

Seed Probability

Standards of Learning

Math 2.18, 3.18, 4.13, 5.14, 5.16

Objective

Students will:

- Use a variety of seeds to conduct a probability experiment

Materials

- Paper lunch bags (one for each pair of students)
- Dry kidney beans, pinto beans, navy beans and black-eyed peas (one bag of each should be plenty)
- Student science journals

Background Knowledge

On the day before the activity, assemble the seed probability bags. You will need one bag per pair of students. Ten seeds are included in each. They are:

- 4 kidney beans
- 3 pinto beans
- 2 navy beans
- 1 black-eyed pea

This lesson strongly supports math concepts of probability, recording, and graphing. Your students will learn the probability of drawing the seeds from the bag, which can also help with fractions. Students can learn how to graph their probabilities on a bar graph and record their information through tally marks.

Procedure

1. Divide students into pairs and distribute the bags.
2. Have students make predictions about which seed will be chosen the most and the least.
3. The students will shake the bag then pull one seed from it.
4. Record the type of seed chosen in the student science journals using tally marks.
5. Return the seed to the bag.
6. Have students repeat this procedure a total of 50 times.
7. Ask discussion questions:
 - Before this experiment, which seed did you predict would be chosen most frequently? Explain. Least frequently? Explain.
 - Compare the actual tally results with your prediction.
 - If this experiment were repeated 100 times, would there be a change in results? Why or why not?

Extension

Create group graphs of collected data. Interpret these graphs using student-generated questions.

Find individual and class averages for seeds that are picked the most and the least.

Find group mean, median, mode and range for data collected.

Brainstorm ways that probability is used in "real" life.

Compose a descriptive paragraph about your results and data.

