

# Analyzing two variables

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# Data

Let's use the schools data again. But this time we're interested in how two variables move *together*.

Types of questions:

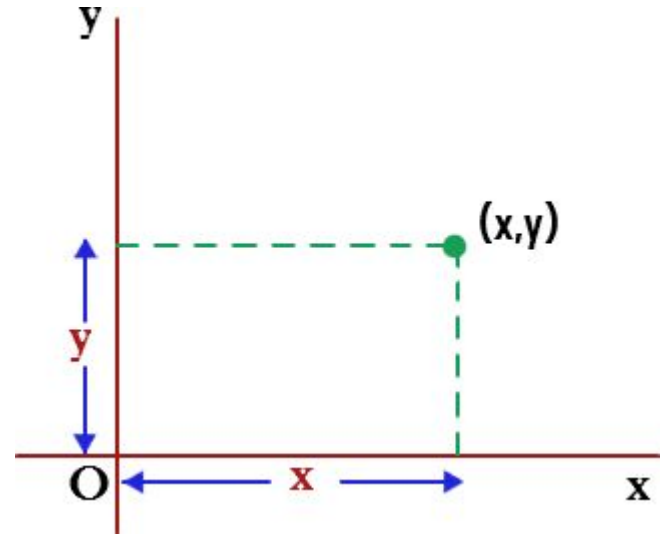
As the rate of poor students at a school increases, what happens to test scores?

Is there a relationship between student teacher-ratio and math test scores?

# Cartesian coordinate review

In general, the  $x$ -axis is the thing we think is a predictor.

The  $y$ -axis is the thing we think might be related to the  $x$ -axis.



# Are poverty and test scores related?

To assess this, we want to plot poverty rates and school average test scores on our x and y axis.

- Select the poverty and math score columns and paste them into a new tab.
- Choose Math vs. Poverty from the options

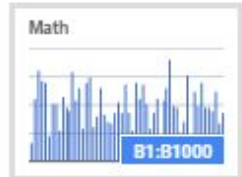
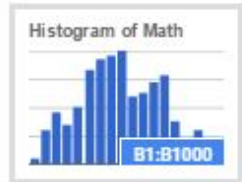
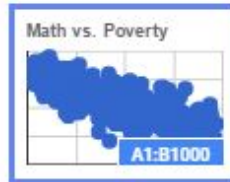
Chart Editor

Recommendations

Chart types

Custom

Sheet1!A1:Z1000

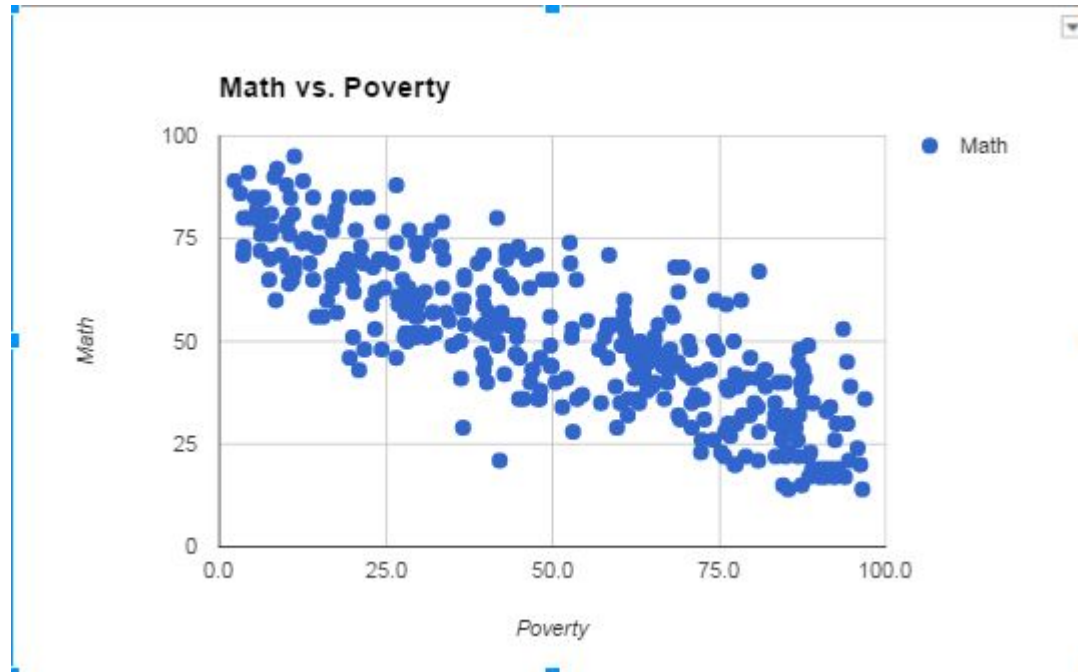


Insert

Cancel

# Are poverty and test scores related?

Your result should look like this:



# Interpreting a scatterplot

If y goes up as X goes up, that is a positive correlation.

If y goes down as X goes up, that is a negative correlation.

There are two uses for a scatterplot:

1. What is the relationship between the variables overall?
2. Are there 'outliers', or observations that don't fit the pattern. This can be the source of good reporting leads.