

Sec.: \_\_\_\_\_ Name: \_\_\_\_\_

Experiment: External Features of Birds  
(B. Science 10-V-53)

Purpose: To study the external features of a bird and become familiar with the terms associated with the areas of a bird's body which are used for purposes of identification.

Materials: mounted robin  
colored pencil robin picture

Methods:

**Part A: External Features of A Bird's Body**

1. Examine a mounted bird. Probably the most familiar characteristic of birds is the body covering of feathers. What other observable characteristics separate birds from vertebrate classes previously studied?
2. What characteristics may be observed that adapt the bird to flight?
3. Explain the fact that birds walk on their toes and not on their feet.
4. Does a bird appear to be balanced on its legs? Explain.
5. In what activities does a bird engage that make a balanced body necessary?
6. Because the forelimbs of birds are developed as wings, the beak must assume activities other animals might perform with the aid of front legs. Name several activities in the life of a bird in which the beak is used.

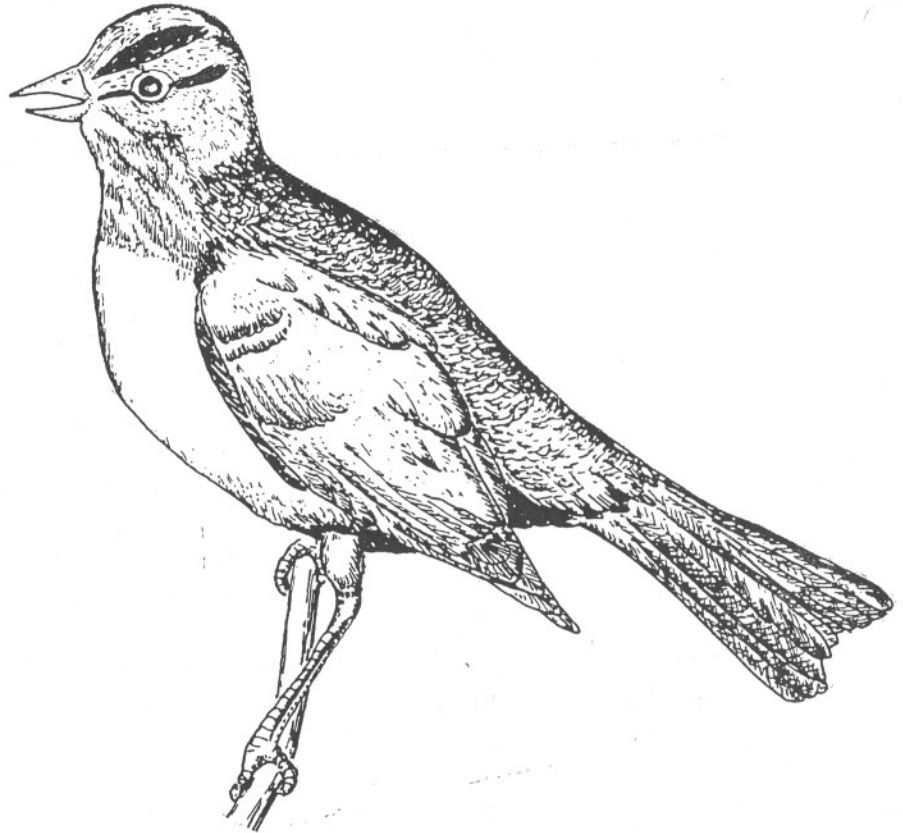
**Part B: Bird Topography**

1. Using the "typical" bird shown in results, label the parts printed in bold. Then use colors given in parentheses to color portions of bird.

On the head, locate the **forehead** which is regarded as the anterior one - third of the top of the head; posterior to this is the **crown**. On many birds there is a pattern of lines in the area of the eye. One, which would be in line with an imaginary eyebrow, is known as the **superciliary line**. Immediately below this is a distinct area which passes through the eye and hence is known as the **eyeline**. In the area directly below the eyeline is a patch of feathers, distinct or indistinct, depending on the species, which marks the position of the ear and is called the **auricular patch** (gray). Posterior to the "ear" patch is the back of the neck or the **nape** (orange).

The beak of the bird is divided into the **upper** and **lower mandibles** (yellow). Often the length and shape of the mandibles may be used as a Positive identification for certain species of birds. Beneath the lower mandible is the **chin** and below that, the **throat** (black). On some species the **nostrils** can be seen at the base of the upper mandible. If these cannot be found, they may be concealed by a small tuft of feathers extending over them.

Results:



Part A:

1. characteristics: \_\_\_\_\_  
\_\_\_\_\_
2. flight: \_\_\_\_\_  
\_\_\_\_\_
3. toes: \_\_\_\_\_  
\_\_\_\_\_
4. balanced?: \_\_\_\_\_
5. necessary: \_\_\_\_\_
6. used: \_\_\_\_\_  
\_\_\_\_\_

Part B:

Conclusions:

1. List six characteristics that distinguish birds from other vertebrates.  
a. \_\_\_\_\_ b. \_\_\_\_\_ c. \_\_\_\_\_  
d. \_\_\_\_\_ e. \_\_\_\_\_ f. \_\_\_\_\_
2. Rate the following senses of a bird as good or poor: smell, taste, sight, hearing.  
good - \_\_\_\_\_ poor - \_\_\_\_\_
3. Why is a flexible neck important in the life of a bird?
4. List the organs of the alimentary (digestive) canal in the order in which food passes through them.
5. What is the function of the air sacs extending from the lungs of the birds?
6. Why is the excretion of uric acid rather than urine considered an adaptation for flight?
7. Mathew 6:25-34. God doesn't want us to be anxious about Earthly things but to seek first His kingdom. Why does he draw our attention to the birds in this text?