Model Based Statistics in Biology.
Part II. Quantifying Uncertainty.
Chapter 6 Frequency Distributions

ReCap. Part I (Chapters 1,2,3,4)
ReCap. Part II (Ch 5)
6.1 Frequency Distributions from Data
    Discrete Distributions
       Example, Four Forms, Four Uses
    Continuous Distributions
       Example, Four Forms, Four Uses
    Uses (Summary)
6.2 Frequency Distributions from a Model
    Notation
    Uses
    Computing Probabilities and Outcomes
       Cell nuclei (binomial)
       Lab3
    Model vs Observed Distributions
6.3   Fit of Observed to Model Distribution
    Grouped Data
    Case 1. Mining Disasters (poisson)
    Case 2. Students/row (poisson)
    Case 3. Ages of alumnae mothers (normal)
    Case 4. MUN student mother ages (normal)
    Case 5. Mortality (binomial)
     Probability plots (Ungrouped Data)

Red chalk for residuals
Yellow chalk for model
White chalk for data

on chalk board

Recap Part I (Chapters 1,2,3,4)
Quantitative reasoning: Example of scallops, which combined stats and models
Quantities: Five part definition
Equations express an idea or concept about the relation of one quantity to another
ReCap (Ch5)
Data equations summarize pattern in data.
Data equations apply to regression lines and to comparison of groups.
The sum of the squared residuals allows us to compare one model to another.
It allows us to quantify the improvement in fit, a key concept in statistics.

Today: Frequency Distributions.
    Frequency distributions are a key concept in statistics.
    For a variable quantity, these distributions summarize information.
    They will be used throughout the course, for a variety of purposes.
    Frequency distributions can be calculated from data
       or from a probability model.