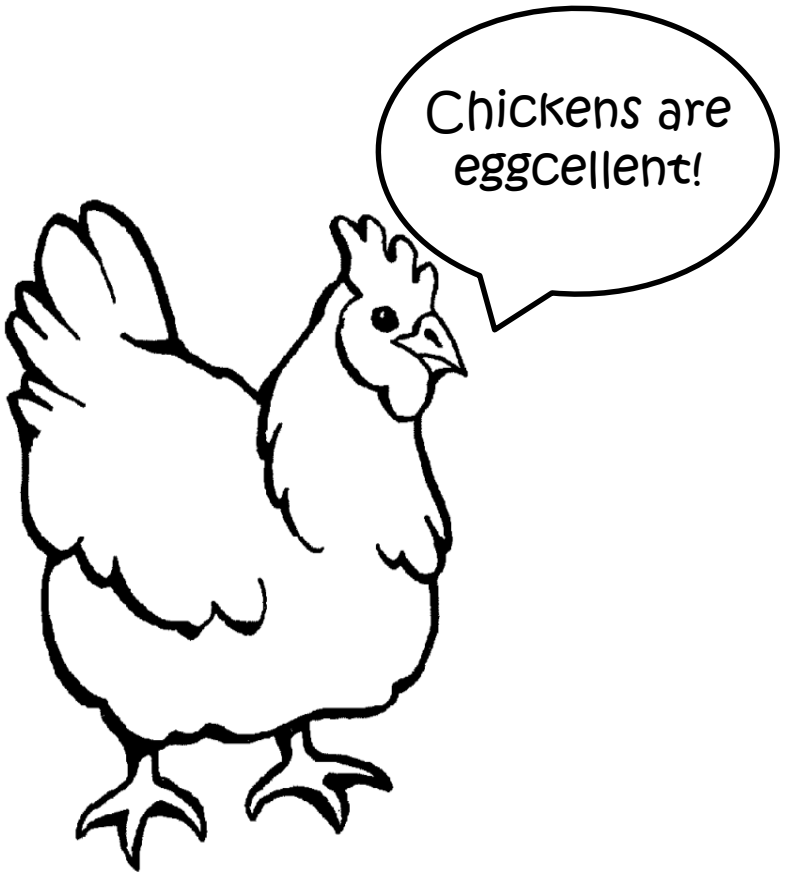


Building Your Own Backyard Chicken Flock?



2015 Eggercise Book!



UC Cooperative Extension



<http://ucanr.edu/sites/poultry/>
http://www.cdfa.ca.gov/AHFSS/Animal_Health/Avian_Health_Program.html















Meet Dr. Cluck

1

Hi I'm Dr. Cluck,
I'm a chicken veterinarian. I heard
someone say that you wanted some
backyard chickens. Well you came
to the right place. In this
eggsercise book, we'll discuss all
sorts of things including:



Table of Contents

-  What to do before buying chicks
-  How to choose chicks
-  How to take care of new chicks
-  How to set up a chicken coop
-  How to feed and raise healthy chickens
-  What is biosecurity
-  Common chicken diseases
-  How to make sure the eggs are safe to eat
-  Anatomy of a chicken and egg
-  Composting waste
-  Be a good neighbor
-  Fun eggzperiments
-  Art contest
-  Other Resources

Deep chicken thoughts: Chickens are fun, BUT please, please, please be responsible if you decide to raise them. Remember that if your chicken gets sick, she could spread her illness to other birds. We have approximately 20 million chickens in California and over 25,000 of our fellow Californians work on poultry farms. Let's all do our part to keep all California chickens healthy!

1. Chicken giblets: How do you know the color of eggs that your chicken will lay?

Answer: By the color of their ears

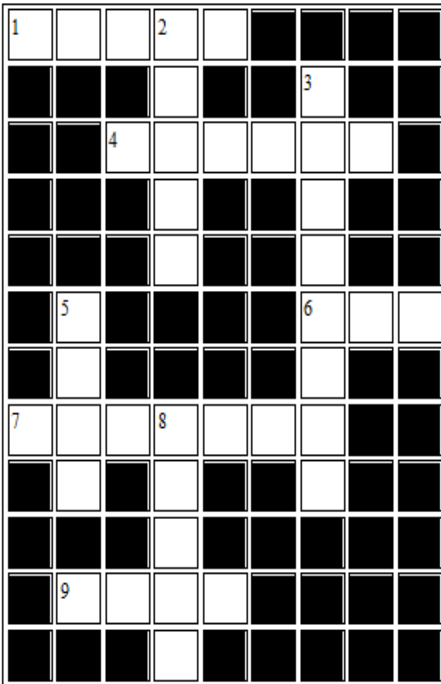
2 **Homework: Before buying chicks or chickens**
(aka don't count your chickens before they hatch)

1. First, find out if your city allows chickens.
2. Set up a brooder (home for the chicks).
3. Set up a coop and fence it off.
4. Purchase feed for chicks or chickens.
5. Have a secure storage container for the feed
6. Read as much as you can about chickens.



Note: Chickens are social butterflies, meaning they like to hang out with other chickens. So, if you want happy and healthy chickens make sure to buy more than one chick or chicken.

Chickenword Puzzle



Across

1. Bunch of chickens
4. Name for a young female chicken
6. Name for a female chicken
7. Name for a male chicken
9. Part of an egg

Down

2. Chicken sound
3. All birds have
5. Where chickens live
8. The outside of an egg

Answers: Across: 1. Flock 4. Pullet 6. Hen 7. Rooster 9. Yolk
Down: 2. Cluck 3. Feathers 5. Coop 8. Shell

One more piece of homework...

Find a veterinarian who cares for chickens!



Not all veterinarians treat chickens! Plan ahead, find a veterinarian who routinely cares for chickens.

Some veterinarians specialize in birds. If you want an expert, ask if the veterinarian has the following credentials:

ACPV: American College of Poultry Veterinarians
ABVP: American Board of Veterinary Practitioners, Certified in Avian Practice

****Note:** There is a shortage of veterinarians who specialize in poultry. If you like chickens, turkeys, and ducks **AND** you want to be a veterinarian, think about becoming a poultry veterinarian!

2. Chicken giblets: What does Alektorophobia mean?

Answer: The fear of chickens

4 How to set-up and maintain a brooder

For the first 6-8 weeks of their lives, chicks need to live indoors (ex. your garage, laundry room or some other well-ventilated, temperature-controlled area).

What is a brooder?

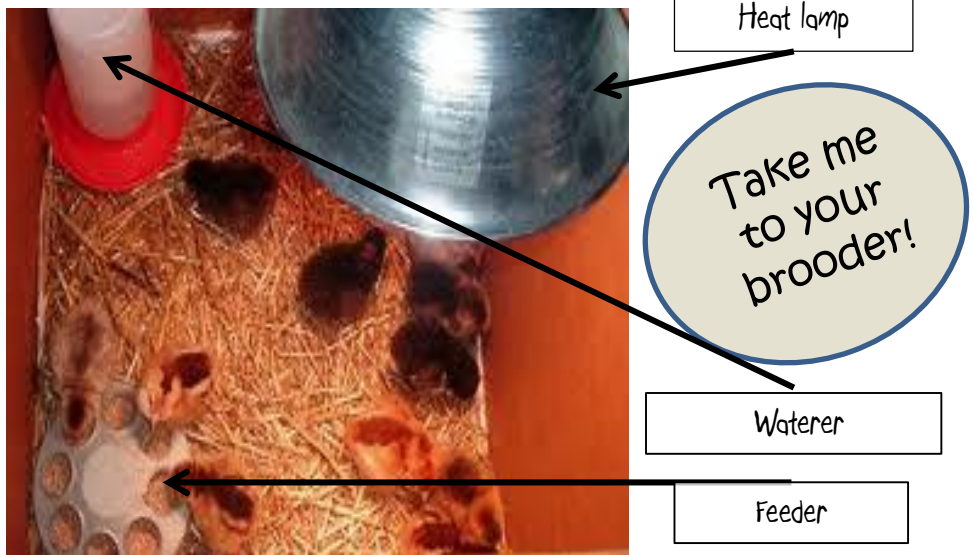
👁️ A brooder is a big box with minimum 18 inch sides, lined with 'litter' (wood shavings, straw, etc.). Change the litter frequently to reduce odor.

What is in a brooder?

- 👁️ A heat source (usually a heat lamp)
- 👁️ A water source
- 👁️ A feeder with chick feed

Make sure pets and youngsters don't have access to the brooder area. The heat lamp is very hot! Work carefully under adult supervision.

Brooder Basics



3. Chicken giblets: How many weeks does it take a female chick to mature and lay eggs?

Answer: Approximately 18-24 weeks

How to set up a chicken coop

When the chicks are 6-8 weeks old, they are ready to live outside in a coop. A recent survey among chickens found out that 9 out of 10 happy chickens like a well designed coop and living area which contains:

Fencing – To prevent unwelcome visitors like rodents or other animals from getting in, and to make sure the chickens don't get out. Make sure there is fencing surrounding and covering the area where the chickens live.

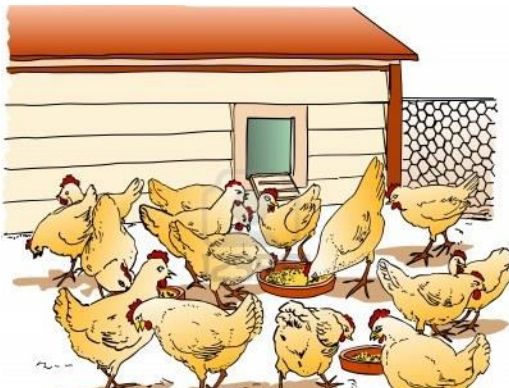
Shelter area - A shelter, such as a coop, protects chickens from extreme weather. Aside from shelter, chickens should have access to sun and shade in order to stay cool or keep warm depending on the weather.

Nest box - Inside the coop there should be a nest box where the hens typically lay their eggs.

Scratch area - Chickens like an area to peck and scratch with their feet.

Perch - Birds like an area to be off the ground to rest their 'bird brains.'

Feed and water area - Make sure there is enough room for all the birds to have access to both food and water.



4. Chicken giblets: Why don't eggs tell each other jokes?

Answer: Because they would crack each other up

Where to pick up some chicks...

Buy chicks from a hatchery, or a local feed store that buys chicks from a hatchery that is part of the National Poultry Improvement Plan (NPIP) or performs similar testing. This means they test the birds to make sure they are free of certain diseases.

Questions to ask yourself and the store before buying chicks:

Small (bantams) or standard???

Were the chicks vaccinated against any diseases???

'Fancy' or 'common' chicken breeds???

How old are the chicks???

Popular Chicken Breeds

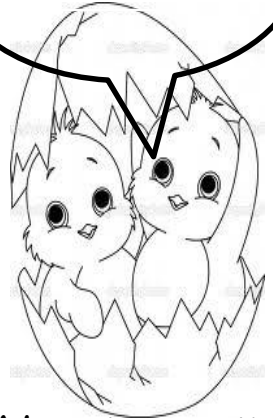
Breed

- 🐣 Ameraucana
- 🐣 Australorp
- 🐣 Leghorn
- 🐣 Rhode Island Red

Cool Factoid

- Produce blue eggs
- Calm/docile
- Economical eater but can be flighty
- Hardy in heat and cold

What kind of chicks will you pick???



Yeah!!! The 'chick' is in the mail. Now lets talk about taking care of chicks...

5. Chicken giblets: How many different breeds of chickens are there?

Answer: Over 150

7 How to take care of new chicks



Make sure the brooder is set up so the new chicks can be put right in the brooder.



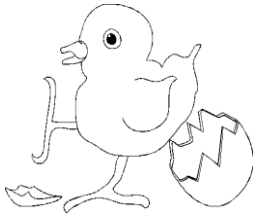
Have fresh water and clean chick feed available at all times.



Wash your hands with soap and water or use hand sanitizer before and after handling the birds.



Isolate (quarantine) any sick birds ASAP!



Don't forget to name your chickens!!!

Unscramble the Scrambled Eggs

1. geg

2. hne

3. koyl

4. htcah

5. lehls

6. oymrbe

7. aekb

8. iecckhn

9. orcuibtna

10. ingsw

11. tapemertrue

12. izdeltirfe

- | | |
|----------|-----------|
| 1. _____ | 7. _____ |
| 2. _____ | 8. _____ |
| 3. _____ | 9. _____ |
| 4. _____ | 10. _____ |
| 5. _____ | 11. _____ |
| 6. _____ | 12. _____ |

6. Chicken giblets : How many days does it take a chick to hatch?

Answer: 21 days



What to feed chickens



For the first 6-8 weeks, chicks in the brooder should be fed 'chick' feed, also called chick starter.



After 8 weeks of age, feed the chickens a standard layer 'crumble' or 'pellet' feed.



As a treat, give chickens a small amount of chicken scratch (mixture of whole grains and cracked corn), but it should not replace their regular diet.



Keep your feed in a waterproof, secure container that won't attract other rodents and vermin.

Chicken Feeder



Chicken Waterer



Always provide clean fresh feed and water.

7. Chicken giblets: When are chickens more likely to lay eggs, as daylight increases or as daylight decreases?

Answer: As daylight increases

What is biosecurity and why is it important?

Biosecurity - is any practice that reduces the risk of introducing disease to your flock or other flocks.

Basically, how we prevent chickens from getting 'cooties' (germs) and giving 'cooties' (germs) to other animals and humans.

Try thinking of your backyard flock as a farm...
Make sure you don't track germs between farms,
even if it's your neighbors 'farm'!

Sources of Disease

- Animals, both domestic and wild
- People
- Feed
- Water
- Fomites: Objects, such as containers, shoes, tires, and tools that can transmit germs



8. Chicken giblets: Why did the chicken cross the playground?

Answer: To get to the other slide

Biosecurity for Backyard Chickens

How to keep your chickens healthy before they get sick

As my buddy Ben Franklin used to say “an ounce of prevention is worth a pound of cure. In other words **Biosecurity** is the best way to keep your birds healthy!!!



To learn lots more about biosecurity:
http://www.aphis.usda.gov/animal_health/birdbiosecurity/

Here are some biosecurity tips:



Wash your hands with soap and water or use hand sanitizer before and after working with chickens.



Use foot baths before entering and exiting the fenced off coop area. A foot bath is a container with an approved disinfectant to disinfect shoes. Make sure to maintain a clean footbath. Disinfectants don't work if the footbath is dirty!!!

...or have designated 'coop boots'. These will be the only shoes that go into your chicken area, and they won't go anywhere else.



Don't allow wild animals to come in contact with your chickens!



If you have a sick bird isolate it (quarantine) and contact a veterinarian (see page 12).

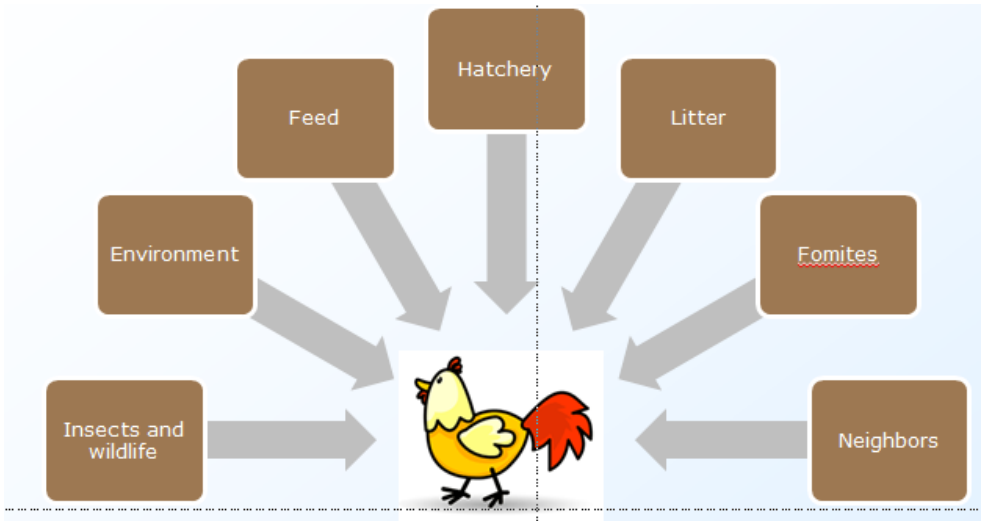
9. Chicken giblets: True or False: Chickens can get diseases from humans and humans can get diseases from chickens.

Answer: True

It's dangerous out there!

It's dangerous out there. Viruses, bacteria, and parasites are all over the place.

Are you practicing good biosecurity to prevent disease from entering your flock from these sources???



What do I do if my chicken gets sick?

Who to contact about a sick bird

- 🐔 Call your veterinarian (see page 3)
- 🐔 Call the Sick Bird Hotline: 866-922-BIRD (2473)
- 🐔 Call your local California Animal Health and Food Safety Lab (CAHFSL). There are four laboratories in the state with veterinarians that are experts in diagnosing animal diseases (service may be free) (page 23).
- 🐔 Your local California Dept. of Food and Agriculture Office (CDFA): Offices throughout the state with veterinarians who can help (page 23).

How to check the health of your bird

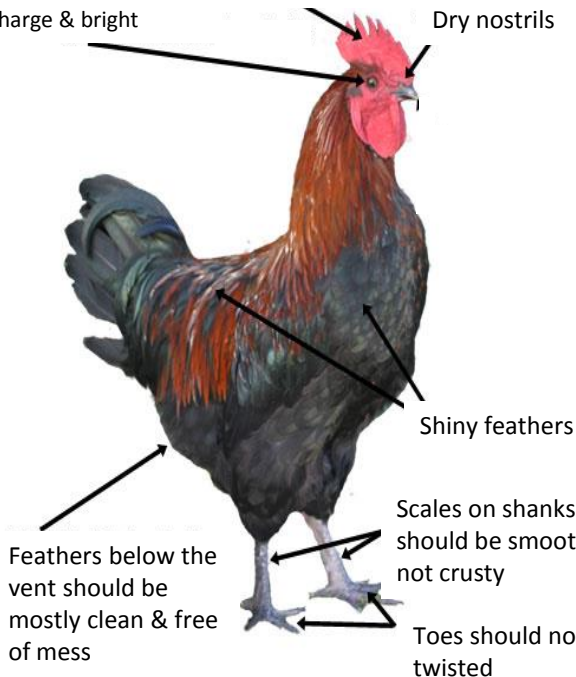
Eyes should be clear of discharge & bright

Comb should be red

Dry nostrils

Signs that birds are sick:

- 🐔 Sudden death
- 🐔 Diarrhea
- 🐔 Decreased or loss of egg production
- 🐔 Inactivity or listlessness
- 🐔 Sneezing, coughing



10. Chicken giblets: What is the normal body temperature of a chicken?

Answer: 102-103°F

What diseases can my chicken can get?

Too many to list. For purposes of this Eggercise book we'll just focus on the biggies!



For purposes of public health, animal diseases can be broken down into 2 categories:

Zoonotic: diseases that can be transferred to humans

Epizoonotic: diseases that can not be transferred to humans

Remember, regardless of the disease
**BIOSECURITY IS ESSENTIAL IN PROTECTING
 YOUR BIRDS AND YOUR FAMILY!**



11. Chicken giblets: Chickens don't have teeth; the gizzard (formally known as the ventriculus) is used to grind up food in a similar way that teeth do.

What diseases can my chicken get?

Marek's Disease



- 👁️ **Marek's Disease** (Caused by a virus)
 - 👁️ Epizootic... What does that mean again??? (see page 13)
 - 👁️ Most common disease of backyard birds
 - 👁️ Transmitted primarily by feather 'dust'
 - 👁️ Check to make sure your birds are vaccinated before you bring them home!
 - 👁️ Signs: weakness or paralyzed birds

Good news! Marek's disease is almost 100% preventable if you:

Have your birds vaccinated against Marek's in the hatchery or at day 1 (ask your pet store or supplier of chicks if they vaccinate)

12. The town of Chicken, Alaska (population 7) was supposed to be named after a type of grouse, but the founders did not know how to spell it. Can you?

Answer: Ptarmigan

What diseases can my chicken get?

Salmonella

...OK this is serious business. By exposing your chickens to other chickens and/or wild animals you increase the risk of Salmonella being transmitted to your chickens



🐔 Salmonella (Caused by a bacteria)

- 🐔 There are many species of *Salmonella* bacteria that can live in your chickens
- 🐔 Chickens can live without any signs of Salmonella, but people can get sick from coming into contact with it.
- 🐔 Rodents can carry it and spread it to your birds.
- 🐔 Signs: depression, not eating, diarrhea, lameness, mortality, or none.

Ever wonder if your chickens have pathogenic Salmonella? Contact your local CAHFS lab (page 29) to learn what you can do!

13. Chicken Giblets: What country has the highest egg consumption in the world?

Answer: Mexico

What diseases can my chicken get?

Avian Influenza



- 👁️ **Avian Influenza or "Bird Flu"** (Caused by a virus)
 - 👁️ There are many different types of Avian Influenza- some more serious than others.
 - 👁️ All chickens get very sick if they get it and it is often very contagious.
 - 👁️ The United States of America has not had any types of Avian Influenza that has made people sick- but there is always a risk, so use proper biosecurity (what is this again? See page 9).
 - 👁️ Wild birds are the biggest risk because they can carry the virus, but look completely healthy- so keep them away from your chickens!
 - 👁️ Signs: depression, not eating, diarrhea, soft/misshaped eggs, mortality, or none.

Do you think your chicken might have the flu?

Call the Sick Bird Hotline at:

866-922-2473

14. Chicken Giblets: True or False: Birds are dinosaurs.

Answer: True

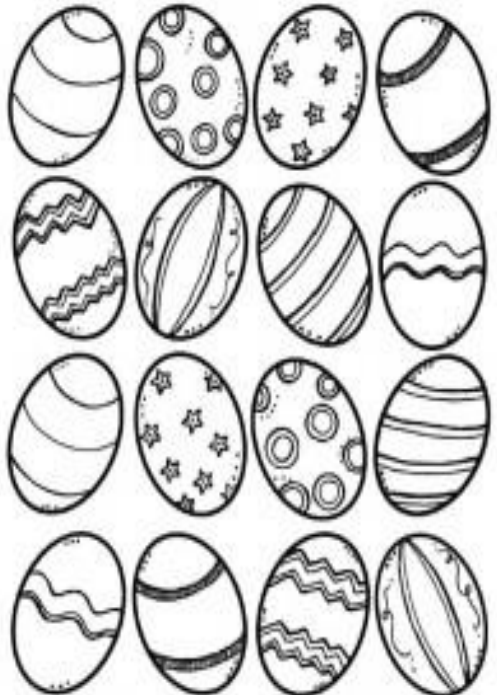
Food Safety

Like all foods, people can get food poisoning from eggs. Here are a couple of handy pointers for the safe handling of eggs:

Collection: Collect the eggs at least 2 times each day. Discard eggs with cracks or holes.

Storage: Store eggs in a refrigerator at 35-40° F. Eggs that are properly refrigerated and handled can be stored and used for about 6 weeks.

Preparation: Cook eggs until yolks are firm and whites are 'set', and cook foods containing raw eggs to 160° F.



15. Chicken giblets: How often, in hours, does an average hen lay an egg?

Answer: Every 26 hours

Lead (Pb) poisoning in chickens and the risk to humans consuming their eggs

☺ Lead in the Environment

- ☺ Mining, refining, and lead pellets have resulted in increased lead levels in the environment.
- ☺ Lead particles can attach to dust, be carried long distances in the air, and deposit on surface soil where they can remain for many years.

☺ Threat to chickens

- ☺ Chickens can ingest Pb directly from pellets and fishing weights, or indirectly from the environment/soil.
- ☺ Pb particles can dissolve in the digestive tract and get into the blood, and build up in your chickens liver/kidneys. If Pb levels gets too high in a bird, it may lead to sudden death.



Get the Pb out!!! And consider calling CAHFS about Pb testing (pg. 29).

16. Chicken giblets: On which side does the chicken have the most feathers?

Answer: On the OUTSIDE!

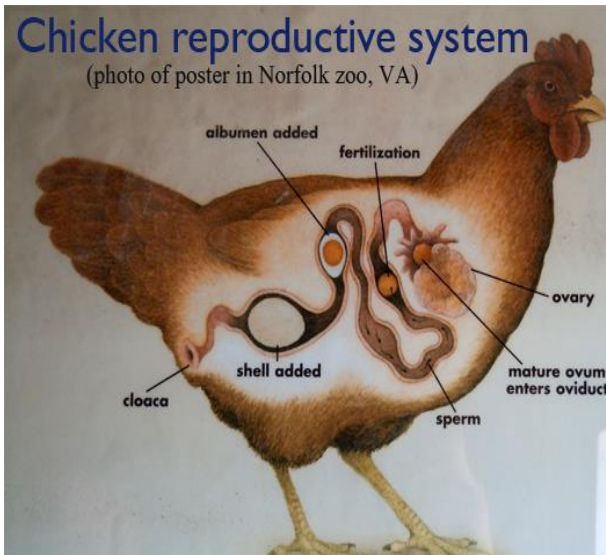
Anatomy of a Chicken:

Where does the golden egg come from???

...I don't know, but here's where the eggs we eat come from...



Hens (female chickens) lay eggs with or without the presence of a rooster (male chicken). That's good to know since roosters are illegal to keep in many communities.



17. Chicken giblets: How big is a chickens bladder?

Answer: Trick question, chickens don't have bladders

Eggnatomy of an egg

Structure	Why do developing chicks need it?	Why do we like it?
Egg yolk	Important source of nutrition for the developing chick	Gives baked goods a smooth and creamy structure
Egg white	Helps protect the developing chick	Essential for a good soufflé!
Shell	Helps protect the developing chick while allowing for exchange of oxygen and carbon dioxide	Good for composting
Chalaza	Holds the yolk centered in the egg	Looks like a bungee cord
Air Sac	Source of air for chick	Size indicates the age of the egg (older eggs have larger air sacs)

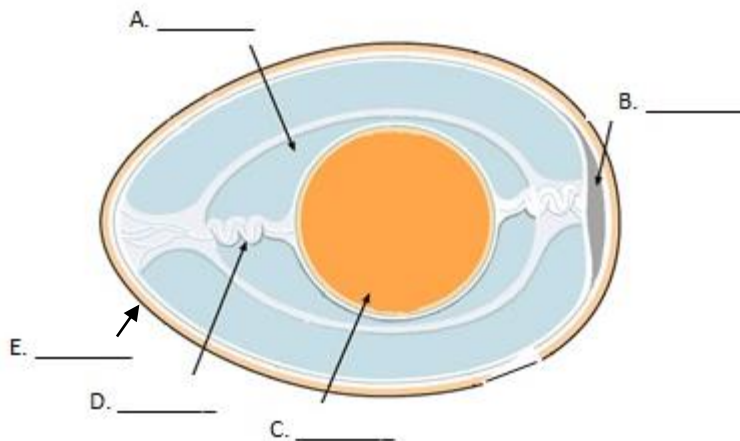
Helpful Tidbits

(How do I get more eggs from my hen?)

Healthy hens produce eggs while stressed and sick hens do not. So, keep hens healthy and keep them in a comfortable, calm environment.

'Broody' hens (hens that sit on their eggs for long periods of time) stop laying eggs. To prevent this behavior, remove the eggs from the nest box at least twice daily.

Based on what you just read, identify the following parts of an egg



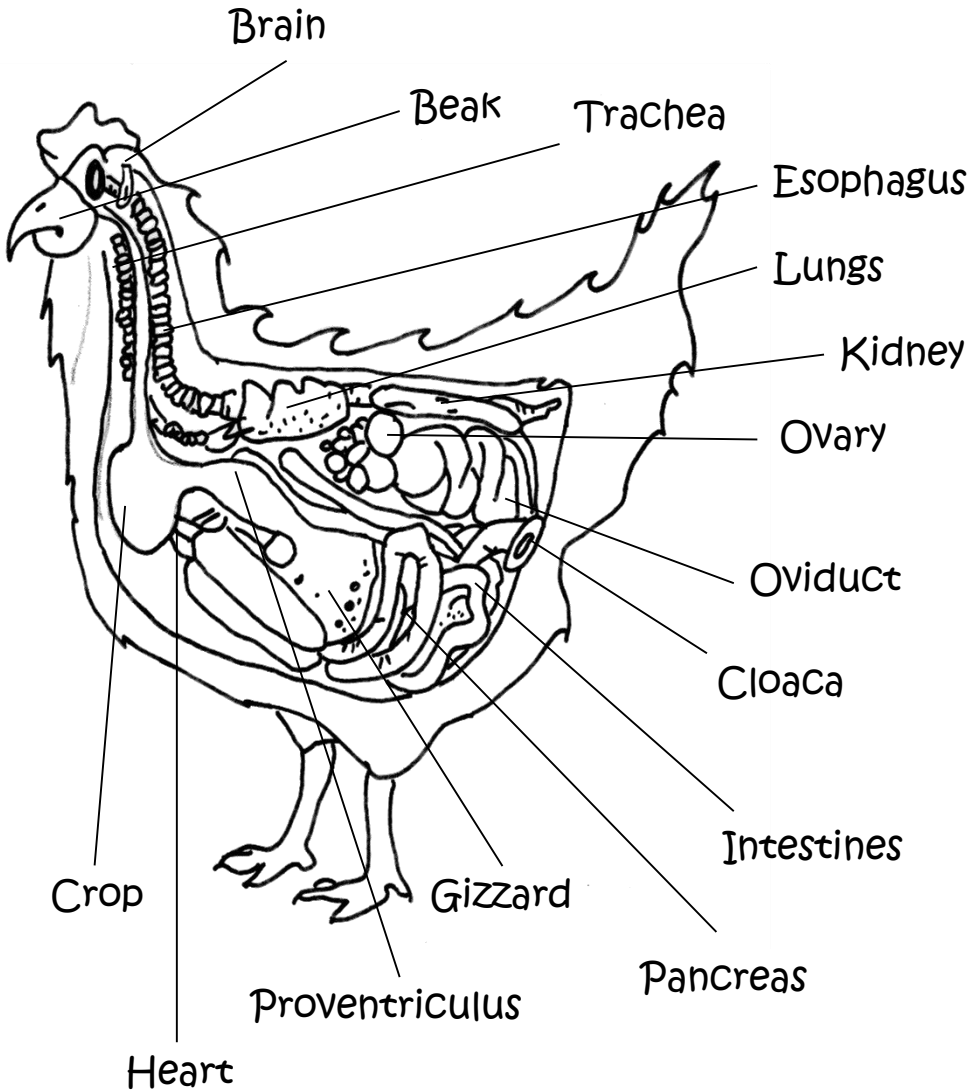
Extra credit: About _____ million laying hens produce some _____ billion eggs each year in the United States

18. Chicken giblets: What are a male and female chicken called?

Answers: **Chicken giblet:** Rooster and hen. **Extra Credit:** 240 million hens and 50 billion eggs. **Matching:** A. egg white B. Air sac C. Yolk D. Chalaza E. Shell

Color my Parts

Then look at the next page to see what they do!!!



These are the Functions of my Parts

BEAK: Picks up food, secretes saliva, moistens food since chickens don't have teeth to chew

ESOPHAGUS: Carries food from the beak to the crop

CROP: Stores food and water before it's goes to the proventriculus

PROVENTRICULUS: I'm where digestion begins

GIZZARD: Grinds food traveling from the proventriculus

LUNGS: Connected to the trachea and bring oxygen to the blood

INTESTINES: Completes digestion and nutrient absorption

HEART: Pumps blood and supplies oxygen to the muscles

22. Chicken giblets: Which of the 8 different "parts" are present in poultry and not humans? (Hint: there are four of them!)

Composting Waste

- Hens produce around $\frac{1}{4}$ lb of poop a day!!! That's a lot of chicken poop or 'black gold' for your garden if composted correctly!
- IF managed correctly the birds can compost the manure using their natural scratching behavior
- Make sure you have a carbon rich litter substrate such as straw or rice hulls where the birds live.
- IF you also garden, consider collecting the litter and composting the litter-manure mix.

Types of composters



19. Chicken giblets: Why did the chicken cross the basketball court?

Answer: She heard the referee calling fowls!

Be A Good Neighbor...

Every city has different rules for Backyard chickens. Here are some basic rules of Comb:



- House your chickens in a clean and sanitary home.
- IF at all possible keep the enclosure at least 20 feet away from neighboring residences.
- Understand and follow your local ordinances

Fun eggzperiments

Look on the next page for some fun experiments you can do with your eggs! Make sure to get permission before starting any experiments!



20. Chicken giblets: What day of the week do chickens dis-like the most?

Answer: FRY-DAY

Fun eggzperiments

Eggzperiment # 1: Spinning Eggs

You need: four raw eggs, a pot and a bowl.

1. Boil two eggs in water for 10 minutes until they are hardboiled.
2. Cool the eggs under water and chill in the refrigerator.
3. Spin the hardboiled eggs and then try spinning some raw eggs.



21. Chicken giblets: Which egg continues spinning after you stop spinning it and which one does not? Why do you think that's so?

Answer: The raw egg still spins because the liquid inside keeps turning since it is not attached to the shell.

Eggzperiment # 2: Squishy Egg

You need: one raw egg, vinegar and a large jar or lidded container.

1. Put a raw egg (in its shell) into the jar and cover it completely with vinegar.
2. Wait two days, then drain off the vinegar.
3. When you touch the egg it will feel rubbery. Be careful not to break the egg membrane. Wash your hands after you touch the egg, since it is still raw.



22. Chicken giblets: Why is the egg squishy?

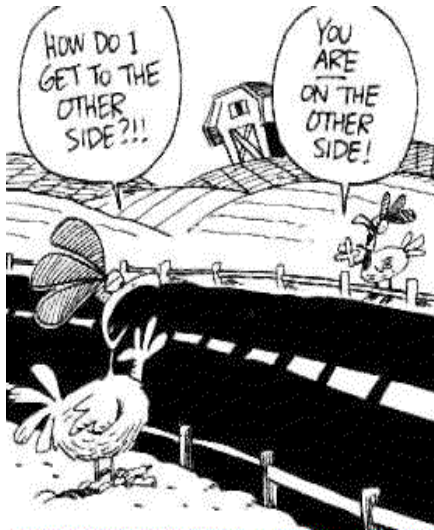
Answer: Vinegar an acid, dissolves calcium in the eggshell. You are 'squishing' the thin flexible membrane just under the shell.

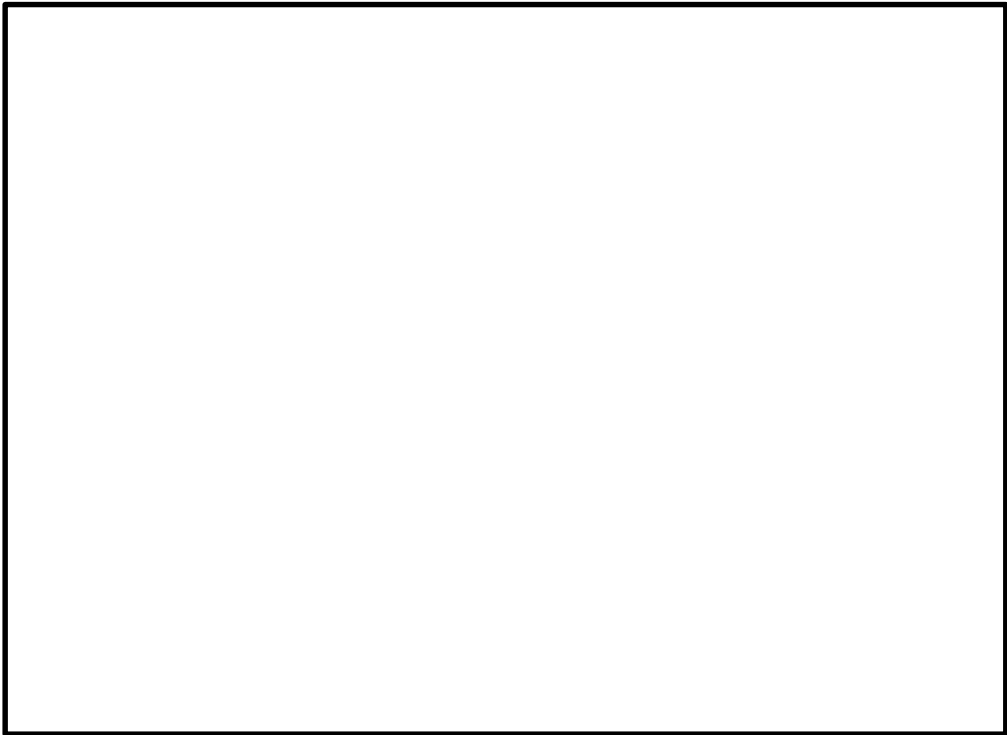
Tidbits for Chicken Giblets

Brown egg or White eggs? As chicken gilet #1 states, we can figure out the color of the eggs the hen will produce based upon the hen's ear color. However, there are no nutritional differences between brown eggs and white eggs.

When will my hens start producing eggs? As chicken gilet #3 states, most hens become sexually mature and begin laying eggs between 18-24 weeks of age. However, most chickens lay eggs as daylight increases (see chicken gilet #7). In addition, certain breeds are more sensitive to light than other breeds. Consequently, it may take longer depending on the season and the breed for a hen to start laying eggs. Reading and practical experience are the best way to figure this out!

All birds including chickens have no bladder (chicken gilet #17). This keeps them light which makes flying easier. Note: Most bird bones are hollow (pneumatic) for the same reason.





Want a chance to have your art on our website? Draw your best chicken picture in the space above OR on a separate 8 ½" by 11" sheet of paper and mail it to the address below.

Want to have your best bird photos in the CDFA chicken calendar? Submit your best photos (at least 3 MB) of birds (any birds) to the address below (More details on our website).

California Department of Food and Agriculture
Animal Health and Food Safety Services
Animal Health Branch
Attn: Felicia De La Torre
1220 N Street Sacramento, CA 95814
(916) 900-5002

http://www.cdfa.ca.gov/ahfss/Animal_Health/Avian_Health_Program.html

Other Resources

Don't be a bird brain! Read and learn as much as you can!



Getting started and general information:

<http://www.citygirlfarming.com/Chickens/GettingStartedChickens.html>
http://www.cdfa.ca.gov/ahfss/Animal_Health/Avian_Health_Program.html

Coop and brooder information:

www.feathersite.com

Biosecurity information:

http://www.aphis.usda.gov/animal_health/birdbiosecurity/

Food safety information:

<http://www.cdc.gov/Features/SalmonellaEggs/>
http://www.foodsafety.wisc.edu/assets/pdf_Files/Egg_Safety_and_the_Backyard_Flock.pdf

Contacts if you have sick birds:

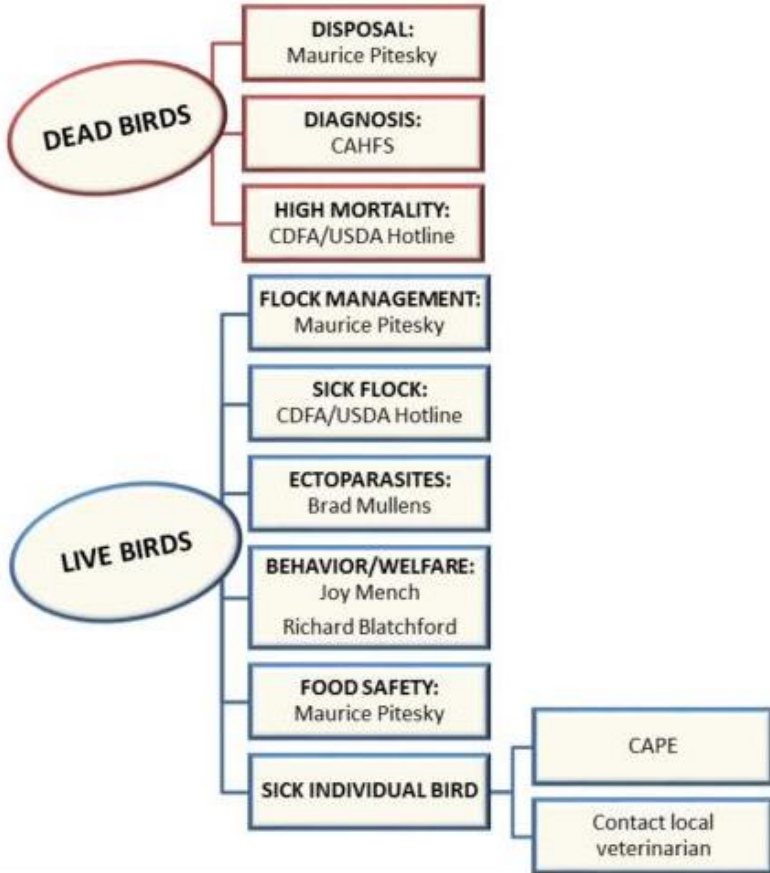
CDFA:

http://www.cdfa.ca.gov/ahfss/Animal_Health/Avian_Health_Program.html or call the Sick Bird Hotline at 866-922-2473

CAHFS: <http://cahfs.ucdavis.edu/contact/index.cfm> (or call: 530-752-8700).

You can also email questions to Dr. Cluck at: mepitesky@ucdavis.edu

Who you Gonna Call?



For specific contact information go to:
<http://ucanr.edu/sites/poultry/contact/>

Chicken Skool!

Come join me and other bird brains at our next chicken skool. See below for all the details



UC DAVIS

VETERINARY MEDICINE

Center for Continuing Professional Education

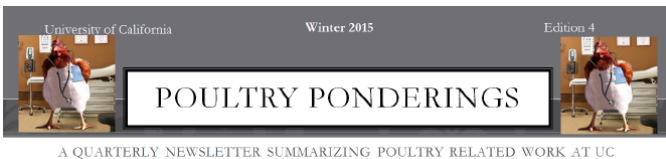
Let's talk AND learn Chicken.

UC Davis periodically hosts different types of "chicken skool" for vets and other interested parties. Go to www.vetmed.ucdavis.edu/CE for more information.

Interested in learning more about what University of California is doing with regards to poultry?

Sign up for our quarterly newsletter

“Poultry Ponderings”



UCD Veterinary Students in the Field

by Dr. Rodrigo Gallardo

More than a dozen veterinary students this fall semester have visited poultry farms in California as part of their curriculum, and there are more to come. This initiative is part of the Veterinary Medicine Teaching Hospital (VMTH) rotation, VET407 and VET 416 for first and second year veterinary students. A year ago the choices in this rotation involved spending time in the teaching hospital shadowing clinicians in their small or large animal duties. Now they have the opportunity to choose a poultry farm visit and learn some of the duties a poultry veterinarian performs in the field. Students have been requesting to be part of this experience, which as they comment change their perspective of the poultry business and broadens their knowledge about veterinary medicine. Recent farms visited include Gemperle and Sunrise farms. A strict biosecurity plan is used before and during these visits, biosecurity forms are signed before the trip, and all the necessary protective equipment is used during the visit.

If you would like to receive students at your farm or offer externship possibilities please contact Dr. Rodrigo Gallardo at UCD (530) 752 1078.

Mixing and Matching Avian Influenza Viruses in Quail

by Dr. Beate Crossley

Did you know that influenza viruses have the ability to mix and match genes? Recombination, the technical term for the viral process of trading genes, is the reason we need to have a new flu vaccine formulated every year. Scientists are able to predict the most probable outbreak influenza virus strains each year, based on their knowledge of which specific flu viruses had been circulating in the population in the prior year. Birds are extremely helpful in providing the information, not just for making the most effective new flu vaccine each year, but also for giving us a better understanding of the small and subtle changes happening as the flu viruses naturally evolve. Influenza viruses make many mistakes in their genome as they replicate, as all living things do. (cont. on next page)



Corurnix Quail. Image courtesy of poultryhelp.com

PLEASE CONTACT MAURICE PITESKY AT MEPITESKY@UCDAVIS.EDU OR 530-752-3215 WITH QUESTIONS OR COMMENTS

If you are interested email mepitesky@ucdavis.edu

Dr. Cluck is not a quack



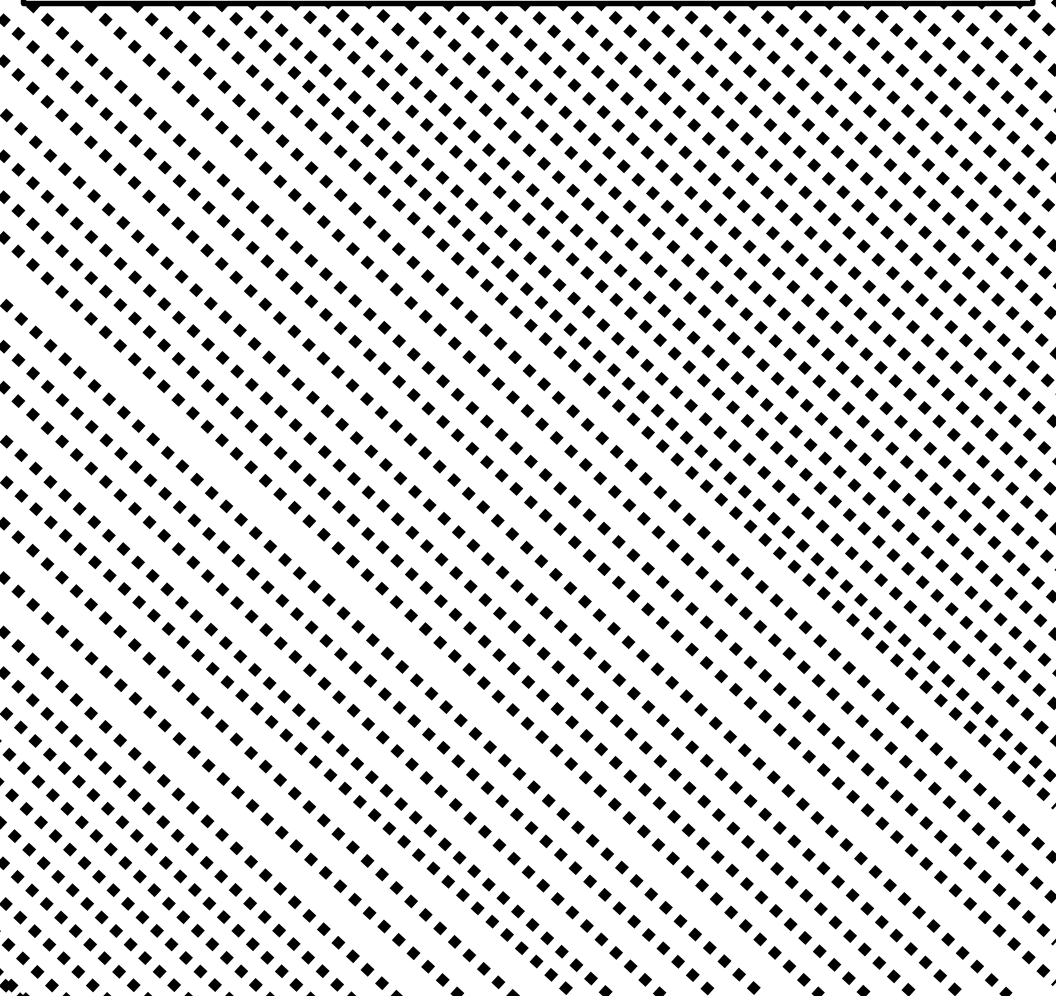
UC Davis School of Veterinary
Medicine
Cooperative Extension
mepitesky@ucdavis.edu
530-752-3215

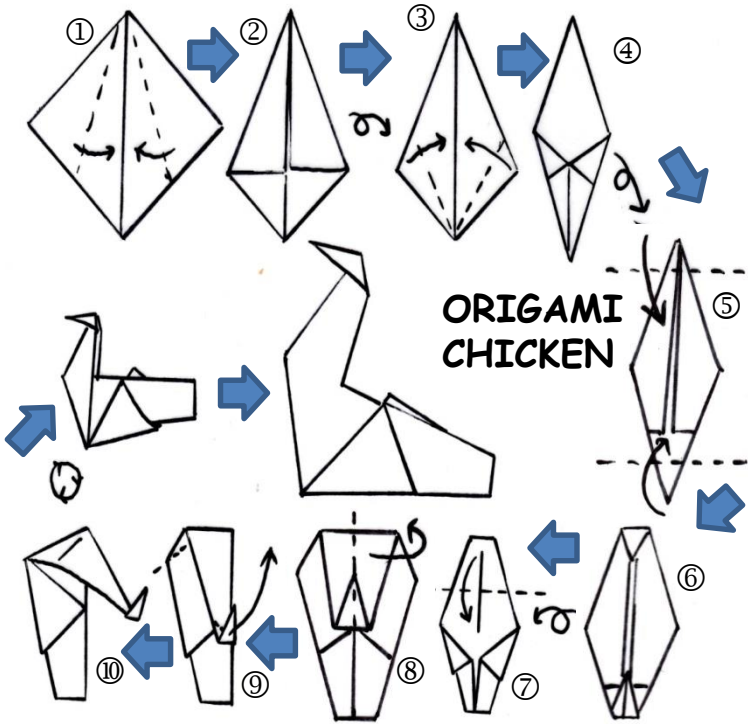
Acknowledgements

Our flock of writers includes in no particular pecking order:

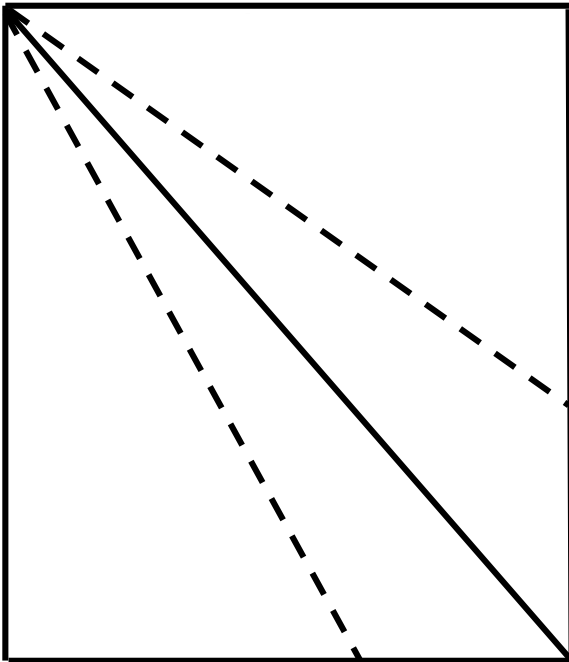
Evan Adler, Myrna Cadena, Jenna Celigja, Felicia De La Torre, Asli Mete, Maurice Pitesky, Nancy Levine-Sinai and Dennis Wilson

**THIS IS THE BACK OF
THE ORIGAMI CHICKEN**





**ORIGAMI
CHICKEN**



STEP 1:
CUT OUT
THIS
SQUARE

STEP 2:
FOLLOW
THE ABOVE
INSTRUCTI
ONS
TO MAKE
YOUR
OWN
ORIGAMI
CHICKEN!!!