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Mixed Up Socks

Pre-Activity

6 brown socks and 4 white socks are all mixed up in a dresser drawer. The 10 socks are exactly alike except for their color. The room is in total darkness, and you want two matching socks.

Start pulling socks out of the drawer, one at a time. What is the fewest number of socks that you must take out of the drawer in order to be certain that you have a pair that match? Explain your answer.

3. What is the smallest number of socks that you must take out of the drawer in order to be certain that you have two pairs of matching socks (two pairs of red socks or two pairs of blue socks), **or** one pair of red socks and one pair of blue socks? Explain your answer.
4. You add 6 green socks to the 12 red and 8 blue socks which are already in the drawer. Now what is the least number of socks that you must take out of the drawer in order to be certain that you have a pair that match? Explain your answer.