NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Bird Anatomy Homework-Wildlife-Mrs. Weimer

Article found at: <http://www.birds.com/education/anatomy/>

**Anticipation Guide for the Bird Anatomy Homework**

***Directions before reading:***Show me what you already know about Bird Anatomy. Read the statements below and indicate whether you think the statement is true or false in the Before Reading column. Compare your responses with someone sitting next to you after you complete your responses.

***Directions after reading:***After reading information related to each statement, decide whether you still think it is true or false. Cite the sources and information that support your final answer.

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| --- | --- | --- |
| Statement and Support | Before ReadingTrue False | After ReadingTrue False |
| 1**. Bird feathers are used for both insulation of the bird and account for the majority of the shape and size of the bird**. |  |  |  |  |
| Support and Source: |
| 2. **Bird feet functions coordinate with their bills, meaning that the type of bird bills will indicate what type of feet they possess**. |  |  |  |  |
| Support and Source: |
| 3. **Keratin (human fingernail material) makes up many portions of the external features of the bird.** |  |  |  |  |
| Support and Source: |
| 4. **Active flying birds have more white muscle than do birds that are not active fliers.**  |  |  |  |  |
| Support and Source: |
| 5**. Birds breathing is much faster than our own breathing, thus their heart must have more chambers than our own heart.** |  |  |  |  |
| Support and Source: |
| 6. **Birds frequently fall off branches when they are smaller and must be taught by their parents to stay in the branches.** |  |  |  |  |
| Support and Source: |



Feathers are the most unique aspect of a bird’s anatomy. The feathers of a bird are made up of keratin, which is the same substance that hair, hooves and beaks are made of. The shaft, or center spine, of the [feather](http://www.birds.com/blog/waterproof-feathers-birds/) is stiff and the tip is flexible for flight. The barbs of the feather hook together to form an air tight seal to resist the wind and also to provide insulation. The bird’s wing consists of primary feathers forming the point of the wing, and secondary and tertiary feathers further up. Contour feathers give the bird its overall shape. Down feathers provide insulation.

Now let us consider the internal anatomy of a bird. The skeleton of a bird weighs less than its feathers and thus [flight](http://www.birds.com/blog/the-marvelous-mechanics-of-flight/) is possible. The bones are so light due to their internal honeycomb structure. The inner anatomy of the bird wing, like our arm, is made up of a humerus and two lower limb bones. The digits are highly modified for flight. The breast bone of the bird has a deep keel for the attachment of flight muscles. This keel is absent in flightless birds.

Further to the internal anatomy of a bird is a look at those organs which assist in flight. There are two types of flight muscles, namely, white and red muscle. White muscle is used for bursts of activity, such as taking off quickly. Active flying birds, such as those which migrate (e.g. geese), have red flight muscles supplied with lots of blood vessels. Heat from flight must be regulated, this is done by means of the respiratory system. Birds have at least nine air sacs connecting chambers in their bodies. This supplies the muscles with extra oxygen to use. Birds have a four chambered heart like our own, only it beats at a much faster pace.

Now let us look at the parts of a bird’s anatomy used for finding and consuming food. The bill of a bird is merely an extension of the jaws and is covered in keratin. It has many nerve endings so as to feel and taste its food. Bills vary in shape and size according to the feeding habits of bird species. The bird’s gullet has a small sac called a crop in which undigested food is stored for later use, such as when [feeding](http://www.birds.com/bird-care/nutrition/) nestlings.

The feet of a bird function in harmony with it’s bill. In bird anatomy, the feet vary according to function. For example, [birds of prey](http://www.birds.com/species/) have sharp talons for killing prey; wood peckers have two toes pointing forward and two pointing back to climb effectively; and ducks have webbed feet for paddling. Interestingly, birds will not fall off a branch when sleeping due to a special locking mechanism in their legs.

All the above just briefly demonstrates what fascinating creatures birds are and how perfectly adapted the [bird’s anatomy](http://www.sobaybirdsoc.com/anatomy.htm) is for survival.