Random error is just that, random. It means that when we take samples, we are subject to the luck of the draw. And the results that we obtain from our sample may or may not accurately reflect the characteristics of the population from which the sample was drawn. But this doesn't mean that we should throw up our hands and declare that it's all about luck. There are situations in which considering probabilities can be used to our advantage.

Suppose, for example, that you were sitting at a blackjack table in Reno, Nevada, and you have just been dealt a queen and a seven for a point total of 17. Your goal is to get as close to a total of 21 as you can without going over, and you have a choice to make. Should you take another card in the hope of getting closer to 21, or should you stay with what you have in the hope that the dealer doesn't have cards that total more than yours.

The critical question here is what is the probability of drawing a card with a point value of 4 or less? Your ability to figure this out would be more accurate if you had kept track of the cards that had already been played. But even so this module will give you some insights into how you might think about this.