

# Seema's Bird Lab

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## All You Need To Know About Birds And Their Beautiful Feathers

There are more than 10,000 bird species out there with beautiful colored feathers and patterns. Believe it or not birds go through an extreme process in order to get their feathers so beautiful. From molting to light refraction it all contributes to a birds feathers. There are also 3 different categories that birds are placed based on their pigmentation.



<https://www.allaboutbirds.org/news/the-basics-feather-molt/>

## Molting

Molting is the process in which a bird replaces their feathers with new ones. It is almost like when humans have dead hair and they cut it off and new hair grows back. Birds old or dead feathers will fall off on their own and regrow. Molting is often the reason why birds have such beautiful colored pattern feathers. The new colors will indicate the bird's age, sex or even the season of the year. Molts are also different for birds, some may have one molt per year while others have 2 complete molts per year.

## Timing

Timing is important for a bird since it takes up so much energy. For larger birds molting is very hard since they have to wait longer for their feathers to grow back than smaller birds.

## System For Birds

Scientists came up with a system called Hymphrey-Parkes which determines whether the bird will have a basic plumage or an alternative plumage. A **basic plumage** is when a bird follows a full molt where as an **alternative plumage** is when birds spend a small amount of time in their bright feathers. Species who look the same all year round are always in basic plumage. This system is useful because it helps you describe molting and plumage throughout a birds life.



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The diagram above shows a bird's plumage over a course of 4 years.

## Carotenoids

Carotenoid is one of the 3 categories of pigments. Carotenoids are produced by plants and are the cause of bright yellows and bright orangish yellow seen in birds. Birds that have carotenoid are required to eat plants or something that has eaten a plant.



## Melanins

Melanins are the second group of pigments. It occurs in both the skin and feathers of the bird. The way melanin is produced varies from location and concentration. It can help a bird reveal colors from the darkest black to reddish brown to pale yellow.

Melanin can also be beneficial to birds. Those that contain melanin have stronger and more resistant feathers. Carotenoids can also interact with melanin to produce olive green colors in birds.



## Porphyryns

Porphyryns are the last group of pigments. It is produced by modifying amino acids. When exposed to ultraviolet light feathers will turn into a bright red. Porphyryns produce colors like pink, brown, reds, and greens.



## Interesting Facts

1. Birds use their wings for flight. Depending on the size and weight of the feathers it determines how long a birds can fly for.
2. Male birds use their feathers to dance and attract female birds.
3. Birds have beautiful colored feathers in order to not confuse themselves with their flock and mates.
4. Birds different colored feathers help them stabilize their body temperature.

Overall learning about birds is extremely interesting. You get to learn about new facts that you wouldn't even think of. You can check out these 3 websites for great information on birds. ( <https://www.allaboutbirds.org/news/the-basics-feather-molt/> )  
( <http://www.justscience.in/articles/birds-beautiful-colourful-feathers/2018/01/08> )  
( <https://academy.allaboutbirds.org/how-birds-make-colorful-feathers/> )

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