University of Kentucky
College of Agriculture, Food and Environment
Cooperative Extension Service
4-H Youth Development

CHICK EMBRYOLOGY – LESSON 11

Time Needed

- Flexible depending on the age of the students and level of discussion: 10-60 minutes

Skill/Grade Level

- Can be adapted for K-12 students

Core Area

- Agriculture
- Animal production
- Family and Consumer Sciences

Life Skills

- Participation in group discussion
- Sharing experiences and ideas

Educational Standards

- AA-2: Participate in conversation, discussion and group presentations

Objectives/Outcomes

- Students will learn about the nutritional value of eggs.

Introduction to Content

Eggs are nutritional and economical. Eggs are among the most nutritious food. They are a good source of vitamins A, B and D. In fact, eggs are one of the few food sources that naturally contain vitamin D, the sunshine vitamin. They also have all the B-vitamins. In fact, eggs have all vitamins except vitamin C. Eggs also contain phosphorus and some iron. Eggs are low in calories, with only 80 in a large egg, yet high in protein. In fact, egg protein is extremely high in quality and includes all the amino acids needed to build and improve body tissues. It makes sense that eggs would be highly nutritious. Eggs contain all the nutrients that the embryo requires to develop and grow.

One dozen large eggs equals one and a half pounds of protein-rich food. If large eggs are $1 per dozen, that is only $0.67 per pound. Of the basic four food groups, eggs are in the meat group and are an 'eggcellent' meat substitute, with two eggs equaling one serving of meat.

Eggs can be served any time of the day. In fact, eggs are so versatile, they can be easily prepared in a variety of ways. However, eggs like other foods, are susceptible to contamination and bacterial growth due to their concentrated content of nutrients and high-quality protein. Therefore, eggs should be fully cooked before eating.

Curriculum

The materials required for this lesson are included.

Materials Needed

- An assortment of empty egg cartons

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Activity 1 – Examining an egg carton

1. Have the youth look at a selection of different empty egg cartons and answer the following questions:
    a. What Grade were the eggs?

    For example, the eggs that were in the carton above are Grade A, as shown by the USDA stamp. The different grades of eggs were discussed in lesson 3. Because production and marketing methods have become very efficient, eggs move so rapidly from laying house to market that you will find very little difference in quality between Grades AA and A. Although Grade B eggs are just as wholesome to eat, they rate lower in appearance when broken out. Almost no Grade B's find their way to retail supermarkets.

    b. What was the size of the eggs?

    For the example above, the eggs were extra-large.

    c. When were the eggs packaged?

    On the carton above, the package date is indicated by the number 251. This is the Julian date, where January 1 is represented as 001 and December 31 is 365 (except for leap years, when it would be 366). The package date of 251 is equal to September 8.

    d. Is a 'use-by' or 'sell-by' or 'best-by' date given? If so, what was it?

    Also on the carton, on the end, is a 'use by' or 'sell by' date. The sell-by date must be 30 days from and including the packing date, which would be October 7. The best-by date must be 45 days from and including the packing date.

    e. What is the plant identification number?

    The plant where the eggs were packaged is also indicated. The plant number is indicated on the carton above – it is P1185A14.

    f. Was there anything special about the eggs? (i.e., free-range, free-roaming, cage-free, vegetarian, omega-3 enriched, etc.)

2. Identify the safe handling instructions

SAFE HANDLING INSTRUCTIONS: To prevent illness from bacteria: keep eggs refrigerated, cook eggs until yolks are firm, and cook foods containing eggs thoroughly.

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3. Identify the nutrition label, which is for one large egg.

Nutrition Facts

12 servings per container
Serving size 1 egg (50g)

Amount per serving
Calories 70

	% Daily Value*
Total Fat 5g	**6%**
Saturated Fat 1.5g	**8%**
Trans Fat 0g	
Cholesterol 185mg	**62%**
Sodium 70mg	**3%**
Total Carbohydrate 0g	**0%**
Dietary Fiber 0g	
Total Sugars 0g	
Includes 0g Added Sugars	**0%**
Protein 6g	**12%**
Vitamin D 1mcg	6%
Calcium 28mg	2%
Iron 1mg	6%
Potassium 69mg	2%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

- ***Cholesterol***: Current research has shown an egg eaten daily, does not increase your risk of heart disease. Cholesterol is a required nutrient and if not consumed, is made by the body.
- With all the media attention on cholesterol, consumers might lose sight of the fact that eggs are a nutrient-rich, affordable contributor to a healthy diet. Not only do eggs contain the highest quality source of protein available, but they also contain almost every essential vitamin and mineral needed by humans. No vitamin C though. Chickens, unlike humans, can produce their own vitamin C and do not need to get it from the diet.
- ***Protein*** promotes immunity and is essential for building and repairing body tissue.
- ***Vitamin D*** works with calcium to strengthen bones and teeth. Eggs are one of the few foods with natural vitamin D.
- ***Calcium*** is needed for healthy bones and for muscle control
- Iron plays a key role in red blood cell production and oxygen transport to body cells.
- Eggs are also an excellent source of highly available ***lutein***, which promotes eye health and prevents age-related blindness.

4. Discuss the place of eggs in the food plate. Give suggestions of how eggs can be used in a nutritionally balanced meal.

Authors

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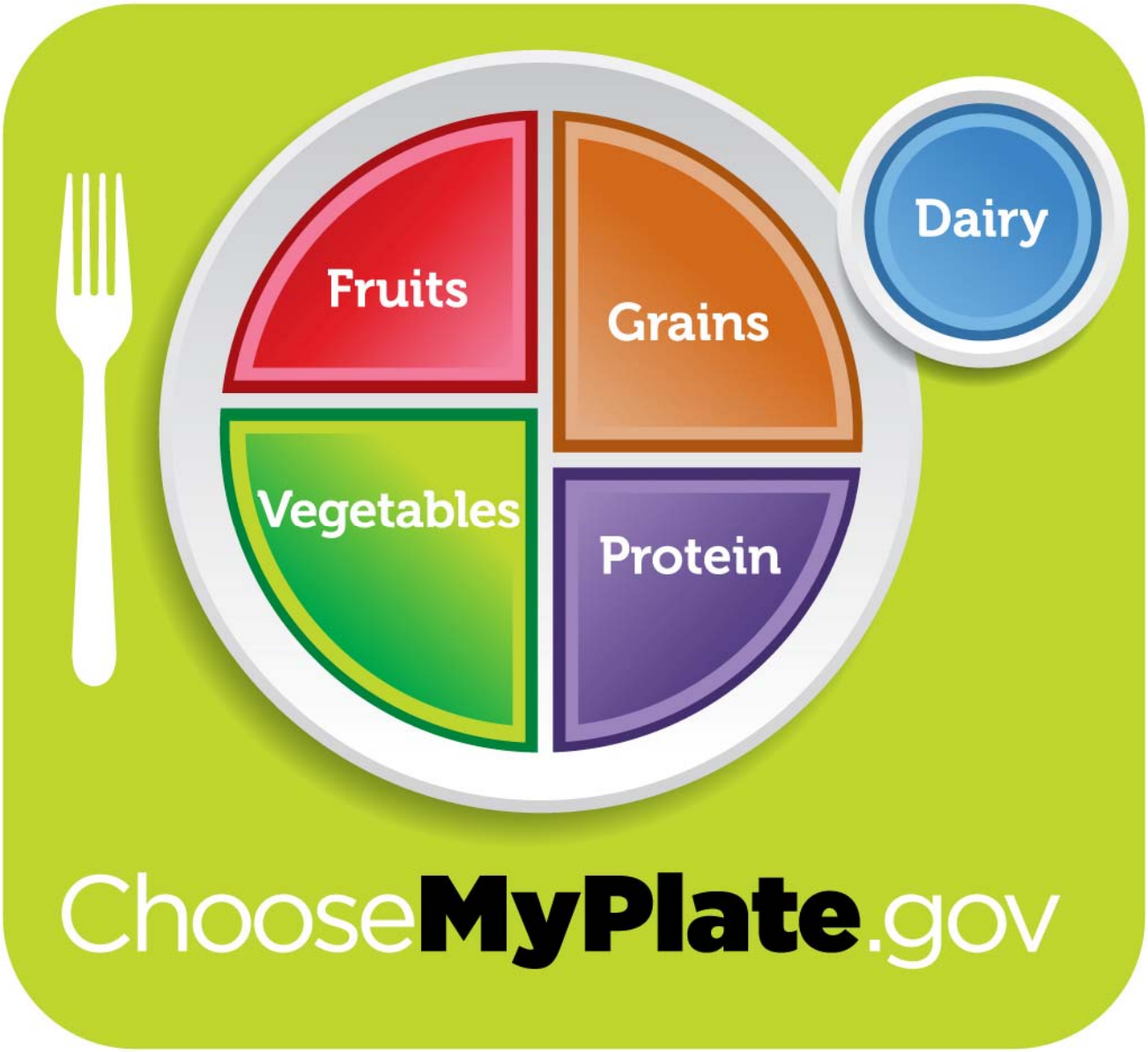

Learn more at www.kentucky4h.org or contact your county extension office.

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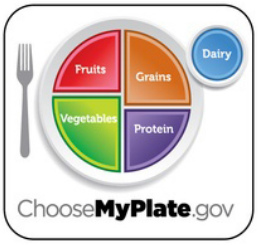
What's MyPlate All About?



USDA United States Department of Agriculture
Center for Nutrition Policy and Promotion

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