Scratch 'n' Win

You need	★ two sets (24) of scratch 'n' win cards (see copymaster)

This month, Snacky Jack is giving his customers a scratch 'n' win card with each purchase they make. They scratch one square in the top line and one in the bottom line. If the symbols that they uncover match, Snacky Jack will give them back their purchase money.

Activity

To investigate your chances of getting your purchase money back from Snacky Jack, do the following experiment using a double set of scratch 'n' win cards placed in a pile face down. All the cards have the same four symbols in both lines, but in random order, like the one on the right.

1. a.
   - Take the top card from the pile but keep it face down.
   - Choose a number between 1 and 4 to select a symbol from the top line. Then choose a number between 1 and 4 for the bottom line.
   - Turn the card over. Do your selected symbols match?
   - If you don't get a match, try again.

I chose 2 and 1. The symbols matched!

How many tries did it take?

b. Repeat the experiment. How many tries did it take this time to get a match?

Repeat the experiment at least 20 times. Record the outcomes on a tally chart, for example:

Trial	Tally (number of tries)	Total
1	⊮⊮ ‖	7
2	‖‖	3
3	⊮⊮ ⊮⊮ ‖	11
⋮		⋮
20		

c. What do your results tell you about the probability of getting a match?

d. Pool your results with those of a group of classmates and answer **c** again.

e. How many cards would it take to guarantee a match?

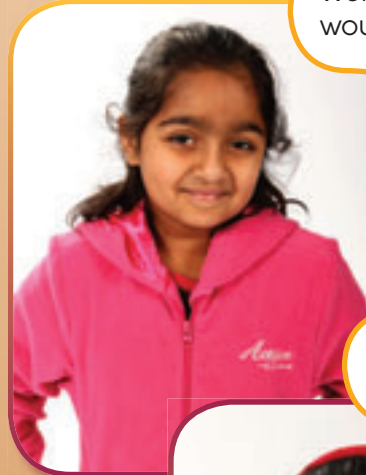**2.** Next month, Snacky Jack is going to use 5-symbol Scratch 'n' Win cards, for example:
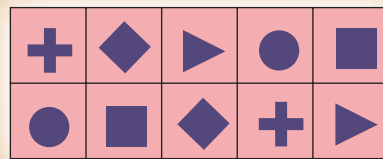
I think 5-symbol cards would make it easier to get a match.

Well, I think that 5 symbols would make it more difficult.

Sunita

I don't think it would make any difference.

Rakai

Lani

Who is right? Can you explain why?

Focus   Exploring probability