Random Sampling

(Jan Böhm)

Task I: Choose random people

Equipment (for group):

- Table of students participating in the course (their names, gender, field, etc.), laminated
- 10-sided die

Each group is given a task to sample random 10 people from the list of all students participating in the course using one (or multiple) 10 sided die.

After some time students are asked to explain their methodology – most important is how did they generated random 3-digit number from discrete interval [1;n], where n is the number of students in the course. Let's say there are 350 students in the couse – what do you do, if you roll number 356? Do you reroll the last number or do you start generating 3-digit number from the beginning?

After discussion if the approach different groups used were correct and what coud be done better is round 2. Students are tasked to random sample 10 male (female, particular field of study etc.) students from the list. What is correct unbiased approach?

Task II: How many grains of rice are in a bag?

Equipment (for group):

- Pack of rice (or something similiar – beans, peas, pasta, pebbles, etc.)
- Large squared sheet of paper

Task is to estimate number of grains of rice in a bag. There are multiple ways to do so, but given squared sheet of paper the most common is to (uniformly) spread grains on the squared, then (randomly) pick a sample of those squares, count grains inside and use obtained number to make a guess about whole pack.

There should be a discussion about methodology of the experiment, whether their approach was correct or not.

Task can be also modified by using picture of crowds (demostrations) and estimate the number of people attending.