

Eggsploring Eggs

Student Journal

This journal belongs to:



What do you know about eggs?

What do you wonder about eggs?

Eggsploring the parts

Match the name with the egg part and write it on diagram.

air cell

germinal disc

shell

albumen

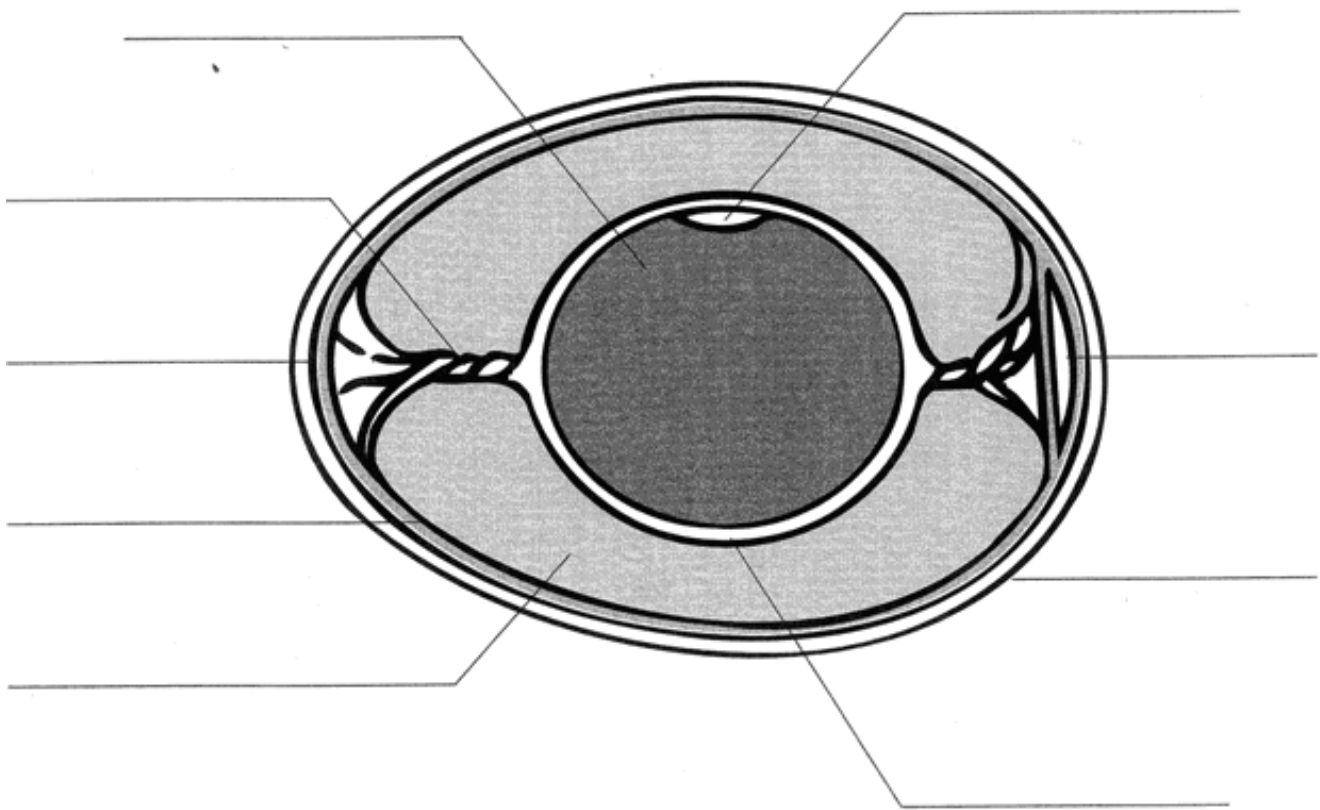
inner membrane

yolk

chalaza

outer membrane

vitelline membrane



Embryology Record Sheet

Date set

Day expected to hatch

Number eggs set: _____
Numbers eggs fertile: _____
Number eggs pipped: _____
Number eggs hatched: _____

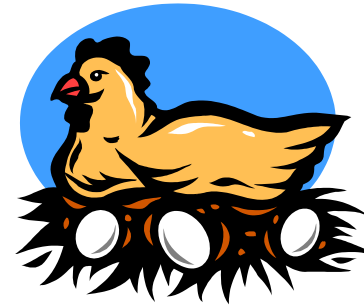
Percent fertility = _____%
Percent hatchability = _____%
Number of fertile eggs/Number of eggs set
Hatch = _____%
Number of fertile eggs/Number of eggs set

Directions: Every time the eggs are turned, make an entry in each column. Make special notes if the class did anything other than turn the eggs, such as add water, candle or weigh the eggs, or other experiments and activities which could have affected the eggs.

Day	Temperatures			Notes: mass of egg (grams), relative humidity, etc.
	In Room	In Incubator	In Brooder	
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

Individual Egg Progress

Number each egg on the air cell end of the egg.
Keep a record of what happens to each egg.



Egg Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Not Fertile																		
Fertile, did not pip																		
Fertile and pipped																		
Hatched																		
Died																		

What observations can you make about this data? _____

What questions do you have now? _____

Warming up with eggs

What's the problem?

Write about why we need to turn the eggs, fill the water canals and monitor the incubator temperature.

How could you solve the problem?

Write about your ideas for turning the eggs, filling the water canals, and monitoring the incubator temperature.

How could you test your plan?

Share the plan. Listen as each team shares its plans. Write down the ideas that you think are best.



1

What could you do to improve your ideas?

With your teacher's help, work as a class to turn the eggs, fill the water canals, and monitor the incubator temperature. Consider setting up a schedule that would allow teams to rotate responsibilities.

2

Test your measurements. Using the embryology record sheet, record the temperature each time you turn the eggs and take an average.

Try it yourself

Building an eggs-ray viewer

Have you thought about what the chick might look like as it is developing inside the egg? With the candler, you will be able to see different parts of the egg and portions of the chick as it develops. Use your planning skills to design a candler. Answer the following questions to make your plan.

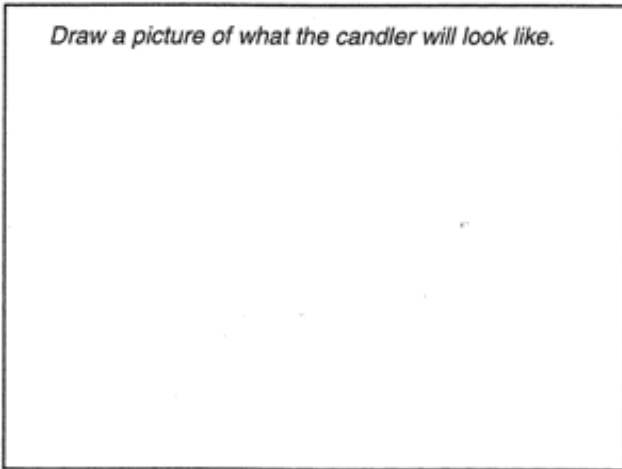
1 What's the problem?

Write about why we need to candle fertile chicken eggs.

2 How could you solve the problem?

Write about your ideas for the candler.

Draw a picture of what the candler will look like.



3 How could you test your plan?

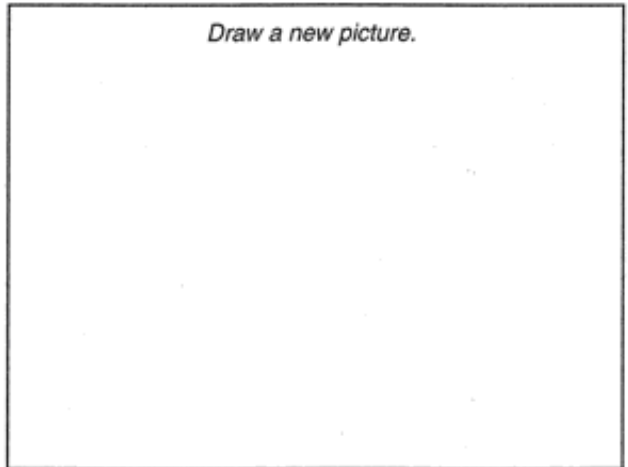
<http://www.ext.vt.edu/4Hembryology>

4 Share the plan.

Listen as each team shares their plans. Write down the ideas that you think are best.

5 How could you improve the candler?

Draw a new picture.



- Help your team design and make a candler.
- Test your candler. Candle an egg. Can you see what is inside?

Write down the egg parts that you can identify with the aid of your candler.

Playing peek-a-boo with embryos

Did you know a chicken embryo looks a lot like you did during your first three months of life inside your mother? Don't feel bad. Many embryos look alike during their early development.

What makes chickens special is that the embryo develops outside the mother's body. This arrangement lets us get a closer look at how the embryo develops without harming the mother or other embryos.

- 1 Use the back of this paper to write or draw what you think a chicken embryo looks like.
- 2 After you have observed a developing embryo, draw what you saw in the space below. Then answer the questions.
- 3 Compare what you expected to see and what you actually saw. Write a paragraph explaining the difference between your expectations and what you actually experienced.

What did you learn?

- What shape did the embryo have for the first five days of incubation? Draw the shape and label the head, heart and tail.
- Circle the first part of the embryo you noticed.

Where does the embryo get its food to help it grow?

What supplied food for you when you were developing in your mother?

What does the amnion (the sac of clear fluid that surrounds the embryo) do for the embryo?

Break out

How does this activity relate to other life experiences?

Have you ever gotten involved in something or started a project and found that your expectations and what actually happened were different?

How did you adjust your approach to the situation?

What did you learn from those situations?

Building a home 'tweet home

Ever wanted to be a mother hen? Now is your chance. When you raise chicks in a brooder, you are taking the place of the chicks' mother hen. Through the brooder, you provide warmth, shelter and food. And you learn a lot about how to take care of a baby—even though that baby is mostly fuzz and just a few inches tall.

Use your planning skills to design a brooder, or new home, for your chicks once they hatch. Answer the following questions to make your plan.

1 What's the problem?

Describe what your chick needs in a new home.

2 How could you solve the problem?

On a separate piece of paper, write or draw about your ideas for the brooder and what the brooder will look like.

3 How could you test your plan?

4 Share the plan.

Listen as each team shares their plans. Write down the ideas that you think are best.

5 What could you do to make the brooder better?

Draw a new picture of how the brooder will look.

6 With your teacher's help, work as a class to make a brooder for your chicks. Place a thermometer in the brooder. Record the temperature three times a day for two days.

Day One

Day Two

Test one _____

Test one _____

Test two _____

Test two _____

Test three _____

Test three _____

7 What changes could you make to your brooder to keep the temperature at 95°F?

Pecking out who's in charge?

When the chicks hatch, mark them and observe which one is at the top of the pecking order.

Materials needed

- colored tape or a felt-tip marker
- stopwatch, watch or clock.

Directions

After the chicks have been in the brooder for one week, mark each one with a small piece of colored tape around the left or right leg or place a small mark on the back of the chick with a felt-tip marker.

Spend 15 minutes each day counting the number of times each chick goes to the feeder and waterer.

After five days, total the number of times each chick went to the feeder and waterer.

Day 1 Date observed: _____

Chick color	Number time eating	Number times drinking
1.		
2.		
3.		
4.		
5.		

Day 2 Date observed: _____

Chick color	Number time eating	Number times drinking
1.		
2.		
3.		
4.		
5.		

Day 3 Date observed: _____

Chick color	Number time eating	Number times drinking
1.		
2.		
3.		
4.		
5.		

Day 4 Date observed: _____

Chick color	Number time eating	Number times drinking
1.		
2.		
3.		
4.		
5.		

Day 5 Date observed: _____

Chick color	Number time eating	Number times drinking
1.		
2.		
3.		
4.		
5.		

Weekly Total

Chick color	Total time eating	Total times drinking
1.		
2.		
3.		
4.		
5.		

Would the chick with the highest number be at the top of the pecking order?

What could you do to ensure that all the chicks got to eat and drink regularly?

How does the space that the chicks have affect the pecking order?

