USCOTS: June 3, 2023

Ideas for the Classroom

σ Randomized Response Trials

Students will flip a coin twice: once to decide if they will answer the question truthfully, and again (depending on the first flip) if they should answer A or B. The true probabilities will then be recovered without true individual responses being divulged.

σ Type I (and Type II) Errors

Each given a unique sample, students will construct a confidence interval in response to a null hypothesis. The true population parameter will then be shared and students will share if their interval resulted in a Type I error. The empirical proportion of students will then be compared to the alpha level.

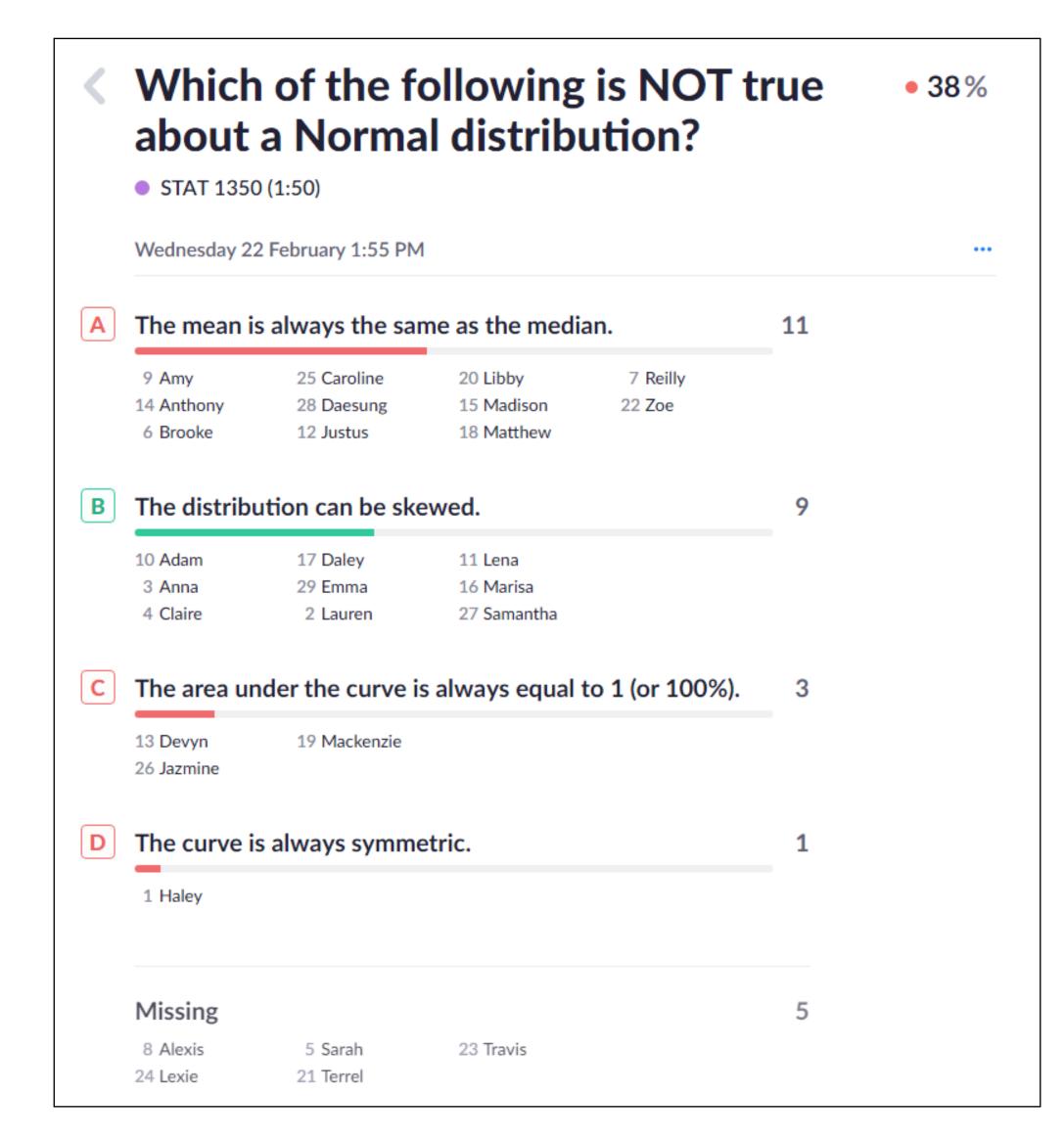
σ Bar Graphs

Results from a Plickers question can be quickly exported as a Microsoft Excel file or general .csv file and used to create Bar Graphs and other appropriate forms of visualization.

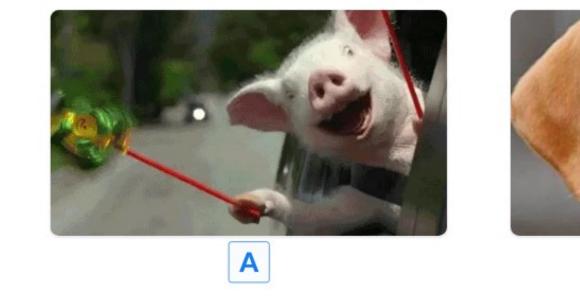


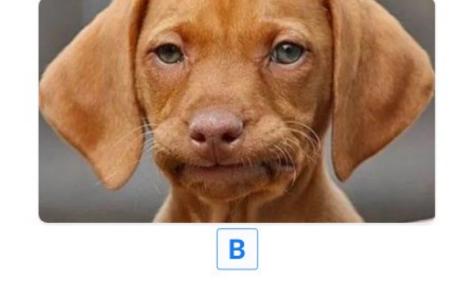
USING PLICKERS TO TEACH STATISTICAL CONCEPTS

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Did you have fun this semester?





CONTACT ME



At a significance level of $\alpha=0.05$, our significance test returns a p-value of p=0.08. We have...

- A ...strong evidence against the null hypothesis.
- **B** ...strong evidence for the null hypothesis.
- c ...not enough strong evidence against the null hypothesis.
- More information is needed.

February

		Chapters	Chapters 7 and 10		Chapters 11 and 12		Chapter 13
Name ^	Total	Which of the following is NOT one of	Where will you be watching the Super	Who are you rooting for on Sunday?	In a distribution of a quantitative	On which day does your midterm open?	Which of the following is NOT true
Class Average	• 54%	31%	43%	Survey	38%	96%	60%
Abigail	1/3	_	D	D	С	В	-
Ajah	2/3	С	-	-	В	В	_
Alexa	3/5	Α	Α	С	Α	В	В
Ally	1/5	С	C	Α	D	В	A
Brianna	0/2	Α	C	В	-	-	_
Caroline	4/5	D	Α	С	В	В	В
Chelsea	3/5	В	Α	Α	D	В	A
Elizabeth	3/4	-	C	С	В	В	В
Evan	3/5	В	C	Α	В	В	Α
Faith	2/5	В	В	Α	Α	В	Α
Grace	5/5	В	Α	С	В	В	В
Gracy	3/5	В	Α	D	D	В	D
Hannah S	2/5	D	В	С	Α	В	В
Hannah Z	2/5	С	Α	С	Α	В	C
Jacob	4/5	В	В	Α	В	В	В
Jordan	1/4	Α	-	-	Α	В	С
Kaylee	3/4	C	-	-	В	В	В
Kris	2/5	D	D	С	В	С	В
Lauren	5/5	В	А	Α	В	В	В
Lili	1/4	Α	-	-	A	В	A
Lilli	3/5	Α	Α	Α	Α	В	В
Lydia	2/5	С	C	D	Α	В	В
Mallory	3/5	C	Α	С	D	В	В
Maria	2/5	A	Α	С	D	В	С
Mia	1/5	D	D	D	A	В	A
Robbie	2/5	A	C	Α	A	В	В
Tami	3/5	C	C	С	В	В	В
Taylor	1/1	В	-	-	-	-	-
Zach	1/1	_	_	_	-	-	В

Ideas for the Classroom

σ Randomization

Students will "randomly" select A, B, C, or D. The results should show that humans are not inherently random, supporting the use of random number generators.

σ Variance

Split students into large groups and assign a value to each of A, B, C, and D. Ask students to work as a team and respond in a way that produces the largest variance among answers.

σ Binomial Probabilities

Provide only A and B as answer choices to a binary question. Take responses in increments of five students at a time and ask students to observe what changes they see in *p*, in (1-p), and in the margin of error as the sample size increases.

σ Learn Names and Take Attendance

