

# 7.SP Waiting Times

## Task

Suppose each box of a popular brand of cereal contains a pen as a prize. The pens come in four colors, blue, red, green and yellow. Each color of pen is equally likely to appear in any box of cereal. Design and carry out a simulation to help you answer each of the following questions.

- a. What is the probability of having to buy at least five boxes of cereal to get a blue pen? What is the mean (average) number of boxes you would have to buy to get a blue pen if you repeated the process many times?
- b. What is the probability of having to buy at least ten boxes of cereal to get a full set of pens (all four colors)? What is the mean (average) number of boxes you would have to buy to get a full set of pens if you repeated the process many times?



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