

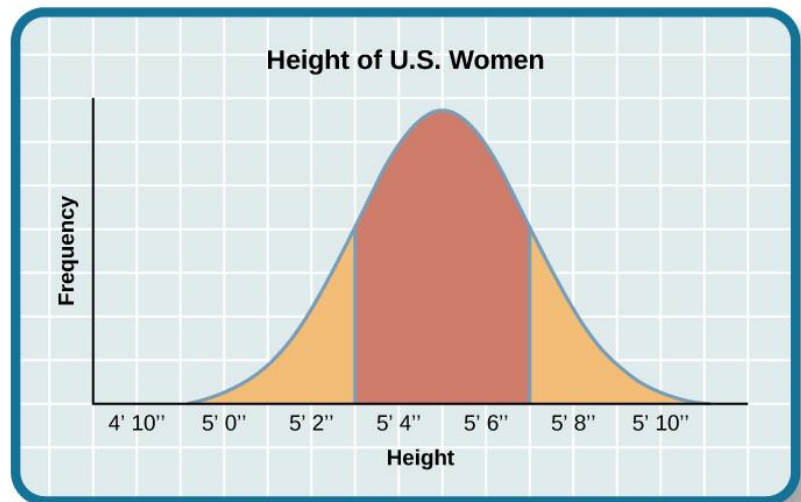
Ring a Bell?

Try It Out

Hold the device with the long, narrow compartments at the top. Shake it a little to get all the balls into the compartment at the bottom. Now quickly but carefully flip the device over so all the balls fall into those narrow compartments. What do you notice? Try the experiment again and again. Anything different?

What's going on?

You are running your own probability experiment. The distribution of the balls in the narrow compartments follows a **Gaussian** or **normal distribution**. This is also commonly called a **bell curve**. Normal distributions are used in statistics to describe the probability of an outcome of a random event. In this experiment, it is much more likely for a ball to end up in the middle compartments than those at the sides.



Graph showing the frequency of heights of U.S. women follows a normal distribution, or 'bell curve.'
(Image:texax.gov)

What's the big deal?

Normal distributions are used in things as simple as test grading in some schools and classrooms. People's heights, blood pressure readings, and many other facts about them, all follow a normal distribution. They are also used for setting quality standards in many manufacturing processes.

Wonder While You Walk...

If you flip a coin 10 times, how many times will it come up heads?