Just In Time Quick Check
Standard of Learning (SOL) 2.14

Strand: Probability and Statistics

Standard of Learning (SOL) 2.14
The student will use data from probability experiments to predict outcomes when the experiment is repeated.

Grade Level Skills:
- Conduct probability experiments using multicolored spinners, colored tiles, or number cubes and use the data from the experiments to predict outcomes if the experiment is repeated.
- Record the results of probability experiments, using tables, charts, and tally marks.
- Interpret the results of probability experiments.
- Predict which of two events is more or less likely to occur if an experiment is repeated.

Just in Time Quick Check
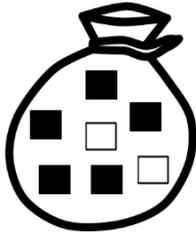
Just in Time Quick Check Teacher Notes

Supporting Resources:
- VDOE Mathematics Instructional Plans (MIPS)
  - 2.14 - We Are Spinning In Second Grade (Word) / PDF Version

Supporting and Prerequisite SOL: 2.15, 1.12a, K.11a

1. The following tiles are in a bag. Use these tiles to answer the following questions.

   a. How many white tiles are in the bag? _____

   b. How many black tiles are in the bag? _____

   c. **Predict:** If you reach in the bag and pull out one tile (without looking), which kind of tile will you <u>most</u> <u>likely</u> pull from the bag? (Circle one.)

   White   Black

   d. **Predict:** If you reach in the bag and pull out one tile (without looking), which kind of tile is <u>least</u> <u>likely</u> to be pulled from the bag? (Circle one.)

   White   Black

2. Kim used the bag of tiles shown above in an experiment. She followed these steps for each trial in her experiment.

   • First, she pulled one tile from the bag without looking.

   • Next, she recorded the color of that tile in a table.

   • Then she put that tile back into the bag.

   The results of each trial are in the table below. Use the data to answer the following questions.

Color of Tiles	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9
White	X			X				X	
Black		X	X		X	X	X		X

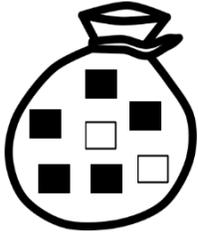   a. Tally the results shown in the table:

   White: _____

   Black: _____

b. Based on the results, which color was chosen the least? _____

c. Based on the results, which color was chosen the most? _____

3. Juana will do the same experiment as Kim. She will follow the same steps. She will use this same bag of colored tiles.
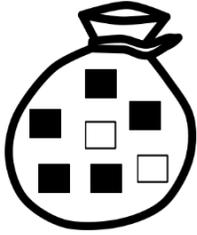

Do you think Juana will get the same results as Kim? Why or why not?

_____

_____

1. The following tiles are in a bag. Use these tiles to answer the following questions.

    a. How many white tiles are in the bag? _____

    b. How many black tiles are in the bag? _____

    c. **Predict:** If you reach in the bag and pull out one tile (without looking), which kind of tile will you <u>most</u> <u>likely</u> pull from the bag? (Circle one.)

    > White   Black

    d. **Predict:** If you reach in the bag and pull out one tile (without looking), which kind of tile is <u>least</u> <u>likely</u> to be pulled from the bag? (Circle one.)

    > White   Black

    Some students may struggle to describe which colored tile is most likely or least likely to be pulled from the bag. These students need additional opportunities to describe events that are more or less likely to happen: it is less likely to snow in August than in February; it is more likely I will eat lunch at school than dinner at school, etc. It may be helpful for the teacher to make cards of events that are more likely and events that are less likely and have the students compare and categorize these events.

    Students who struggle to use more likely and less likely in probability investigations will benefit from additional opportunities to engage in actual investigations to determine which is more or less likely to be pulled from a bag and to utilize the associated vocabulary. Students need opportunities to conduct probability experiments using multicolored spinners, colored tiles, or number cubes. Discourse should be focused on predictions and possible outcomes, and how the data collected from the experiments will help you to predict future outcomes if the experiment is repeated.

2. Kim used the bag of tiles shown above in an experiment. She followed these steps for each trial in her experiment.

    *   First, she pulled one tile from the bag without looking.

    *   Next, she recorded the color of that tile in a table.

    *   Then she put that tile back into the bag.

The results of each trial are in the table below. Use the data to answer the following questions.

Color of Tiles	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9
White	X			X				X	
Black		X	X		X	X	X		X

a. Tally the results shown in the table:

      White: _____

      Black: _____

Some students may need support with transferring the data from the graph into tally marks. Provide students with opportunities to record the results of probability experiments, using tables, charts, and tally marks

b. Based on the results, which color was chosen the least? _____

c. Based on the results, which color was chosen the most? _____

Students who are unable to describe the results of an experiment need to actively engage in additional probability investigations using concrete materials. In introducing or reinforcing the vocabulary, the teacher should place cubes in an opaque bag (i.e., 4 blue, 1 red, 7 yellow) and engage students in discourse about what they notice. Questions such as the following will allow students to engage in using the vocabulary associated with probability and to make sense of what more likely and less likely mean in relation to probability experiments:

- *Which colors can be pulled from the bag?*
- *Is it more likely to pull a red or a yellow? How do you know?*
- *Is it possible to pull out a green cube? Why or why not?*
- *Is it likely that a red cube will be pulled? Why or why not?*

Then provide student partners with a bag containing the same colors and numbers of cubes to pull and record the results. Remind students to replace the cube after they have recorded the one chosen. Discuss the results to see whether the class results, across pairs, were similar.

3. Juana will do the same experiment as Kim. She will follow the same steps. She will use this same bag of colored tiles.
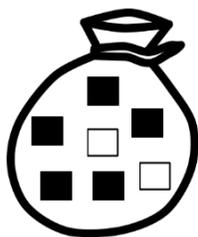
Do you think Juana will get the same results as Kim? Why or why not?

_____

_____

Some students may struggle to understand that, given the same number of white and black tiles, it is likely that they will get similar results if the experiment is repeated. These students need additional probability experiences (e.g., dropping a two-colored counter, using spinners, rolling number cubes) and recording the results using tables, charts, and tally marks. Sharing and discussing their results and reasoning will be helpful in making sense of probability and predicting the likelihood of events (i.e., more likely or less likely, etc.).