UW-MADISON EXTENSION

BE AN EGG-SPLORER!

We all know a little bit about eggs. Some people eat them for breakfast. They come from birds. But what else can we learn?

4-H PROJECT AREAS:
Animals, Science & Technology

LIFE SKILLS:
Critical Thinking, Communication, Keeping Records

TIME:
30 minutes (5-10 minute per experiment, 3 experiments)

MATERIALS:
- Egg Size Data Sheet (attached)
- Question Eggs (attached) - 1 copy per group
- Paper
- Markers, colored pencils or crayons
- 1-2 dozen eggs, depending on number of participants (3 eggs per group)
- Bowls (2 per group)
- Rulers (1 per group)
- 6 inch pieces of string (1 per group)
- 1 clear glass or jar per group
- Hot water (hot pot, thermos, etc.)
- Magnifying glasses (optional)
- Scale (optional)

MAKE AHEAD OF TIME:
Number the eggs 1-12. Give three eggs to each small group of 3-4 youth.

Ask

What do you think of when you hear the word, "egg?"

How do people use eggs?

What ways do people use them, besides for eating?

Did you know?

Eggs can be brown, white, speckled, or other colors like green or blue. They can be big or small, depending on the bird they come from.
Eggs have three main parts - yolk, albumen (pronounced *alb-you-men*), and shell. The yellow center is the yolk, which contains protein, vitamins, minerals and fat. The "egg white" is called the albumen.
The shell protects the egg and has tiny holes in it, which allow air to move into and out of a small air pocket inside.

Investigate

For this activity, we'll be using chicken eggs. If you have access to eggs from a variety of birds (or pictures of them), it's a great way to show differences in size and color. Small groups of 4-6 youth led by an adult or older youth work best. Each group has three eggs to compare.
In the small group, ***Ask, Are all 3 of my egg friends the same size? How do you know? How could you measure them?***
After listening to some ideas, tell them we will use string.

Demonstrate:

- Wrap a piece of string around the middle of the egg. Mark the string where it meets the beginning of it. Hold the string along the ruler to see how long it is. Write this measurement on the data sheet
- Repeat this process for the vertical measure of the egg.
- If you're weighing the eggs (optional), use a kitchen scale and record the weight on the data sheet.
- Repeat this process for all 3 eggs and discuss the results.

Ask: Do the shells have any holes?

How might they find the answer to this question?

Encourage the youth to look closely at the eggs. Do they see any holes? Then demonstrate:

- Place the egg carefully inside a glass or jar. Carefully pour hot water into the glass/jar until it is nearly full.
- With the glass/jar on the table, watch the egg closely for a few minutes (Be careful of the hot glass.).
- Ask the youth what they notice about the egg in the hot water. They should see bubbles forming on the shell and floating to the surface.
- Explain that there's an air pocket inside the egg and tiny holes in the shell that allow air to pass back and forth through it.
- Encourage the youth to use magnifying glasses to look at the other two eggs. Can they see the small holes in the shell?

Ask: What's inside of the eggs? How might you find out what's inside?

Guide them toward the suggestion of cracking one open. Then demonstrate:

- Crack the two eggs that were not in the hot water, each into its own bowl and encourage them to observe what is inside
- Ask youth to identify the yolk and the albumen. Have them describe what they see to a partner.
- Ask them what is the same and what is different between the two eggs.

Create

Give the youth paper and coloring supplies. Ask them to draw a picture showing what they learned about eggs during the activities.

Share/Reflect

Ask, What was the same about your group's eggs?

Ask, What was different about them?

Ask, What do you know about eggs that you didn't know before?

Relationship to 4-H…

A sense of Mastery is one of the four essential elements of 4-H. Mastery, in this case, means youth learn more and more about their project every year. 4-H builds on what youth know to help them grow in their skills and understanding with each year of participation. After several years in a project, they gain Mastery and share what they have learned with younger youth, starting the cycle of learning all over again.

More to explore…

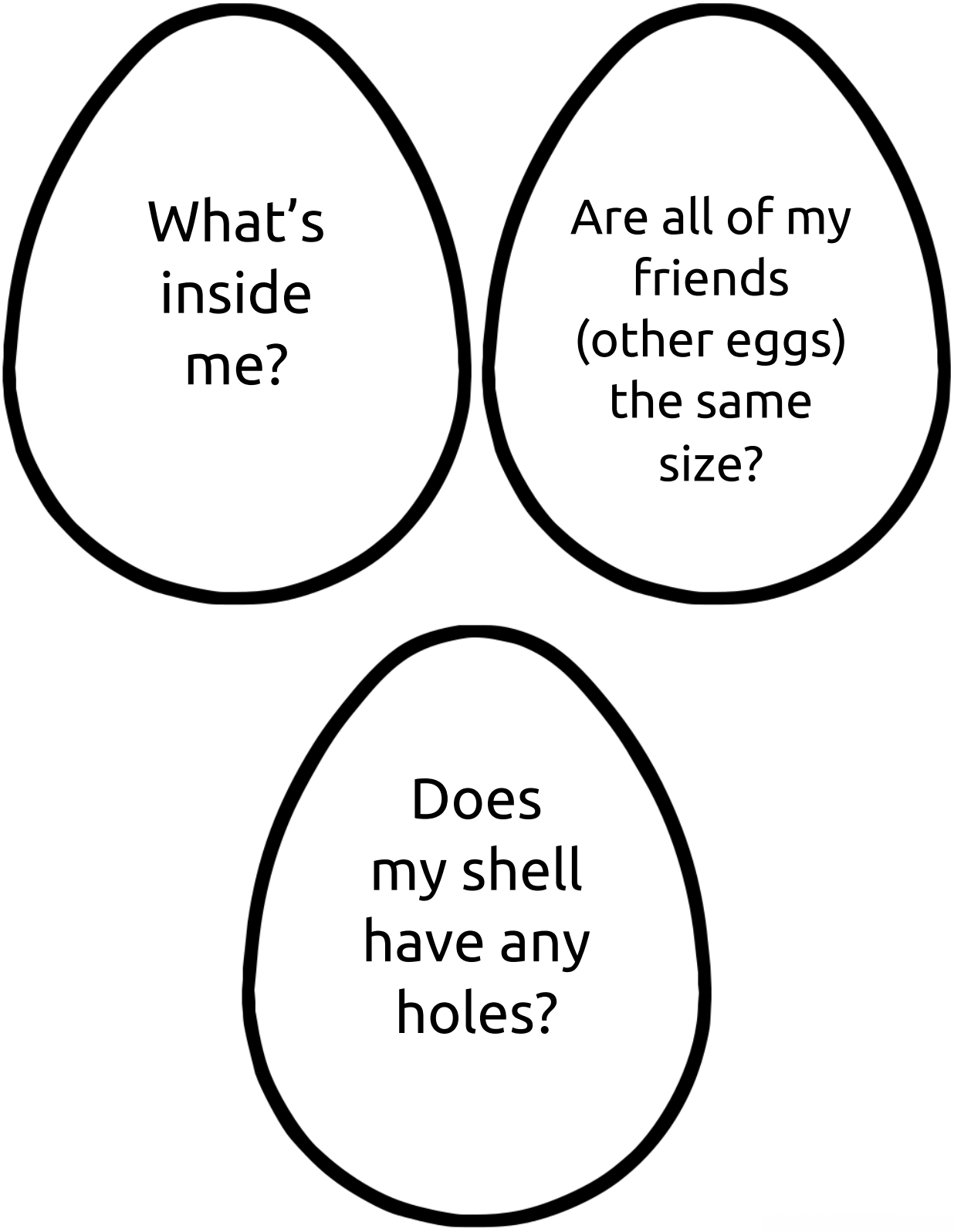
If time allows, help the children compare different groups' eggs - by size and color.
Explore answers to more questions about eggs: Does the weight of a raw egg change when it's hard boiled? Will an egg roll at different speeds on different surfaces? Will eggs roll in a straight line?
Your local public library has lots of fun books about eggs. Go check some out.

Resources **Source:** American Egg Board, "Be a DetEGGtive"
Adapted by: Monica Lobenstein, University of Wisconsin Division of Extension 4-H Youth Development Educator

Egg Size Data Sheet

Egg #	Horizontal Measurement	Vertical Measurement	Weight (optional)

Question Eggs



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