Crossing the Line

You need ★ a toothpick ★ classmates

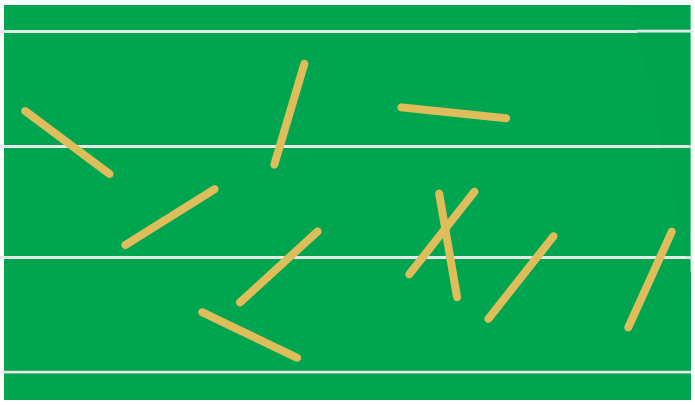
Activity

1. Do the following activity twice with a classmate. The second time, swap roles.

   Draw parallel lines on a sheet of paper. The gap between the lines should be the same as the length of the toothpick.

   Drop the toothpick onto the sheet 100 times from a height of about 50 centimetres. Each time, the classmate records whether or not the toothpick lies across a line (scores a "hit").

   If it bounces off the sheet, it doesn't count.



2. For each person's data, how likely is it that the toothpick will score a hit? For each person, what simple fraction best represents this probability?
3. Compare your findings with those of other pairs of classmates who have carried out this experiment. Are they similar or quite different?
4. Pool your data with the data of classmates.
   a. What can you say now about the probability of a hit?
   b. What simple fraction best represents this probability?