

4-H Embryology in the Classroom Project
Worksheet One: What is embryology?

Name _____ **Date** _____

What is Embryology?

Embryology is the study of how embryos grow and develop. Embryos are plants or animals in the process of developing. What kinds of things grow and develop from embryos? Just as a lima bean is the embryo of a lima bean plant, a fertilized chicken egg is an embryo of a chicken. You are learning how a chicken develops in an egg.

Chicken eggs are usually hatched on the farm with a mother hen. In your classroom, you are hatching baby chickens, where you cannot have the mother hen sit on the eggs. You need an incubator to hatch the eggs in your class. An incubator is a box that provides and maintains a favorable environment for hatching fertile eggs. Five factors are very important to insure the success of hatching fertile eggs in an incubator. They are temperature, humidity, ventilation, and turning the eggs regularly. Temperature is the most important of these factors. Humidity is the measure of moisture, or water, in the air while ventilation is movement of fresh air through the incubator. Normal incubation periods for chickens are 20 to 22 days. Turning each egg several times daily prevents the embryo from sticking to the shell. Eggs should not be turned after day 18.

To set up your incubator you must consider the five factors mentioned above as well as location. The location of your incubator should be placed so that it is free from drafts of air and direct sunlight. Temperature is most important when considering the effectiveness for a good hatch. Ventilation from the incubator, provides oxygen for the embryo to develop while the gases given off by the embryo need to be removed. The ideal temperature in a still-air ventilated incubator is 100 degrees. Lastly, turning eggs is important from the second to the eighteenth day. All eggs should be turned a minimum of three times per day.

Questions: Answer on your own sheet of paper.

1. What did you learn from the text you just read regarding embryology?
2. What is the ideal temperature for incubating and hatching eggs?
3. What five factors are important for hatching eggs?
4. If you are not using an automatic egg turner, how many times per day should you turn each egg? Why do the eggs need to be turned?
5. Why should the eggs be ventilated?
6. How long do eggs need to incubate?