**Key points**

* The task of statistical inference is to estimate an unknown population parameter using observed data from a sample.
* In a sampling model, the collection of elements in the urn is called the *population.*
* A *parameter* is a number that summarizes data for an entire population.
* A *sample* is observed data from a subset of the population.
* An *estimate* is a summary of the observed data about a parameter that we believe is informative. It is a data-driven guess of the population parameter.
* We want to predict the proportion of the blue beads in the urn, the parameter p. The proportion of red beads in the urn is 1−p and the *spread* is 2p−1.
* The sample proportion is a random variable. Sampling gives random results drawn from the population distribution.

**Code: Function for taking a random draw from a specific urn**

The **dslabs** package includes a function for taking a random draw of size n from the urn described in the video:

library(tidyverse)

library(dslabs)

take\_poll(25) # draw 25 beads