In this activity, you will make observations of an island (plastic bin), the ecological community on the island (group of bags in your bin), individuals of various species (the plastic bags), and the genetic material – alleles (types and flavors of candy) – of each individual.

*D. Data Collection*

At the end of each, record the number of species in your community, and the alleles in each species, as you did during the set-up.

Wait for your instructor’s go-ahead before beginning the next round.

*C. Reproduction*

Randomly select an individual from your community. It reproduces: Create an identical individual by placing the same alleles (candies) in a bag with the same species pictured. This new individual becomes part of your island’s community.

*B. Drift*

Count the individuals in your community. If it is greater than K, your island’s carrying capacity, randomly select one or more individuals to remove from your bin so that there are no more than K individuals in your community. These individuals are deceased. **Some reproductive success or mortality is random, which results in ecological and genetic drift: the loss of species and alleles due to random chance.**

*A. Colonization*

* 1. Roll a die.
  2. Randomly select an individual from your community. Try to toss the individual into the island designated by your die roll.
  3. After all the groups have tossed their bags, any individual that landed in your bin is now part of your island’s community. Any individual that landed outside of your bin is deceased and removed from the game.

1. **Each Round:**

Each round has three phases: colonization, reproduction drift, and data collection.

1. **Set-up:**

To get started:

* 1. Count the number of individuals of each species in your bin and record your observations on the Species Data Sheet.
  2. Count the number of each allele (flavor/types of candy) among all the individuals of each species, and record your observations on the Allelic Richness Data Sheet.

Repeat steps A-B until you have completed 10 rounds.

*End of class*

Enter your island’s data into the class spreadsheet. This spreadsheet will calculate species richness, allelic richness, and average allelic richness for each island for each round.