**Rat Evolution!**

According to natural selection, plants and animals with helpful adaptations will have a better chance of surviving to have offspring. Over a Looooooooooooooong period of time, several adaptations can lead to entirely new species. This is called evolution. Keeping these ideas in mind, you will predict how some common rats may have evolved over 50 million years in **3 different environments.**

A large population of rats start out living on a cargo ship that stops at 4 different islands. At each of these locations, a large number of rats get off the boat. Each of the islands is described below and has a station at 4 different places around the room:

**Island A:** Very hot and desert-like. The sands are a light yellow-tan color. The easiest food source is beetles with hard shells. There are large carnivorous birds with very good eyesight that inhabit the island and eat rats for breakfast.

**Island B:** This Island has moderate (medium) temperatures with a lot of rain. The landscape is mostly craggy, volcanic rock. There is very little plant life or insects, but there are a lot of fish, snails and clams along the shoreline and in tide pools accessible to the best swimmers.

**Island C:** The weather here is very cold, with a thin layer of ice constantly covering the ground. There are a number of nutritious roots to eat, but they can only be accessed by the best diggers. There is also very little shelter above ground. Arctic foxes also inhabit this island and will feed on rats if they can catch them.

**Island D:** The weather here is quite comfortable. However, the food sources are limited to berries and nuts that only grow high above the ground in tall, lush trees. On the ground there is a large population of ferocious wildcats who are very good hunters and will definitely eat a rat if they can catch it. Trees are they safest place from the wildcats.

You need to visit AT LEAST 3 of the 4 islands above. Imagine what the rats there may look like after 50 million years go by. On a large sheet of paper, complete the following for each island you visit:

1. **Draw what the rat would look like** after 50 million years in that environment. Consider what characteristics might have evolved in that environment that would allow for survival.
2. Write a 5+ sentence paragraph (using complete sentences) **describing the changes** that occurred in your rat **and why**
3. Be sure to name your rat species!