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Life Science
3rd Grade
Life Cycle of a Chicken: The Incredible Egg

Objective/Purpose: This lesson was designed to help kids visually understand and identify the parts in an egg, the first stage in the life cycle of a chicken. They will also observe eggs in different conditions such as being raw, boiled, and having its shell dissolved.

QCC Requirements:
- Topic 3: Safety. Identifies and practices accepted safety procedures in manipulating science materials and equipment.
- Topic 12: The living World: Living Things. Recognizes and describes the basic life processes in the immediate environment such as gathering and digesting food, excreting waste products, reproducing, breathing and responding to the environment.
- Topic 15: The Living World: Animals. Recognizes and describes a variety of animal and plant lifecycles.

Materials/ Time Required:
- Plastic bowls
- Plastic Knives
- Eggs, raw, boiled, and some with their shells dissolved.
- White Vinegar
- A large Bowl

This activity takes between an hour and a half.

Background Information:
Prior to beginning this activity the students should be taught the life cycle of the chicken, including all five stages. Then emphasize to the students that it is important to learn about each stage individually and in detail. The students should then go over the parts of the cross section of the egg, including the shell, the white of the egg, the yolk, the yolk membrane, and the soft egg membrane. Have the students fill out a worksheet to make sure they can identify the parts of the egg on paper. After they can fill out the cross section of the egg on paper, Cut a boiled egg so that the cross section is visible and have them identify the parts on the boiled egg.

The parts of the egg should also be visible on a raw egg. Crack an egg in a bowl and make sure that the yolk does not break. Have the students identify the white of the egg and the yolk of the egg. Then have them identify the yolk membrane and have them realize that a membrane is something that holds things together. Using a plastic knife, break the yolk membrane and let the yolk ooze out. Have the students realize that the yolk oozed out because the membrane was broken.
Before the activity, dissolve the shell of a few eggs. Using the shell-less egg, have the students identify the soft egg membrane. Also have the students look inside the egg and see that the yolk is whole and that the yolk membrane is in place. Have the students make observations about eggs and their different forms.

**Preparation:**

Before the activity you will need to obtain a few raw eggs, boil a few eggs, and dissolve the shell of a few eggs. You will need two days to dissolve an egg shell. You will need to place the eggs in a bowl of white vinegar. Replace the vinegar after 24 hours. After the second day, the egg shell should have dissolved and you will be left with a shell-less egg.

**Safety:**

Make sure that the students don’t touch the raw eggs. If they do accidentally touch the raw eggs make sure that they thoroughly wash their hands to prevent the spread of bacteria. Also make sure that none of the students have any allergies to eggs.

**Activity Outline/Teacher Procedures:**

During the activity make sure you circulate to the different stations and have the students tell you what the different parts of the cross section of the egg are. Have them relate the real egg to the egg that is on a worksheet. Also make sure that the students understand how the egg shell was dissolved. It was actually a chemical reaction between the acid in the vinegar and the calcium carbonate in the egg shell. This might be a good lesson on chemical reactions for an older crowd.

**Possible Questions:**

1) What is the purpose of the yolk of the egg?
2) What is the purpose of the white of the egg?
3) What is a membrane?
4) Why is the shell of an egg important to a baby chick?

**Assessment/Evaluation:**

Constantly ask the students questions to make sure that they understand what the parts of the egg are and where they are located. You can do this by using a worksheet and also pointing to different parts on the cross section of the egg. The information about the egg was also used in other lessons so I could tell that the students picked up on what was being taught. They also seemed a lot more interested in the material because it was a hands on activity.