



incredible!

American Egg Board

Grade 8

Name _____ Solving problems, using scientific notation (8.EE.A.4)

Eggsactly!



Solve each problem. Show your work and write your answers using scientific notation.

<p>1 In one year, 30% of all the eggs consumed were egg products such as liquid or powdered eggs. If that 30% equaled 2.286×10^{11} eggs, how many eggs altogether were consumed that year?</p>	<p>2 If food manufacturers produced three billion pounds of egg products each year, how much do they produce each month?</p>	<p>3 US egg farmers produce about 79 billion eggs each year. If a hen on an egg farm lays 265 eggs a year, about how many egg-laying hens are there on US egg farms?</p>
<p>4 How much would it cost if 40 egg inspectors worked 60 hours a week for two weeks? Each inspector earns \$30.00 per hour.</p>	<p>5 About 0.05% of an egg white is the protein avidin. How much of the protein avidin is there in 250 eggs?</p>	<p>6 If a commercial egg facility processed 18 million eggs in eight hours, how many eggs would it process each hour?</p>

Bonus: Use the following data to write a problem with an answer that can be written in scientific notation.

- There are about 280 million egg-laying hens on US egg farms.
- We use about 60% of the 79 billion eggs as consumers.
- The 79 billion eggs produced in the United States each year make up about 10% of the world's egg supply.
- The foodservice industry uses about 9% of the 79 billion eggs.





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Answer Key for “Eggsactly!”

1. 7.62×10^{11}
2. 2.5×10^8
3. 2.98×10^8
4. 1.44×10^5
5. 1.25×10^{-1}
6. 2.25×10^6

Bonus: Problems and answers will vary.

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Name _____ Main idea, summarizing (RST.6-8.2)

Eggs and Pasteurization

Summarize each section in one sentence. Be specific and clearly explain the main idea.

On the blank, write an appropriate title for the section. Be sure it relates to the main idea.



Section 1: _____

Pasteurization is the process of heating foods or liquids to destroy disease-causing organisms like bacteria. This makes foods safe to eat. Pasteurization has helped to reduce the transmission of many serious diseases, like typhoid fever, dysentery, and polio.

The pasteurization technique was developed in the mid 1800s by the French biologist Louis Pasteur. At first, it was only used to keep wine from going bad. Today, many other foods are pasteurized. A few common ones are fruit juices, milk and milk products, and eggs and egg products.

Egg products are required by law to be pasteurized. These products include refrigerated liquid, frozen, and dried eggs used by the foodservice industry and as ingredients in other foods, like mayonnaise and ice cream. Laws don't require that whole eggs in the shell be pasteurized, but they are now available and some grocery stores carry them.

Summary:

Section 2: _____

Pasteurization destroys *Salmonella*, a harmful bacteria in eggs. This bacteria causes an infection called salmonellosis. Symptoms are diarrhea, fever, and abdominal cramps. Most people recover without treatment. However, infants, older people, and those with weakened immune systems may need hospitalization.

All egg products are continuously monitored for pathogenic organisms like salmonella, and only egg products that test negative for salmonella can be sold. Actually, only one in 20,000 eggs has *Salmonella*, an extremely low rate. Pasteurization will eradicate harmful bacteria in egg products. But safe handling is still necessary. When making recipes calling for raw or uncooked eggs, use pasteurized shell eggs or pasteurized egg products. In the past 40 years, there have been no recorded outbreaks of salmonellosis linked to pasteurized egg products.

Summary:

Section 3: _____

Pasteurization of egg products is done in special egg-processing facilities. The egg products are rapidly heated to a minimum temperature for a certain amount of time. The eggs are heated enough to kill the bacteria, but not enough to cook the egg. Pasteurization doesn't affect the taste, texture, or baking properties of the egg product. It ensures that eggs are safe to eat.

Summary:



Grade 8

Answer Key for “Eggs and Pasteurization”

Answers will vary.