



7TH GRADE TI-84 ACTIVITY 27: FLIPPING OUT

ACTIVITY OVERVIEW:

In this activity we will

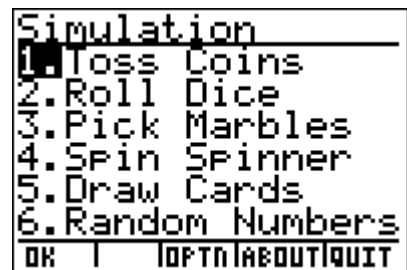
- Set up an experiment with coins on the TI-84
- Investigate experimental and theoretical probability



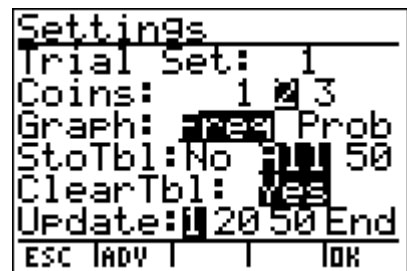
If you toss two coins in the air, how many times do you think you would get two heads? If you say about 1/2, perhaps you are thinking about only one coin.

We can do an experiment on the TI-84 to explore this situation. We can also figure out what should happen from something called theoretical probability.

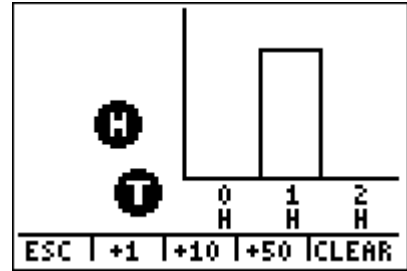
Press the **[APPS]** key and arrow to ProbSim. Press **[ENTER]**. From this screen press **[ENTER]**. Then press the SET softkey (**[ZOOM]**).



Set up your window just like the screen on the right. Use the arrow key to reach the desired highlighted areas. Press **[ENTER]** to select the areas to be changed. Then press the OK softkey (**[GRAPH]**).



Press the TOSS softkey (WINDOW). This flips the coins once and shows the result in the graph. After you flip the coins a total of 3 times to see the changes in the graph, press the +50 softkey (TRACE). Allow the 50 tosses to occur. Repeat this two more times. You should have a total of 153 tosses.



Press the ESC softkey (Y=) to end the trials. Press the arrow key to record the results (0 heads, 1 head, two heads) Divide the total for 2 heads by the total trials. Convert this to a percent. Show all this work to the right.

Now, list the possible results for each time you flip two coins. It does matter whether a head appears on coin1 or coin 2, so these are considered different results.

| <u>Coin 1</u> | <u>Coin 2</u> |
|---------------|---------------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

By comparing your results from the experiment and listing the theoretical outcomes, you can compare what did happen to what might happen in theory.

Extension

You might consider expanding this to three coins, to see how the theoretical and experimental probabilities might change.