**Starburst Probability - Student Activity Guide**

By Shannon Bishop and Trey Cox

Watch: “[Starburst Mound](http://threeacts.mrmeyer.com/yellowstarbursts/act1/act1.mov)” Video Labeled Act One:

On your own (without any help from other students):

1. Guess how many of the packs shown in the video will have exactly one yellow Starburst. Explain how you chose your guess. Write down one guess that you know will be too large but is still reasonable (e.g. don’t write “a billion”) and one guess you know will be too small but is still reasonable (e.g. don’t write “0”). How do you this guess is too large?
2. Guess how many of the packs shown in the video will have exactly two yellow Starbursts. Explain how you chose your guess. Write down one guess that you know will be too large but is still reasonable (e.g. don’t write “a billion”) and one guess you know will be too small but is still reasonable (e.g. don’t write “0”). How do you this guess is too small?

Team up with at least one other student and brainstorm an answer to the following question:

1. What additional information would you like to have so you can try to answer the questions “How many packs have 1 yellow?” and “How many packs have two yellows?” **Don’t actually try to provide a numerical answer** – just state the information you think would be necessary to do so. (And you may **not** just say “open them all to find out”)

Information will be provided to you BEFORE you turn the page – DO NOT TURN THE PAGE!

1. Using the additional information you have been provided with regarding the Starburst mound – answer the following questions:
   1. How many packs will have 1 yellow in them?
   2. How many packs will have 2 yellows in them?
2. What assumptions about Starbursts are built into the method you’ve implemented in solving question 4?
3. How could knowing the color ***distribution*** of the Starburst colors in this sample help? Would that possibly change your answer? How so or why not?

Watch “[The Answer](http://threeacts.mrmeyer.com/yellowstarbursts/act3/act3.mov)” and then show the Frequency of Every Pair.

1. How close were your too high and too low guesses? What was the percent error of your guesses?
2. How close were your mathematical calculations? What was the percent error of your mathematical calculations?