Procedure for Randomly Assigning Participants to Comparison Groups

The most popular procedure for randomly assigning participants to comparison groups is to use a list of random numbers, such as the following list of 200 numbers. (Larger lists are contained in the appendixes of most statistics books.)

	1	2	3	4	5	6	7	8	9	10
1	8	1	4	5	5	6	9	8	7	3
2	2	7	9	6	5	4	6	4	8	3
3	0	0	0	5	5	8	9	7	6	9
4	7	8	3	4	7	0	7	7	5	2
5	8	5	8	6	3	5	4	2	2	2
6	7	3	5	3	6	8	0	7	3	3
7	1	8	6	0	1	0	7	4	4	7
8	7	9	5	3	0	1	5	5	5	1
9	5	6	6	7	8	5	8	1	1	9
10	3	0	3	3	9	1	9	9	1	9
11	9	7	4	7	8	4	7	1	0	9
12	5	6	4	5	1	4	5	4	1	1
13	5	7	4	0	4	2	5	9	6	7
14	8	6	0	5	6	9	4	4	3	2
15	6	7	6	7	3	3	7	1	8	9
16	2	6	0	6	7	3	3	0	6	9
17	6	7	5	5	1	4	7	4	1	2
18	6	3	0	9	9	9	5	3	8	0
19	0	3	7	3	0	3	0	6	8	6
20	7	1	6	8	2	0	5	3	2	1

This list consists of a series of twenty rows and ten columns. The number in each position is random because each of the numbers from 0 to 9 had an equal chance of occupying that position, and the selection of one number for a given position had no influence in the selection of another number for another position. Therefore, since each individual number is random, any combination of the numbers must be random.

Assume that you have fifteen participants in your sample and you want to randomly assign them to three comparison groups. First, you give each participant a number from 0 to 14. You then block the list of random numbers into columns of two to provide five pairs of columns since two columns are necessary to represent the total sample of participants.

Now you are ready to randomly assign the five participants to each of the three comparison groups.

The procedure usually followed is to randomly select the first five participants from the sample of fifteen and assign them to one comparison group. Then randomly select a second group of five participants from the sample of fifteen and assign them to another comparison group. Once these ten participants have been randomly selected and assigned, only five participants remain; these five participants are assigned to the third comparison group.

To randomly select the first participant for the first group, read down the first two columns until you encounter a number less than 15. From the list, we find that the first such number is 00. Consequently, the first randomly selected participant is the participant with the number 0. Proceed down the columns until you encounter the second number less than 15, which is 03. Participant number 3 represents the second randomly selected participant. Once you have reached the bottom of the first two columns, start at the top of the next two columns. With this procedure, the participant numbers 05, 06, and 09 are selected, which represent the remaining three of the first five randomly selected participants. Note that if you encounter a number that has already been selected (as we did with the number 05), you must disregard it.

To randomly select the second group of five participants, proceed down the columns and identify numbers less than 15 that have not already been chosen. Using this procedure, we find the numbers 10, 01, 14, 07, and 11. These numbers correspond to the second group of randomly selected participants. The third group represents the remaining participants.

We now have the following three randomly selected groups of participants.

00	01	02
03	07	04
05	10	08
06	11	12
09	14	13

Once each of the three groups has been randomly selected, they must be randomly assigned to one of the three experimental comparison groups.

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This is accomplished by using only one column of the table of random numbers, since there are only three groups of participants. The three groups are numbered from 0 to 2. Proceed down the first column until you reach the first of these three numbers. In looking at column 1, you can see that the first number is 2. Consequently, group 2 (the third group of participants) is assigned to the first treatment condition and represents the first comparison group. The second number encountered is 0, so group 0 (the first group of participants) is assigned to the second treatment condition and represents the second comparison group. This means that group 1 (the second group of participants) is assigned to the third treatment condition and is the third comparison group. Now we have randomly assigned the sample of participants to three groups and have randomly assigned them to the three treatment or comparison conditions.

Treatment or Comparison Condition		
A_1	A_2	A_3
Group 2	Group 0	Group 1