

Chapel Hill Math Circle
Beginners Group (1-3)
March 12, 2016

1. Activity: Write the numbers 1 through 20 on individual pieces of paper. Now choose 11 numbers without looking.
 - a. Do you have any consecutive pairs of numbers?

 - b. Choose 11 numbers again two more times and check if you get at least one pair of consecutive integers each time.

 - c. What conjecture can you make, that is, what do you think must happen?

 - d. Can you prove it?

 - e. What did you use?

2. Prove that if 26 numbers are chosen from the natural numbers between 1 and 50, then at least 2 of them must be consecutive.