

Hatching Curriculum: Quail



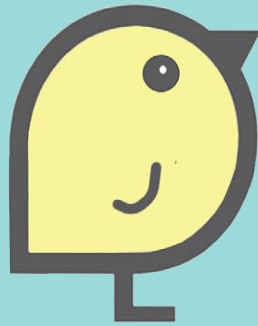
UPDATED 10/6/22

This curriculum/activity book was developed for third graders. Please adapt for your students as needed.

This curriculum is set up as a book you can print for individual students or for your entire class. When **printing**, set the paper orientation in your printer settings for **landscape mode** (not portrait) for best results.



My Hatching Book



— ● ● ————— ● ● —
YOUR NAME

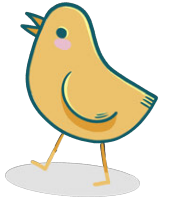
What's in this book

- **Hatching Countdown Chart**
- **Getting Ready: All About Quail**
- **Week 1: All About Eggs**
- **Week 2: How Chicks Grow**
- **Week 3: How Chicks Hatch**
- **Week 4: All About Chicks**



Hatching Countdown Chart

Number squares 1-18. Cross off one square daily until hatching day!



Set eggs

Week 1

--	--	--	--	--	--	--



Candle eggs

Week 2

--	--	--	--	--	--	--



Lockdown

Hatching day!

Week 3

--	--	--	--

Paper Chain Countdown

Make a paper chain and tear off a link each day until hatch day!

1. Draw an outline of an egg on a piece of white paper.
2. Cut out the egg and write your hatch date on it
3. Cut out 18 strips of colored construction paper
4. Staple or tape links together to make a chain
5. Attach the first link to your egg
6. Tear off the bottom link each day until you get to the egg!



Getting Ready

All About Quail



Let's Talk



What do you already know about quail? What would you like to learn?
Talk about these questions with your teacher, parent, or friend.

- Where do quail come from?
- What do quail do for people?
- What do quail eat?
- How long do quail live?
- Why do quail roosters crow?
- How do quail take a bath?
- Can you name the parts of a quail?
- How are quail different from chickens?
- If you have ever been around quail, what did you notice about their behavior?

My own question:

Fun Facts: Japanese Quail



There are many kinds of quail. Japanese quail (called coturnix quail) have been raised for eggs and meat for about 900 years. Quail live for 3-5 years. Quail **hens** can start laying eggs just six weeks after hatching! A quail hen can lay up to 300 eggs every year. A quail **rooster** crows, but it sounds different than a chicken rooster. [See a video of crowing quail.](#)

Quail don't have teeth. They eat small stones called **grit** to help them digest their food. Quail eat mostly grains, seeds, worms, spiders, and bugs.

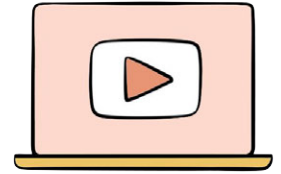
Quail take baths, but not in water. They take **dust baths** by laying down on the ground and throwing dirt and sand all over their bodies! This keeps their feathers clean and keeps mites (biting bugs) away.

In 1990, Japanese quail hatched on the Mir Space station.

[See a video of quail floating in space!](#)



All About Quail!



**Watch to
answer these
questions:**

When do quail
chicks first
start to get
feathers?

Where do
those feathers
grow?



Quail vs Chicken

Quail and chickens are the same in some ways and different in others.



WHAT'S THE SAME?

Chicken and quail both:

- Lay eggs
- Have beaks and feathers
- Eat grains, seeds and bugs
- Can't fly very well
- Take dust baths

WHAT'S DIFFERENT?

Chickens:

- Lay big eggs
- Lay eggs in nests
- Sleep on a perch, not the ground

Quail:

- Lay small eggs
- Lay eggs on the ground
- Sleep on the ground



Quail vs Chicken

Quail

Quail & Chicken

Chicken

Parts of a Quail

Draw a line from the word to the part of the quail.

FEET

BEAK

BACK

WING

TAIL

EYE



California vs Japanese Quail

The California quail is our state bird. Here's how it's different from the Japanese quail.



California Quail:

- Have a plume of head feathers
- Are in the New World quail family
- Are not raised for eggs



Japanese Quail:

- Don't have a plume of head feathers
- Are in the Old World quail family
- Are raised for eggs

Show what you know!

QUAIL



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graph TD; Q[QUAIL] --- L1[ ]; L1 --- C[can]; Q --- L2[ ]; L2 --- A[are];
```

can

have

are

Week One

All About Eggs

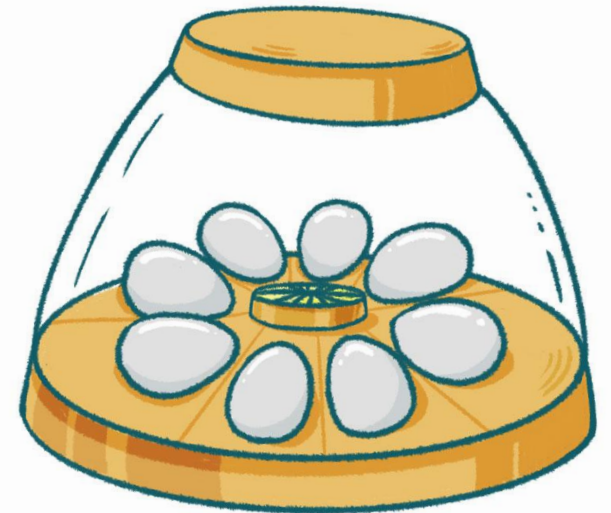


What's Happening This Week

This week you will start your **incubator**. A heater will keep the air inside the incubator warm. A motor will turn your eggs many times a day, just like a mother hen would! Turning helps keep the chicks from getting stuck to one side of the shell.

You will fill up one section of the water well on the inside of the incubator. Every day, you will check the outside water well. If the water level goes below the top of the guide, you will add more water. Water helps the air in the incubator stay moist, or **humid**. This keeps the **membrane** in the egg from drying out.

Your job of adding water to the incubator is very important!



Let's Talk



What do you already know about eggs? What would you like to learn?
Talk about these questions with your teacher, parent, or friend.

- How often does a hen lay an egg?
- How are eggs formed?
- Why are eggs different colors?
- What are the parts of an egg?
- How does a developing chick use each part of the egg?
- How does an egg get fertilized?
- Does a hen need a rooster around to lay an egg?
- Are eggs from the grocery store fertile?

My own question:

Fun Facts About Quail Eggs



A quail hen starts laying eggs when she is two or three months old. Most quail hens can lay 250-300 eggs a year. That's a lot of eggs!

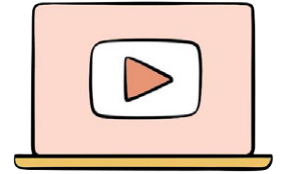
Most quail eggs are speckled. The eggs in your incubator are blue. The hens that laid your eggs have a mother and a father who have a special **gene** that they passed on to their babies. It's called the celadon gene. Celadon is another name for blue. Celadon quail come in all different colors, but they all lay blue eggs.



A **fertilized egg** is an egg that can develop into a chick. A hen needs a rooster to lay a fertilized egg. But if a rooster isn't around, she will still lay eggs! Eggs from the grocery store or usually not fertile. Fertile eggs won't develop unless a hen sits on them or they go into an incubator.

If the fertile egg gets the right amount of heat and **humidity**, the chicks will grow. It takes 18 days for a chick to grow big enough and strong enough to hatch.

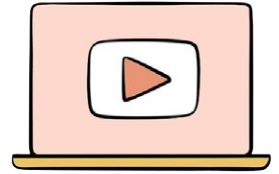
How Eggs are Formed



Listen to
answer this
question:
What are
eggshells
made of?
(mostly)



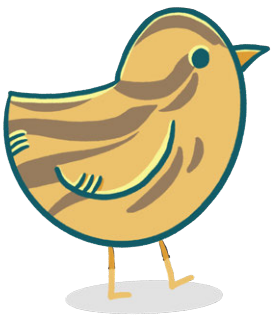
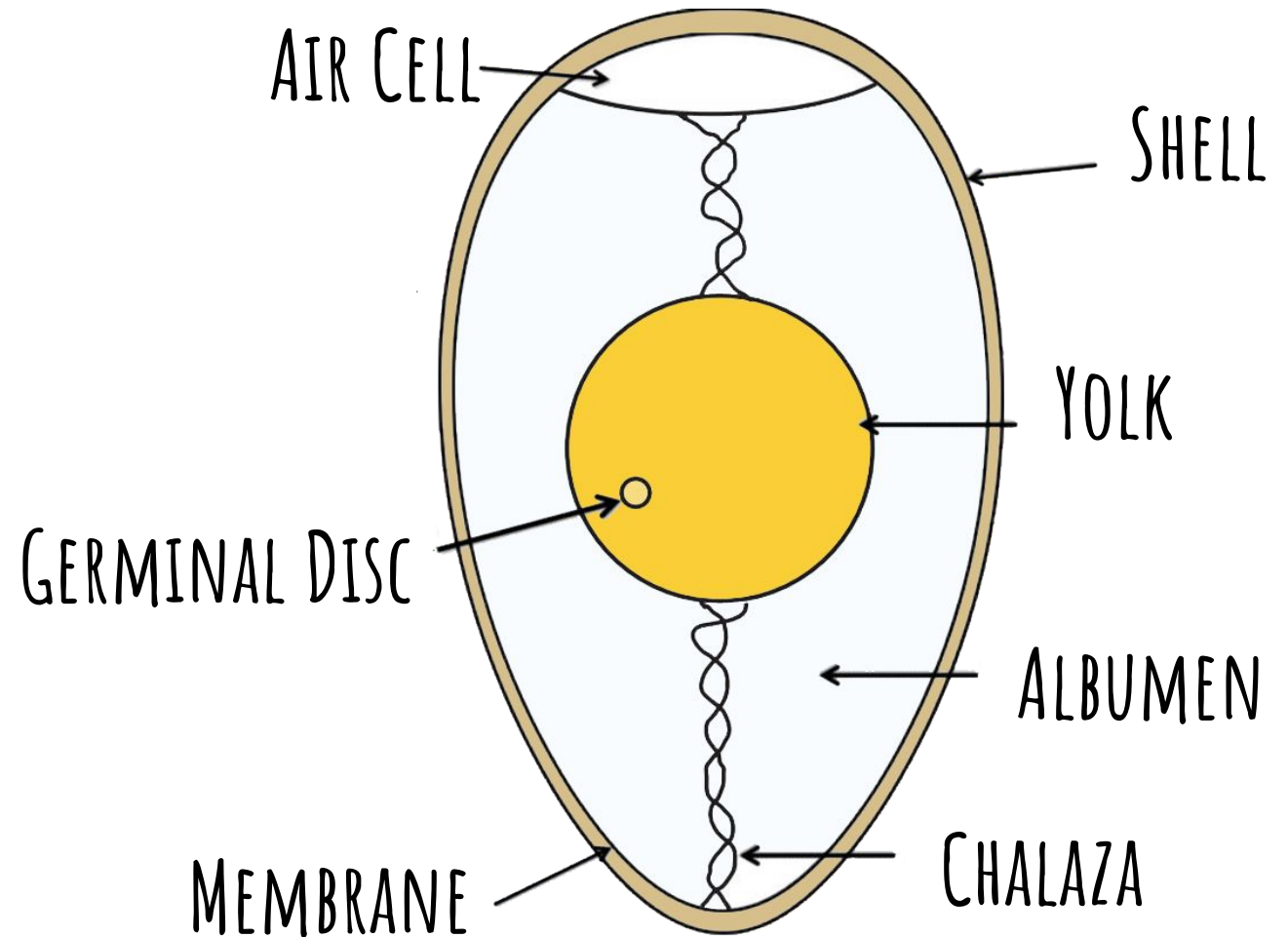
Parts of an Egg



Listen to
answer this
question:
How can you
make a squishy
egg at home?

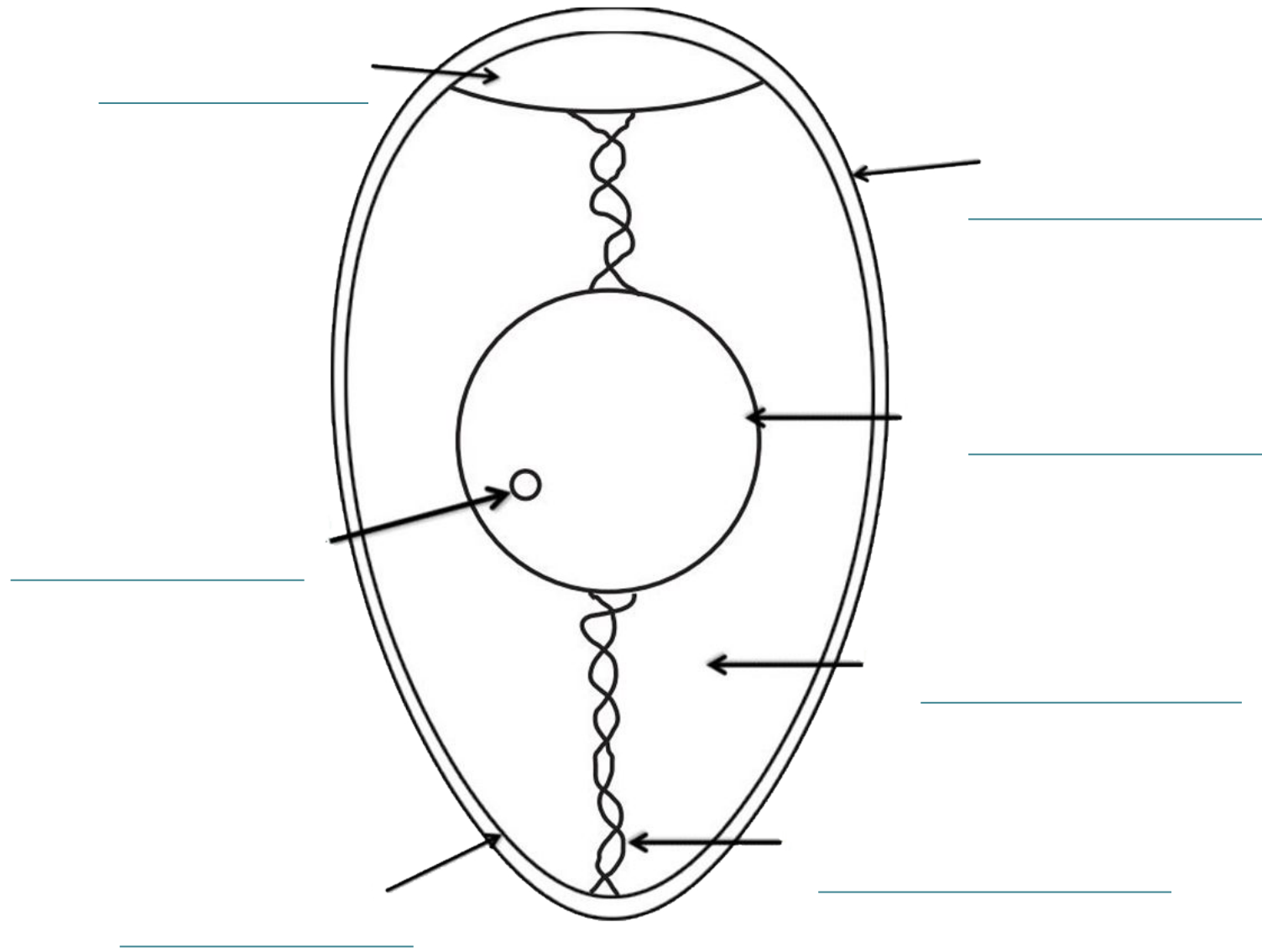
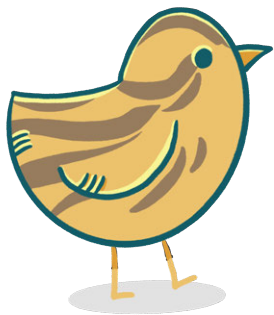
Egg Anatomy

Parts of an Egg



Parts of an Egg

Color the parts of the egg and label them!



How Chicks Use Parts of an Egg

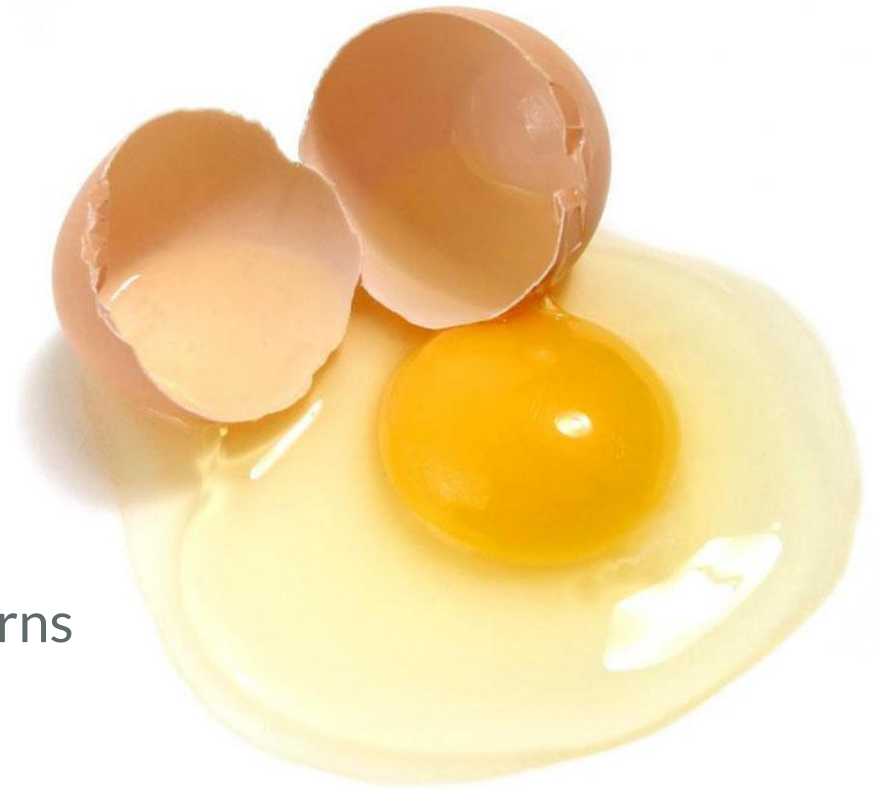
SHELL - keeps the chick safe

ALBUMEN - is like a pillow for the growing chick. Sometimes it is called the egg white because it's the part that turns white when you cook it!

YOLK - gives the chick food and water

AIR CELL - holds air for the chick to breathe just before hatching. The cell starts out small, but gets bigger as the chick grows.

Can you see the air cell in this picture?



Science Eggs-periments

These fun activities are from [A Kids Guide to Keeping Chickens](#) by Melissa Caughey



WALKING ON EGGSHELLS

Place two dozen eggs still in their cartons side by side and stand on top of them barefoot.

What happens?

Do they break?

What do you think keeps them strong?



RUBBER EGGS

You can make a shell-less egg by placing a regular (raw, uncooked) egg in a cup of white vinegar.

Over the course of the next few days, the vinegar will deplete the shell of its calcium. Only the inner lining (membrane) will remain.



Science Eggs-periments

These fun activities are from the [American Egg Board](#) | [See all activities](#)

EGG BRUSH UP

What happens to our teeth when we drink soda? Eggshells can help us find out!



Get experiment

STRONG AS AN EGG

What does an egg have to do with architecture and strength? You'll find out when you try this simple experiment!



Get experiment

My Photos

SETTING UP THE INCUBATOR

Week Two

How Chicks **GROW**



Let's Talk



What do you already know about how chicks grow inside the egg? What would you like to learn? Talk about these questions with your teacher, parent, or friend.

- How do chicks develop in the egg?
- Why do we candle our eggs?
- What will we see when we candle our eggs?
- Why do we wash our hands before and after holding eggs?
- Why don't all eggs grow chicks?
- How did people incubate and candle eggs before electricity?

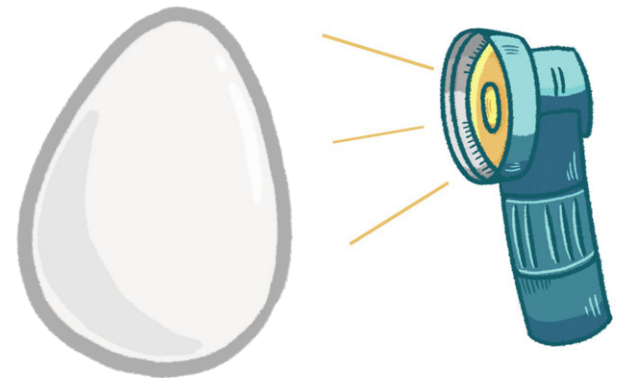
My own question:

What's Happening This Week

This week you will **candle** your eggs by shining a strong light through the egg so you can see the chick **embryo** inside.

Not all eggs are **fertile**, even if a rooster is living with the hen that laid the egg. If you candle an egg and the light shines brightly through it, it is not fertile. It's called a clear egg. You can take any clear eggs out of your incubator and throw them away. They will never hatch a chick and they are not good to eat.

If you see a dark spot (the eye) and some **blood vessels** when you candle, you will know that you have a chick inside the shell! If you hold really still, you may see the chick moving inside. If you are candling on Day 9, look for the beak. If you can see it, watch to see if it opens and closes.

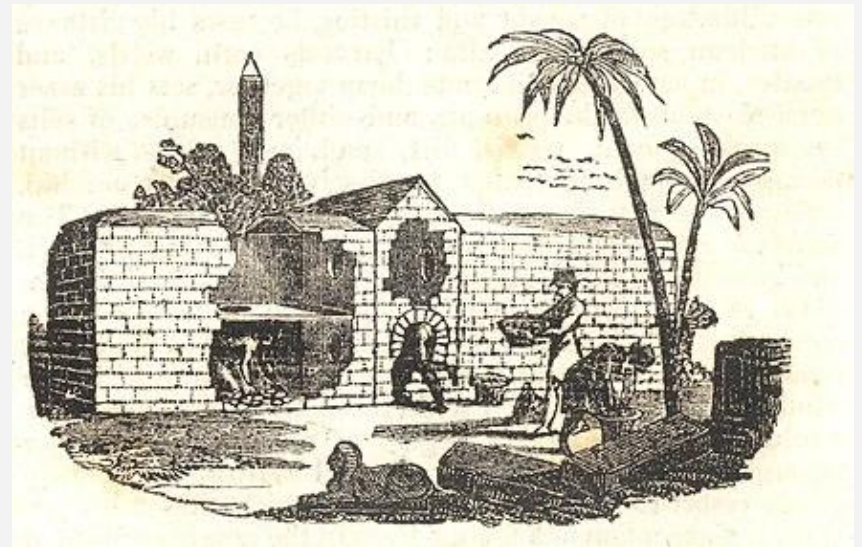


Fun Facts: History

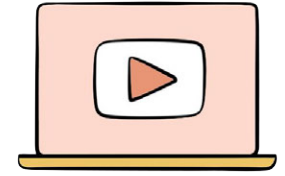


Before electricity, people would hold an egg up in front of a candle to look through it. That's why we call it **candling**!

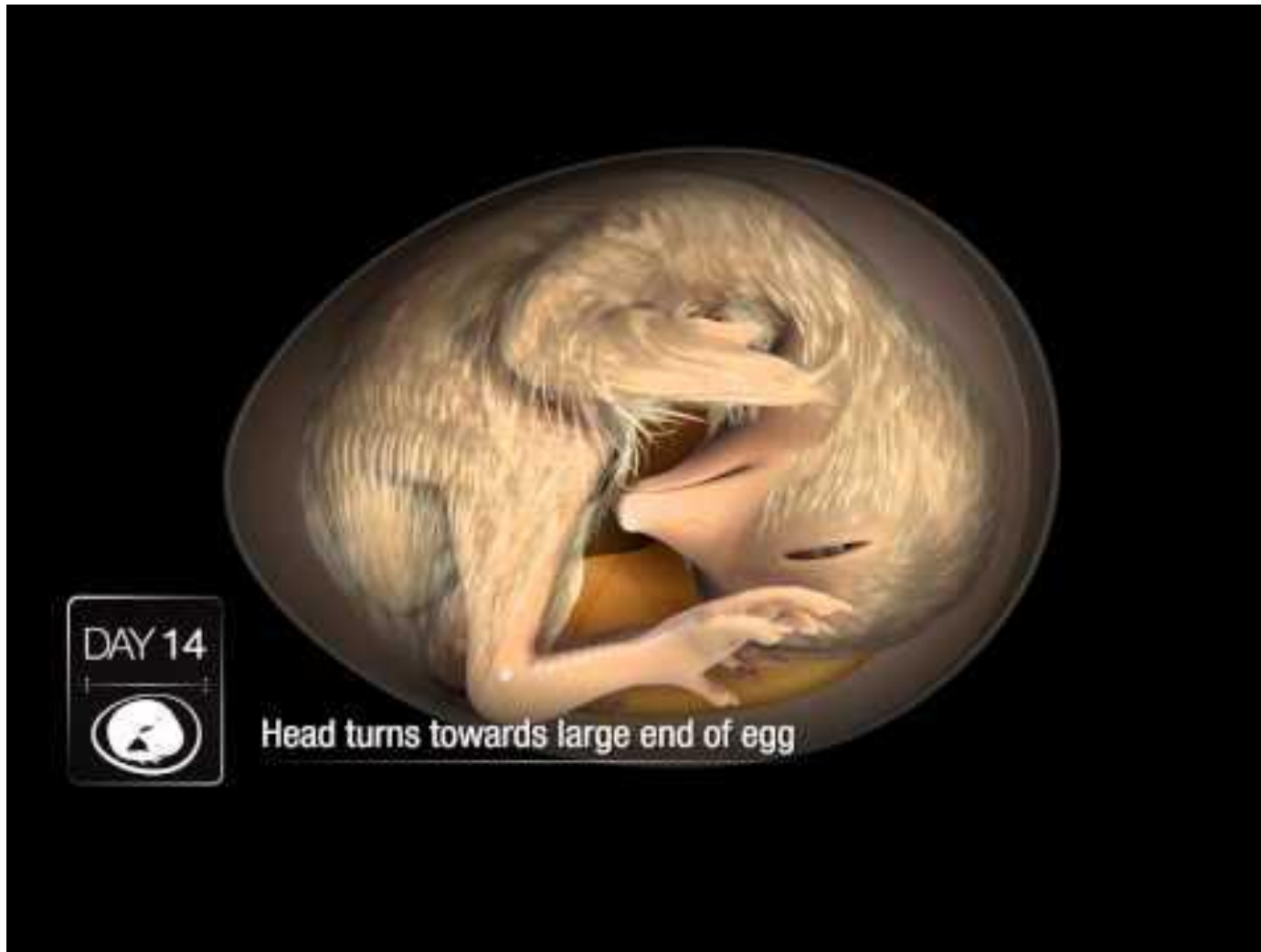
In Egypt, they built large ovens out of mud brick to incubate eggs. One of these ovens was so big that they could warm 80,000 eggs at one time. All of those eggs had to be turned by hand. Workers did not have a way to tell how hot the oven was. They would hold eggs up to their eyelids to feel if they were warm enough. In the early 1900s, Egyptians used these ovens to hatch out 9 million chicks every year.



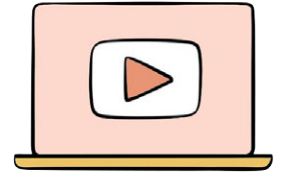
How Chicks Grow Inside the Egg



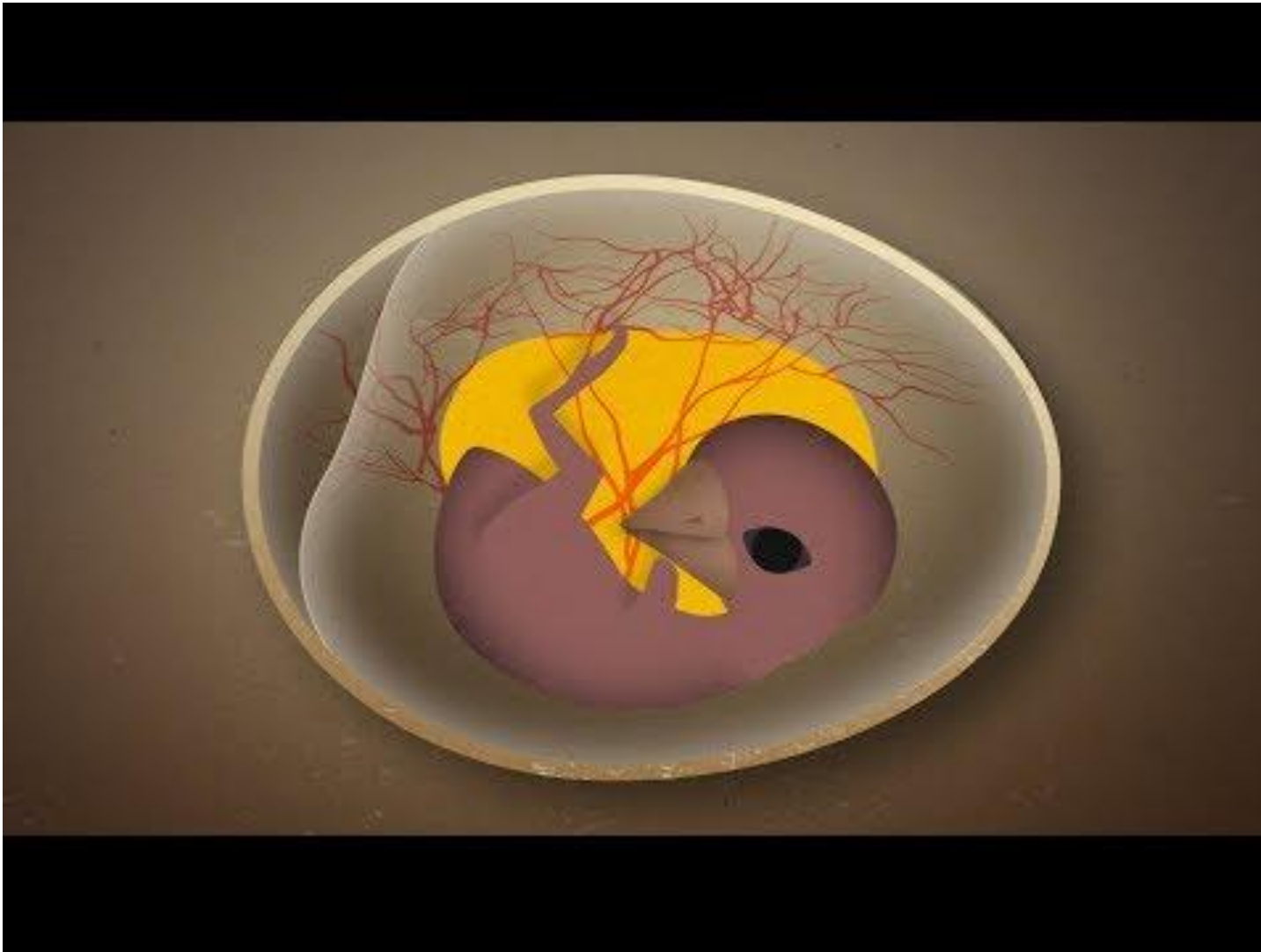
Read to
answer this
question:
On what day
does the
chick's heart
begin to beat?



How Chicks Get Oxygen Inside the Egg



Listen to
answer this
question:
What do the
blood vessels
in the egg do
for the chick?



Show what you know!

EGGS

are

have

need



Make Your Own Candler

This activity is from [National Agriculture in the Classroom](#)

MAKE AN EGG CANDLER

You will need the high-intensity LED flashlight and modeling clay.

Wrap the clay around the top of the flashlight to create a nest for the egg. The clay will seal between the flashlight and the egg and will help focus the light through the egg.



My Photos

CANDLING EGGS

Week Three

How Chicks **HATCH**



Let's Talk



What do you already know about how chicks hatch? What would you like to learn? Talk about these questions with your teacher, parent, or friend.

- Why do eggs all hatch at once?
- How does a chick get ready to hatch?
- When does a chick start breathing?
- How does a chick break the shell?
- How long will it take to hatch?
- Will all the chicks hatch?
- Why are chicks wet when they hatch?
- Is a chick hungry or thirsty after it hatches?

My own question:

What's Happening This Week:

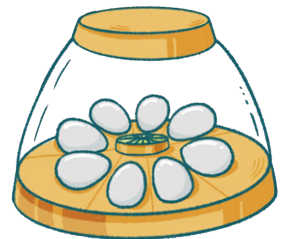
Lockdown



This week you will put your incubator on **lockdown** because your chicks are getting ready to hatch! Here is what you will do on Day 14:

1. Wash your hands really well to keep your chicks safe.
2. Open the incubator and take the eggs out. Put the eggs in a safe place where they won't roll away and crack.
3. Take out the **turning tray** and put in the **hatching mat**.
4. Fill up both sides of the water well and replace the well cover.
5. Put the eggs back in the incubator and put the top back on.

Now your chicks are ready and will start hatching soon. On Day 16 and 17, listen closely. When a chick **pips** through the **membrane**, it will breathe the air in the **air cell**. Now it can peep! **Make a peep sound and see if your chicks answer you.**



What's Happening This Week:

Brooder Set Up

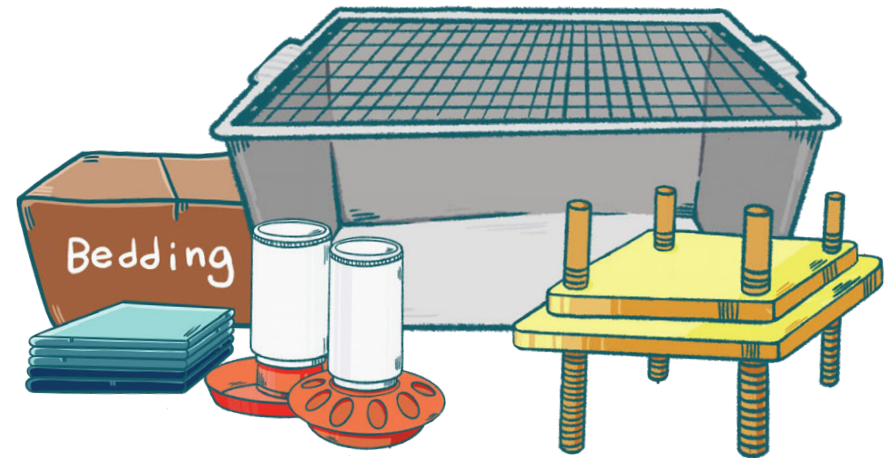


This week you will set up a place for your chicks to live. It's called a brooder box. It is a safe place that has everything your chicks need. Here are the things you will put in their brooder box:

- warming plate
- feeder
- waterer
- pads and bedding

Set up your brooder box on Day 15 so it will be ready when your chicks hatch. While your chicks are hatching, you can fill up the **feeder** with **chick feed** and fill up the **waterer** with water.

After a grown-up has put your chicks in the brooder, it's time to watch them to see what they do!



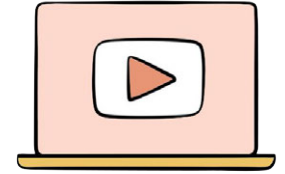
Fun Facts: Chick Hatching



It can take a chick a day or two to hatch. There is a lot happening inside the shell! First, your chick takes in the rest of the yolk. The yolk will give the chick enough food and water for the first two or three days of life. Next, the chick will turn so its head is at the wide end of the egg. It will **pip** (poke a hole in) the **membrane** of the **air cell** and start breathing. It can peep now! Can you hear it peep?

Its next job is to pip through the egg shell. It is hard work. The chick will use its **egg tooth** to pip through the shell. Then it will rest. Its next job is to pip all around the shell. It's called zipping. It can take a chick many hours to zip. After zipping, the chick will push on the shell with its legs. Pushing is hard work, too. Finally, the chick will come out of the shell. It is all wet because the inside of the egg is wet. It will need to dry out. The incubator has a fan in it. Can you hear the fan? It pushes the warm air around so the chicks can dry out fast. When chicks are dry their **down feathers** fluff up. Puffy chicks are so cute!

How Quail Chicks Hatch



(Not So) Fun Facts: When a Chick Dies



There are a LOT of things that need to go right for a chick to hatch. In nature, not all eggs hatch. Sometimes a chick will pip but not hatch. There are many reasons for this. The chick could be sick. The chick's legs might not be strong enough for it to get out. The chick's body might not be formed correctly. If the chick had hatched, it would not be able to move around and get food easily. Other chicks might peck at it. It would not be a good life for the chick. Sometimes a chick might be strong enough to get out of the shell, but is not healthy enough to live for very long. This happens even when mother hens hatch out their eggs.

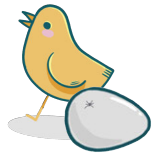
We feel sad when a chick dies or doesn't hatch. We wish every chick can live to be healthy and strong. It's okay to feel sad. There are some things you can do to feel better. You can take some time to say goodbye to your chick or unhatched egg. You can put it in a box and bury it in a place where you can visit. Mark the grave with a special rock, plant, or flowers. You can light a candle for your chick that died. You can thank your little chick for its short life and say a prayer for it. You can also write down how you feel or talk to a grown up who is a good listener. Ask for a hug if you need one. There are many ways to help yourself feel better. When you are ready, hold one of your healthy chicks in your hands and see if that helps cheer you up.

Parents and teachers, see our Recommended Books section at the end of this document to find books for kids on death and grieving.

My Hatch

Write and draw a picture.

What did you like the most about watching your chicks hatch?



My Photos

LOCKDOWN

My Photos

HATCHING

Week Four

Caring for your Chicks



Let's Talk



What do you already know about how chicks grow? What would you like to learn? Talk about these questions with your teacher, parent, or friend.

- What do chicks need to live?
- What do quail eat?
- How does a chick chew its food?
- What instincts do chicks have?
- How does a hen take care of chicks?
- How do I hold a chick?

My own question:

What's Happening This Week: Holding Chicks



Once your chicks are in their brooder and your parent or teacher says it's okay, you can hold your chicks. Here are some things you should know:

1. **ALWAYS** wash your hands **BEFORE** and **AFTER** you hold a chick.
If you don't, you can get sick from germs that chicks naturally have.
2. Put one hand **UNDER** the chick and one hand **OVER** it.
This will keep your chick from jumping out of your hands and will keep your chick warm.
3. **Hold the chick close to the floor.**
If it jumps away, it will not get hurt from a fall.
4. **Pet your chick gently or just watch it up close.**
Never kiss a chick!



Fun Facts About Chicks



Quail chicks don't have teeth to chew their food. Chicks start by eating **feed** called chick starter. Take a look at the feed. Do you see how small each piece is? The small pieces make it easier for the chick to digest. When they get ready to go outside, they will eat grit. **Grit** is small pieces of rock that will stay inside the chick. The grit helps grind up the food!

Chicks stay close to their mother. A mother hen leads chicks to their food and water. She watches and talks to them. If she sees a hawk, she will cover her chicks to keep them safe. When a chick is covered, it will be quiet, and sometimes even fall asleep. Try this with your chicks. Pick one up that is chirping. Cover it with your hand and see what happens!

Chicks are born with a pecking **instinct**. That means they are born knowing how to peck at the ground to look for food. If their mother pecks, they will come running. Try it out. Set a chick on the floor. Move away a little bit and set some food on a paper towel on the ground. Take your finger and peck it on the floor next to the food. Does your chick pay attention? Did it come running? One bad thing about the pecking instinct is that chicks will try to eat poop. Gross! You can stop the chicks from eating poop by putting a little bit of **bedding** on top of the **pads** in the **brooder box**.

Show what you know!

CHICKS

```
graph TD; CHICKS --- are; CHICKS --- have; CHICKS --- need;
```

are

have

need

Let's Sing

I'm a Little Quail Chick

by Susan Peters

shown here with modifications

Sung to the tune of "I'm a Little Teapot"

From ScienceNetLinks.com



I'm a little quail chick,
ready to hatch,
I'm pecking at my shell, I
scratch, scratch, scratch.
When I crack it open, out I'll leap,
Fluff UP my feathers and
cheep, cheep, cheep!

Name Your Chicks

Draw a picture or put a picture of your chicks on this page.
Write their names under each picture.

My Photos

MY CHICKS

Vocabulary List

Air cell (or air sac) - a small pocket of air inside the large end of the egg. The chick will use the air to breathe just before hatching.

Albumen - the clear liquid in the egg sometimes called the egg white that is like a pillow for the chick embryo

Beak - a chicken's mouth. It is pointed to help it eat and clean its feathers.

Bedding - material for the brooder box to help it stay clean so the chicks won't eat their poop. Bedding can be pine shavings, shredded paper, straw, pine needles or dry leaves

Blood vessel - a tube that brings blood to a chick embryo

Breed - a group of chickens that looks the same, acts the same, and lays the same color eggs. A breed of chicken will have the almost the same feather color and patterns.

Brooder box - a place where chicks can eat, drink, and stay warm

Candle - to shine a bright light through an egg to see the embryo

Chick - a baby chicken

Chick feed - food that is ground up into very small pieces so it is easy for chicks to eat

Down - the soft, fluffy covering on a new chick before they grow adult feathers

Dust bath - an area in the dirt where chickens can roll around and throw sand and dirt on their bodies

Vocabulary List

Egg tooth - a hard knob on the end of the chick's beak that helps it break through the shell

Embryo - an animal in the first stage of growth that can't live on its own yet

Feeder - a container that holds chick feed

Fertile egg - is an egg that has been fertilized by a rooster and can grow a chick

Genes - DNA that determines what traits are passed on from parents to their children

Grit - small rocks that grind up food inside a chick or chicken

Hatch - when a chick comes out of its shell

Hatching mat - a mat that prevents chicks from slipping on the floor of the incubator

Hen - a female chicken that is one year or older

Humidity - water vapor or moisture that is in the air

Incubator - a device for keeping eggs warm and moist

Lockdown - steps taken to let the egg get ready for hatching like removing the hatching tray, adding the hatching mat, and adding water to the water well to increase humidity

Membrane - a thin lining on the inside of the egg

Pip - the hole a chick makes in the the membrane or shell while hatching



Vocabulary List

Rooster - a male chicken that is at one year or older

Shell - the hard outer covering of the egg

Turning tray - a tray in the incubator that is moved by a motor to turn the eggs

Waterer - a container that holds water for chicks

Yolk - the yellow part of the egg that provides food for the embryo

Zip - the circle the chick pecks in the eggshell to hatch



Recommended Books



Non-Fiction (not specific to quail)

Let's Hatch Chicks by Lisa Steele

Hatching Chicks in Room 6 by Caroline Arnold

Where Do Chicks Come From by Amy Sklansky

Chicks & Chickens by Gail Gibbons

A Kids Guide to Keeping Chickens by Melissa Caughey

The California Quail by Julie Lundgren

Fiction

Quincy the Quail & the Mysterious Egg by Barbara Renner

Quincy the Quail Leads His Family on an Adventure by
Barbara Renner

How the Quail Earned his Topknot by Richard Oldenburg

Queenie Quail Can't Keep Up by Jane Whittingham

Dale the Quail: An Adventurous Tale by Meagan Huddleston

Books about death and grieving

The Invisible String

The Memory Box

Where Are You

Help Me Say Goodbye

I Miss You

Why Do I Feel Sad

The Sad Dragon

Losing a Loved One

Over the Rainbow



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