TEKSING TOWARD STAAR

MATHEMATICS ®

GRADE 7

Hands-on-Activity

Six Weeks 3

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Lesson 4

Teacher Notes for Student Activity 3

MATERIALS: Per Pair of Students: 1 bag of 4 colored tiles using 4 colors; 1 penny; 1 number cube

PROCEDURE:
- Distribute materials to pairs of students.
- Students complete Student Activity 3.

Before students begin working, ask the following questions:
- How can you create a frequency table for the results of an experiment?
- Can you create a sample space for an event?

During Student Activity 3, roam the room and listen for the following:
- Do the students understand how to make the frequency table for their event?
- Do the students understand how to analyze their data and answer questions about the probabilities of their event?

During Student Activity 3, roam the room and look for the following:
- Are students working together to answer their questions?

Answers to these questions can be used to support decisions related to further whole class instruction or group and individual student instruction during tutorial settings.

Student Activity 3

MATERIALS: Per Pair of Students: 1 bag of 4 different colored tiles; 1 penny; 1 number cube

PROBLEMS:
- How can you make a sample space for an event?
- How can you make a frequency table for an event?

PROCEDURE: Work with your partner to complete this activity. Identify Student 1 and Student 2.
Part I:
- Open your bag of colored tiles. List the color of your tiles on the frequency table below.
- Create a sample space to represent the outcomes of drawing a tile from the bag. Use the space below to write your sample space.
- Create a sample space for rolling the number cube. Use the space below to write your sample space.
- Create a sample space for drawing a tile AND rolling the number cube. Use the space below to write your sample space.

Sample space for the drawing a tile:

Sample space for rolling a number cube:

Sample space for the drawing a tile AND rolling a number cube:

Experiment 1:
- Student 1 will draw a tile from the bag and record the color by tallying on the frequency chart below. Replace the tile in the bag and drawing again. Student 1 will do this 50 times and record the results of the drawings on the frequency chart below by tally marks. After all the draws, total the tally marks and complete the last row of the chart.

Color				
Frequency				
Total Draws				

- Student 2 will toss the number cube 50 times and record the results of the tosses on the frequency chart below by tally marks. After all the tosses, total the tally marks and complete the last row of the chart.

Number	**1**	**2**	**3**	**4**	**5**	**6**
Frequency						
Total Tosses						

Using the data in the charts of the experiment, answer the following questions.

- What is the probability that the next draw and toss will be a _____ tile and a 3? (Use the first color you listed on the frequency table.)

- How does this probability compare to the theoretical probability you will draw a _____ tile and toss a 3? (Use the third color you listed on the frequency table.) (Use your sample space from the other page.)

- What is the probability that the next draw and toss will be a _____ tile and a 6? (Use the second color you listed on the frequency table.)

- What is the probability that the next draw and toss will be a _____ tile and a 2 or 3? (Use the third color you listed on the frequency table.)

- What is the probability that the next draw and toss will be a _____ tile and an even number? (Use the fourth color you listed on the frequency table.)

Part II: Experiment 2:

- Student 1 will toss the penny 25 times and Student 2 will tally the results in the chart
  Student 2 will toss the penny 25 times and Student 1 will continue the tally of the results in the chart.

	Heads	Tails
Total		

Using the frequency tables from Experiment 1 and the frequency table for the penny toss, answer the following questions.

- What is the probability of tossing a head and drawing a (first color listed) tile?

- What is the probability of tossing a tail and rolling a 5?

- What is the probability of tossing a head, rolling a 2, and drawing a (second color listed) tile?

- When tossing the penny and rolling the cube, does one outcome of tossing the penny and rolling a particular number appear to have a larger probability than any other similar outcome?

  If so, what is the outcome?

  Theoretically, should there be one outcome with a larger probability? Explain your answer.

Part III:

- Did you have any difficulties in answering any of the questions in this activity?_____ If so, which questions?

- Did you have any difficulties in creating the frequency tables?

- How did you check your frequency table to make sure you had completed the experiment?

- Create a compound event using all three frequency charts. Write the event below, and then find the probability of the event occurring.