PDST
Professional Development Service for Teachers | An tSeirbhís um Fhorbairt Ghairmiúil do Mhúinteoirí
POST PRIMARY MATHS

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Statistics & Probability:

Transition from Junior Cycle to Senior Cycle

Correlation Task

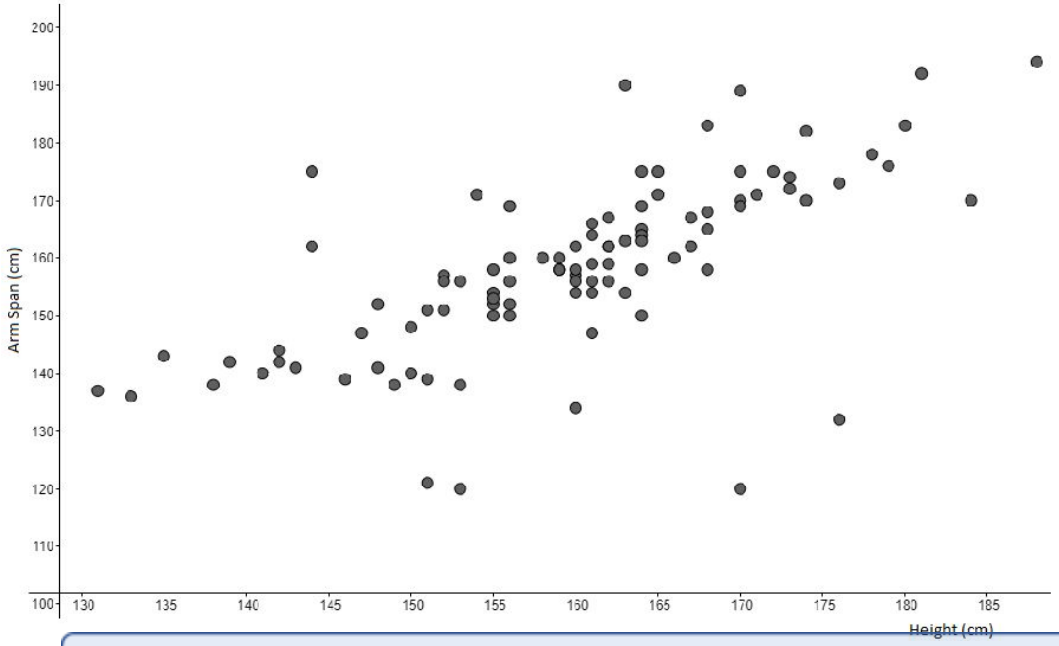
Name: _____

Syllabus Learning Outcome 1.6

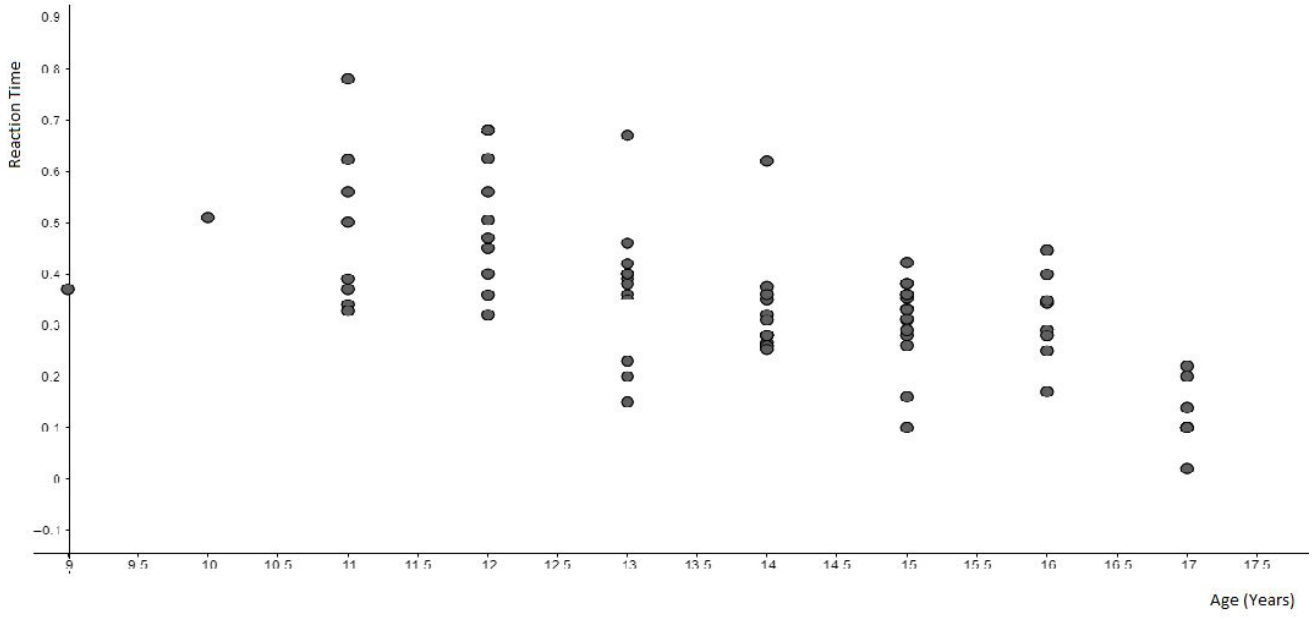
Task 3.1 – Bivariate Relationships

Student prior knowledge:
JC: Linear relationships from algebra/patterns. Coordinate geometry of the line.
LC: Scatter plots.

Q1. For each of the following diagrams, comment on the strength of each relationship in the context of the question.



Comment:



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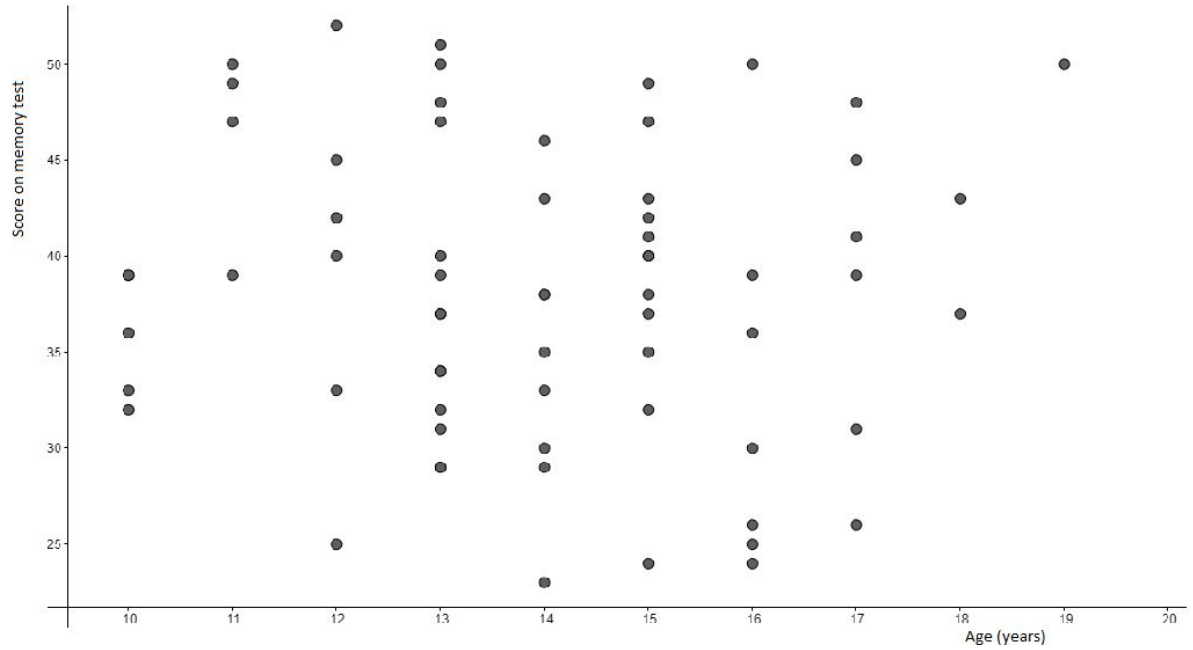
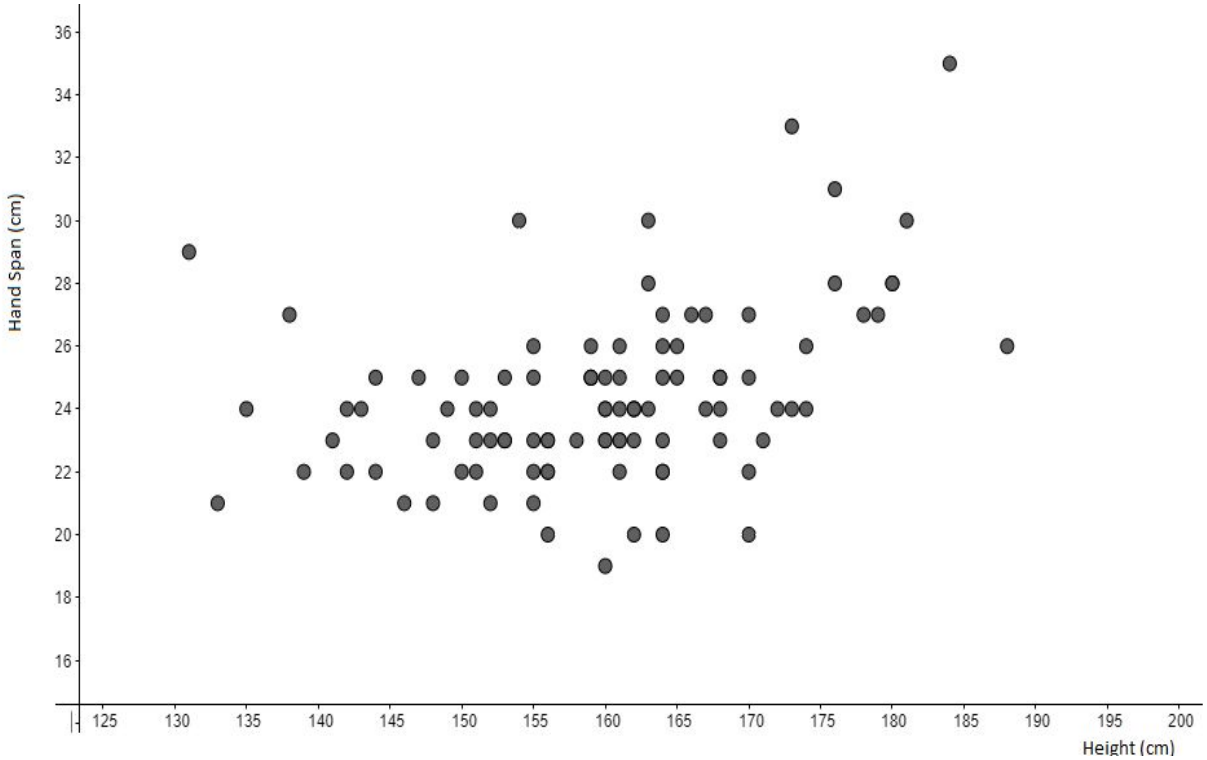


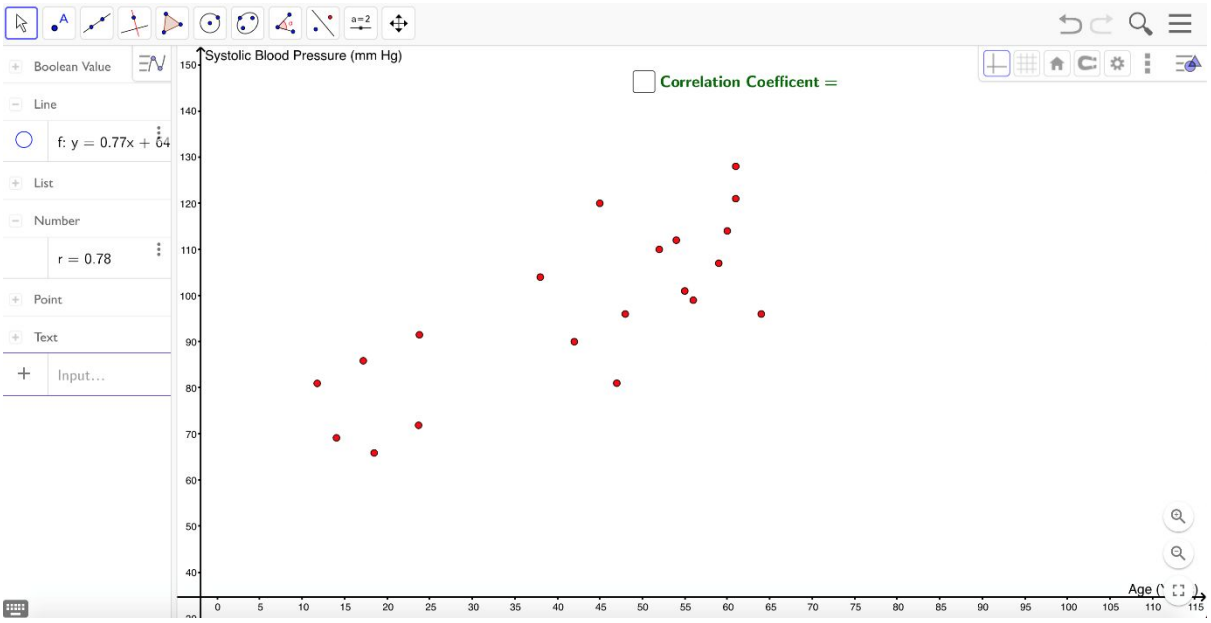
Comment:



Comment:

Correlation Coefficient

Log on to:
https://www.projectmaths.ie/geogebra/blood-pressure-example-correlation/ to access the GeoGebra file.

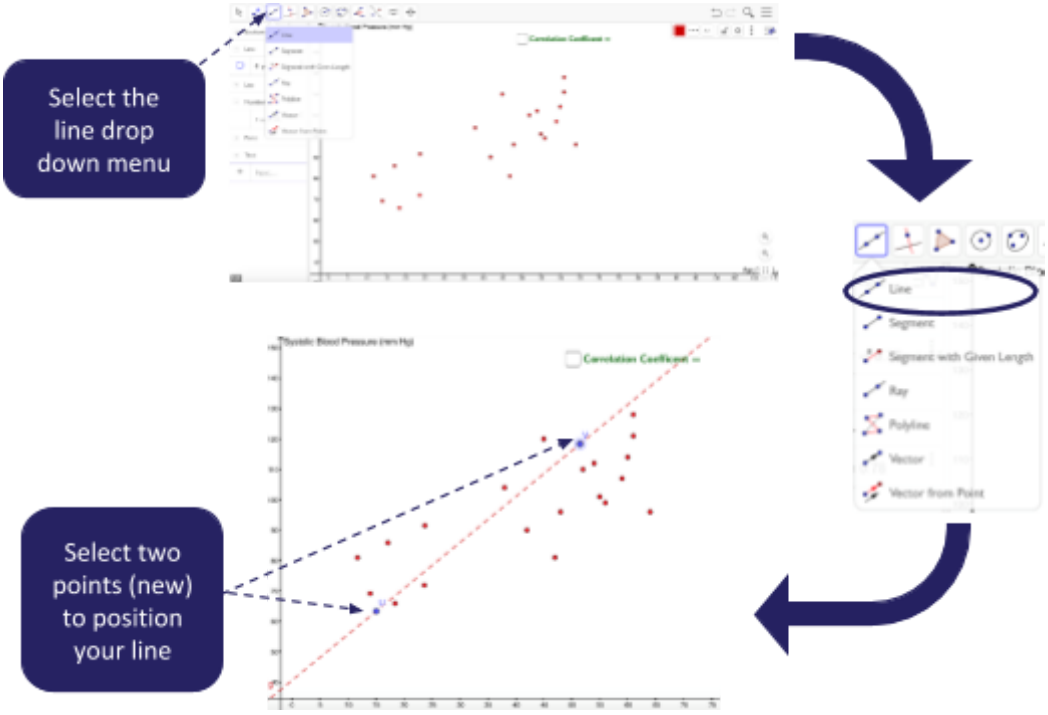


Drag the points around and investigate the changes to the correlation coefficient. Note these observations in the box below.

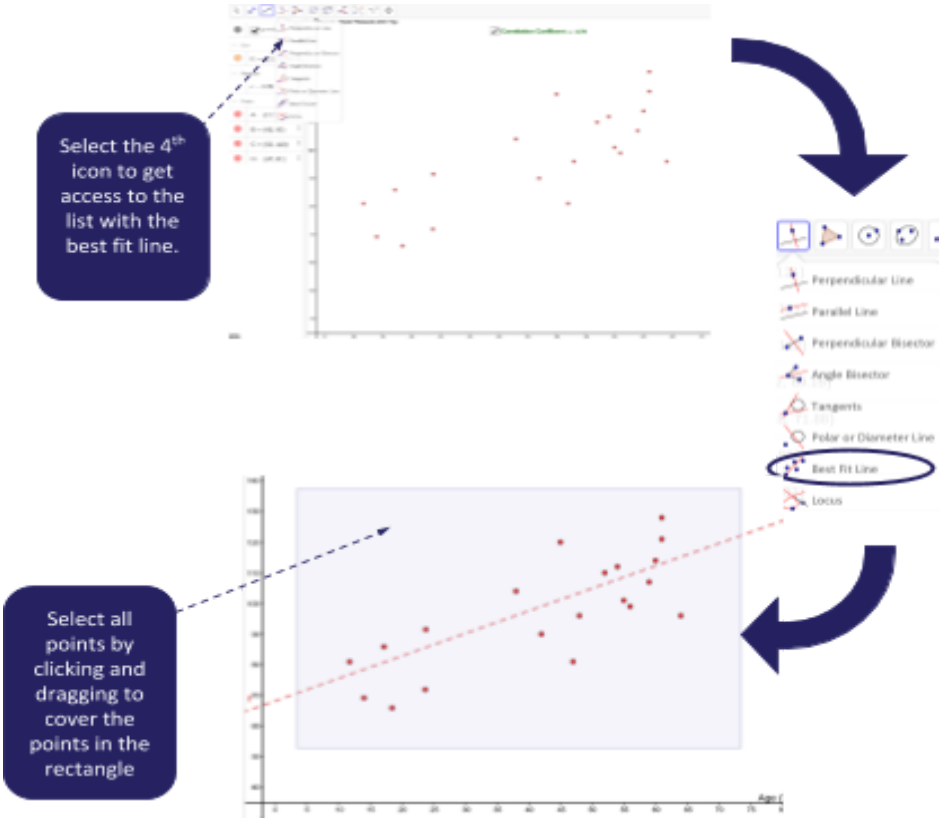
Observations:

Line of Best Fit

Using the cheat sheet plot a line that best represents the data.



Then, using GeoGebra enter in the actual best fit line using the best fit line tool (see below). Note that the equation of this line shows up in the Algebra view. Drag the points and notice the effect on the line of best fit.



Extension Questions

Extension Questions:
Why is the 'line of best fit' a better representation of the strength of the relationship than your initial estimate line?
Is there any reason why two seemingly unrelated quantities can be strongly correlated?
Can you predict what blood pressure a person of age ... would be?
Is there any situation where the slope of the line of best fit and the correlation coefficient are the same? Justify your answer.