

Lesson Summary

- The long-run relative frequencies can be used as estimated probabilities of events.
- Collecting data on a game or chance experiment is one way to estimate the probability of an outcome.
- The more data collected on the outcomes from a game or chance experiment, the closer the estimates of the probabilities are likely to be the actual probabilities.

Problem Set

Jerry and Michael played a game similar to *Picking Blue!* The following results are from their research using the same two bags:

Jerry's research:

	Number of Red Chips Picked	Number of Blue Chips Picked
Bag A	2	8
Bag B	3	7

Michael's research:

	Number of Red Chips Picked	Number of Blue Chips Picked
Bag A	28	12
Bag B	22	18

1. If all you knew about the bags were the results of Jerry's research, which bag would you select for the game? Explain your answer.
2. If all you knew about the bags were the results of Michael's research, which bag would you select for the game? Explain your answer.
3. Does Jerry's research or Michael's research give you a better indication of the makeup of the blue and red chips in each bag? Explain why you selected this research.
4. Assume there are 12 chips in each bag. Use either Jerry's or Michael's research to estimate the number of red and blue chips in each bag. Then, explain how you made your estimates.

Bag A

Number of red chips:

Number of blue chips:

Bag B

Number of red chips:

Number of blue chips:

5. In a different game of *Picking Blue!*, two bags each contain red, blue, green, and yellow chips. One bag contains the same number of red, blue, green, and yellow chips. In the second bag, half of the chips are blue. Describe a plan for determining which bag has more blue chips than any of the other colors.