STUDENT HANDOUT: SAMPLING STRINGS

Each student or pair should use *each* of the following methods to select a sample of 10 string lengths. (Thus you will end up with two samples of ten, one selected by the Touch method and one by the Random Number method.) Since there aren't as many bags as students, you will need to take turns using one of the bags, so which method you use first will vary. Read instructions before you begin.

Touch Method

a. *Without looking into the bag*, reach into it and select a string. Record its length (to the nearest inch) in the table below *and then return the string to the bag*. Repeat this process until you have sampled 10 strings.

String #	String length	String #	String length
1		6	
2		7	
3		8	
4		9	
5		10	

b. Give the bag to another student or pair to use.

c. Calculate the mean of your string lengths sampled by this method.

d. Enter your mean on the stem-plot labeled "Touch Method" on the board.

Random Number Method

a. Choose 10 random integers between 1 and 25, *with replacement*, using a random number table or a random number generator on your calculator or laptop. *If you use a random number table*, each student should start at a different place, so different people end up with different lists of 10 numbers. (Choosing allowing replacement means taking the first 10 numbers in the random number table, starting at your individual starting point.)

b. For each of the ten numbers you have chosen, find the length of the string with that number from the table on the other side of this sheet.

c. Calculate the mean of your string lengths sampled by this method.

d. Enter your mean on the stem-plot labeled "Random Number Method" on the board.

String Number	Length
1	9
2	6
3	10
4	5
5	9
6	12
7	8
8	6
9	7
10	12
11	4
12	4
13	5
14	9
15	10
16	10
17	5
18	9
19	10
20	12
21	5
22	5
23	7
24	5
25	9

If you need to wait for others to finish, think about the following questions:

1. Suppose you are interested in the distribution of the length of time it takes a person to complete their transaction at a bank teller's window. You wish to choose a sample to study this distribution. What method of sampling would be analogous to the Touch method? What method of sampling would be analogous to the Random Number method?

2. An environmental scientist wants to measure the average area of the lakes in Texas. He decides to sample lakes by randomly dropping grains of rice on the map and measuring the area of the lakes hit by the rice. Is this a good sampling plan? Why or why not?