

Educational Hatch “A” Chick Brooder and Incubator Check List.

*Checked by Farmer Dave – Checked by Participant

1 Box

1 Heat Lamp

1 Feeder

1 Waterer

Kitchen Paper

Paper Towel

1 Feed

1 Funnel

1 Incubator

1 Egg Carton

1 Embryonic development book/CDROM

Important Dates

Name: _____

Set Up Date: _____

Candling Session Date: _____

Two Days before Hatch Date: _____

(On this date both ports of water need to be filled and kitchen paper put in place of turning disc.)

Hatch Date: _____

Incubator Pick Up/Return Date: _____

Chick Pick Up/Return Date: _____

Notes: _____

How the Chicken Incubates Eggs Naturally

In nature, the female bird selects the nest site and lays a clutch of eggs (usually 8 to 13 eggs), one egg per day. Once she has a clutch of eggs, she begins sitting on the egg full time, leaving only for food and water.

The hen's body temperature is 105°F to 106°F. When the hen sits on the eggs, she heats the eggs to 100°F to 101°F. The hen turns the eggs on a regular basis by using her beak to scoop under the egg and roll it toward her. The humidity comes from the environment, the hen's body, and any moisture she transfers back to the nest on her feathers. Brooding hens often leave their nests to feed at dawn or dusk when the dew is present on the grass.

The Water

The water

We recommend you use Brinsea Incubation Disinfectant Solution or distilled water in your incubator.

[Brinsea Incubation Disinfectant Concentrate](#) which you dilute in water 100:1 (1 part concentrate to 100 part water) is both powerful and safe for the eggs. It has been specially formulated to kill bacteria, fungi and viruses associated with birds and can be used to clean eggs as well as incubators and brooders.

Distilled water is free of contaminants and prevents mineral deposits in the incubators which can promote bacterial growth.

Day 1: There are several important body functions and organs that become evident during the first day of incubation:

- Hour 4: heart and blood vessels start to develop.
- Hour 12: heart starts to beat; blood circulation begins; blood vessels of the embryo and the yolk sac join.
- Hour 16: embryo takes on the chicken shape.
- Hour 18: the alimentary tract appears.
- Hour 20: the vertebral column appears.
- Hour 21: the nervous system starts to develop.
- Hour 22: the head begins to take shape
- Hour 24: the eyes start to develop



Day 2: The ears start to develop.



Day 3: Early on day 3 the beak, legs and wings begin to develop. At 3.5 days the embryo begins to rotate so that it lies on its left side. The circulatory system development increases at a rapid rate.



Day 4: The tongue starts to develop and all body organs are evident. The vascular system is clearly visible.



Day 5: The reproductive organs separate and the sex can be determined. The heart begins to take on a definite shape. The embryo now is obviously a chicken.



Day 6: The embryo starts to move in the egg.



Day 7: The body starts to develop at a rate much greater than the head.



Day 8: The first sign of feathers appear.



Day 9: Growth day

Day 10: The beak hardens and the toes and scales appear.



Day 11: The abdomen appears and the intestines are seen developing.



Day 12: Growth day

Day 13: Most organs have developed and growth is the major activity. Down is present; skeleton starts to calcify.



Day 14: The embryo moves to lie lengthwise in the egg with the head towards the larger end.



Day 15–16: Growth days

Day 17: The head turns to locate under the right wing and with the beak directed towards the air cell.



Day 18: Growth day

Day 19: The yolk sac containing the remaining yolk material starts to enter the chicken's abdominal cavity. The chicken adopts a position to facilitate pipping of the shell by the beak.



Day 20: The yolk sac is fully drawn into the abdominal cavity and the navel or umbilicus starts to close. The chicken's beak penetrates the air cell and it takes its first breath i.e. pulmonary respiration commences.



Day 21: After first pipping the shell the chicken rests for several hours. It then starts to break out of the shell by cutting around the shell from the first pip in a clockwise direction. It may take up to 20 hours from the first pip till the chicken escapes. This is a major undertaking for the chicken and any that are weak are unlikely to succeed or if they do they will be weak.

The normal hatching position is:

1. Forepart of the body towards the large end of the egg
2. Head under the right wing
3. Legs up under the head



Hatching

11.1 If hatching in the Mini Advance remove the egg disc two days before the hatch is due.

11.2 In AUTO mode the turn system will switch itself off at day 2 on the Day Countdown. If using ON mode the turning must be switched to OFF manually in the control menu.

11.3 For cleanliness it is recommended to place a sheet of kitchen paper or similar in the bottom of the incubator under the eggs when they are due to hatch.

Tear a hole in the middle to fit over the water pots.

This also helps the chicks stand more comfortably.

11.5 Hatching humidity levels need to be high (see section 8 above). Ensure the water pots are full to above the divider between them.

11.6 When most eggs have hatched (12 to 48 hours after the first egg hatches) remove the hatchlings to a brooder.

11.7 During hatching the high humidity levels will fall dramatically when the lid is lifted and will take some time to build up. Resist the temptation to open the incubator frequently – leave for at least 6 hours between inspections.

Care of newly hatched chicks

Incubating eggs is very rewarding and if you have children, they will absolutely love the experience of raising their own chicks and of course will learn an awful lot about how chicks are reared and what happens to them as they grow. Follow a few basic rules and you will be rewarded by a lot of fun and excellent eggs for years to come.

Chicken eggs take 21 days to hatch and chicks require basic care for the first 6 weeks of their life: a brooder with clean bedding, food and water. A brooder is a special heater for baby birds and by extension refers to the heated container or area the chicks are kept in. So let's take a look at the elements of this brooder.

Housing:

A small container such as a cardboard box, wooden crate or plastic bin lined with paper towels and bedding is suitable for freshly hatched chicks. Make sure the container is big enough for a cool side with food and water and a warm side with the brooder or heat lamp. As the chicks grow they will require more space and will also start fluttering. An enclosed cage like those suitable for rabbits or ferrets is a nice, easy to clean option to keep them contained.

When the chicks are about 3 weeks old, you should also consider adding a roost such as a piece of wood dowelling about 4" off the floor of the cage. The chicks will jump on it and may even begin sleeping there. Be careful not to put the roost directly under the heat source as it would be too hot. |

Bedding:

Sawdust or pine shavings are recommended. DO NOT use cedar shavings; cedar has oils which are toxic to the chickens' respiratory system. Straw is another possibility but it tends to smell and attract bugs when wet. It also can harbor mites.

Try not to have newspaper in direct contact with the chicks as the ink may be toxic and chicks will instinctively peck at everything. Some newspapers can also be slippery and cause splayed legs, a condition which occurs when the chicks repeatedly slip and their legs begin to split apart. If this happens you can carefully strap the legs together but prevention is best.

The bedding should be changed out every couple of days, and never allowed to remain damp – cleanliness is VERY important at this stage. Baby chicks are prone to a number of diseases, most of which can be avoided with proper sanitation.

Heat source:

Newly hatched chicks should not be removed from the incubator until they are fully dry and fluffed up; otherwise they could chill and die.

You can use a brooder or a heat lamp. The floor temperature should be around 95–100°F for the first week and can then be reduced weekly by 5°F until the chicks can maintain their own body temperature and are fully feathered. This is usually done by adjusting the height of the heat source.

Chicks will find their own comfort zone moving under or away from the heat source as they require. Observing their behavior will help you determine if the heat source is at the right level from the floor. They will huddle together under it and shiver if too cold. Conversely they will spread out and away from the heat source and pant if they are too hot.

At 6 weeks the young chickens can be acclimatized to the outside providing the temperature is not too cold. If it happens to be very cold you may need to introduce the chickens gradually.

Water:

Just before hatching chicks absorb the remainder of the yolk sac which provides them with nutrition for a couple of days after hatching but they will need water as soon as they are transferred out of the incubator. Fresh water should always be available and placed on the cool side away from the heat source. Make sure to clean it at least once a day (chicks will poop in their food and water)

Food:

Chicks will instinctively scratch for food so it's best to use a feeder with a lid. You may give the chicks crushed cooked egg yolk initially until you get chick crumbs which are specially formulated for chicks.

However, feeding your chicks treats can be fun. After the first week or two, you can give them a worm or two from your garden to play with and eat. Although adult birds will eat a lot of vegetation, greens are not recommended when they're young as they can cause diarrhea-like symptoms. When droppings are loose, a condition may develop called "pasting up", where droppings stick to the vent area and harden up, preventing the chick from pooping. Check the chicks for pasting – if you see any signs of it, clean off the vent area using a moist towel or even some mineral oil.

Play time:

Chicks are insatiably curious – after the first week or two, they can be taken out of their enclosure for short periods of time if the temperature is warm. They **MUST** be watched at this age, however. Chicks can move fast, squeeze into small spaces, and are helpless against a variety of predators, including the family dog or cat. If they have bonded to you (the first large thing a baby chicks sees is forever it's 'mama', this is called "imprinting"), they will follow you around. Chickens become fond of their owners; some will come when you call them (and some won't!).

Chicks grow fast so start planning their outdoor housing requirements early. They will need a coop and a run but that's another project!

Chicken Egg Hatchability Problems:

There are a number of problems that can arise for the hatchability of eggs, though they will typically be problems with the hatchery, the handling of the eggs, or the breeder flock. Identifying these problems quickly is essential, and requires the cooperation of hatchery, egg handling, and breeder farm personnel. When working to identify the hatchability problems that may be occurring, detailed and accurate records are essential. Every piece of information that can be obtained will help you locate and resolve any issues. Here are some general issues you may encounter, and their potential causes.

Problem: Infertile eggs with no blood and a small, white germinal disc that, when candled, show clear.

Causes: There are a number of things that can cause this problem, many of which can be easy to solve, some of which are unfortunately beyond control. Some examples include extreme weather conditions.

Problem: Fertile eggs that have no blood, have a germinal disc which appears enlarged, and which candle clear may be referred to as "blastoderm without embryo."

Causes: This is another issue that can be caused by breeders that are too young or too old, a disease in the flock, or exposure to drugs, pesticides, etc. However, many other causes of this problem are related to handling. These can include the eggs being stored too long, being held under improper conditions, washing the eggs at too high a temperature, fumigating incorrectly, or being jarred or exposed to sudden sharp changes in temperature during transport.

Problem: Eggs that, when candled, show clear, containing a blood ring or an embryo which died within three days of incubation.

Causes: This issue has many of the same causes as the previous issue. However, other causes may include inbreeding and nutrient deficiencies.

Problem: Embryos that have died within three to six days of incubation, an embryo on its left side, with a yolk sac circulatory system and no egg tooth.

Causes: Sharing many causes with the blastoderm without embryo, this problem has the additional potential causes of a lack of proper ventilation, improper turning, or vitamin deficiencies.

Problem: Embryos that have died within seven to seventeen days of incubation, each with an egg tooth, feathers/feather follicles, and toenails.

<http://www.chickenhousesplus.com/chegghaabprp.html>