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To Flip or Not to Flip

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Student's Name: _____

Date: _____

To Flip or Not to Flip...

Dear Family Partner,

In math, we are studying **Theoretical and Experimental Probability**. I hope you enjoy this activity with me. This assignment is due _____.

Sincerely,

(Student's Signature)

(Note: If your child has been assigned more than 1 Interactive Homework, you may be eligible for an extension. Please talk to the teacher.)

OBJECTIVE: To create frequency tables with information gathered around home.

Who is your family partner?

Name: _____

Relationship: _____

LOOK THIS OVER: Explain the following vocabulary words to your family partner.

Probability – the chance that a desired outcome will occur.

- Probability is usually written as a fraction.

$$\left(\frac{\text{desired outcome}}{\text{total \# of outcomes}} \right)$$

Theoretical Probability – an educated guess (using math!!! ☺) of the desired outcome you think will happen.

- The theoretical probability of rolling an even number on a 6 sided die is 3 out of 6, $3/6$ or $1/2$.
- If I were to roll the die 10 times, I would expect that 5 of the outcomes would be even numbers and 5 would be odd numbers.

Experimental Probability – the actual outcome after running an experiment a given number of trials.

- I rolled the die 10 times and got: 1, 2, 2, 6, 5, 3, 1, 2, 4, and 4. My experimental probability of getting an even number is 6 out of 10, $6/10$ or $3/5$.

DO THE EXPERIMENT: With your family partner, use a coin (it must have 2 different sides – for example a tails and a heads) to determine the theoretical and experimental probabilities.

1. How many possible outcomes are on the coin?
2. Choose your desired outcome (heads or tails) and write it here.

Student's Name: _____

Date: _____

To fill out the chart below:

1. First fill out the Theoretical probability column. You should write the number of times you expect to get your desired outcome in each box of this column.
2. Now do the experiment, and write down your experimental probabilities in the last column.

	Theoretical Probability	Experimental Probability
Experiment	# of times you think you'll get _____	# of times you actually got _____
Flip/Spin the object 10 times.		
Flip/Spin the object 25 times.		
Flip/Spin the object 50 times.		

- Were your theoretical and experimental probabilities the same for each experiment?
- What do you notice when you compare your theoretical probability to your experimental probability when you flipped the coin 10 times?
- What do you notice when you compare your theoretical probability to your experimental probability when you flipped the coin 50 times?
- What would you expect to happen to your theoretical probability and experimental probability if you were to flip the coin 100 times? Would they get closer or farther apart?

HOME TO SCHOOL COMMUNICATION:

Dear Family Partner,

Thank you for working on this activity with your child. Please give me your reactions to your child's work on this activity. Write YES or NO for each statement.

- _____ 1. My child understood the homework and was able to discuss it.
_____ 2. My child and I enjoyed the activity.
_____ 3. This assignment helped me to know what my child is learning in math.

Other comments:

Family Partner Signature: _____