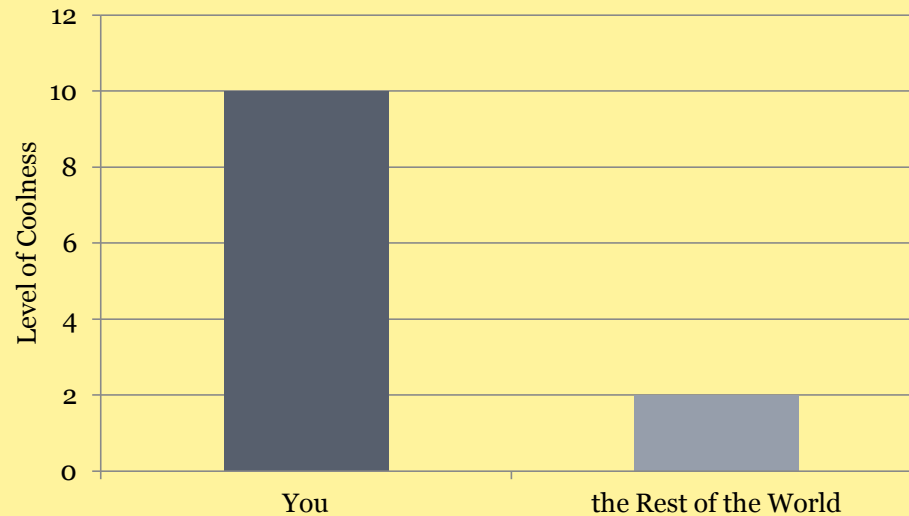# You Are So Significantly Cool

You Are So Significantly Cool

Frances Chin

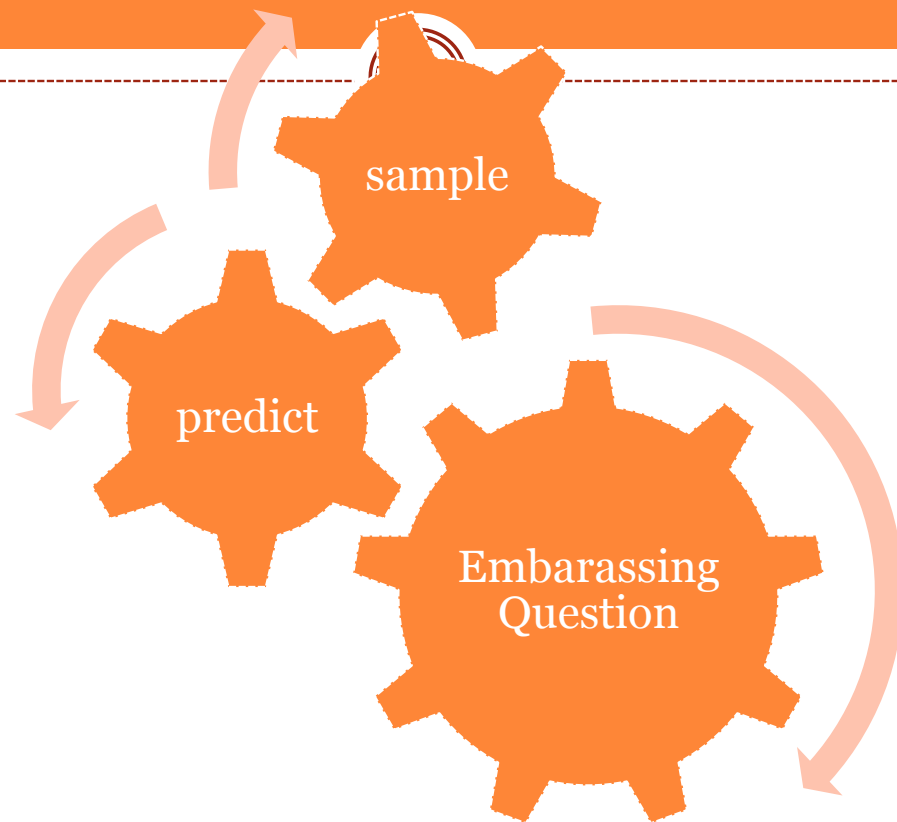**Clifton High School**
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NCTM Annual Conference
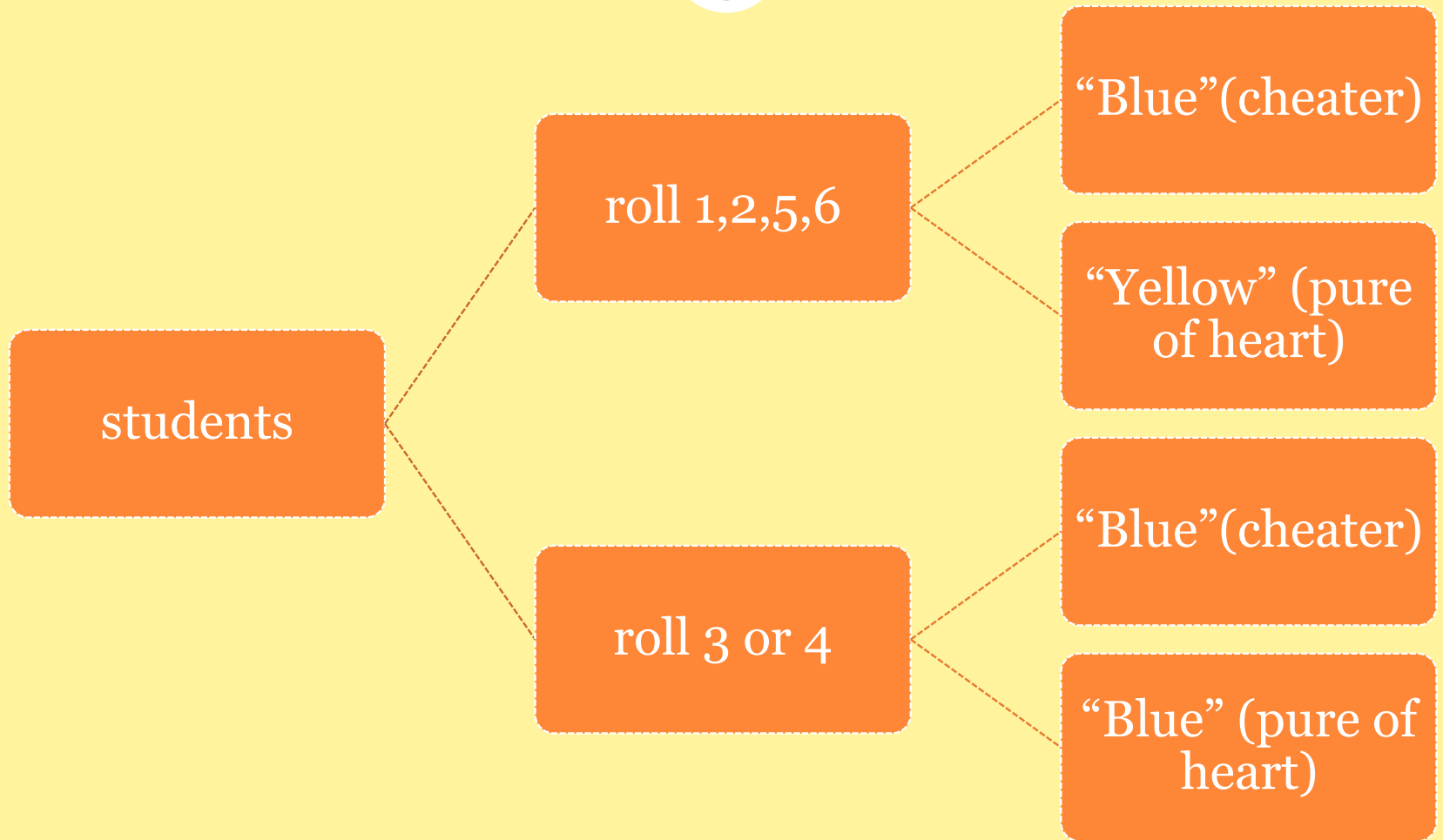**April 2012**

Investigate

- 1. What is sampling variability?

- 2. What are the characteristics of a distribution?

- 3. What is an extraordinary observation?

- 4. Is this win/loss record an outlier or is it biased?

1. What is sampling variability?

sample

predict

Embarassing Question

Tree diagram of conditional probability

Calculations

- (2/3) x (proportion pure of heart) = % "Yellow"

% cheaters = 1- proportion pure of heart

Results

Total Blue	Total Yellow	% Yellow	% Pure of Heart	% Cheaters

2. What are the characteristics of a distribution?

Center

Spread

Shape

A reporter wishes to portray baseball players as overpaid. Which measure of center should he report as the average salary of major league players?

(A) Mean
(B) Median
(C) Mode
(D) Either the Mean or Median. It doesn't matter since they will be equal.

Which of the following is likely to have a mean that is smaller than the median?

(A) Salaries of all professional baseball players
(B) Prices of homes in a large city
(C) Scores on a very difficult exam in which most get poor scores, but a few do very well
(D) Scores on a very easy exam in which most get nearly perfect scores, but a few do very poorly

A histogram of the educational level (in number of years of schooling) of the adult populations of the United States would have which of the following characteristics?

I.   Symmetry
II. Clusters
III. Skewness to the left

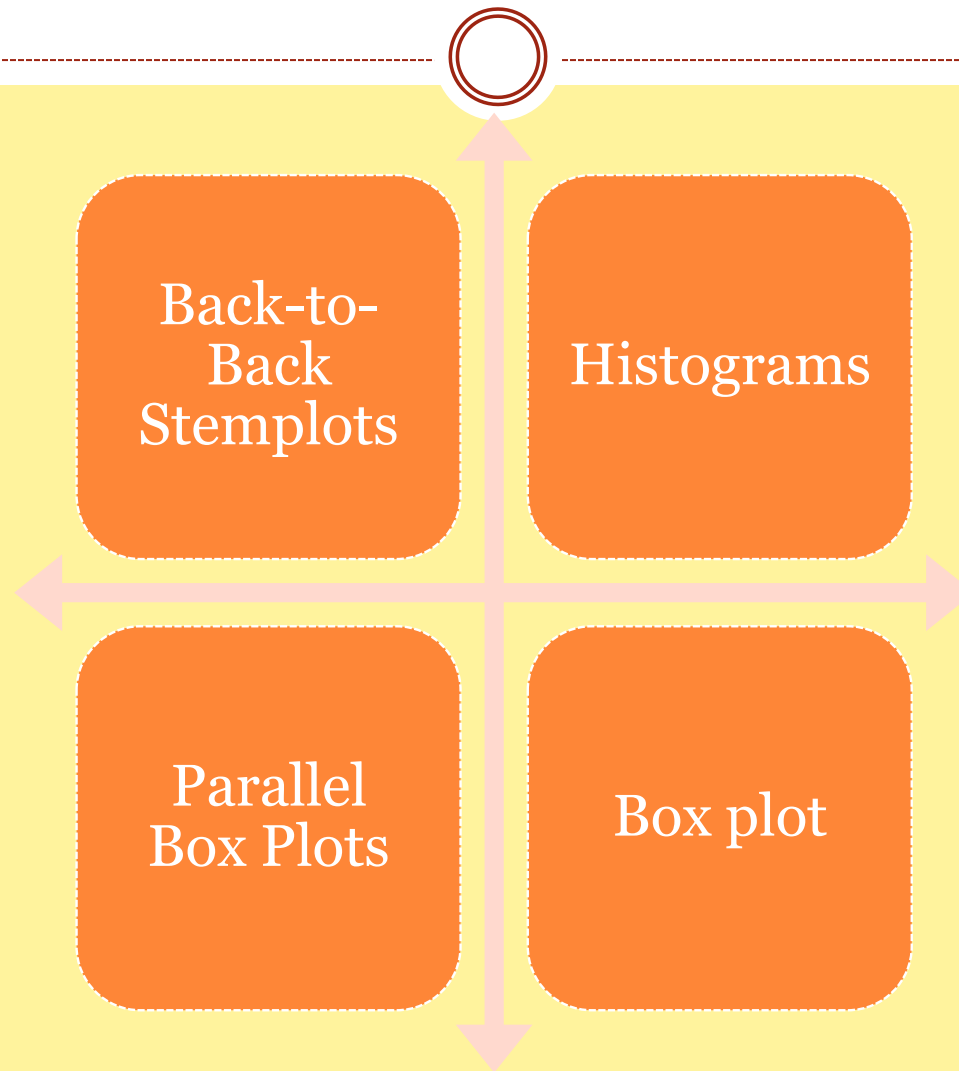(A) I and II   (B) I and III
(C) II and III   (D) I, II, and III

What are your observations?

Subject	Gender	Ht (in)	Foot (cm)	BPM 1	BPM 2	$$$	Work	Mother's age	Cell m/d
1	f	64	22	48	44	8	0	26	0
2	f	62	22	64	60	5	0	30	5
3	f	64	23	68	72	2	0	32	5
4	f	64	24	68	76	6	0	18	30

Compare Distributions

Back-to-Back Stemplots

Histograms

Parallel Box Plots

Box plot

3. What is an extraordinary observation?

1.5 IQR criterion

- Construct a Boxplot challenge

3 standard deviations from mean

- Construct a dotplot with the highest standard deviation

4. Is this win/loss record an outlier or is it biased?

A GAME OF DICE FOR TWO PLAYERS

Player A wins?

Player B wins