Which Came First the Chicken or the Egg?

MATERIALS
Copy for each student:
Food Taster Notebook
Observation Sheet and
Student Self Evaluation Sheet
Fresh Uncooked Eggs; the quantity of eggs needed will depend on whether you demonstrate with one egg or allow older students to work individually or in groups. The amount of eggs cooked in the various demonstrations will influence how many eggs are needed. Figure one egg per student when preparing scrambled eggs and/or boiling eggs for egg salad. (Suggestion: Have eggs boiled before class so they are cool for peeling.)
Latex gloves, paper towels as needed.
Small pans or trays for dissecting eggs; quantity will depend on whether students work independently or in groups.
Craft sticks to assist with the dissection.
For the cooking experiences you need:
An electric fry pan, a portable electric burner, a pan large enough to boil eggs, water to cover the eggs for boiling, non stick spray for the pan or butter, a spatula, a cooking spoon, forks for smashing mayonnaise, salt, pickle relish, bread or crackers and paper plates.

VOCABULARY
Arizona Grown egg, porous, shell, membrane, albumen, egg white, nutrition, yolk, fried, boiled, healthy, cook

RELATED LESSONS
Can You Walk on Eggs?
The Day an Egg Solved the Mystery of the Cell.

SUPPORTING INFORMATION
Which comes first, the chicken or the egg? This question has intrigued adults and children probably since recorded history began. It’s one of those mind-bending questions, that, if we had a definite answer it wouldn’t make any difference; but it’s fun to debate the question.

What is the answer? Well, since both the birds and the eggs came before man, historians weren’t around to record the answer. So, whichever answer you like, it’s okay.

The fact is that a chicken can’t be born without a chicken egg and a chicken egg can’t be laid without a chicken. It’s also a fact that both chickens and eggs are important in the human diet.

People have collected and eaten eggs for thousands of years.
Chickens have been important in America since ancient times, but scientists say they weren’t the same kinds of chickens that lay our eggs today. Historians believe...
that Christopher Columbus brought the birds related to today’s chicken to America in 1493. On Columbus’ second trip to the New World he brought along crates of chickens. The captain’s log says the chickens produced eggs and meat for the sailors. Remember on their first trip many men died from starvation, so the second trip they were better prepared. Apparently they still had some chickens left when they landed and those chickens escaped....or, so the story is told.

GETTING STARTED
This is consumer protection information: Students may be handling raw fresh eggs so you may want to provide latex gloves. Occasionally a student may have an allergy to eggs, if so, that student should only observe. When finished, everyone handling eggs should wash their hands with soap and water. Be sure that all eggs are kept in a refrigerator or ice chest before use.

PROCEDURES
Session 1.
Introduce the question. Which comes first, the chicken or the egg?
(use Supporting Information)
Discussion point: ask students to speculate on this question. Lead them in developing other questions that would give them more information. Perhaps one group of students can debate another group, (alternating to present opposing opinions) the remaining students would need to listen closely to determine who presented the most convincing answer. Do they agree or disagree? Why or why not? This should be a fun experience, don’t let it get out of hand.

What is the answer? Present the history of chickens and eggs (Supporting Information) and therein lies the answer. (students can read sections out loud.)
Re-ask: so which comes first, the chicken or the egg? Students should document and defend their own opinion on the Food Taster Notebook Observation Sheet.
Transition from the question to a proven point: eggs are an extremely important item in the American diet. (see Supporting Information).
On the Food Taster Notebook Observation Sheet students should use the diagram as a guide and follow along as you are demonstrating the parts of the egg. An alternative would be for the students to dissect an egg in groups or individually. (allow 10-15 minutes extra time).
Utilize the Supporting Information with the dissections or demonstrations.
Clean up and wash hands.
Session 2.
Transition from exploring the parts of an egg to discussing the VALUE of eggs in our diet. From Supporting Information share the nutritional value of eggs. Then how students can include eggs in their meal planning and snacks.
Demonstrate how eggs are fried, scrambled and boiled. During this demonstration the students should be listening to the recipe (directions) and writing them on their Food Taster Notebook Observation Sheet. (Even if the hard-boiled eggs have been prepared in advance it will be beneficial to demonstrate how eggs are boiled, length of time, etc.) IT IS IMPORTANT FOR STUDENTS TO UNDERSTAND THAT HARD BOILED EGGS MUST ALSO BE STORED IN THE REFRIGERATOR; THEY WILL STAY GOOD FOR ABOUT A WEEK.
Make egg salad and/or scramble eggs, serve and enjoy. Encourage students to talk with their parents to include eggs in their snacks. Complete the Observation Sheets.

EVALUATION OPTIONS
1. Teacher evaluation of Food Taster Notebook Observation Sheet & Questions.
2. Student self-evaluation rubric.

EXTENSIONS AND VARIATIONS
Read & enjoy Dr. Seuss’ Green Eggs & Ham. If you have a class where nobody would be offended by eating ham, then it could be appropriate to add some chopped ham to the scrambled eggs.

RESOURCES
Education sites include: the University of Illinois Extension Program www.urbanext.uiuc.edu/eggs
Education World. Their lesson planning includes Why all the EGGS-citement about eggs? An eggs-plosion of across-the-curriculum egg-tivities for all grades. www.education-world.com
Resources for information about consumer safety, egg production, safety and business include: Presidents Council on Food Safety-Egg Safety Educating individuals throughout the production to consumption continuum. www.foodsafety.gov/~fsg/ceggs
United States Department of Agriculture www.usda.gov/Two of the more comprehensive egg industry information sources are: Egg Nutrition Center A center of research, safety, business, marketing for the
Curriculum Design
Anita R. Easley
6th Grade Teacher
Gilbert Elementary School
Gilbert, Arizona

Egg industry and the consumer.
www.enc-online.org/
American Egg Board, the Incredible Edible Egg Website
1460 Renaissance Dr, Park Ridge, Illinois 60068 (847) 296-7043 www.aeb.org/
In Arizona be sure to check these websites:
Arizona Department of Agriculture - ARIZONA GROWN Program, 1688 West Adams, Phoenix AZ 85007 (602) 542-4373 www.agriculture.state.az.us/
Hickman’s Egg Ranch Their website has some interactive kid activities. Arizona can be proud of this homegrown business. www.hickmaneggs.com/

Credits
All of the websites listed above were helpful in the development of this unit, especially the Egg Nutrition center.
I thank Henrietta, a stray chicken that has lived several years on our school campus for the pleasure she gives us. It’s also important to the universe to acknowledge my own flock of chickens that faithfully produce 18 or so beautiful brown and blue eggs every day.

Educators’ Notes

Curriculum Design
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This Arizona Grown Specialty Crop Lesson Plan was paid for by a grant from the Arizona Department of Agriculture’s Office of Marketing and Outreach.
The Arizona-Grown Egg: Which Came First the Chicken or the Egg?

Food Taster Notebook Observation Sheet

Technician's Name: __________________________

Experiment Date: __________ in ______________ Laboratory

(Teacher's name)

Egg Structure

Match item numbers to each part.
1 shell
2 albumen/egg white
3 air cell
4 chalaza
5 membranes
6 yolk

What three things should you remember when buying eggs?

Look for ____________________.

Check the ____________________

As soon as possible put the eggs in ________________.

Whenever possible buy ______
______________ eggs.

Select the best answer.

best used by date ____

cracked eggs

the refrigerator

Arizona Grown

Unscramble the Scrambled Eggs
Put the steps in correct order: 1-12

Mix eggs and milk. ______
Add a spoonful of milk. ______
Break eggs into a bowl. ______
Season to taste. ______
Prepare skillet for cooking. ______
Ask an adult to watch you work. ______
(depending on your age and house rules)
Turn on the stove. ______
Serve eggs on a plate. ______
Clean up any mess. ______
Stir eggs as they cook. ______
Turn off stove. ______
Eat and enjoy! Yum-yum good! ______

Eggcellent Work

is a

Good Egg
The Arizona-Grown Egg: Which Came First the Chicken or the Egg?

TEACHER'S KEY: Food Taster Notebook Observation Sheet

Technician's Name: ____________________________

Experiment Date: ________ in ______________________________ Laboratory

(Teacher's name)

Egg Structure

1. shell
2. albumen/egg white
3. air cell
4. chalaza
5. membranes
6. yolk

Match item numbers to each part.

What three things should you remember when buying eggs?

Look for: Cracked eggs

Check the: Best used by date ________

As soon as possible put the eggs in: The refrigerator

Whenever possible buy: Arizona Grown eggs.

Select the best answer.

best used by date ________
- cracked eggs
- the refrigerator
- Arizona Grown

Unscramble the Scrambled Eggs
Put the steps in correct order. 1-12

Mix eggs and milk. ________5
Add a spoonful of milk. ________4
Break eggs into a bowl. ________3
Season to taste. ________6
Prepare skillet for cooking. ________2
Ask an adult to watch you work. ________1
(depending on your age and house rules)
Turn on the stove. ________7
Serve eggs on a plate. ________10
Clean up any mess. ________12
Stir eggs as they cook. ________8
Turn off stove. ________9
Eat and enjoy! Yum-yum good! ________11

Student's name

This is a Good Egg

Well done!
Which Came First the Chicken or the Egg?

<table>
<thead>
<tr>
<th>Criteria</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Science Concepts</strong></td>
<td></td>
<td></td>
<td></td>
<td>My ideas shine! I can teach it to a friend.</td>
</tr>
<tr>
<td>I don't get it yet.</td>
<td></td>
<td>I get some of it.</td>
<td>I get it.</td>
<td></td>
</tr>
<tr>
<td>I did not record.</td>
<td></td>
<td>I started to record.</td>
<td>I did record and share.</td>
<td>I did record details carefully and asked questions.</td>
</tr>
<tr>
<td><strong>Food Taster Notebook Observation Sheet</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I didn't help my team. I was off task.</td>
<td></td>
<td>I did less than my share of work and was off task quite a bit.</td>
<td>I did some of the work. I helped clean up and shared the work most of the time.</td>
<td>I worked well with my team, cleaned up, stayed on task and shared the work equally.</td>
</tr>
<tr>
<td><strong>Vocabulary</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Many of the vocabulary words are still confusing to me.</td>
<td></td>
<td>Some of the vocabulary words are confusing to me.</td>
<td>I feel like I can use the vocabulary words most of the time.</td>
<td>I can understand and use the vocabulary words correctly.</td>
</tr>
<tr>
<td><strong>Neatness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I rarely used legible handwriting.</td>
<td></td>
<td>Sometimes I used legible handwriting.</td>
<td>Usually I used legible handwriting.</td>
<td>I consistently used legible handwriting.</td>
</tr>
</tbody>
</table>

Teacher Comments:

Total--->

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