

Egg Sampling

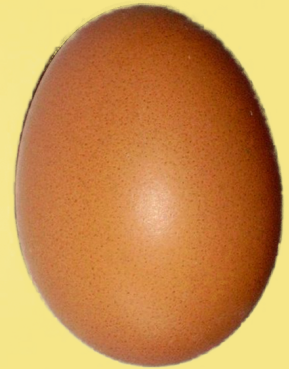


Egg Sampling

**Do you need an idea for a scientific study?
Try out one of our ideas or make one of your own.**

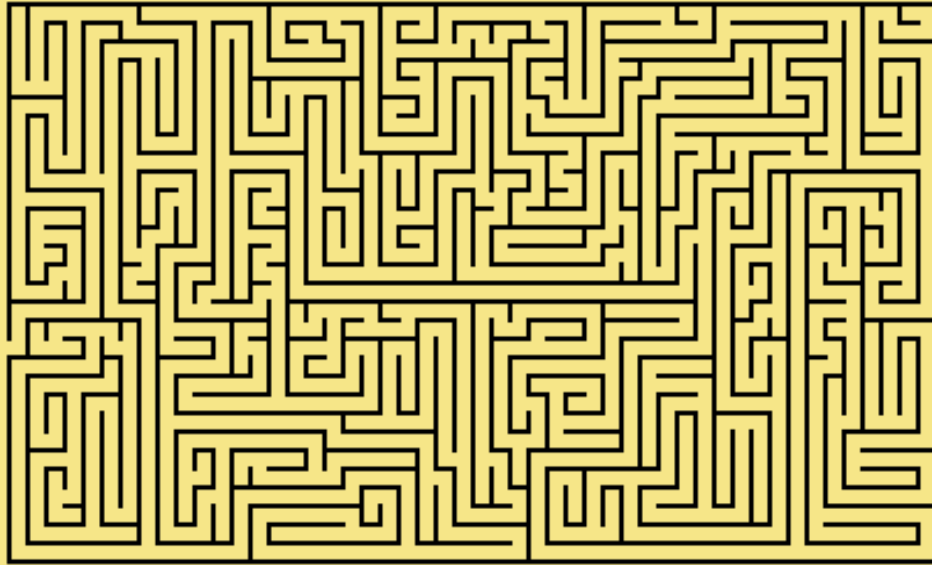
Start learning right now about how chicken eggs are tested for harmful pathogens. Take the following brief quiz to see how much you already know about common bacteria that can infect eggs. See the bottom of page 4 to check your answers.

1. A raw chicken egg is placed in a deep bowl filled with water. Which of the following would indicate that the egg is very fresh?
 - a. the egg floats at the surface
 - b. the egg floats in the middle of the bowl
 - c. the egg sinks to the bottom and assumes a vertical position
 - d. the egg sinks to the bottom and assumes a horizontal position
2. A chef cracks and places a raw chicken egg on a flat plate. The freshest egg would appear with a(n):
 - a. round, compact yolk with clear egg white.
 - b. round, compact yolk with cloudy egg white.
 - c. oval, jagged yolk with clear egg white.
 - d. oval, jagged yolk with cloudy egg white.
3. Which grade of chicken egg indicates the highest quality egg?
 - a. Grade A
 - b. Grade AA
 - c. Grade AAA
 - d. Grade AAAA
4. A scientist testing chicken eggs for pathogens is experimenting with bacteria. Each bacterium has a diameter of one micron in diameter. The bacteria reproduce by dividing every minute into two bacteria. At 2:00 PM, the scientist places a single organism in a container. At precisely 3:00 PM, the container is completely filled. At what time was the container half full of bacteria?
 - a. 2:30 PM
 - b. 2:45 PM
 - c. 2:59 PM
 - d. cannot be determined
5. A chicken egg has a brown shell. A chicken with _____ feathers and _____ ear lobes most likely laid the egg.
 - a. white; white
 - b. red; white
 - c. white; red
 - d. red; red



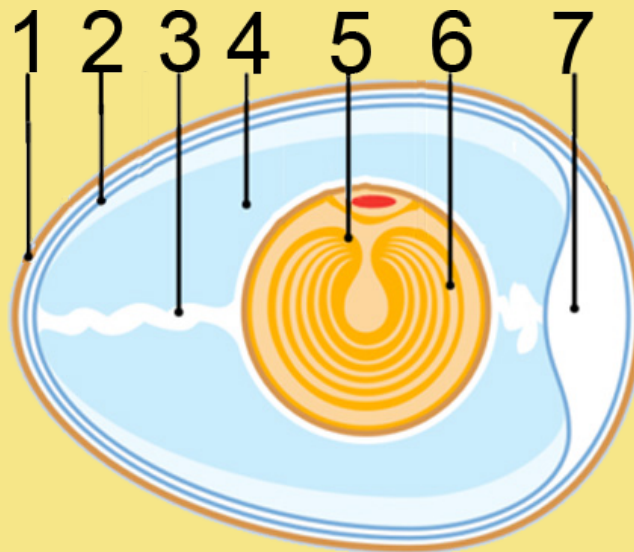
Can you get the chicken egg to market on time?

Find your way through the maze to take the egg from the farm to the kitchen table.



Egg Anatomy Matching

Match the name to the various structures of the egg.



- | | | | |
|----|------------|----|-------------------|
| a. | air cell | f. | egg shell |
| b. | albumen | g. | membrane |
| c. | blastoderm | h. | nucleus of Pander |
| d. | chalaza | i. | white yolk |
| e. | cuticula | j. | yellow yolk |

Egg Sampling

Rotten Egg

Chicken eggs are high in protein and are one of the most nutritious foods available. However, eating raw or slightly cooked eggs can lead to serious illness due to the presence of a pathogen called Salmonella. To make things worse, the Salmonella bacteria can be on the inside as well as the outside of an egg that otherwise looks totally normal.



What steps can you take to protect yourself from illness when handling and using raw chicken eggs? The Center for Disease Control and Prevention has provided a number of suggestions on how to reduce the risk of Salmonella from eggs. These include:

- Never eat raw or undercooked eggs
- Always store raw eggs in the refrigerator at 40 °F (4 °C) or lower
- Discard cracked or discolored eggs
- Eat eggs promptly after cooking

For more on protecting yourself from egg-borne illnesses, check out the following link: <http://www.cdc.gov/Features/SalmonellaEggs/>

Please visit our site for more helpful information:
STEMsims.com

Answers: 1) d, 2) b, 3) b, 4) c, 5) d, Egg Anatomy Matching Answers: 1) f, 2) g, 3) d, 4) b, 5) j, 6) i, 7) a.

The Science Fair Kits project was funded in part under the Department of Homeland Security Science and Technology Directorate grant contract #N10PC20003. Its contents are solely the responsibilities of the authors and do not necessarily represent the official views of the Department of Homeland Security.

© 2015 STEM Sims. All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable, and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent or other industrial or intellectual property rights.