

Is There Probability in *THIRD*?

Reporting Category Probability and Statistics

Topic Exploring the concept of probability

Primary SOL 3.18 The student will investigate and describe the concept of probability as chance and list possible results of a given situation.

Materials

- *THIRD* Recording Sheet (attached)
- Small, square cards (the size of a small sticky note)
- Small paper lunch bags
- Sticky notes

Vocabulary

possible outcome, event, predict, probability, impossible, unlikely, equally likely, likely, certain, least likely, most likely, as likely as

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

Note: Before undertaking this activity, prepare multiple sets of five small, square cards, each with a letter written on it: T, H, I, R, and D. Put each set into a small paper bag.

1. Explain to students that they will be conducting a probability experiment to see how many times they will need to pick a letter out of a bag before they can spell the word *THIRD*. Explain to students that there will be only five letters in the bag—a T, an H, an I, an R, and a D—but that the letters must be picked out *in order*—T first, then H, then I, and so forth.
2. Put students into pairs, and distribute copies of the *THIRD* Recording Sheet. Go over the directions, making sure students fully understand. Ask them what the probability is of choosing each of the letters, guiding them to recognize that as the letters are permanently removed from the bag and placed on the table, the *probability increases*. Then, have each student make a prediction and write it in one of the spaces on the recording sheet. Ask students to share their predictions and the reasoning they used to make them. Record the students' predictions in order to compare them to the class results.
3. Give each student pair a bag containing letters, and have the pairs conduct the experiment.
4. When all experiments are complete, create a class line plot titled "TOTAL PICKS," and add the students' data to the line plot, using a sticky note.

Assessment

- **Questions**
 - How did your total number of letters picked compare to your prediction?
 - Do you think you and your partner would get the same results if you did the experiment again? Why, or why not?
- **Journal/Writing Prompts**
 - Imagine that you are going to cut apart each of the letters in the words *THIRD GRADERS*. You place the letters in a bag and pick out one letter and look at it.

Explain the probability that the letter you picked out is R. Explain the probability that the letter you picked out is D. Explain the probability that the letter you picked out is S. Draw a picture showing the letters in the bag after you picked out one letter.

THIRD Recording Sheet

Names: _____

Date: _____

Directions:

- You and your partner are given a bag containing 5 letters: a T, an H, an I, an R, and a D.
- Partner 1 picks the letters one at a time out of the bag in order to spell the word *THIRD*.
- The letters must be picked out *in order*—T first, then H, then I, and so forth—in order to be used.
- Whenever the wrong letter is picked, it must be put back in the bag and the bag must be closed and shaken to mix up the letters.
- When the right letter is picked, it is permanently removed from the bag and placed face up on the table.
- Partner 2 records the number of times each letter is picked, using tally marks in the chart below.
- When the word *THIRD* is spelled, the experiment finishes, and Partner 2 totals all the picks and calculates the grand total.

_____ (partner 1) **predicts that we will have to pick letters out of the bag _____ times before we can spell the word *THIRD*.**

_____ (partner 2) **predicts that we will have to pick letters out of the bag _____ times before we can spell the word *THIRD*.**

Letter	Tally Marks	Total
T		
H		
I		
R		
D		
GRAND TOTAL		