Making the Selection - Data Table

|  |  |
| --- | --- |
| Generation | Population |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |

**Procedure:**

1. Use the provided data chart.
2. Take the 50 objects of color (A) and put them in one stack together to represent the parent (A) gene pool. Do the same for the 50 objects of color (B), so there is a separate gene pool for both parent organisms.
   1. Remember: Gene Pool: the name for all the genes the organ can contribute. They are all the same color because each pile represents a purebred organism.
3. Take one object from group (A) and one from group (B) and place them in a container/plastic bag. Make a tally mark in the data table for generation one. Repeat this until all the objects of both gene pools have been used. How many hybrid organisms did you produce in the container?
   1. Remember: Each pair represents a hybrid produced. All of these hybrids would survive a drought because each has drought-resistant genes.
4. Place all 100 objects in the container, and mix thoroughly. Without looking, remove two objects. If you get two objects of the SAME color, (AA) or (BB) set them aside. If you get one object of each color (AB), make a tally mark in the column for generation 2, and then place the objects in a second container/plastic bag. Keep doing this until all objects are removed from the first container.
5. Repeat the process for the third generation using the objects you placed in the second container. Draw two objects; discard the pairs of the same color and save the pairs of two colors. Make a tally mark in the third column only when a mixed pair is drawn.
6. Repeat the process for the fourth, fifth, and sixth generation columns (unless you reach zero sooner). If the total of mixed pairs for the sixth generation is still greater than zero, extend the data table, and continue with further generations until you reach zero.
7. Use your graph paper to plot the population of hybrids (number of mixed pairs) on the y-axis and the generation number on the x-axis and connect with a smooth curve.

**Follow-Up Questions:**

1. What happened to the number of hybrid individuals in succeeding generations after the first one?
2. Why does the number of hybrids change as it does?
3. How do these results explain why farmers must buy new hybrid seed each year, instead of keeping seed from the hybrid crop to plant?