MPM 1DI

Grade 9 Academic Math

Day 28: Scatter Plots (Trends & Correlation)

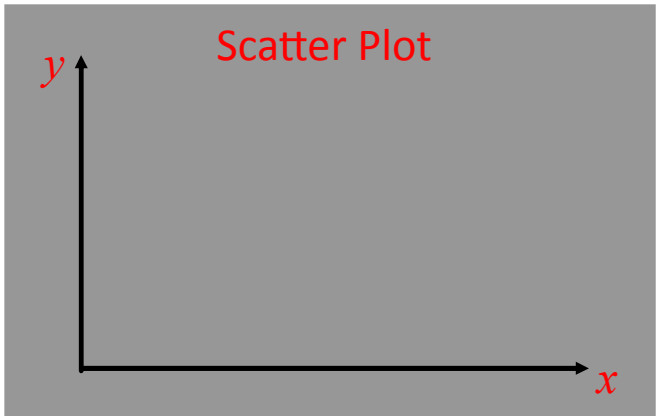
Learning Goal:

Students can a) describe relationships and trends shown on scatter plots using good terminology, and b) use correlation to make predictions.

Oct 11-1:49 PM

ACTIVITY: "Skittle" (Scatter) Plots

Everyone should have a piece of paper. Label it as seen below.



TASK:

Create scatter plots using your Skittles (based on given criteria).

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CONSOLIDATION:

There are **3 aspects** that we should discuss when talking about correlation/ trend:

- linear or non-linear
- strength
- direction

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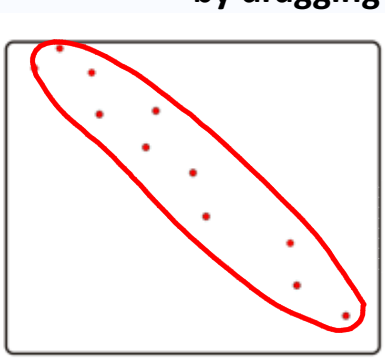
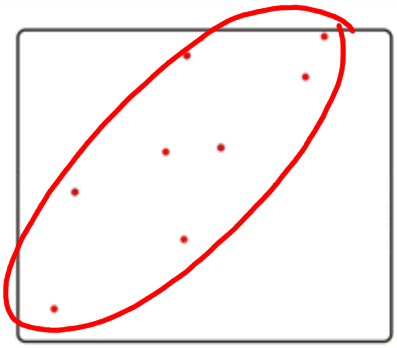
Indicate if there is any correlation & its strength

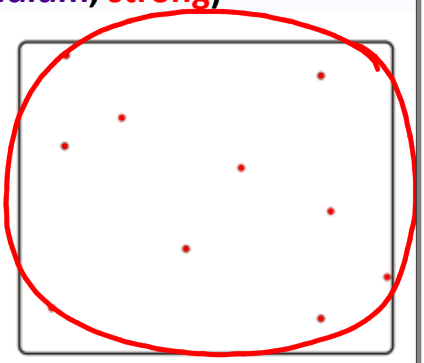
by dragging the correct word (no, weak, medium, strong)



Medium Correlation



Weak Correlation



No Correlation

"snowstorm"

Strength of Correlation: To visualize the ***strength*** of correlation, enclose the plotted points in an *oval*.

Weak Correlation | Medium Correlation | Strong Correlation

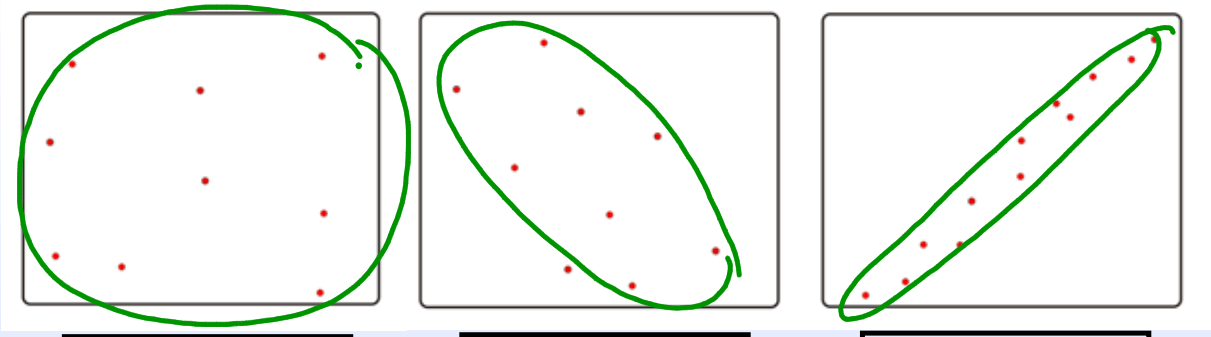
Weak — If the oval is *fat*, then the correlation is *weak*.

Strong — If the oval is *thin*, then the correlation is *strong*.

No Correlation — If the points are roughly enclosed by a ***circle***, then there is *no correlation*.

Minds On

Indicate if there is positive or negative correlation.



No Correlation | Negative | Positive

Correlation: Positive Negative

Pos

Positive correlation means that as one quantity increases the other increases as well.

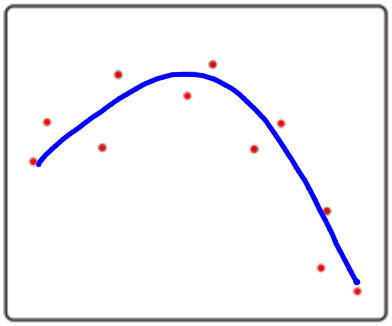
No Correlation

If the points are roughly enclosed by a ***circle***, then there is *no correlation*.

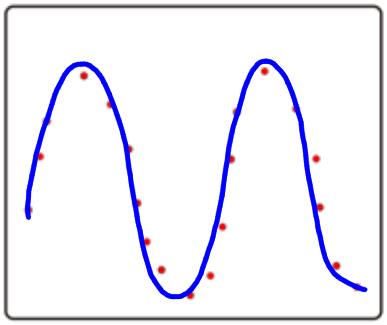
Neg

This means that as one quantity increases the other decreases.

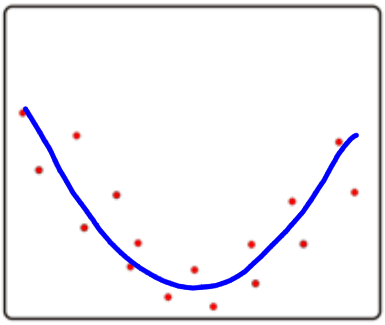
Indicate if there is a linear or non-linear correlation



Non-Linear



Non-Linear



Non-Linear

Type of Relation: **Linear**

linear — If the plotted points can be fitted using a straight line, then the relation is linear.

No Correlation

If the points are roughly enclosed by a ***circle***, then there is *no correlation*.

non-linear — If the plotted points cannot be fitted using a straight line, then the relation is non-linear.

Let's practice!

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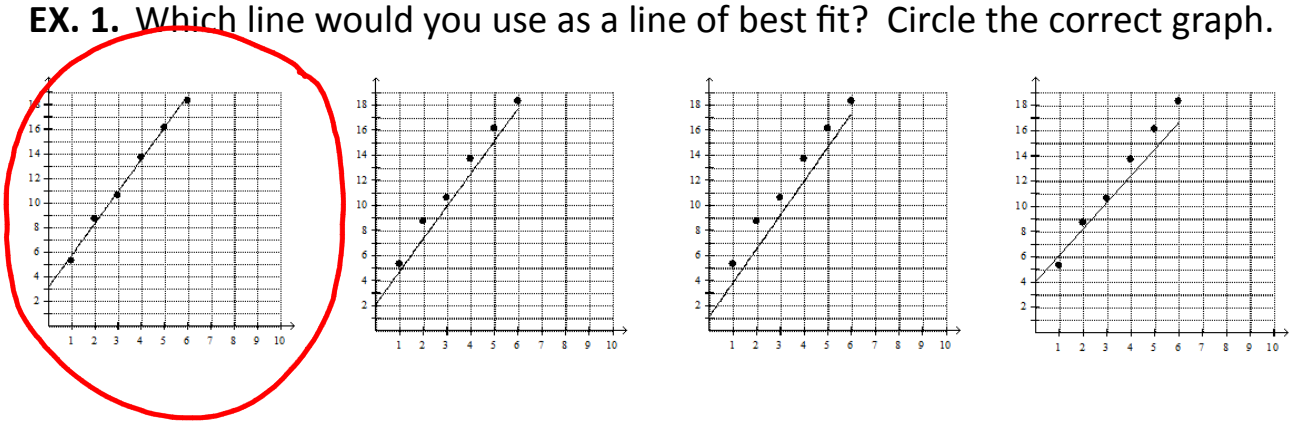
More Learning Goals:

Students can a) draw a line or curve of best fit to determine a trend, b) determine the independent and dependent variables, and c) use trends to make predictions (interpolation & extrapolation).

LINE OF BEST FIT:

When drawing a LINE OF BEST FIT, there should be about as many points above the line as below.

EX. 1. Which line would you use as a line of best fit? Circle the correct graph.



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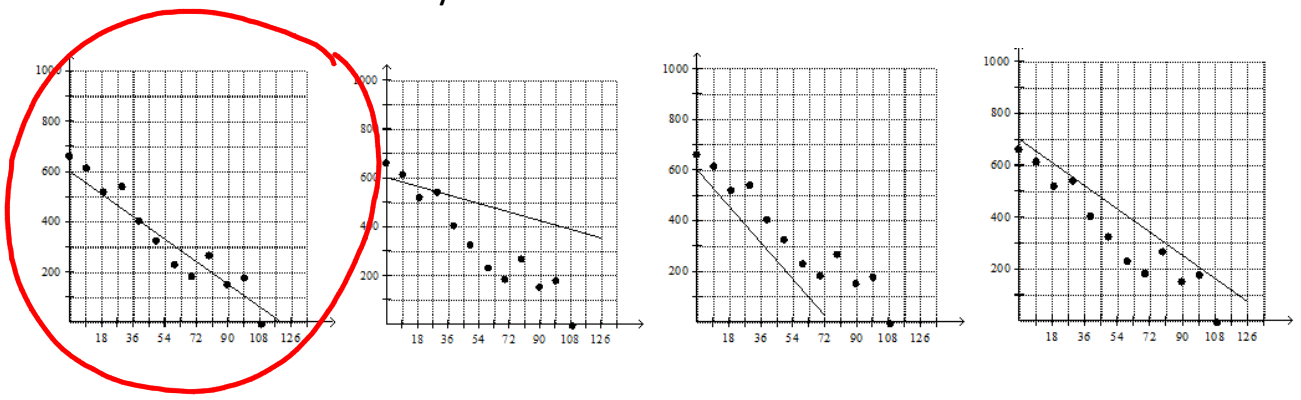
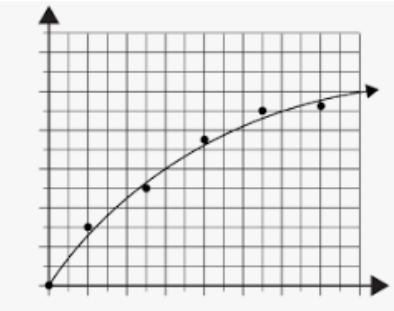
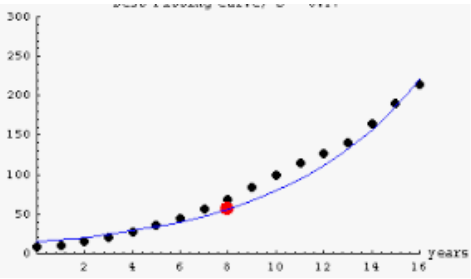
EX. 2. Which line would you use as the line of best fit?



CURVE OF BEST FIT:

Why would you use a curve of best fit for these two graphs instead of a line of best fit?





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Practice: p. 83 #1, 3-5

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