Performance Assessment



The **Keel Billed Toucan is an interesting species that thrives in the warm and rainy climates in Latin America. It is currently creeping onto the endangered species list. This bird has many ecologists that study it and try to figure out how to save it. They have to go through a series of steps in order to be able to save it.**

**The first thing that has to be done is to obtain a sample of the forest to see how many Keel Billed Toucans there are in a forest.**

1. Describe below what you might do to obtain a sample of the forest. Describe how you might figure out how many birds are in the rain forest.
2. The section of forest that is being used is a 800km by 500km rectangle. Show how you might sample that area for birds.

The next thing that must be done is to figure out the future population of the Keel Billed Toucan. Through their sampling the ecologists have discovered that there is a population of around 15,000 birds. These birds have a birth rate of around 90 birds for every 1000. They also have a death rate of around 100 birds for every 1000.

1. What will be their change in population next year? What will be their total population next year?

Use the space below to show any and all of your work.

The Keel Billed Toucan has several natural predators. Snakes, monkeys and other birds have been known to hunt and kill this colorful bird. The amount of birds that can live in the rain forest is something that ecologists need to figure out in order to see what the maximum population should be.

1. Draw a graph of what the population of the Keel Billed Toucan should be if they achieved a maximum population given their environment. Take into account the factors listed above.

Use the space below that to explain why you drew that particular graph. Explain why this type of graph best represents the Keel Billed Toucan.

One of the predators of the Keel Billed Toucan is the Green Viper. This snake will hunt and kill Keel Billed Toucans for its food. The relationship between these two animals is of interest to ecologists because they would like to know how the numbers of Green Viper and the Toucan are related.

1. Draw a graph that shows a relationship between the Keel Billed Toucan and the Green Viper. This graph should show fluctuations in the numbers of Keel Billed Toucans and Vipers.

Use the space below to both draw a graph and explain what you drew. Explain why the populations behaved the way that they did.