is a straight line. So, the scatter plot shows a linear association between the average monthly temperature and the business's natural gas bill. So, the last statement that "the scatter plot shows a non-linear association between the average monthly temperature and the natural gas bill" is **false**.

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Name: _____

Angles in Triangles

Find the measure of the unknown angle in each of the triangles.

1. If m∠1 = 40° and m∠2 = 80°, what is m∠3?

2. If m∠1 = 50° and m∠2 = 75°, what is m∠3?

3. If m∠1 = 50° and m∠2 = 80°, what is m∠3?

4. If the complement of ∠1 is 80° and m∠2 = 80°, what is m∠3?

5. If the supplement of ∠2 is 110° and the complement of ∠3 is 60°, what is m∠1?

6. If the supplement of ∠1 is 80° and m∠2 = 70°, what is m∠3?

7. If the supplement of ∠1 = 40° and m∠2 = 30°, what is m∠3?

8. If the complement of ∠1 = 60° and m∠2 = 80°, what is m∠3?

9. If m∠1 = 80° and the complement of m∠2 = 70°, what is m∠3?

10. If the supplement of ∠2 is 70° and m∠3 = 30°, what is m∠1?

Name: _____

Exponents, Squares & Cubes

Write an equivalent expression for each of these expressions.

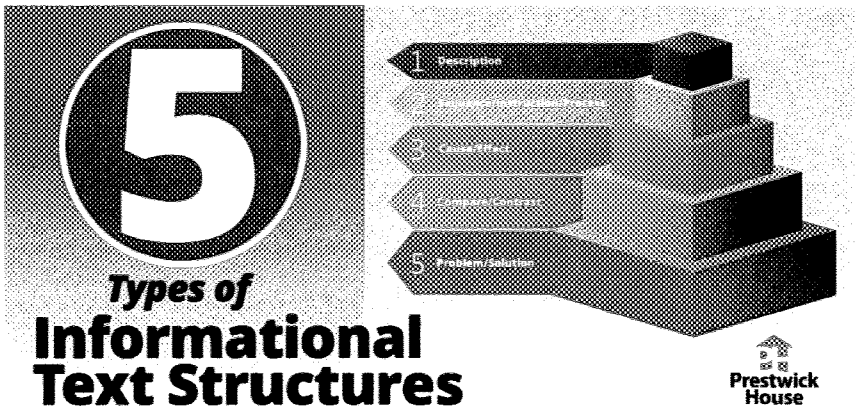
1. $2x + 4y + 7x^2 - 6y$ _____
2. $2x^2(4x^2 + 2x)$ _____
3. $x(x^2 + x - 1) - x^2$ _____
4. $y^2(x^2 + 1)$ _____
5. $x^2(x^2 + 1)$ _____

Find the square root of each of the following.

6. 4 _____
7. 25 _____
8. 81 _____
9. 144 _____
10. 196 _____
11. 625 _____
12. 10,000 _____
13. 1 _____
14. 56.25 _____
15. 100 _____

Find the cube root of each of the following.

16. 8 _____
17. 125 _____
18. 64 _____
19. 343 _____
20. 216 _____
21. 3.375 _____
22. 1,000 _____
23. 1,000,000 _____



READING

5 Types of Informational Text Structures

by Derek Spencer

The vast majority of texts are written for one or more of these three purposes:

- To make an argument
- To inform
- To tell a story

To achieve these purposes, authors use one or more of the following 5 text structures:

- Description
- Sequence/Instruction/Process
- Cause/Effect
- Compare/Contrast
- Problem/Solution

Norton

lents must be able to unpack these 5 text structures and study their components in order to ful erstand and analyze informational texts, whether they're reading textbooks, news articles, or ks of literary nonfiction.

1. Description

This is pretty straightforward. Texts that use this structure simply describe something. With few exceptions, these texts also present plenty of details about what they're describing.

A text using this structure might also:

- Tell you why something is being described
- Tell you why the described topic is important
- Provide examples of the described topic(s)

Descriptive texts are everywhere—in novels, works of literary nonfiction, news articles, science textbooks—which makes sense because the entire point of description is to present information.

2. Sequence/Instruction/Process

This text structure covers a few purposes:

- Sequential instructions (Step 1, Step 2, Step 3; do this, then do that, and finally do this)
- Chronological events (This happened, then this happened, then this happened, etc.)
- Arguments that use evidence to support a claim (presenting evidence from least to most convinci

When students read or write a text with this structure, order is key. Texts that use this format usual don't present any event or instruction out of order, as doing so would make its directions more difficult to follow.

As a ludicrous example, imagine a cake recipe in which preheating the oven is the last step. It woulc just be confusing and odd. Poorly written instructions just aren't worth your time.

Here is a non-exhaustive list of words and phrases that indicate a text follows the sequence/instruction/process text structure:

after	before	during	earlier
eventually	finally	first	from
how to	in order	last	meanwhile
next	now	until	while

3. Cause/Effect

se/Effect text structures explain, well, causes and effects. Sounds pretty simple! But works that structure can become complex when an effect has multiple causes (or vice versa).

Students will encounter complex examples of cause-effect when they read historical texts. Many events in history had more than one cause, all related in ways that can be difficult to unpack.

Here is a non-exhaustive list of words and phrases that indicate a text follows the cause/effect text structure:

because	cause	led to	reason
accordingly	effect	result	consequence

4. Compare/Contrast

This text structure involves a comparison involving multiple things, revealing how they are similar a how they are different.

Make sure your students know that contrasting two or more things doesn't necessarily mean identifying them as either good or bad. Comparisons simply relay the differences; therefore, one th could have both positive and negative traits.

Here is a non-exhaustive list of words and phrases that indicate a text follows the compare/contras text structure:

alike	also	both	comparable
even	in common	just as	similar
although	but	despite	difference
however	instead	otherwise	unlike

5. Problem/Solution

This text structure involves two parts:

- The author identifies a problem
- The author details a solution to this problem

Problem/Solution can be a very complex text structure, as it necessitates the use of other structure: too. Clearly, the author needs to describe the problem. The author would likely also explain the cau and effects of the problem in order to argue in favor of their solution. Does implementing the autho solution involve following a series of specific steps? That involves another structure. What if the aut wants to mention other potential solutions and then explain why their solution is the best one? Oh, hello there, Compare/Contrast!

t's important here, as it is with any text in which an author marshals an argument, is that the or uses only the information needed to advance the argument or refute counterarguments. Wl

students examine a text that uses the Problem/Solution text structure, they should examine at leas two things: the argument as a whole and the individual components of it.

Knowing that aspects of other text structures might appear in the Problem/Solution one will help students examine the argument's individual components. That's why it's essential that students understand and can analyze the other four structures if you want them to be able to examine Problem/Solution effectively.

Looking for a series that makes teaching informational material easier? Try ***Reading Informational Texts***, available now for grades 7–12. Each book in this series offers challenging nonfiction passages that align with the rigorous guidelines of the Common Core State Standards.

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