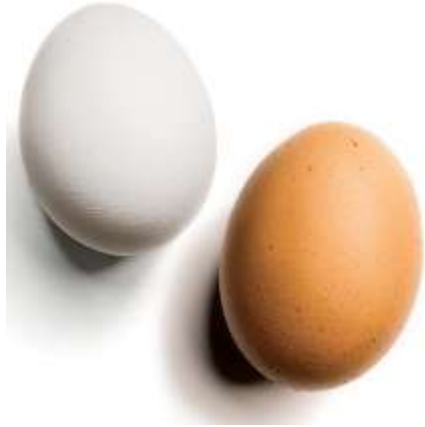


# A Miracle: The Making Of A Chicken Egg!



During our sanctuary tours and while working with volunteers of all ages in the chicken area we get asked a lot of interesting questions. Here are a few of the most frequent ones!!

**“Can a hen lay eggs without a rooster?”** The answer is “Yes”. But please note that an egg can’t become a baby chicken without a rooster fertilizing the egg.

**Children have asked us “how does the egg get inside the chicken so that she can lay it?”** That is really the one key question that results in a miraculous answer when you think about the “assembly line” inside a hen. Henry Ford definitely would be proud of this process.

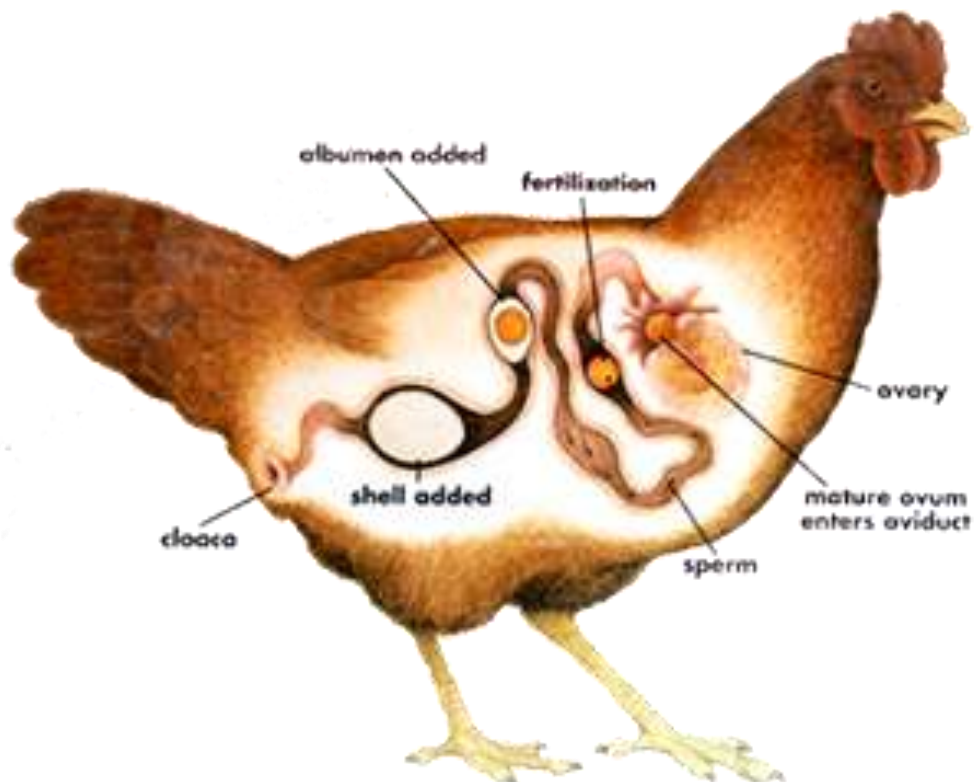
When a hen (female chicken) is born she has thousands of small cells in its body that potentially can turn into a “yolk” or the yellow part of an egg. Once the hen gets to an age where she can begin to lay eggs, one of the cells grows into a yolk in the hen’s ovary. (Note: most chickens lay approximately five to seven eggs a week when they are young. The hen has thousands of these cells but not every one of the cells turns into a yolk during the hen’s life.) At times two yolks can form at the same time and go through the process described below together. That is how double yolk eggs happen.

In this first stage the yolk (ovum) is formed in the hen’s ovary and there it is covered with a thin layer of membrane which contains “food” (nutrients). This membrane also helps hold the yolk in the middle of the egg’s shell when it is formed. It is also the place where the egg will be fertilized if a rooster has mated with the hen before the yolk was formed.

When the yolk and membrane are combined (i.e. becomes a mature ovum) they then pass down into the oviduct (a twisted tube like structure) inside the hen. In the oviduct, the egg white (albumen) is added to the yolk. This step in the process takes about two to three hours. Then another membrane surrounds the yolk and the egg white. This second membrane helps hold the yolk and egg white next to the shell as the shell is formed.

When the yolk, egg white and second membrane have been combined they travel further down the oviduct into an area where the egg shell forms around the yolk, egg white and membrane. The egg shell is made up of calcium and other minerals and the shell's job is to protect the internals of the egg. An egg shell takes about twenty hours normally to form on average.

Once the egg shell is added the egg then it travels out of the oviduct and into the hen's vagina (cloaca). Once the egg is positioned there the hen then pushes the egg out of its body. When the egg has been pushed outside of the hen's body we say that the hen has "laid an egg".



### **Children commonly ask “does it hurt the hen to lay an egg?”**

The answer is basically “no”. There may be some discomfort however when a young hen lays her first egg or so but generally it is not believed to hurt. Some hens however “cackle” loudly when they are in the process of laying an egg. Some people believe that the hen does this to draw attention to herself and her accomplishment. But no one is sure why some hens “cackle” loudly and others don’t.

### **Another common question is: “How does the egg get fertilized?”**

An egg gets fertilized after a rooster has injected sperm into a hen. Note: roosters (like other birds) do not have a penis. Instead roosters have an “orifice” or “hole” from which they squirt their sperm into an orifice of the hen. Basically, the rooster will mount a hen, shake its hips quickly and then squirt the sperm into a holding area inside the hen. Note: the rooster’s orifice is the same orifice it uses to urinate and defecate.

After the hen’s reproductive system has added the first membrane around the yolk the yolk then comes in contact with the stored sperm from the rooster and the egg is fertilized (i.e. see the diagram on the previous page). Note: that the sperm has to be inside the hen before the yolk is formed.

The rest of the egg creation is exactly the same as that of an unfertilized egg. When the egg is laid you can’t tell whether it is fertilized or not.

### **How can you tell if an egg is fertilized or not?**

By holding an egg up to a light or a candle you can look inside the shell and look at the membrane next to the egg yolk. If the egg is fertilized the membrane will be larger than normal. People can purchase chicken “candles” or use a candle or flashlight to look inside eggs. The darker the color of the egg shell the harder it is to see inside though.



Egg candling torch or light



Yolk and membrane visible inside the egg

Note: If an egg is fertilized that does not mean there is a baby chicken inside the egg. A freshly laid fertilized egg can be eaten and it will taste the same as an unfertilized egg.

### **How long does it take for an egg to hatch into a baby chicken?**

A fertilized chicken egg needs to be “incubated” (i.e. kept warm by the hen sitting upon the eggs or warmed by artificial heat) before it can be hatched into a baby chicken. About two to three days after the egg has been laid the embryo inside the egg will begin to grow if it is being properly incubated under proper warmth and humidity. It will then take twenty one days for a baby chicken to be hatched in the proper incubation environment.



We hope this document has broadened your understanding of how chicken eggs are formed and how baby chickens are created.

When we stop and think about the entire process of how an egg's parts are created, combined possibly fertilized and then passed through the hen's reproductive system it truly is a miraculous process.