



# PECKING OUT RATIOS

**GRADE:** 6-8

**SUBJECT:** Mathematics

**NATIONAL STANDARD(S)**

(6-8) MA: 3.5, 3.9, 3.12,

**THEME:** Poultry

**FOOD AND FIBER TOPIC:** I-A; II-A,D

## LEARNER OBJECTIVE

The student will practice writing ratios as fractions, using poultry-related illustrations as visual representations of the problems.

## VOCABULARY

**broilers**—Seven- to eight-week-old poultry raised for their heavy meat content.

**clavicle**—A bone found in fowl, often called a wishbone.

**denominator** - The quantity below the line indicating the number of units into which a whole is divided.

**Etruscans**—People who lived in ancient Etruria, in what is now Tuscany and parts of Umbria in western Italy.

**numerator** - The expression written above the line in a common fraction.

**ratio** - The relative size of two quantities expressed as the quotient of one divided by the other.

## BACKGROUND

The chicken is probably the most common bird in the world. It is raised for meat, eggs and by-products such as feathers. Some people even raise chickens as a hobby. The chickens we know today came from red jungle fowl of southeast Asia, which were first tamed around 2300 BC. Chickens were kept for their eggs, and when the birds grew too old to lay, they were used for meat.

The tradition of pulling apart the wishbone, or clavicle, may be as much as 2,500 years old. Ancient Etruscans in what is now Italy kept chickens in their temples to aid priests in interpreting signs of the future. When one of the sacred birds died, the collarbone was dried and saved. Believers would stroke the bone and then make a wish.

The ancient Romans, who came to live in Italy after the Etruscans, believed chickens had special powers. When sacred chicken bones from the temple became scarce, the people began breaking the collarbone of the chicken in half to create more bones for others.

The Romans carried the custom with them when they conquered the British Isles. The British were the first to believe good luck would come to the person left with the head of the bone still attached, or the “lucky break.” China raises more chickens than any other country in the world. The largest number of chickens grown in the US are grown on commercial broiler farms. Broilers are seven- to eight-week-old chickens raised for their heavy meat content. The major broiler-producing states in our country

are Arkansas, Georgia, Alabama, North Carolina, Mississippi, Texas, Delaware and Maryland.

Most chickens weigh between seven and 10 pounds. Hens start laying at 22 weeks of age. A good layer lays one egg per day and will lay 206-280 eggs a year during her most productive period. Eggs hatch in 21 days.

### **STEP-BY-STEP INSTRUCTIONS**

1. Review the definition of a ratio and how to write ratios as fractions. If possible, use groups of real objects, and practice this operation orally with the students while writing the correct ratios on the board.
2. Share the background information with the students, then pass out the student worksheets.

### **RELATED ACTIVITIES**

1. The “lucky break” is only one of many common phrases in the English language that are related to poultry. See if your students are familiar with any, and see if they can decipher the original meaning. Have students work in groups or discuss orally to come up with the answers.
  - a. “Don’t put all your eggs in one basket.”
  - b. “As mad as a wet hen”
  - c. “As light as a feather”
  - d. “Don’t count your chickens before they hatch”
  - e. “An Egghead”
  - f. “No spring chicken”
  - g. “Walking on egg shells”
2. Create your own flock of chickens with yellow plastic eight-ounce drinking cups and 24-inch lengths of cotton string. Before giving the cups to your students, use an ice pick to punch two holes, 1 2-inch apart, in the bottom of each cup. Hand out the cups and string. Have each student tie a knot at one end of the string and lace the other end through the holes, starting from inside the cup. The string should hang down from the upside-down cup. The upside-down cup will form the body of the chicken. To form a beak, cut a long diamond shape from yellow construction paper or felt, about 1½ -inches long and ½ -inch wide, and fold the diamond in half. Glue the fold of the beak at the center of the cup’s ridges. Use red felt or construction paper to cut a ridged comb, about ¾-inch wide, and glue the flat side of the comb over the string on the bottom of the cup (top of the chicken’s head). Above the ridges on the cup, draw eyes on your chicken, using black permanent marker. Once all the glue has dried, hold the chicken/cup with one hand, grasp the string with the thumb and finger of your other hand, and gently tug, while sliding your fingers down the string. This will produce a sound similar to that of a clucking chicken. Add a bit of water to your fingers to produce a more clear chicken clucking sound.

### **RESOURCES**

#### ***Student Books***

- Butterworth, O. (1956). The Enormous Egg. Little, Brown and Company.
- Coville, B. (1991). Jeremy Thatcher, Dragon Hatcher. Harcourt, Brace, Jovanovich.
- Johnson, S.A. (1982) Inside an Egg. Lerner.

### ***Teacher Resources***

“The Incredible Journey from Hen to Home,” American Egg Board, 1460 Renaissance Drive, Park Ridge, IL 60068 (educational kit contains lessons in math, science, and nutrition, \$9).

### ***Related Internet Websites***

American Egg Board. Egg facts, production info., nutrition info., industry info:  
<http://www.aeb.org/>

American Poultry Association. America’s first livestock organization devoted to poultry:  
<http://www.radiopark.com/apa.html>

Breeds of Poultry <http://www.ansi.okstate.edu/poultry>

The Chicken Page. Information resource all about chickens: <http://ccwf.cc.utexas.edu/~jfza664/>

US Poultry and Egg Association. National organization which represents all aspects of poultry and eggs: <http://www.poultryegg.org/>

### **EVALUATION**

Answers for the student worksheet are as follows: 1)  $\frac{5}{7}$ ; 2)  $\frac{4}{6}$ ; 3)  $\frac{7}{2}$ ; 4)  $\frac{2}{5}$ ; 5)  $\frac{3}{9}$ ; 6)  $\frac{2}{3}$ ; 7)  $\frac{3}{3}$ ; 8)  $\frac{1}{2}$ ; 9)  $\frac{4}{1}$ .

### **ACKNOWLEDGMENT**

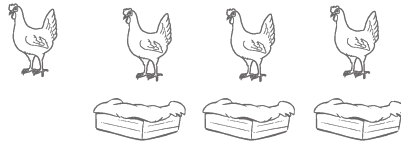
This lesson adapted from Oklahoma Ag in the Classroom, Department of Agricultural Education, Communications and 4-H Youth Development, Oklahoma State University, Stillwater, OK 74078.

Name \_\_\_\_\_

# Pecking Out Ratios

Write the ratios in fraction form

There are four hens.



There are three nests.

We say: "The ratio of hens to nests is four to three."

We write: Hens → 4  
Nests → 3

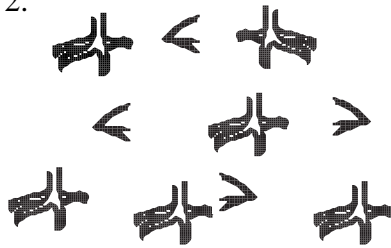
Write each ratio.

1.



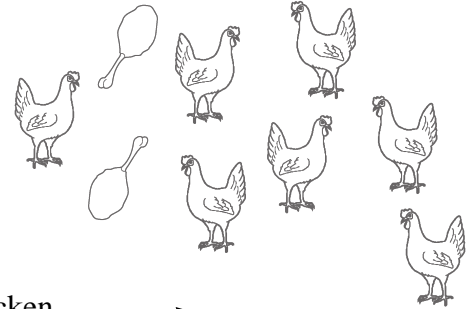
eggs → 5  
to  
chicks → 7

2.



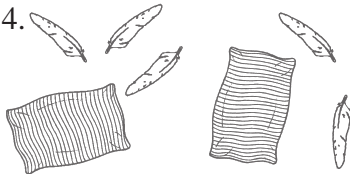
beaks →  
to  
feet →

3.



chicken →  
to  
drumstick →

4.



pillows →  
to  
feathers →

5.



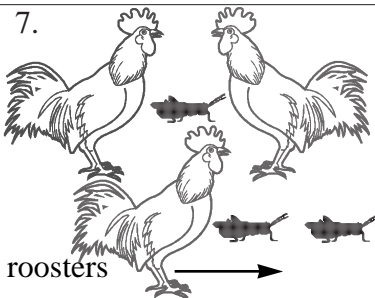
wheat →  
to  
corn →

6.



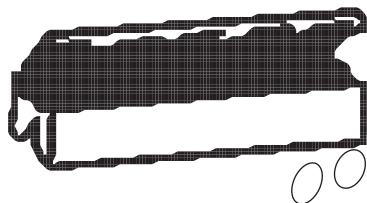
hen →  
to  
chick →

7.



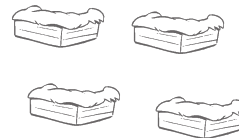
roosters →  
to  
grasshoppers →

8.



carton →  
to  
eggs →

9.



nests →  
to  
henhouse →

On the back of your paper draw your own ratio problem. Use pictures to express your problem. Write the ratio out in numbers and in words.

Adapted from Oklahoma Ag in the Classroom.

