Scatterplots & Correlation

Agenda

Warm-Up

Reminders

Notes Unit 5

HW: #1-8

Reminders

Quiz Friday!

Essential Question

How can I tell the correlation between two variables?

Warm-Up Tuesday

Find your new seat. At your table, write one school-appropriate thing <u>your shoulder partner</u> did over the break.

Some Reminders...

THINK of one thing about how this class runs (procedures, grading, etc)

On page 67 set up unit 5 in your notebook.

PAGE 66 IS BLANK!

Put your "5" tab on page 67 (fold along the dotted line)

67

UNIT 5

TITLE: Scatterplots

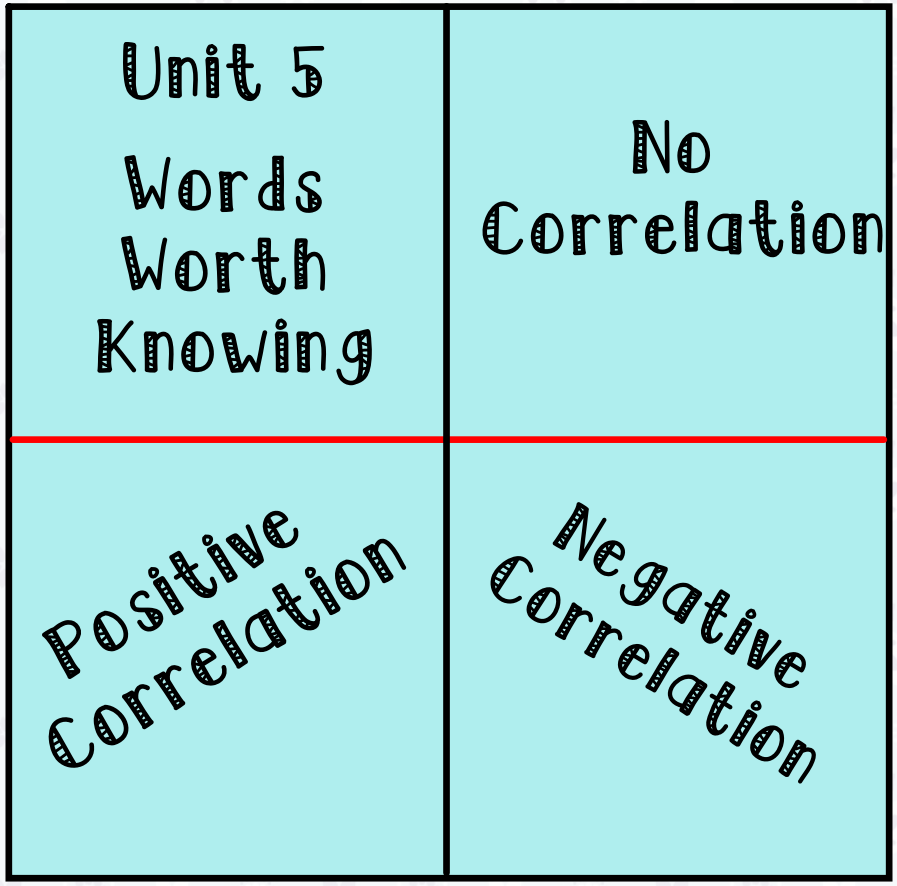
Page #	Page Title
68	WWK/Correlation

You may start a new notebook but it must be at the beginning of a unit. There will be a quick notebook check tomorrow.

Scatterplots & Correlation p.68

Essential Question How can I tell the correlation between two variables?

Fold the blue paper so it looks like below. Cut the flaps in between.



Scatterplots & Correlation p.68

Essential Question How can I tell the correlation between two variables?

Unit 5

Words Worth Knowing

No Correlation

Positive Correlation

Negative Correlation

Scatterplots & Correlation p.68

Essential Question How can I tell the correlation between two variables?

Scatterplot:

a graph with points plotted to show a possible relationship between two variables

Correlation:

describes the relationship between two variables or a scatterplot

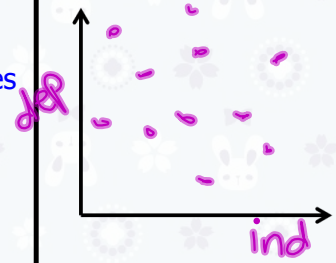
Trend line (Line of Best Fit):

the line that comes closest to all the points in a data set. This line describes the trend in the data.

Linear Regression:

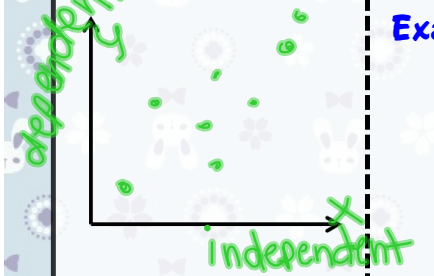
Used to find THE equation of the line of best fit.
Use STAT on your calculator.

Examples



No relationship between the given variables.

Examples



When one value increases, the other increases.

Examples

When one value increases, the other decreases.

Scatterplots & Correlation p.68

Decide whether the relationships below represent **positive**, **negative** or **no** correlation. Write each example down on the appropriate section of your foldable. Only write in pencil unless you are positive you are correct!!

- Temperature and number of people wearing jackets
- How tall a person is and how fast they drive
- A person's height and a person's age
- Hours in the mall vs. amount of money spent
- Weight on a skateboard vs. speed of the skateboard
- Hours of studying vs. grades
- Test scores vs. shoe sizes
- Distance traveled vs. amount of gas in the car
- Number of days absent from school vs. math average
- Number of pets a person has and number of books a person has read
- Education and income

negative

None

Scatterplots & Correlation p.68

No Correlation

- How tall a person is and how fast they drive
- Test scores vs. shoe sizes
- Number of pets a person has and number of books a person has read

Positive Correlation

- Hours of studying vs. grades
- A person's height and a person's age
- Hours in the mall vs. amount of money spent
- Education and income

Negative Correlation

- Temperature and number of people wearing jackets
- Weight on a skateboard vs. speed of the skateboard
- Number of days absent from school vs. math average
- Distance traveled vs. amount of gas in the car

Tonight's assignment. Help will be posted on twitter.com/mskmat

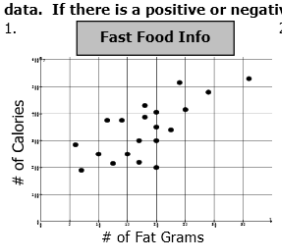
Algebra I - Unit 5: Topic 1 – Scatterplots and Correlations

Practice – Scatterplots and Correlations **pp 262 - 269**

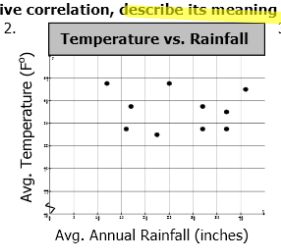
Name _____ Date _____ Period _____

Look at the scatterplots below. Determine if there is a positive, negative, or no correlation between the data. If there is a positive or negative correlation, describe its meaning in the situation.

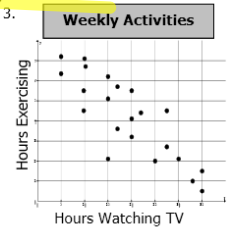
1.



2.



3.



Correlation:	Correlation:	Correlation:
Description of meaning:	Description of meaning:	Description of meaning:

For each of the following, state the correlation the statement represents, then explain why.

4. The length of a baby at birth and the month in which the baby was born.

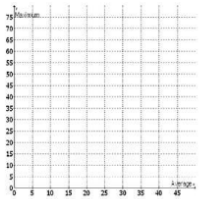
5. The amount of free time you have and the number of hours you work.

6. The sales of snow shovels and the amount of snowfall.

7. During one month at a local deli, the number of pounds of ham sold decreased as the number of pounds of turkey sold increased.
   A. What type of correlation is this an example of?
   B. Is it reasonable to conclude that the change in turkey sales caused the decrease in ham sales? Explain your answer.

8. The table to the right shows the average and maximum lifespan for some animals.
   A. Plot the data from the table on the graph below.
   B. What type of correlation exists, if any.
   C. Describe the correlation.

Lifespan of Some Animals								
Avg.	12	25	15	8	35	40	41	20
Max.	47	50	40	20	70	77	61	54



Scatterplots & Correlation HW HELP

Essential Question How can I tell the correlation between two variables?

1-3, make sure you **explain** WHY!

1. Positive 2. None 3. Negative

4-6, make sure you **explain** WHY!!

4. None 5. Negative 6. Positive

7. A. Negative

B. No, correlation does not imply causation. People could be buying something else, not turkey.

8. A. Make the scatterplot (x-axis is average age, y-axis is maximum age)

B. Positive

C. Why is this relationship positive?