Goals:

- Get all data onto one spreadsheet
  - option A: we'll share
  - option B: you'll work on your own & combine
- Tell the spreadsheet to find:
  ① Water quality & ② diversity
- Analyze the ① & ② using a graph called "linear regression"

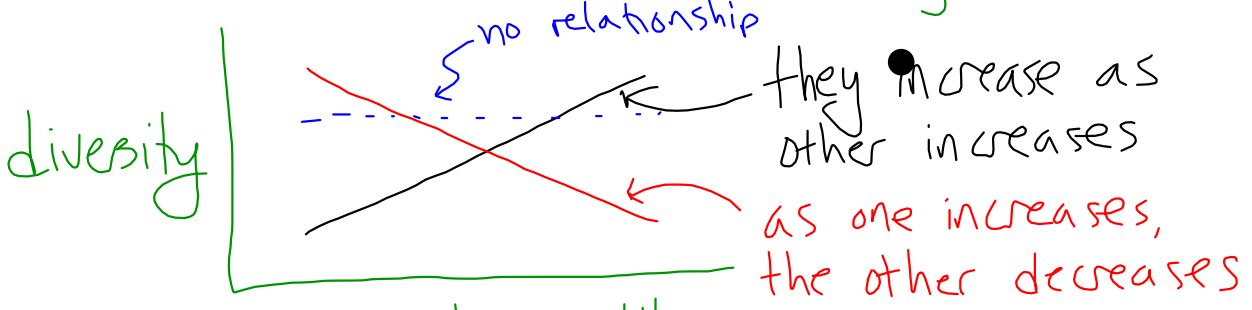
Instructions

- Select on the shared data link
- Enter your data (individual)
- Copy & paste water quality/diversity/total formulas
  - water quality - a weighted average rating w.q. from 1 (low) - 10 (high)
  - diversity - combines richness & evenness from 0 (low) to 1 (high)
- Make a copy of the spreadsheet & perform a linear regression
  - ★ R^2 (between 0 & 1) → we are looking for at least 0.6

- Make additional data tables showing depth vs. water quality and depth vs. diversity and perform a t-test.
- Find averages for:
  - Diversity of shallow water
  - Diversity of deep water
  - Water quality of shallow water
  - Water quality of deep water

For your discussion:

- Linear regression: "Is there a relationship between diversity and water quality?"
  - ⇒ What does the line show you?



  - ⇒ What does the R^2 tell you?
    - $R^2 > .60$: meaningful
    - $R^2 < .60$ not that meaningful

- T-tests:
  - Compare average water between shallow & deep water
  - Compare average diversity between shallow & deep water
  - Use the t-test to determine "significance":
    - P-value < 0.05, our data is significant
    - P-value > 0.05, our data is not significant