

## Packet 6: Bivariate Data

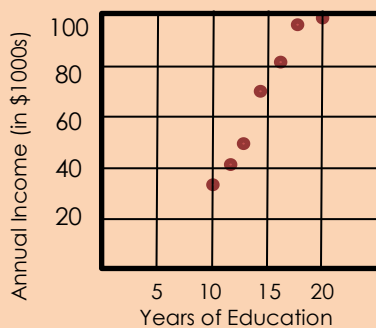
Dear Parents/Guardians,

In Packet 6, students will explore bivariate statistics. In Lesson 1, students plot data points to make scatter plots, describe associations, and draw conclusions. In Lesson 2, students connect what they learned about linear functions to statistics and draw and interpret lines of best fit. In Lesson 3, they organize and display data in tables, visual organizers, and graphs, as well as interpret the data.

### Numerical Data

Students graph their data and interpret the results.

Level of Education	Average Years of Education	Annual Income (in \$1000s)
Not a High School Graduate	10	32
High School Graduate	12	40
Some College, No Degree	13	49
Associate Degree	14	68
Bachelor Degree	16	80
Master Degree	17	98
Doctorate Degree	20	99



The graph is non-linear (not a line) but indicates a positive association.

Based on the data, more education is associated with making more money. Students might estimate a line that roughly fits this data and use it as a predictive tool.

<https://tinyurl.com/averagesalarybyeducationlevel>

### Frequency Table

A frequency table is a table that lists items and the number of times they occur in a data set. Students use their categorical data to complete two-way frequency tables for two variables.

	Students with a Job	Students without a Job	Total
Students with Chores	6	4	10
Students with No Chores	2	10	12
Total	8	14	22

Students separate the data to explore relative frequency tables.

Example: We can construct a frequency table relative to students who did/did not do chores to determine that approximately 27.3% of students who have chores also have a job.

$n = 22$	Job	No Job	Total
Chores	$\frac{6}{22} \approx 27.3\%$	$\frac{4}{22} \approx 18.2\%$	45.5%
No Chores	$\frac{2}{22} \approx 9.1\%$	$\frac{10}{22} \approx 45.4\%$	54.5%
Total	8	12	100%



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# MathLinks

GRADE 8

By the end of the packet,  
your student should know...

- How to construct and interpret scatter plots [Lesson 6-1]
- How to recognize associations between variables and notice the difference between linear and non-linear associations [Lessons 6-1 and 6-2]
- How to draw lines of best fit and estimate their equations [Lesson 6-2]
- How to interpret the slope and y-intercept of linear models [Lesson 6-2]
- How to construct and interpret two-way frequency tables and relative frequency tables [Lesson 6-3]

### Additional Resources

- For definitions and additional notes, please refer to Student Resources at the end of this packet.
- For information on how to read and interpret two-way frequency tables: <https://youtu.be/k8xFH6fCIWs>