In class activity – Discovering Sampling Distributions.

In this activity you will be creating random samples to simulate a probability density distribution. We will create distributions of data (x), and see how they differ from the distribution of the average ($\bar{x}$).

Setup

- Each group assigns one person to be a recorder, another to be a plotter.
- Write the number of people in your group in front of the die size in the top right. - E.g. if there are *3* of you and you are using a *D4*, your group would be *3d4*
- Everyone gets a die to roll.
- The recorder logs into Google drive and opens the designated spreadsheet and identifies the group they are working in.

Phase 1: Create a random sample of x's

- Everyone rolls their dice and report the values to the recorder and the plotter.
- The recorder enters the data into their assigned column.
- The plotter draws a dot above the value on the x-axis on the top graph. Stack the dots for repeated rolls vertically.
- Collect as much data as you can in 5 minutes.
- Describe the distribution of the x's in the [Hack MD Lec05 notes]. Discuss location, shape, spread.

Phase 2: Create a random sample of $\bar{x}$'s.

- Pick a different person to be the plotter and recorder.
- Everyone rolls their die at the same time and report the values to the recorder
- The recorder enters the raw data points into the colored cells (x). The mean will automatically be calculated and displayed in the gray box.
- The recorder then records the calculated average in the xbar column and tells this number to the plotter, who plots this data point as a dot on the bottom graph.
- Collect as much data as you can in 10 minutes.
- Describe the distribution of the $\bar{x}$'s in the [Hack MD Lec05 notes]. Discuss location, shape, spread.

Wrap up

- Take a picture of your plot.
- Upload to the `07 Foundatinos for Inference/Simulation` folder in Google Drive.
- Name this file with your 'group' name (e.g. `3d4`)