RELIABLE RECALL: THE PROCESS IS THE POINT

Nicholas Lytal
California State University, Chico
Mathematics and Statistics Department
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Mathematics and
Statistics Department

Why Notecards?

- Math and Stats are languages too
- More means of engagement covers more learning styles
- Students build individual connections
- Training the ear, but for math: groundwork sense of material vs. rote memorization

Goals

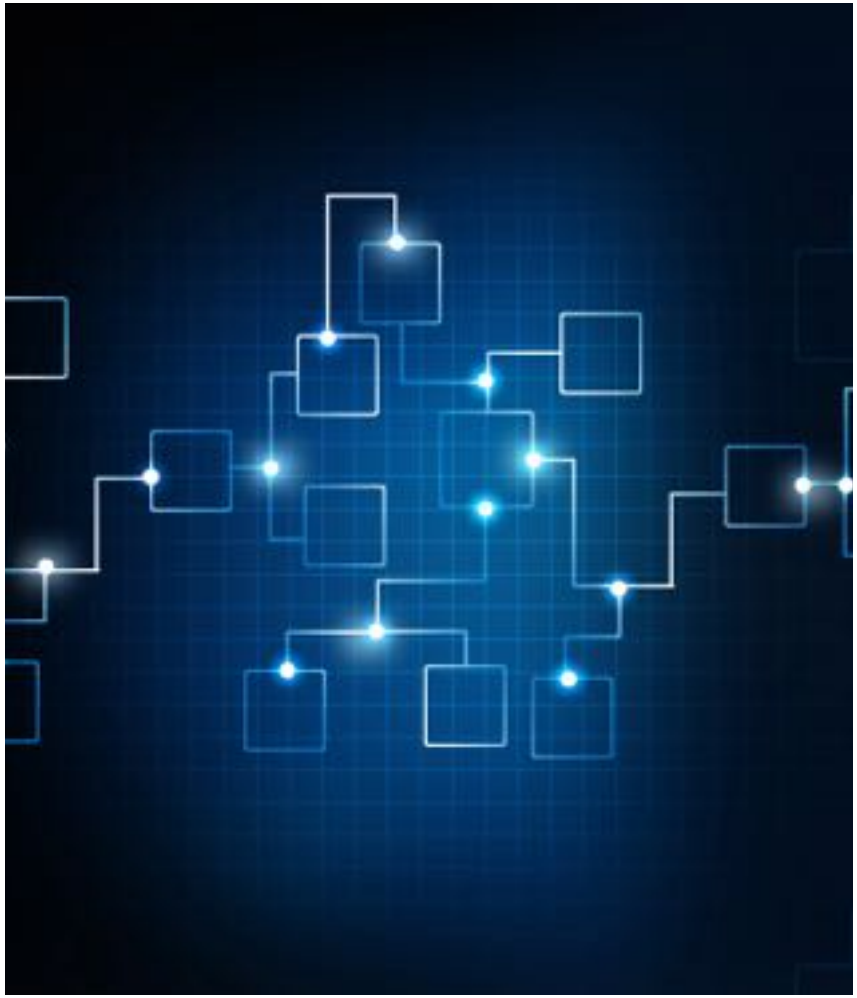
- A new framework to set up exercises with course terminology
- Emphasis on helping early lower-division students
  - Some may not have developed college-level skills
  - Others may need to replace bad habits
- Accommodating different means of engagement and learning

Materials

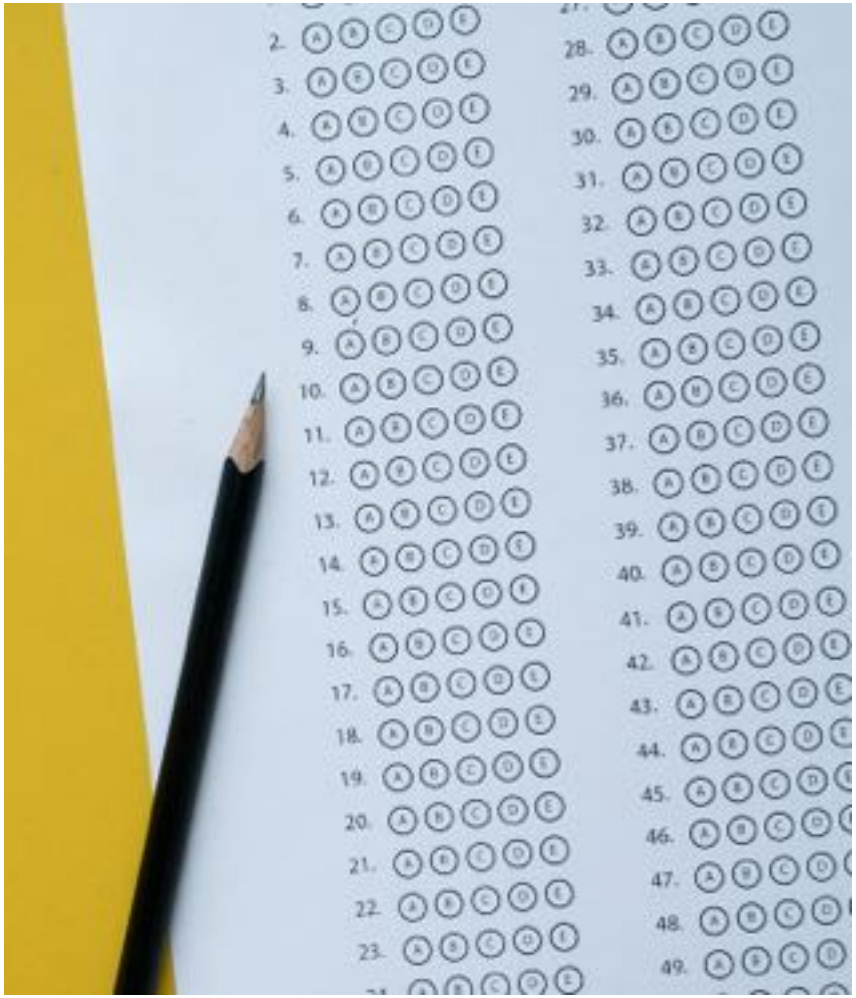
- Physical notecards and your own drawings
- Notecard programs such as Anki
- References are fine! Images and giphys are helpful too

Benefits

- Students can do the work in their own ways and form associations that work for them specifically.
- Even if a student does not believe they need it, the focus is improving **recall**, rather than merely testing knowledge.



Assessment Ideas

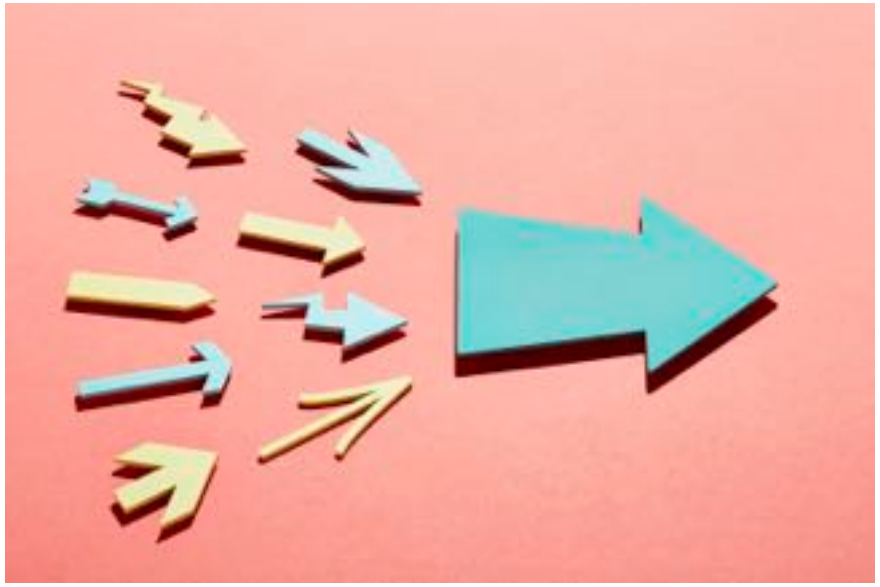


- Regular short-answer polls for terms, with a focus on what will be used that day.
  - Services such as PollEverywhere can be helpful for these.
  - Be sure to frequently review especially important terms.
- Consider two separate groups early on
  - Those who utilize the card setup vs. a control group.
  - Monitor differences in assignments and poll responses.
- For consistency, encourage small amounts of review each day (useful in general)

Working Together

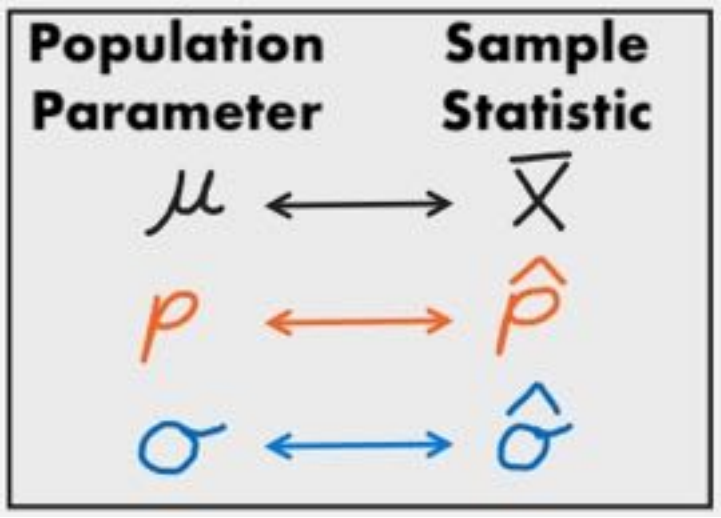
- Some students may directly reference each other.
  - This is fine, so long as they do the work of constructing their own cards.
  - Collaboration can be part of your design.

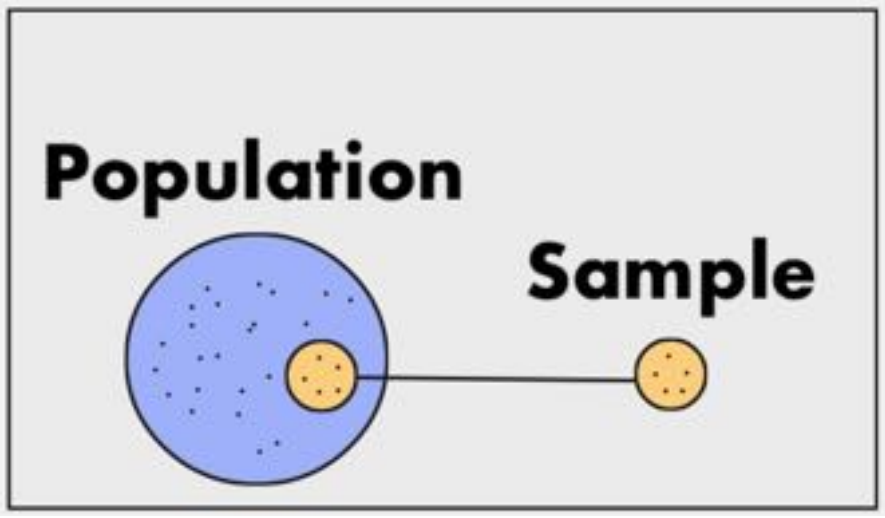
- The **process** is the **point!**



Example: Activity 1

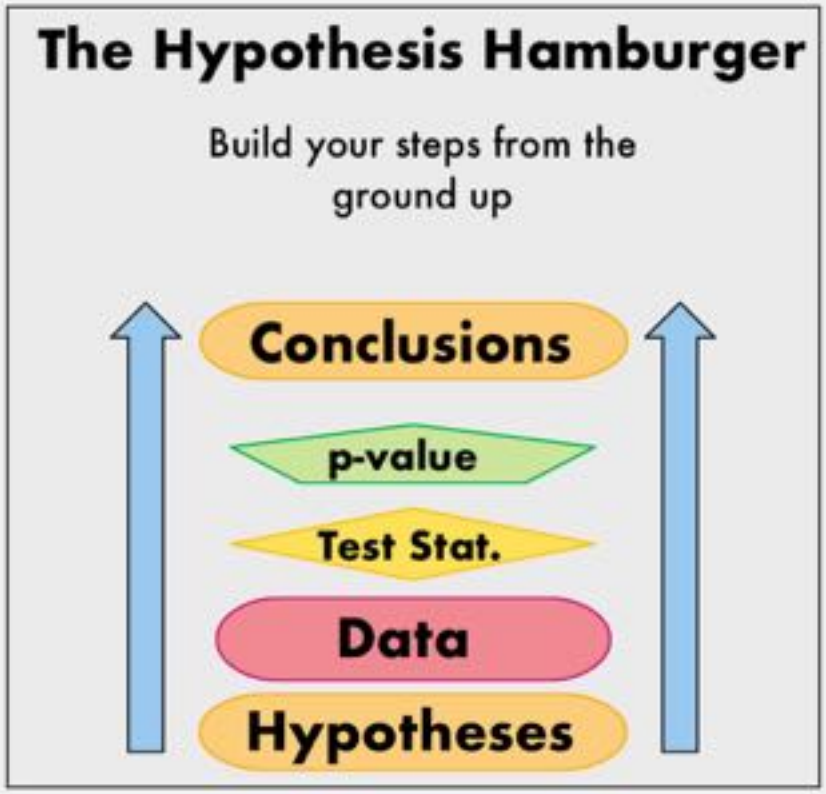
- Common Terms (What is a population, sample, etc.)
- Take the association between population and sample.
- Encourage picture association.
  - Student's own drawings
  - Online images/giphy for digital cards.
- Flattening concepts down to images aids in recall.





Example: Activity 2

- A hypothesis test can be broken into several steps. For instance:
  - Define hypotheses (null vs. alternative)
  - Collect data (define variables)
  - Analyze data (compute summary statistics / p-values)
  - Make conclusions (which hypothesis, context in problem)
- Consider an analogy for a multiple-step process (e.g. hamburger).



Special Thanks

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Thank you for your interest in this topic!

You can contact me at: nlytal@csuchico.edu