

Steps in Biological Investigations

By this stage, you will have completed many of the early stages of your investigation. Now is a good time to review what you have done and reflect on the biological significance of what you are investigating. Review the first page of this flow chart in light

of your findings so far. You are now ready to begin a more in-depth analysis of your results. Never under-estimate the value of plotting your data, even at a very early stage. This will help you decide on the best type of data analysis (see opposite).



Photos courtesy of Pasco

Observation

Something ...

- Changes or affects something else.
- Is more abundant, etc. along a transect, at one site, temperature, concentration, etc. than others.
- Is bigger, taller, or grows more quickly.

Pilot study

Lets you check ...

- Equipment, sampling sites, sampling interval.
- How long it takes to collect data.
- Problems with identification or other unforeseen issues.

Research

To find out ...

- Basic biology and properties.
- What other biotic or abiotic factors may have an effect.
- Its place within the broader biological context.

Analysis

Are you looking for a ...

- **Difference.**
- **Trend** or relationship.
- **Goodness of fit** (to a theoretical outcome).

Variables

Next you need to ...

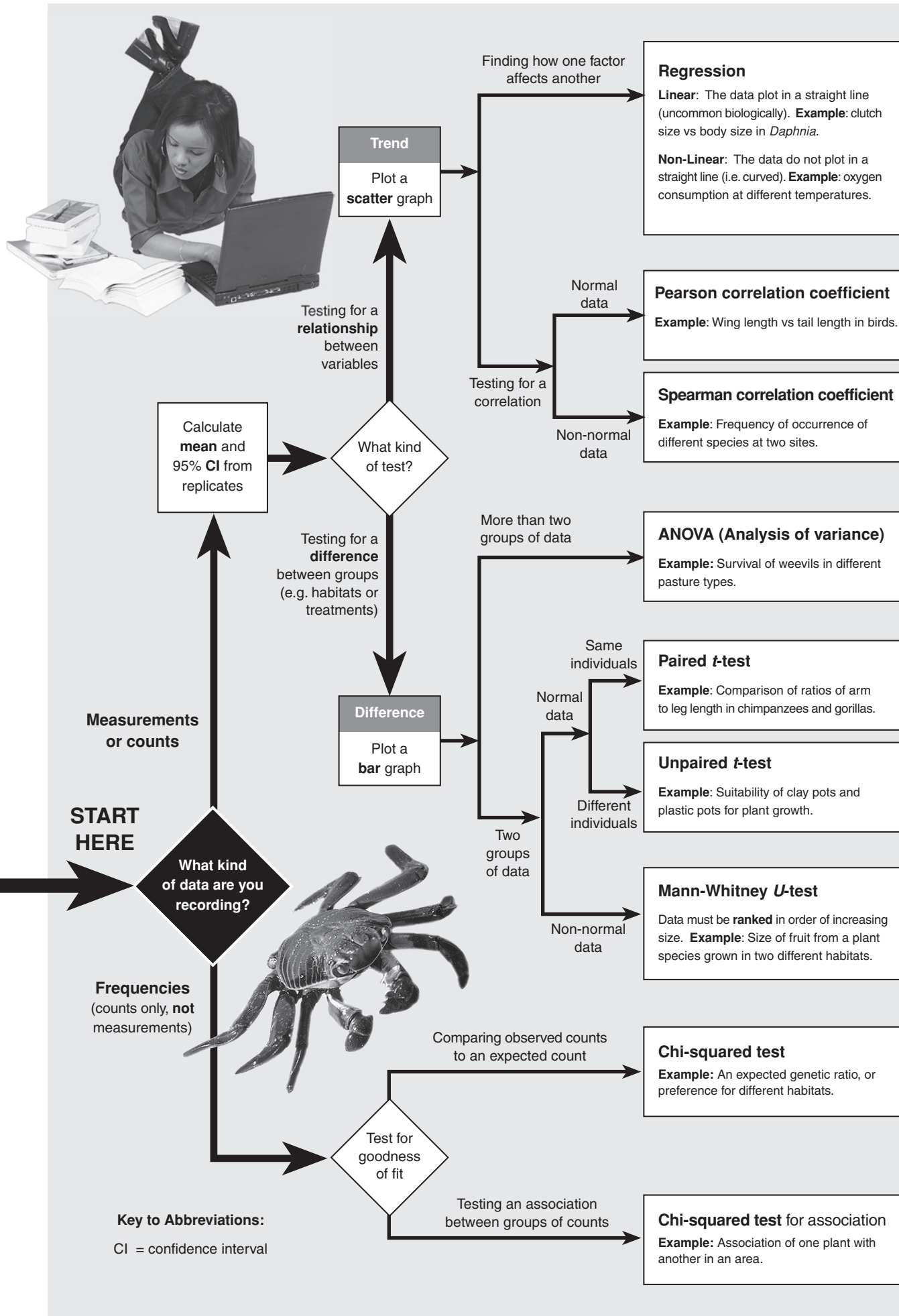
- Identify the key variables likely to cause the effect.
- Identify variables to be controlled in order to give the best chance of showing the effect that you want to study.

Hypothesis

Must be ...

- Testable
 - Able to generate predictions
- so that in the end you can say whether your data supports or allows you to reject your hypothesis.

Be prepared to revise your study design in the light of the results from your pilot study



Key to Abbreviations:
CI = confidence interval