

Math 310 - Dr. Miller - Activity #13: Intuitive Probability

1. A paper bag contains 18 items: 4 green marbles, 8 green cubes, 2 blue marbles, and 4 yellow cubes. Suppose 1 object is taken from the bag. Describe and justify the probability of each event below, using these probability words:

No chance

Nearly impossible

Unlikely

(roughly) Even chance

Likely

Almost certain

Guaranteed

To justify, do NOT calculate any probabilities as numbers: young children don't know fractions in this way.

Instead, count favorable vs. unfavorable outcomes and list these counts separately, to compare how close they are.

- (a) You get a blue marble.
- (b) You get a marble.
- (c) You get a green cube.
- (d) You get a green object.
- (e) You get an object that's not yellow.
- (f) You get a red cube.
- (g) You get an object that's green or yellow.
2. Thinking about the paper bag and its contents above, answer each question below. If not possible, explain. Answers can vary!!!
- (a) How many blue cubes could be added to the bag to have a roughly even chance of getting an object that's blue?
- (b) How many yellow cubes could be removed from the bag to make it almost certain that you get a green object?
- (c) How many green objects could be added to the bag to make it impossible to get a blue object?