Model Based Statistics in Biology

Chapter 2. Quantities

ReCap (Ch 1)
Ch2 Quantities
2.1 Five part definition
2.2 Types of measurement scale
2.3 Data collection, recording, and error checking
2.4 Graphical and tabular display of data Critique of graphs and tables (Lab 5)
2.5 Ratio Scale Units Base Standard Multiples Commonly used units in biology
2.6 Dimensions

Ch2.1 needed for problem set 1

Ch2_1 Break, if no quiz: 2 copies of 'Quantitative Answers to Rhetorical Questions'

on chalk board

ReCap Chapter 1 The Role of Statistics in Science

Statistics have come to play a central role in the biological, psychological, and health sciences.

Model Based Statistics in Biology

Simplification required to deal with uncertainty and with biological complexity

 \triangle Verbal, graphical, and formal model (equations)

Models are used to make: useful calculations (species extinction) decisions (experiments. yes/no)

Role of statistics: Development of models (exploratory analysis)

Formal evaluation of models (confirmatory analysis)

Quantitative reasoning about biological phenomena.

Not a course in math. Not a course in statistical recipes.

It is a course in how to think with measured quantities.

It will integrate models with statistics.