5. **Pool the results.**
   There are 128 possible combinations of the seven traits. To find out how many different combinations are present in the class population, go around the room and have each student give his or her "Genetic Wheel" number. Record the numbers on the board. If there is more than one student with the same number, place a check next to that number.

6. **Discuss your findings.**
   Are there any two students in the class who have the same seven traits? Then ask the students if they can think of an eighth trait that would set these two people apart. Are there any numbers that have clusters of classmates? Why?

BEFORE YOU BEGIN! PART II

You will need 15 to 20 index cards. On each card, write one characteristic that distinguishes one student from another. See "Indexing Student Characteristics."

WHAT TO DO! PART II

1. **Introduce the demonstration.**
   Divide the students into two teams and explain that they're going to do a demonstration that illustrates why genetic diversity is important. Show them your stack of index cards and explain that each one lists a characteristic that, for the purposes of the game, is going to represent a genetic trait. Tell them that once the game starts they are not allowed to change anything about themselves.

Tell them that you're going to read several of these cards aloud and that if anyone on either team has the characteristic listed on that card, he or she will "die." Those students who are "dead" must sit down. The object of the game is to have at least one member of their team "alive" at the end.

Every individual in any population is different from every other individual. Have students look at the variations among the people in their class as an example. But these variations don't make any individual a different species. Everyone in the class, regardless of his or her differences, is still a human being.

2. **Do the demonstration.**
   Have the students get into their teams and then stand facing you. Read one of the index cards you made earlier and ask all the students with the characteristic listed on the card to sit down. Repeat until you have gone through about three or four of the cards. (At least one of the teams should still have members standing.) Tell the students that if there's anyone still standing on their team, they can all regenerate and join back in. If both teams still have members

Indexing Student Characteristics

To do this demonstration you will need a stack of index cards, each of which has a "genetic" characteristic that can distinguish your students from one another. Because it may be difficult to come up with enough genetically-based traits, you should feel free to use traits, such as clothing color or type of shoes, in the demonstration. Below are some possibilities for the cards. You will need to choose characteristics that will weed out your group—but not wipe out the entire class all at once. During the demonstration, each time you read one of these traits, every student who has the trait will "die out" for the rest of the round.

- light-colored eyes
- bent little finger
- not wearing glasses
- shoes laced and tied
- shoes without laces

- wearing earring(s)
- wearing a sweater
- wearing hair clips of any kind
- wearing a watch
- a widow's peak

- not able to curl tongue
- attached ear lobes
- wearing a hat
- not wearing red

standing, play another round, reading through three or four additional cards. Then go on to step three.

3. **Discuss the demonstration.**
Ask the students what happened. Did any "characteristics" wipe out more people on their team than others? Did one team do better than the other? Why? (Answers will vary depending on what happens with your group. However, students should be figuring out that their team has a better chance of surviving when the characteristics of the team members are more diverse.)

4. **Do the demonstration again.**
Restore each team to its full number of "live" members. Then tell the teams that they're going to try the demonstration again but that before you start they are allowed to make any adjustments they want on their teams. (Students should do things that give the group a wider range of traits. For example, some team members may untie their shoes while others may leave them tied, and some may add layers of clothing.) Shuffle the stack of cards and then read through several of them, having students with any of the characteristics "die" and sit down.

5. **Wrap up.**
Have the students describe what happened. Did their team last longer this time? What helped them or hurt them? What can they say about how genetic diversity might help wild populations of animals or plants survive? (Students should understand that the more diverse their team was, the greater the chance it had of having at least one member left at the end of several rounds. They should also be able to generalize that the more genetically diverse a wild population is, the greater its chances of surviving over time. However, if the students can't quite make this leap yet, don't worry. They'll get a chance to apply these ideas in Part III.)

BEFORE YOU BEGIN! PART III
Make several copies of the "White-tailed Deer Genetic Wheel" for each group. Also make two copies of the "White-tailed Deer Cards" for each group (one copy on white paper and one copy on colored paper). You'll need to make two copies of the "White-tailed Deer Fawn Cards" on white paper and two copies on colored paper, cut the cards apart, and put them in a container. Then make one copy of the "Event Cards," cut them apart, and put them in another container. If possible, laminate the cards for future use. (If "All About White-tailed Deer" is used as a homework assignment, copy one for each student.)

WHAT TO DO! PART III
1. **Introduce the white-tailed deer game.**
Tell students that they will play a game that illustrates why genetic diversity is important. The game focuses on the white-tailed deer. You may want to read "All About White-tailed Deer" to the class as an introduction to the activity or give it to the students to read for homework the night before.

2. **Set up for the game.**
Divide the class into five groups and give each group its "White-tailed Deer Cards" (one set on white paper, one set on colored paper). Explain that each group of students is "watching over" a small population of white-tailed deer, represented by the "White-tailed Deer Cards." Each card identifies the characteristics (genetic traits) that each white-tailed deer will have during the game. The traits used in the game are as follows: sex; acuity of hearing; resistance to disease; sense of smell; and home range size. Colored cards represent males and white ones represent females. The other traits are written on each card.

3. **Determine the genetic number of the white-tailed deer.**
Hand out several copies of the "White-tailed Deer Genetic Wheel" to each group. Using the traits provided on each white-tailed deer card, tell the students to work together to determine the genetic