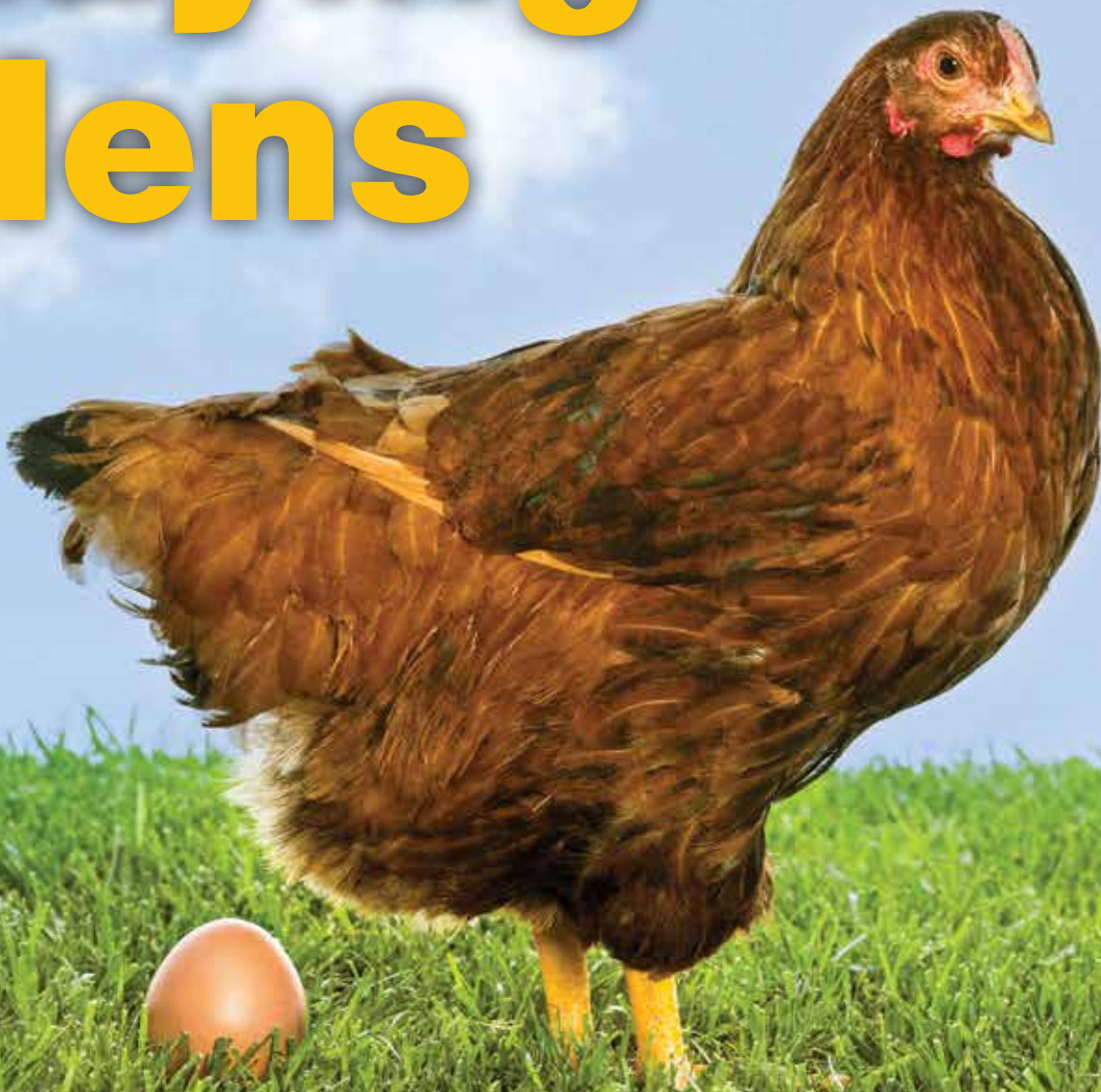




Jr. Animal Scientist

APRIL 3, 2020

Laying Hens



Life cycle of a laying hen



Egg

A hen lays a fertilized egg, whether in the backyard or in a commercial operation. In the backyard, a mother hen will sit on her eggs to protect and keep warm. In a commercial operation, eggs are moved to an incubator immediately following laying. Eggs are placed on trays that will tilt for 18 days before moving to a hatchery room. Eggs will hatch at approximately 21 days—at home or in a hatchery!

Chick

For the first 4 to 8 weeks in the backyard, chicks will follow the hen. In a commercial operation, hatched chicks are placed in boxes and shipped to other farms. **With or without the hen, as long as the chicks have access to clean food and water, they will grow!**



Pullet

Both in the backyard and in a commercial operation, the pullet will continue to grow until about 18 weeks of age. Pullets are not considered hens until they lay their first egg!

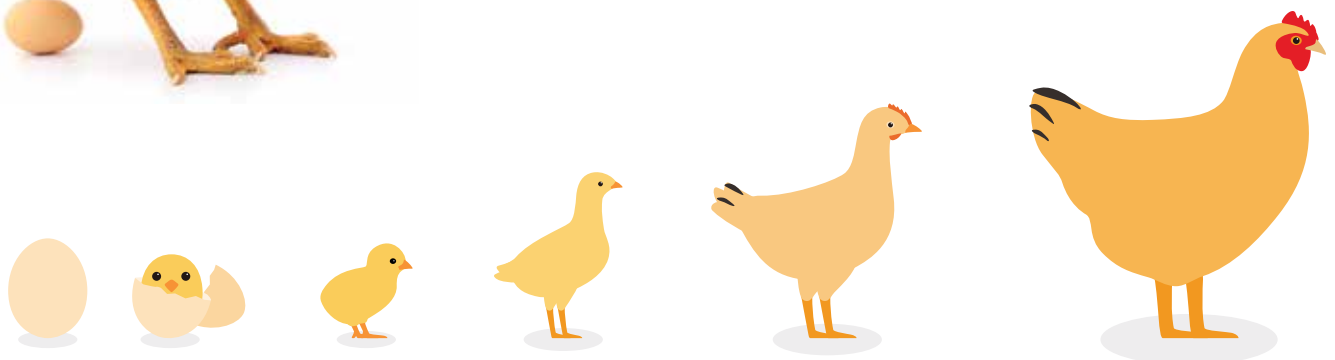
Hen

Every year a hen molts (shed their old feathers) and lays approximately one egg per day. **That's a lot of eggs!**

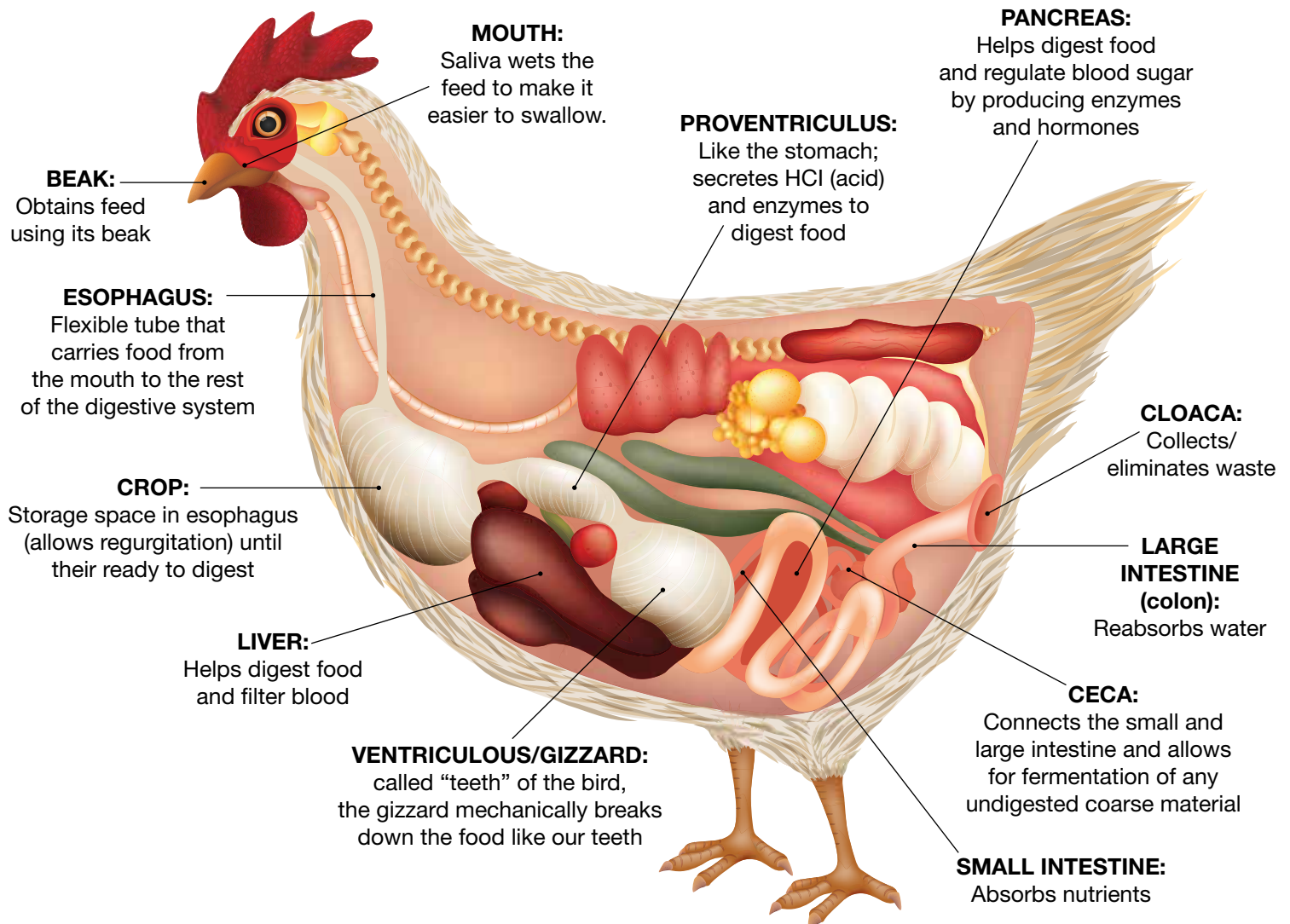


FUN FACTS!

- An average hen lays more than 265 eggs a year!
- A hen can live up to 20 years!



GI Tract of a laying hen



BONUS WORDS

ENZYMES: molecules that speed up chemical reactions

HORMONES: Chemicals that tell cells and body parts what to do; messengers

DIGESTION: Process where food is broken down into nutrients that are needed for the body to function properly



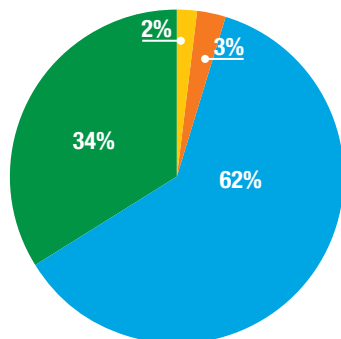
What do Laying Hens Eat?

Just like people, all animals require certain nutrients to remain healthy.

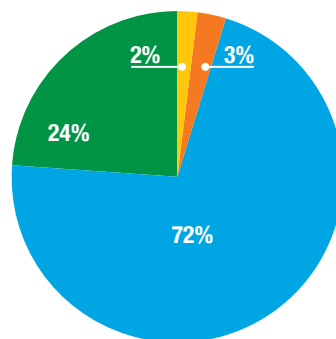
There are six nutrients: water, carbohydrates, protein, lipids, vitamins, and minerals. Unlimited water should always be provided, but other nutrients should be given in measured amounts. To make sure chickens are fed properly, nutritionists create a balanced diet.

Laying hen diets are typically made of corn, soybean meal, limestone, vitamins, and other minerals. Corn is a carbohydrate that provides energy and soybean meal is protein. Limestone is very important to laying hens because it provides calcium. Calcium is needed for a hen to make the shell of the egg. The diet has to be changed as chicks grow. This can be divided into three distinct stages of life: chicks, pullets, and layers. A chick is a baby chicken. A pullet is a young hen that is not laying eggs yet. A layer is a fully-grown hen that can lay eggs.

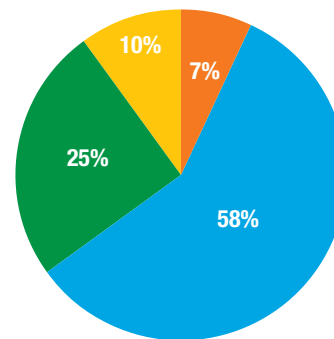
The graphs below show an example of the diet for each stage of life. The ingredients are shown percentages. The main difference between a chick and pullet diet is that the pullet diet has less protein. The layer diet is much higher in limestone. This provides the calcium needed to make the egg shells.



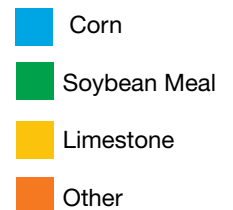
Chick Diet



Pullet Diet



Layer Diet



If raising chickens in your backyard there are many commercially available feeds that will keep your chickens healthy. As a special treat feed some meal worms!

FUN FACT!

Did you know? The egg yolk color can change if a hen eats certain foods. For example, if a hen eats marigolds, the yolk will be more orange than yellow.

Fun activity: Decorating Eggs

Part One: PLEASE HAVE PARENTS DO PART ONE!

1. Place the eggs in room temperature water.
2. Bring to a boil then turn temperature down to a low boil for 12 minutes.
3. Remove from stove and let cool before decorating.
4. Refrigerate within 2 hours of cooking and use within a week.

Hint: White eggs will show the most brilliant colors!

Supplies:

- White vinegar
- Water
- Small bowls
- Hardboiled eggs
- Liquid food dye
- Spoons

Dye Colors:

Red: 16 drops

Blue: 20 drops

Yellow: 20 drops

Orange: 12 drops yellow and 6 drops red

Teal: 14 drops blue and 4 drops green

Purple: 15 drops red and 5 drops blue

Green: 16 drops



Use 1 bowl per color. Before adding dye to each bowl, add 1/3 of a cup of vinegar and 2/3 of a cup of water. Add food dyes to each cup as directed above to get your favorite colors.

Place the boiled egg in the dye mixture and allow it to sit for a few minutes. The longer the egg is in the dye the brighter the color. Place eggs on paper towels to dry.

Word Search!

G N A H U C M S G J P E G I N
P I J C O R E V I L N J Q O N
O J Z L E P C S M I L K V M S
R X O Z U C H F T O O Z M Z P
C N V Z A H H S X X D C V J L
P O A M L R E P K C O P P V E
K G O O Q T D M E C D X K F E
Y K K T N E S O P H A G U S N
T Y H I E P M R D P Q S R I Z
N B Y Y M Q Z Z G E F T M C X

Find the following words in the puzzle.

CECA
COLON
CROP
ESOPHAGUS
GIZZARD
INTESTINE
LIVER
SPLEEN



Egg grading

What is USDA Egg Grade?

All eggs sold in markets are classified by three grades defined by the U.S. Department of Agriculture (USDA): Grade AA, Grade A, and Grade B. The official USDA grade marked on the egg carton indicates that the eggs have been processed, packed, and approved by U.S. standard. Safety, health, and quality are ensured and certified.

How are eggs graded?

Eggs are graded based on two factors: exterior quality and interior quality.



- **Exterior quality:** Exterior quality includes the cleanliness, soundness, texture, and shape of the eggshell. In other words, it is “how an egg looks.” All market eggs must be clean and with unbroken eggshells. The ideal eggshell should be oval with one side wider than the other. Any misshape, rough texture or spots lowers the egg grade.
- **Interior quality:** Interior quality is tests for the inside part of the egg. Because producers still need to sell unbroken eggs, the interior quality is measured using a technic called candling. Candling is done in a dark room with the egg held in front of a light. The light shines through the egg making the inside of egg easy to see.
- **Grade levels:**
 - **U.S. Grade AA (“Perfect eggs”):** The most perfect eggs! These are the art works of the egg market.
 - **U.S. Grade A (“Good eggs”):** This grade is most commonly seen in stores. They are perfectly fine to eat, just not as perfect as Grade AA.
 - **U.S. Grade B (“Just fine eggs”):** Grade B eggs are still totally safe to eat! These eggs are not usually in stores because they are used to make egg products, such as ice creams and baking products.

Myths about egg grading:

1. Size impacts grading.

NOT TRUE! All size eggs are graded under the same scale. No matter the size.

2. Grade AA eggs taste better.

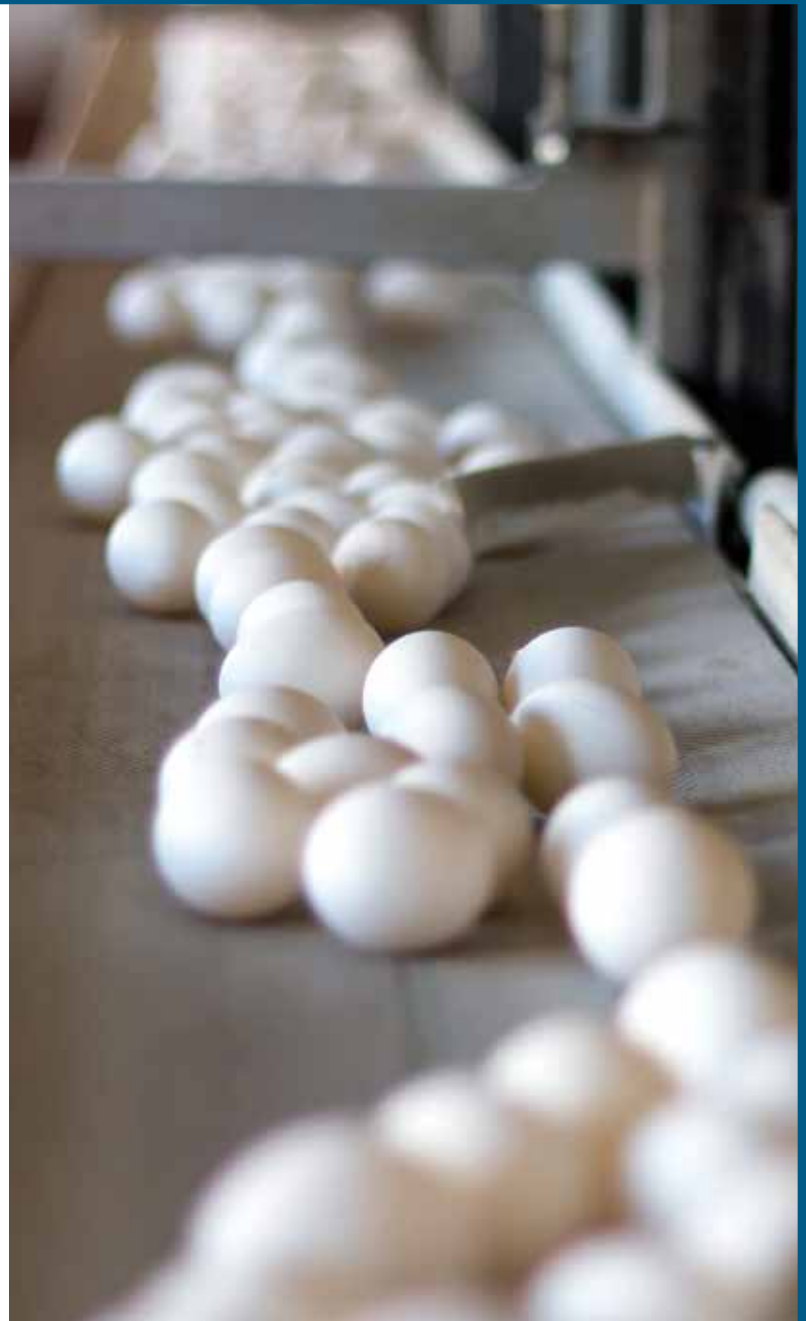
NOT TRUE! All eggs, no matter the grade, taste the same.

3. Brown eggs have higher grade than white eggs.

NOT TRUE! Color doesn't impact grading.

4. Cage-free eggs, organic eggs, free-range eggs would earn "extra points" when being graded

NOT TRUE! All types of eggs are graded ONLY based on quality under the same USDA standard.



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