

## Let's Flip a Coin

Use the TI-Graphing Calculator to flip one coin 48 times. Place the results in the table below by using tally marks.

	Number of Heads (1)	Number of Tails (0)
Actual Number Flipped		
Expected Number Flipped		

How often did you expect heads to come up on the chart? \_\_\_\_\_ How often did you expect tails to come up on the chart? \_\_\_\_\_ Why do you believe your results are different from what you expected?

Let's get a bigger sample by combining the class results. Use your calculators to add the total number of heads and tails flipped by the entire class. Then complete the rest of the chart.

	# of Heads	# of Tails	Total # of Trials	% Heads	% Tails
Actual Number Flipped					
Expected Number Flipped					

How do these results compare with what you expected to happen?

There are two different sets of numbers indicated in each chart: Actual Number Flipped (Or Experimental) and Expected Number Flipped (Theoretical). Explain how you would complete the expected number flipped if you did not have the experimental data to guide you?

What happens to the number of Heads and Tails flipped if we flip 2 coins rather than just 1?

Use the TI-Graphing Calculator to flip 2 coins 48 times. Place the results in the table below by using tally marks. Remember to enter the command coin(2) and press ENTER.

	<b>0 Heads</b>	<b>1 Head</b>	<b>2 Heads</b>
Actual Number Flipped			
Expected Number Flipped			

This is a little harder this time. Looking at your actual number of flips answer the following questions:

How often did you expect 0 heads to come up on the chart? \_\_\_\_\_ How often did you expect 1 head to come up on the chart? \_\_\_\_\_ How often did you expect 2 heads to come up on the chart? Why do you believe your results are different from what you expected?

Let's get a bigger sample by combining the class results. Use your calculators to add the total number of heads and tails flipped by the entire class. Complete the first row of this chart.

	<b>0 Heads</b>	<b>1 Head</b>	<b>2 Heads</b>	<b>Total # of Trials</b>	<b>% 0 Heads</b>	<b>% 1 Head</b>	<b>% 2 Heads</b>
Actual Number Flipped							

Did you expect that there would be the same number of trials with 0 heads, 1 head, and 2 heads? Why or why not?

How do these results compare with what you expected to happen?

Which type of event occurs more often based on your experimental data?

What do you notice about the other two events?

Using the expression H for Heads and T for tails make a table to illustrate the ways three coins can be flipped. The first and last flips have been completed.

First Coin	<b>H</b>			<b>T</b>
Second Coin	<b>H</b>			<b>T</b>

How many different types of flips can you have total?

How many types of flips end up with 0 heads showing?

How many types of flips end up with 1 head showing?

How many types of flips end up with 2 heads showing?

Suppose that the class flipped 2 coins 400 times. Based on the facts you have listed above describe the number of times you would expect 0 heads, 1 head, or 2 heads on the flipping of three coins.

	<b>0 Heads</b>	<b>1 Head</b>	<b>2 Heads</b>	<b>Total # of Trials</b>	<b>% 0 Heads</b>	<b>% 1 Head</b>	<b>% 2 Heads</b>
Expected Number Flipped				<b>400</b>			

Again in this experiment there are two different sets of number indicated in each chart: Actual Number Flipped (Or Experimental) and Expected Number Flipped (Theoretical)

Explain how you would complete the expected number flipped if you did not have the experimental data to guide you?

What happens to the number of Heads and Tails flipped if we flip 3 coins rather than just 1 or 2?

Use the TI-Graphing Calculator to flip 3 coins 48 times. Place the results in the table below by using tally marks. Remember to enter the command coin(3) and press ENTER.

	<b>0 Heads</b>	<b>1 Head</b>	<b>2 Heads</b>	<b>3 Heads</b>
Actual Number Flipped				
Expected Number Flipped				

This is again a harder question with three coins being flipped. Try to think about what number you expected in the flipping of 3 coins.

How often did you expect 0 heads to come up on the chart? \_\_\_\_\_ How often did you expect 1 head to come up on the chart? \_\_\_\_\_ How often did you expect 2 heads to come up on the chart? Why do you believe your results are different from what you expected?

Let's get a bigger sample by combining the class results. Use your calculators to add the total number of heads and tails flipped by the entire class. Complete the first row of this chart.

	<b>0 Heads</b>	<b>1 Head</b>	<b>2 Heads</b>	<b>3 Heads</b>	<b>Total # of Trials</b>	<b>% 0 Heads</b>	<b>% 1 Head</b>	<b>% 2 Heads</b>	<b>% 3 Heads</b>
Actual Number Flipped									

Did you expect that there would be the same number of trials with 0 heads, 1 head, 2 heads and 3 heads?

Why or why not?

How do these results compare with what you expected to happen?

Which type of event occurs more often based on your experimental data?

What do you notice about the other two events?

Using the expression H for Heads and T for tails make a table to illustrate the ways three coins can be flipped. The first and last flip have been completed.

First Coin	H							T
Second Coin	H							T
Third Coin	H							T

How many different types of flips can you have total?

How many types of flips end up with 0 heads showing?

How many types of flips end up with 1 head showing?

How many types of flips end up with 2 heads showing?

How many types of flips end up with 3 heads showing?

Suppose that the class flipped 3 coins 400 times. Based on the facts you have listed above describe the number of times you would expect 0 heads, 1 head, 2 heads or 3 heads on the flipping of three coins.

	0 Heads	1 Head	2 Heads	3 Heads	Total # of Trials	% 0 Heads	% 1 Head	% 2 Heads	% 3 Heads
Expected Number Flipped					400				

Again in this experiment there are two different sets of number indicated in each chart: Actual Number Flipped (Or Experimental) and Expected Number Flipped (Theoretical)

Explain how you would complete the expected number flipped if you did not have the experimental data to guide you?