



# What's Growing On In Virginia?

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## Where do chickens and turkeys come from? Virginia!

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### About the Newsletter

What's Growing On In Virginia is a semiannual publication for Virginia elementary school teachers, published by the Foundation for Agriculture in the Classroom

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**P**oultry, most notably turkeys, broiler chickens and eggs, are among Virginia's most valuable agricultural products, contributing \$754 million in sales to the commonwealth's economy in 2000.

That's not chicken feed! In fact, broilers are Virginia's top agricultural commodity in terms of cash receipts. Turkeys and eggs are ranked fourth and seventh, respectively.

According to the Virginia Agricultural Statistics Service, Virginia poultry farms produced nearly 265 million broilers, 25.5 million turkeys and 824 million eggs in 2000.

Nationally, Virginia is ranked fourth for turkey production, eighth for broiler production and 28th for egg production.

A survey conducted in 2000 by the Virginia Poultry Federation counted

900 chicken farms and 380 turkey farms in Virginia. Most chickens in Virginia are raised in the Shenandoah Valley, though there are poultry operations on the Eastern Shore, in the Piedmont and in other parts of the state. Rockingham County is the nation's top turkey-producing county.

### Eggs Are back!

The high point for per-capita egg consumption was 402 eggs in 1945. That number had been steadily declining due to lifestyle changes and health concerns, and per capita consumption reached its lowest point in 1991 at 233.5 eggs. Egg consumption is back on the increase, however, as encouraging news about eggs and cholesterol has reached consumers.

## Pass the poultry, please

Meat from chickens and turkeys is high in protein, low in cholesterol and extremely versatile. Chicken eggs also can be used in a variety of dishes and are an excellent source of protein.

Industry organizations report that each year the average American eats:

- 81 pounds of chicken (National Chicken Council);
- 17.75 pounds of turkey (National Turkey Federation); and
- 260 eggs (American Egg Board).

# Starting from scratch:

## Poultry industry started with backyard entrepreneurs

**T**he commercial poultry industry grew out of backyard flocks of chickens that, in the 1800s, supplied households with eggs and the occasional Sunday dinner. By the early 1900s, some families began selling young chickens for meat as an extra source of income. The commercial broiler industry got its start in the early 1920s; chicken meat production previously was a subsidiary of the egg industry.

In the 1940s and 1950s, feed companies began contracting with farmers to share profits from raising poultry in exchange for feed. Over time manufacturers and feed distributors, having consolidated into fewer

and larger companies, began processing and marketing poultry, eventually becoming today's integrated poultry companies.

Today, five integrated poultry companies—Cargill Turkey Products, George's Foods, Perdue Farms, Pilgrim's Pride Corp. and Tyson Foods—employ more than 12,000 people and support the livelihoods of 1,300 family farms in Virginia.

Important aspects of the modern poultry industry were hatched in Rockingham County. In the 1920s, Rockingham's Charles W. Wampler, Sr. became the father of the modern turkey industry when he raised the first flock of turkeys hatched in an incubator and grown in confinement.

Parts of the United States where poultry are raised tend to be those with favorable weather conditions and easy access to supplies of corn and soybeans, the major components of poultry feed. However, in the Shenandoah Valley, more than 13,000 rail cars a year deliver some 1.6 million tons of poultry feed ingredients grown in the Midwest. Virginia's greatest advantage as a poultry-producing state is its proximity to large East Coast population centers.

Poultry production begins on breeder farms, where hens lay eggs that are taken to hatcheries. There, the eggs are placed in incubators that maintain ideal

temperatures and humidity for them to hatch—a process that takes 21 days for chickens and 28 days for turkeys. Newly hatched birds are checked for good health and vaccinated before being transported to poultry farms.

Poultry litter, which consists of manure and bedding—usually sawdust or peanut hulls, is an important byproduct of poultry production. Poultry litter is a valuable organic source of essential plant nutrients, which farmers recycle as a fertilizer and soil amendment for crop and pasture land. Most poultry farmers operate with a nutrient management plan, which can help maximize their efficiency in meeting plant nutrient needs while protecting rivers and streams from runoff pollution.

### Nobody here but us chickens

Broilers and turkeys are raised in scientifically designed, climate-controlled barns known as grow-out houses. Chicken houses are usually 20,000 to 25,000 square feet, and turkey houses range from 32,000 to 45,000 square feet. The buildings have heaters and ventilations systems that maintain a comfortable, healthy environment, and many *continued on page 5*

## Talking turkey, chatting chickens

**T**he general term **poultry** refers to domestic birds raised for eggs and meat.

A **broiler** is a young chicken raised for meat and meat products. Broilers are considered mature at 42 to 49 days of age and weigh 4 to 5 pounds. The terms broiler and **fryer** often are used interchangeably. A **roaster** is a slightly older, slightly larger bird raised

to be sold for pan-roasting or processing.

Mature female chickens and turkeys are called **hens**, and younger female chickens are called **pullets**.

Mature male chickens are called **roosters**, and younger male chickens are called **cockerels**. Mature male turkeys are **toms** or **gobblers**.

Newly hatched chickens are called **chicks**, and

newly hatched turkeys are called **poults**.

**Processed** chicken or turkey products are those that have been cooked, marinated, ground, deboned or otherwise altered to change their form or texture and/or add convenience for consumers. That includes Buffalo wings, chicken nuggets, self-basting turkeys, ground turkey and turkey or chicken franks.



# What's Growing On In Virginia?

## Lesson Plan

### A Chicken Pyramid



**Skills:**

comparing similarities and differences, comprehending, concluding, describing, discussing, listening, reading, writing, predicting, communicating, sequencing

**Virginia Standards of Learning**

Language (oral, reading/literature & writing)  
 – K.1, K.8, 1.1, 1.5, 1.6, 1.7, 1.8, 1.10, 1.11, 1.12, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 3.1, 3.3, 3.4, 3.5, 3.6, 3.7 and 3.8

1. Before the lesson, create a model story pyramid for the students to review.
2. Ask the students to listen carefully to the sequence of events that take place because they will be completing a story pyramid.
3. Read the book, "Chicken for a Day," a Step into Reading book by Frances Minters, ISBN 0679991336 (If the students are readers, they may read the story aloud).
4. During the reading ask questions such as:  
 Why did you think Daisy woke up as a chicken?  
 Why was breakfast difficult for Daisy?  
 Why are animals not allowed on school buses or at school?  
 Predict what Daisy might learn at chicken school.  
 Which activities would a real chicken do?  
 What human characteristics allow Daisy to help Mona?  
 What forms of protection do chickens have?  
 What do you think was the most important lesson that Daisy learned?

**After reading:**

1. Review the sequence of events.
  2. Have students complete a story pyramid about the book.
- On line
- 1 – write the name of the main character
  - 2 – two words describing the main character
  - 3 – three words describing the different settings
  - 4 – four words describing the physical changes in the main character
  - 5 – five words describing the breakfast scene
  - 6 – six words describing the school bus scene
  - 7 – seven words describing the farm scene
  - 8 – eight words describing the ending

**After completing the story pyramid:**

- Allow students to share their own pyramids.
- Discuss how using the story pyramid helped to organize the chain of events in the story.
- Encourage students to illustrate their pyramids with scenes from the story.
- Compare and contrast a real chicken and a story-book chicken, involving physical parts, living conditions, animal behavior and life cycles.

1. \_\_\_\_\_

2. \_\_\_\_\_ . \_\_\_\_\_

3. \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_

4. \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_

5. \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_

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### Extension Ideas

Math (Probability & Statistics) K.14, 1.18, 1.19, 2.23 and 3.22

Construct bar graphs and line graphs using chicken information.

- Graph students' favorite/least favorite chicken meals, such as barbecued, nuggets, fried, etc.
- Graph students' favorite/least favorite chicken parts, such as leg, thigh, breast or wing.
- Graph favorite/least favorite fast food chicken restaurants, such as McDonald's, Wendy's, Chick-fil-a, etc.

Have students interpret graphed data.

Have students use the graphed data to create addition and subtraction story problems.

### History & Social Science (Civics) – 1.12, 2.12 and 3.12

Read "Mama Provi and the Pot of Rice" by Sylvia Rosa-Casanova, ISBN0 689319320 (This book honors the diversity of people living within an apartment complex by sharing a vast variety of ethnic foods, beginning with Mexican chicken and rice).

Cook a sample of the foods described in "Mama Provi and the Pot of Rice." Include the students as much as possible in this endeavor.

Using a map, locate and mark the individual countries represented in the book.

Research other basic foods found in the marked countries.

Create a recipe book using foods described in "Mama Provi and the Pot of Rice."

Have each student share a special food and recipe from home. Create a classroom diversity cookbook.

### Science (Living Systems) – K.6, 1.4, 1.5, 2.5 and 3.4

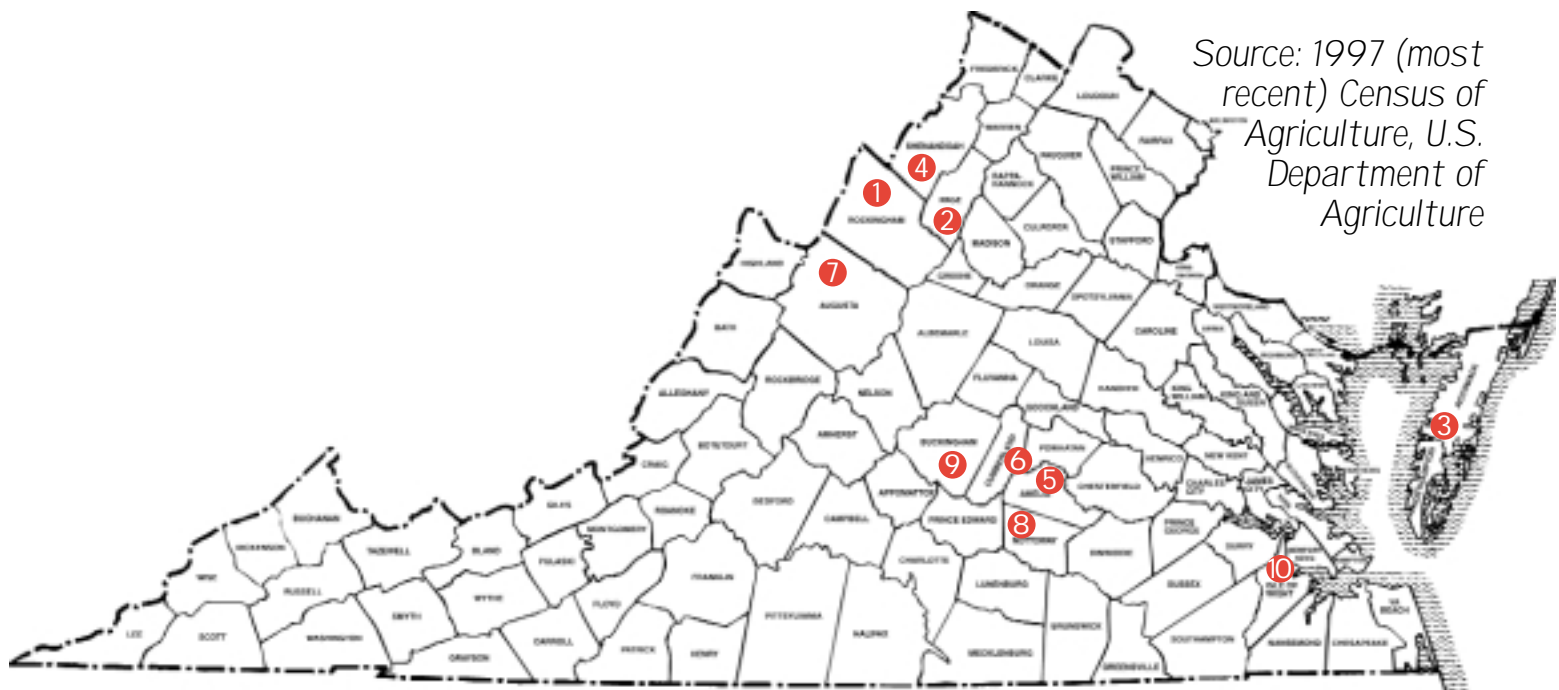
Visit Embryology in the Classroom at

<http://ulisse.cas.psu.edu/4hembryo/index.html>. This contains information and lesson plans on embryology. The lessons are aligned to national science standards. Your local Cooperative Extension may also be of service. Don't know your local Extension staff? Go to <http://www.ext.vt.edu/offices/> for a listing of Virginia offices.

Visit the 4-H Virtual Farm at

<http://www.ext.vt.edu/resources/4h/virtualfarm/>. There is a section related solely to poultry and poultry production.

# Virginia's top poultry-producing counties in terms of numbers sold



continued from page 2

have misting systems that help keep birds cool during the summer. Poultry house temperatures feel warm by human standards, but then chickens' body temperature is about 106 F, as opposed to humans' 98.6 F.

The houses keep the birds safe from predators and also keep out insects, rodents and wild birds, which helps protect the flock's health. Chickens and turkeys are not caged inside grow-out houses, and free-range poultry are birds that are able to go outdoors.

Food and fresh water are dispensed automatically in commercial poultry houses. While made up primarily of ground corn and soybeans, chicken and turkey feed also contains vitamin and mineral supplements.

### Contracting for consistency

The vast majority of chickens and turkeys raised for human consumption in the United States are produced by independent farmers who contract with poultry production and processing companies. A small number are produced on company-owned farms.

An important purpose of the contract system is to standardize production practices, ensuring consistent, quality products for the consumer.

Generally, producers care for the birds and provide

# Hats off to an 'egg-stremely' versatile food

**A** story attached to the toque, the tall white hat worn by chefs, is that each of its small pleats represents a different way to cook an egg. That seems plausible when you start counting omelets, quiches, frittatas, custards, puddings, cakes, sauces, soups and meringues—and realize it's difficult to stop.

With all those culinary options, it's a good thing today's egg-producing hens can lay between 250 and 300 eggs a year. That's considerably more than the average of 150 eggs a year in the late 1940s.

### Making the grade

Once they've been laid, gathered and washed, commercially produced

eggs are graded and sized before they get packed for shipping.

According to the American Egg Board, Grade AA eggs are best for frying and poaching, but Grade A eggs are acceptable as well. That's because their whites are more firm and less likely to spread out when broken into a pan.

Grade A is better for hard-cooking because they are easier to peel than Grade AA and more likely than Grade B to have centered yolks.

Grade B eggs generally are not sold in cartons in the grocery store. Some are used by bakeries or restaurants, but most get made into egg products.

Any grade of egg can be used for scrambling, baking

or any recipe in which the shape of the egg is not important.

### Attention to food safety

When preparing eggs, it's always wise to make sure they are completely cooked. Scrambled eggs should be firm but still moist. Fried and poached egg whites should be opaque, and the yolks should be starting to thicken.

Always use a cooked custard recipe for ice cream or egg nog, and try not to eat raw cookie dough. If planning to eat colored Easter eggs, keep them refrigerated and consume them within one week of preparation.

land and housing facilities, necessary utilities and maintenance and labor. The processing company provides them with birds, feed, veterinary supplies, technical services and transportation of birds to and from the farm.

Contracting farmers are paid based on weight gained or eggs produced by each flock, and the contract system provides incentives for them to keep their operations and practices current.

### The brown egg/white egg thing:

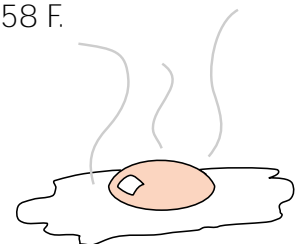
Chickens with white earlobes lay white-shelled eggs, while chickens with red earlobes lay brown-shelled eggs. But other than the shell color difference, eggs are eggs.

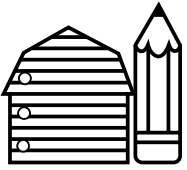
Chickens have earlobes? Absolutely—beneath their ears! Who knew?

There is one exception to the earlobe/egg color rule: Eggs laid by Araucana chickens have blue and green shells.

### Just how hot is that sidewalk?

Most of the time, references to a summer day being "hot enough to fry an egg on the sidewalk" are an "eggs-ageration." Eggs will turn from a liquid to a solid at 144 F to 158 F.





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or [wendy.strong@vafb.com](mailto:wendy.strong@vafb.com).

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## Online resources

**W**eb sites that provide additional poultry information—including links to other relevant sites and, in some cases, teacher resources—include:

### National Chicken Council

[www.eatchicken.com](http://www.eatchicken.com)

### Delmarva Poultry Industry, Inc.

[www.dpichicken.org](http://www.dpichicken.org)

### National Turkey Federation

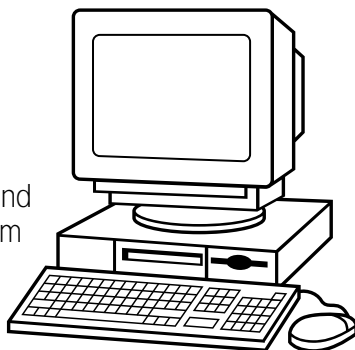
[www.turkeyfed.org](http://www.turkeyfed.org)

### American Egg Board

[www.aeb.org](http://www.aeb.org)

### Virginia Egg Council

e-mail: [eggsrgr8@rev.net](mailto:eggsrgr8@rev.net) and  
[virginiaeggcouncil@erols.com](mailto:virginiaeggcouncil@erols.com)



## Teachers' Club members get all the dirt on ag education

**W**ant to be outstanding in your field? Want to know "eggs-actly" what's growing on in Virginia—and feed your pupils' growing awareness of farming's impact on their home state?

Members of the Virginia Foundation for Agriculture in the Classroom Teachers' Club get all the goods!

Your \$25 annual dues will bring you two issues of What's Growing On, including new SOL-aligned lesson plans; advance registration for the annual School Garden Project; a

Teachers' Club T-shirt; a 2001-2002 vinyl window decal for your classroom window or door; new SOL-aligned lesson plans available to club members only; and a back-to-school goodie box.

To receive a Teachers' Club registration form, contact Wendy Strong, AITC program coordinator, at [wendy.strong@vafb.com](mailto:wendy.strong@vafb.com) or 804-290-1143.

For more information on AITC, visit [www.vafb.com/aitc.htm](http://www.vafb.com/aitc.htm).