

Make a species!

Many animals share a common ancestor; for example, the alligator, the turtle, and the dinosaurs all developed out of a primitive reptile called *Hylonomus*, which lived 315 million years ago. But how do different species arise? One way is through geographical isolation.

When a group of animals (such as dinosaurs) gets divided by changes in geography (such as the opening of the Atlantic Ocean), they can no longer breed together. As a result, the two groups may change into two different species; this happens even faster if the two locations have very different environments (desert in one and rainforest in the other). You can use this idea to play a game.

You'll need:

1. Three sheets of paper
2. A couple small bags of colored candy (e.g., M&M's, Skittles)
3. A pen
4. A pair of scissors

Label one sheet of paper "North America" and one sheet "China". Put them together and label the large piece of paper "Pangaea". Now pour the candy onto the combined sheet of paper and mix it well, so that half the candy is on each side. This is the starting dinosaur population; it has many different animals, with different color skins.

Write the name of each color of candy onto the last sheet of paper, leaving plenty of room between each name. Use the scissors to cut out each color name and then fold the slips so that you cannot see the names. You are ready to play!

Round 1: Pangaea – Pick up one of the slips of paper. Unfold it and look at the color. Take all of the dinosaurs/candy with that color and make it extinct by eating it.

Round 2: The continents – Now move North America away from China. The two populations are geographically isolated, and can no longer inter-breed. Will this create two new species?

Round 3: Speciation – Mix the slips of paper together again. Pull out one slip for North America and eat the color of dinosaur that appears on the slip. Now repeat the process for China. Keep doing this until only one color remains on each continent. Are they the same? If not, then you have two different species!