



## Chinchilla Activities

### 1. Biogeographical “Rules!”

This is an activity inspired by a short article found on the <http://www.wildchinchillas.org> website written by Amy Deane.

- Goals:**
1. Students will become more familiar with Chinchilla habitat, appearance and vocabulary.
  2. Students will be exposed to biogeography, specifically to Allen and Bergman.
  3. Students will recreate a scientific field study, form their own hypothesis and make their own conclusions about two slightly controversial theories.

**Background:** In 1847, Carl Bergmann observed that within the same species of warm-blooded animals, populations having smaller individuals are more often found in warm climates near the equator, while those that are larger, or have more mass, are found further from the equator in colder regions. This is due to the fact that larger animals generally have larger body masses that result in more heat being produced by the body. Because a normal byproduct of metabolism in cells is heat, the more cells an animal has, the more internal heat it will produce. Additionally, larger animals usually have a smaller surface area relative to their body mass and, therefore, are comparatively inefficient at radiating their body heat off into the surrounding area. His rule simply states that the colder the climate (either from latitude or altitude), the larger the body size of a warm blooded animal when compared with races of the same species in warmer regions. In 1877, Joel Allen found that the size of appendages in warm-blooded animals also has an effect on the amount of heat lost to the surrounding environment. Long extremities increase the surface area of the body and subsequently increase the speed at which body heat will be lost. Therefore, he noted that individuals living in populations of the same species found in warmer climates tend to have longer limbs than do populations in colder climates.

Wild chinchillas are good examples of both theories. Long-tailed chinchillas live in warmer climates lower in altitude than the short-tailed chinchillas of the high Andes.

- Materials:**
- ◆ Scissors
  - ◆ Rulers capable of measuring millimeters
  - ◆ Measurement Worksheet
  - ◆ Photos of Chinchillas or a live animal if available
  - ◆ Chinchilla Outlines
  - ◆ Pencils

## Methods:

1. Introduce topic of chinchillas to the students.
2. Inform them that they are going to recreate a biological field study in order to prove or disprove 2 theories.
3. Have them cut out the chinchilla outlines, being careful to retain the exact dimensions of the outlines, and to divide them into 2 stacks according to their species.
4. Introduce the concept of biogeography briefly. Then discuss Allen and Bergmann's rules. Tell them about the Chinchilla habitat and the climate for each species.
5. Ask the kids to make a hypothesis. Will chinchillas fit into these rules?
6. Ask the students to measure the tail length, the ear height, and the body length of each of the members of each species, and record them on the Measurement Worksheet.
7. Then have the kids average the results of each measurement for each species. Write the averages for each species on a chalkboard or a poster so that everyone can see the results.
8. Ask the kids whether or not their hypothesis was correct. Remind them that a theory may not be proven or disproven with just one study. Let the students tell you what would improve the study and how they might design a better one.

## Extensions:

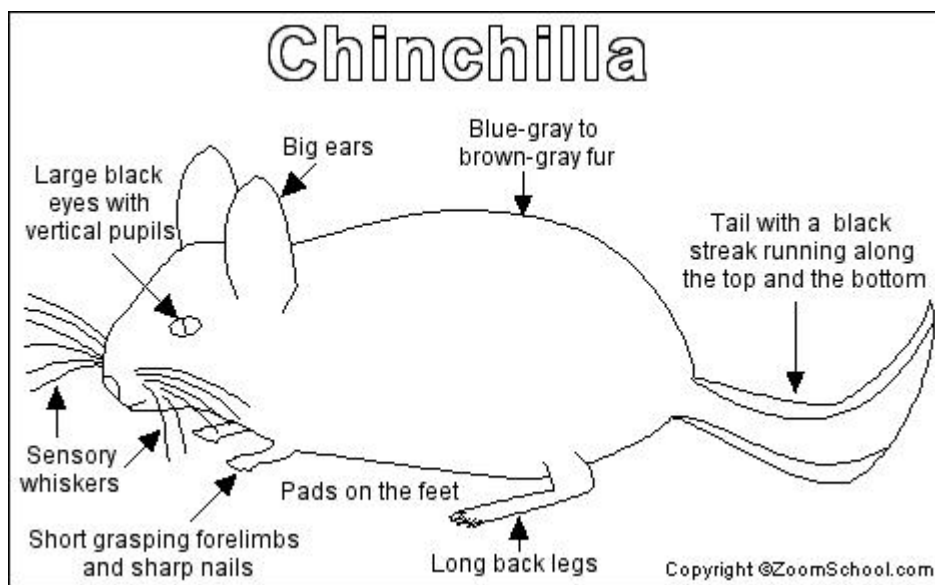
1. Let the kids redo the experiment with measurements they look up and find for other species that are found in two different climates. Examples are moose, white-tailed deer and mountain lions.
2. Ask the kids to try a similar biogeographical study to try to prove or disprove Golger's Rule which states that dark pigments increase in races of animals living in warm and humid habitats. Therefore populations that are found in a drier climate will be lighter in color than ones found in more humid regions.



## 2. Chinchilla Coloring Page

**Goal:** 1. Students will become more familiar with Chinchilla appearance and anatomy.

**Extension:** 1. Instruct the students to research Chinchilla habitat and create a background environment for their colored Chinchilla. They can then cut out the colored picture and glue it onto the habitat poster or diorama.





### 3. The Furry Funnies...

#### Goals:

1. Students will use creative and fine arts to share knowledge about Chinchillas.
2. Students will independently research Chinchilla issues and life history in order to create a comic strip about them.

**Materials:** ♦ white newsprint or copy paper  
♦ pencils                      ♦ colored pencils  
♦ photos of chinchillas and chinchilla habitat  
♦ chinchilla research materials  
♦ examples of comic strips

#### Methods:

1. Bring out examples of comic strips. Let the kids read some of them out loud and ask them to discuss their favorite comics. Steer the kids toward the comics with animals as main characters (Ranger Rick magazine does a comic style article every month) such as Garfield, Marmaduke and Peanuts.
2. Discuss what makes a comic successful...funny, communicates a message, characters with personality...etc...
3. Let the kids know that their comics are going to be centered on chinchillas and the animals and or people found in their habitat.
4. Instruct the students to research chinchillas and their issues and life history to make their comics relevant.
5. Let the kids write out a script for their comic on a separate piece of paper so that they know how many scenes will be in their strip.
6. Let the students create their comic strips.

**Extension:** Once the students have created their own comic strip help them to collate all their strips and bind them into a book. If possible, let the kids each take home a copy of the whole Chinchilla comic book.

