13.1 Find a Probability   TEKS 8.11.B

MATERIALS • paper bag

QUESTION   **What is the chance that you would select the initials of a student in your class from a bag of letters?**

You can perform an experiment and record the results to approximate the likelihood of selecting the initials of a student in your class.

EXPLORE   **Perform an experiment**

STEP 1 *Select letters*

Write each of the 26 letters of the alphabet on separate pieces of paper. Put all of the letters into a bag. Select a letter at random (without looking into the bag). Replace the letter and select a second letter at random.

STEP 2 *Record the results*

Record the results of the selections in a table like the one shown.

• If the first letter is the first initial of any student in your class, put a tally mark in the "first initial" column.
• If the second letter is the last initial of any student in your class, put a tally mark in the "last initial" column.
• If the two letters are the first and last initials of any student in your class, put a tally mark in the "both initials" column, but do not put a tally mark in the other columns.

Perform this experiment 30 times.

	First initial	Last initial	Both initials
Tally	ЖП	ЖП II	I
Frequency	?	?	?

STEP 3 *Record the frequencies*

Record the *frequency*, the total number of tally marks, of each possible result.

DRAW CONCLUSIONS   **Use your observations to complete these excercises**

1. For what fraction of the times that you performed the experiment did you select the first initial of a student in your class? the last initial? both?

2. Which of these results do you think is least likely to happen if you repeat the experiment 30 more times? *Explain* your choice.

3. **REASONING** You perform the experiment 90 times. How many times do you expect to select both the first and last initials of a student in your class? *Explain* how you made your prediction.