

# Chickens and Eggs

## Background

Most of the eggs we eat come from chickens. Chickens are in the **poultry** family, along with ducks, geese and turkeys. Farmers raise poultry for their eggs and for their meat.

Chicken **producers** place nests in their hen houses so the hens will lay their eggs in places that are safe and protected. If the farmer didn't provide a nest, the hen would hide her own nest so carefully that the farmer might not be able to find it.

Most chickens weigh between seven and 10 pounds. Some weigh as much as 13 pounds. Some weigh as little as 1.5 pounds.

**Hens** start laying at 22 weeks of age. **Laying** hens produce about 240 eggs each year. During the hen's most **productive** period, she may lay an egg about six out of every seven days. Eggs **hatch** in 21 days. The hen requires at least 25 hours to produce an egg. Thirty minutes later, she starts all over again.

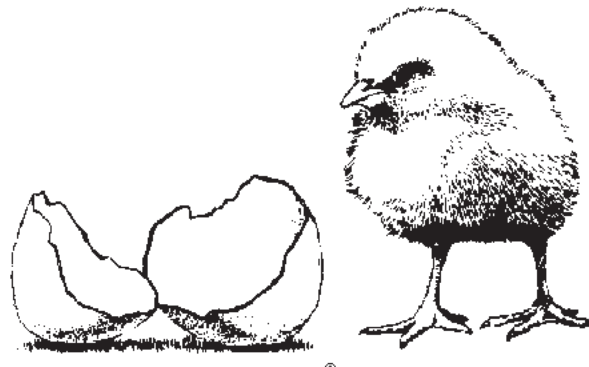
Chickens do not lay eggs until they receive a light cue, either from **natural** sunlight or **artificial** light. The light stimulates a **gland** near the chicken's eye, which **triggers** the release of an egg **cell** from the chicken's **ovary**. A chicken will lay bigger and stronger eggs if the lighting is changed to make her think a day is 28 hours long.

A young chick is very small when it hatches. After eight weeks it has grown to weigh about 3 1/2 pounds.

A chicken is different from other birds because it has a **comb** and two **wattles**. The comb is the red **appendage** on top of the head, and wattles are the two **appendages** under the beak.

Because the **pecking order** of the hens sometimes causes them to hurt each other, the beaks of baby chickens are trimmed.

Eggs are a good source of **protein**. Research shows that eating high-quality protein foods like eggs for breakfast can help you feel more satisfied and energized throughout the day. Eggs help build and maintain muscles.



## THE EGG SHELL

The eggshell is a hard, three-layered container composed of **calcium carbonate**. Its purpose is to protect the enclosed **embryo** from the weight of the parent's body while the bird develops inside.

With the exception of those birds that warm their eggs in mounds of dirt, all birds use body heat to **incubate** their eggs and turn them regularly to keep the temperature even. In natural incubation the hen turns the eggs as she gets off the nest and moves them with her beak while she is sitting on them.

Like all living things, the developing chick must have three things to live—food, water and air. The food

is provided by the **yolk**, which is mostly protein. Protein helps to build strong bones and muscles. Water comes from both the yolk and the **albumen**. The albumen is the clear portion of the egg, most commonly called the “egg white.” The albumen is 85 percent water, and the yolk is about 50 percent water. Air passes through the shell and the membrane. The chicken uses the oxygen and passes carbon dioxide back through the shell.

Each egg shell has a coating or covering, called a **bloom**, that seals its pores, prevents bacteria from getting inside and reduces moisture loss. Eggs are washed before they are sent to the market. This is necessary for cleanliness but removes the bloom. To restore this protection, packers give the eggs a light coating of edible mineral oil. Properly handled and stored, eggs rarely spoil but will simply dry up if kept long enough.

Although the exact shape of an egg is as individual as the hen herself, most eggs are roughly egg-shaped. Some abnormalities that can be found in the shells of fresh eggs are ridges, bulges and rough texture. Eggs having any of these abnormalities would get poor eggshell ratings from the US Department of Agriculture (USDA). Some extreme oddities in eggshell shapes include shells that are long, appear bent, or look as though they have been mashed in on one side. It would be very rare to find any of these shapes on grocery store shelves. Wild birds have shells that are more pointed than those of most domesticated varieties.

The size of an egg is an inherited characteristic, and poultry breeders spend large amounts of time and effort to select strains for egg size. When a **pullet** (a young hen less than a year old) first begins laying eggs, her eggs are small. After 15 to 20 days of laying, the size of her eggs will reach the size of a standard grocery store egg. Egg size varies greatly from one kind of bird to another. The eggs of domestic chickens weigh an average 58 grams. Those of domestic turkey are about 85 grams. Hummingbirds lay eggs weighing a half a gram. Quail eggs weigh an average nine grams, and ostriches lay eggs weighing an average 1,400 grams.