

# Incubation Guide Chicks



## Gumpert Homestead Incubation Guide -Chicks

If you don't have a broody hen at home, you can use an egg incubator to mimic the mother hen's role. The incubator maintains the warmth of the eggs, as well as turns the eggs (until lockdown) helping the embryo develop.

Using an incubator to hatch chicken eggs can be challenging for beginners, but it becomes enjoyable once you master the process. There are a few basic things you need to know before getting started. In this guide, we will discuss the necessary steps for successfully incubating chicken eggs and provide tips on how to begin.

### Supplies:

1. Chicken Egg Incubator- An egg incubator is essential for incubating and hatching fertile chicken eggs. You have the option to either purchase or build your incubator. While some prefer to construct their own, we recommend buying one for the best results.



2. Fertile Chicken Eggs- An unfertilized egg cannot hatch. To obtain fertilized eggs, purchase them from a chicken hatchery or poultry farm. Using eggs from the same source helps prevent the spread of diseases among the eggs and chicks. If you have a rooster with your hens, you can collect fertilized eggs from your backyard. Alternatively, order from a hatchery or farmer online and have the eggs shipped to you. Choosing a seller closer to you can reduce the time the eggs spend in transit.



3. **Candling Device-** An egg candle is a device used for checking the fertility of poultry eggs.



## **How long does it take for chicken eggs to hatch?**

Chicken eggs require 21 days to hatch.

## **Incubator temperature & humidity**

The ideal conditions for incubating chicken eggs are a temperature of 99.5°F (37.5°C) and a humidity level of 45-50%. Your incubator will come with detailed instructions on how to setup, and maintain your temperature & humidity.

## **Before DAY 1 Begins:**

Ensure your incubator is clean and connected to a reliable power source. Run the incubator for 24 hours to verify that all functions are operating correctly. This step is crucial for a successful hatch, as a malfunctioning incubator can result in the loss of an entire hatch.

Eggs should rest after shipping for 24 hours with the pointy side of the egg facing down, this will help the eggs settle after shipping!

## **Day 1:**

Once your incubator has been running for a few days and is maintaining the correct temperature, you can add your eggs. This step is known as setting the eggs.

If you are not using an automatic egg turner, take a moment to mark each egg with an X on one side and an O on the opposite side using a pencil. This will assist you in turning the eggs later.

It's advisable to place at least six eggs in the incubator, especially if you are new to hatching chicks or if the eggs have been shipped, as shipped eggs typically have a lower hatch rate.

When placing the eggs in the incubator, make sure the pointy side of the egg is down..

For the first 24 hours after placing the eggs in the incubator, leave them undisturbed except for checking the temperature.

## **Days 2-18:**

During days 2-18, try to leave your eggs undisturbed as much as possible, but make sure to check daily that the incubator's water reservoir is full and the humidity is maintained.

## Turning the Eggs

Turning the eggs is a crucial part of the incubation process. Ideally, the chick embryo should develop on top of the yolk, but the yolk tends to float upwards, which can cause the developing chick to be squeezed between the yolk and the shell. Turning the eggs helps to move the yolk away from the shell, protecting the growing embryo.

Eggs need to be turned three times a day. This can be done easily using an automatic egg turner usually built into your incubator or by turning them by hand.

## Days 18-21: Lockdown Getting Ready For Hatching

By the 18th day, the chicks are fully developed and preparing to hatch. Here are a few crucial steps to ensure they have the best chance of success:

1. **Stop Turning the Eggs:** On day 18, cease turning the eggs. At this stage, the chicks are positioning themselves inside the eggs in preparation for hatching.
2. **Increase Ventilation:** If your incubator has air plugs, now is the time to open them. The chicks will need more fresh oxygen during the hatching process.
3. **Maintain Temperature and Adjust Humidity:** Keep the temperature constant, but increase the humidity to 65-70 percent. This higher humidity level is essential for the chicks as they hatch.

## Day 21: Baby Chicks Start To Hatch

Chicks typically begin to hatch on the 21st day of incubation. However, if the eggs were kept slightly cool before incubation, the hatching process might take a bit longer. Don't worry if they haven't started hatching by day 21. Conversely, if the incubator was a bit warmer than usual, hatching might begin a day or two early.

When hatching starts, you'll see a small opening in the middle of the egg, known as pipping. Gradually, the chick will work its way around the egg, creating a crack line around the middle before finally pushing the eggshell open. This process can take up to 24 hours, though some chicks may complete it in as little as 5 hours.

It's crucial not to assist the chicks during this process. They are absorbing the egg yolk, and their blood vessels may not have dried up yet. Interfering too soon can cause bleeding and potentially kill the chick. Leave the chicks in the incubator until they have dried off.

Although you might feel the urge to remove them immediately, the safest place for the chicks is the warm incubator. Chicks can stay in the incubator for up to two days without any issues. This is beneficial because opening the incubator frequently to remove chicks increases the

risk of harming those still hatching. Changes in temperature and humidity can cause the membranes around the hatching chicks to dry out, making it harder for them to hatch.

Be patient and let the hatching process proceed undisturbed. Once all the chicks have hatched and dried off, you can move them to the brooder.

If you don't have more eggs hatching, but the baby chicks are at least mostly dry you can move them into their brooder early. We find that they dry off faster in the brooder than in the incubator because it's less humid.



Chicks will wobble around the incubator we love watching them “poof up” while drying off!

## Common Issues:

### Managing Humidity

When starting out with incubation, adjusting humidity is crucial, especially during lockdown. How do you make these adjustments? If humidity is too low, how do you increase it? Conversely, if it's too high, how do you decrease it?

The solution is straightforward: manipulate the surface area of water. Humidity levels are dictated by the surface area of water exposed in the incubator, not just the volume of water itself. For instance, consider two scenarios: one incubator contains a large jug holding a quart of water with a 3-inch square opening, while another has a damp paper towel covering 10 square inches with just a cup of water. Despite the first incubator holding more water, the second will maintain higher humidity.

Many incubators come equipped with water troughs designed for humidity control. If adding water to these troughs isn't sufficient, which can be critical during lockdown, you can augment surface area, a damp sponge or paper towel (not in direct contact with the eggs) can be placed strategically to raise humidity fast.



## Power Outage

### Step 01: Noting Down the Time

The first important task is to note the time when the electricity goes out. You can record this on your smartphone or in a notebook. This helps you keep track of the duration of the power outage.

Talk to your nearby neighbors to find out if they also have a power cut. Additionally, try to learn the cause of the outage and the estimated time for power restoration.

Wait for 1-2 hours. If the power doesn't come back within this time, proceed to the next steps.

### Step 02: Removing the Incubator Lid

If the power hasn't returned within 1-2 hours, disconnect the incubator from the main switch and remove its lid from the eggs. Set the lid aside.

This will allow the eggs to cool down, which slows down the embryo's metabolism and growth rate.

If the outside temperature is very cold, you may attempt to keep the eggs warm. However, success in maintaining an appropriate temperature can vary.

Failing to keep the eggs adequately warm can impact embryonic development, potentially leading to abnormalities.

### Step 03: Ensuring Enough Ventilation

Some chicken keepers use blankets to wrap eggs, but this can interfere with the eggs' ability to exchange gases and regulate their temperature.

Eggs need to breathe, and gas exchange is crucial for proper development.

Wrapping eggs with a blanket can cause them to overheat or cool down improperly, leading to poor development or embryo death. It may also lead to suffocation due to lack of oxygen. Ensuring adequate ventilation for the eggs is essential during a power outage.

Once the power returns, replace the lid, turn on the incubator, and let it operate normally. Be sure to check the temperature and humidity levels, and add water to the water pot as needed.

### Can Power Outage Affect the Hatchability of Eggs?

The duration of the power outage is a critical factor.

If the power returns within 12-14 hours, it shouldn't significantly affect the hatchability of the eggs, though it may delay the hatching process.

The development stage of the eggs is also important. If the eggs are only 1-2 days old, they are in the early stages and can be cooled to put them in a 'sleep mode,' protecting essential molecules from damage and slowing down embryonic development.

For eggs that are 19-20 days old, chicks may start hatching on their own to regulate their body temperature.

However, if the eggs are 7-10 days old, the power outage can significantly impact their hatchability.

## **Cracked Eggs**

Cracked chicken eggs can be disappointing for those attempting to incubate and hatch their own eggs. The question remains: will a cracked egg still hatch? Unfortunately, the answer is no. A cracked egg will not hatch and should be removed from the incubator immediately.

A crack in the egg indicates damage, which can result from rough handling during collection, transportation, or storage. It can also occur due to a weak or thin eggshell. When an egg cracks, it allows bacteria to enter, potentially spoiling the egg or infecting the embryo, leading to its death.

When an egg is cracked, the membrane and inner lining are exposed to air, causing the egg to lose moisture and dry out. This dehydration can kill the embryo. Additionally, moisture loss can cause the egg to become too cold, which is also fatal for the embryo.

Even a small crack is problematic. It can still permit bacteria to enter and infect the embryo, even if the crack is not easily visible.

In conclusion, a cracked chicken egg will not hatch. If you discover a cracked egg in your incubator, remove it promptly to prevent contamination and maintain a healthy incubation environment for the remaining eggs. Carefully monitor and handle the eggs throughout the incubation period to avoid cracking.

# contact us!



**If you find yourself needing immediate answers feel free to contact us via text 269-455-0305**

