

**It Started With An**  
**EGG**



***Teacher Idea Packet***  
***Pittsburgh Zoo & PPG Aquarium***



# It Started With an Egg

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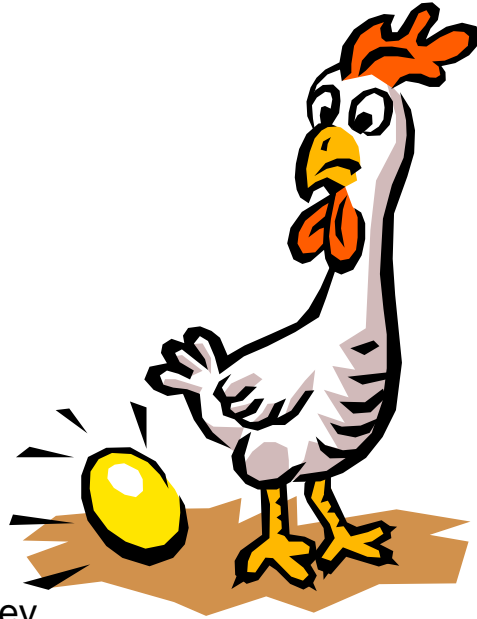
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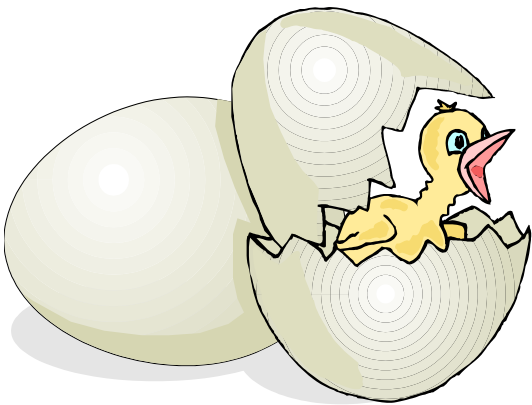
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# It Started With an Egg

## Background Information

Which came first, the chicken or the egg? No matter how you answer this question, eggs are truly one of nature's wonders. Not only do they provide a rich food source for us and for many other living creatures, but they also provide food, water, and protection for the developing baby animals inside them.

So, how do eggs manage to accomplish all this? Take a look at the structure of a common chicken egg.

### On the Surface

The **shell** of the egg is hard and smooth. It protects the embryo as it develops inside. It is porous, allowing for gas exchange, and is the first line of defense against bacteria. Even though the shell is relatively thin and brittle, it is able to bear the weight of the parent bird. This is because of its shape. The shell is an oval (technically, it's an oblate spheroid). When pressure is put on its ends, the curve of the shell distributes the force evenly, giving it amazing strength and structural integrity. Lining the shell is the **chorion**. This membrane allows the embryo to exchange oxygen and carbon dioxide. It also provides a second line of defense against bacteria.

### Inside the Egg

The albumen, or white of the egg, provides protein and water to the growing embryo. There are two layers: thick and thin. It makes up 2/3 of the egg's weight (without shell). The yellow yolk is surrounded by the **vitelline membrane**. The yolk contains most of the egg's vitamins and minerals, including protein and fatty acids. It nourishes the developing embryo. It makes up the other 1/3 of the egg's weight (without shell). The **chalazae** anchor the yolk in the middle of the shell, and act as shock absorbers. They appear as two twisted, white "strings" connected to the yolk and albumen.

After the egg is laid and begins to cool, a small pocket of air that forms at the wide end of the egg. The longer the egg sits, the more moisture evaporates through the pores in the shell. The fresher the egg is, the smaller this **air cell** will be. This is why a fresh egg sinks in water, but an old egg will float.

### Growing the Embryo

The **germinal disc** appears as a small white spot or depression on the yolk. This is the spot where fertilization occurs. It will develop into the embryo. As it grows, the **amnion**, a membrane filled with amniotic fluid, surrounds and protects the embryo. The **allantois** forms to store the wastes of the embryo. As it grows larger, the allantois takes part in the gas exchange.

### Oviparous Animals

Because of its many advantages, eggs are one of the main ways animals reproduce. This "egg-ceptional" reproduction can take many forms. **Oviparous** animals lay eggs that develop outside the female's body. Some reptiles, fish and invertebrates have fertilized eggs that develop inside the female's body, but do not get nutrients from it. Instead, they have a yolk sac or similar source of nutrition. These animals are **ovoviviparous**. Other animals have fertilized eggs that develop inside the female's body and draw nutrition from it, and give birth to live young. These animals are **viviparous**. Most mammals, and some fish and reptiles are viviparous.

## Beautiful Birds

Birds are easily the best-known oviparous animals. They lay eggs with hard, brittle shells, usually in a nest which is often lined with their feathers. Since they are endothermic, they are able to incubate the eggs using their body heat. The largest living bird, the ostrich, lays the largest egg. Their eggs are the size of a softball, and are equal in volume to about two dozen chicken eggs. The smallest egg is laid by the bumblebee hummingbird, is the size of a pea, and weighs about half as much as a paperclip. The largest known bird egg of all time was laid by the now-extinct elephant bird. Elephant birds were 9' – 10' tall, flightless birds native to Madagascar. Their eggs were about the size of a soccer ball – about seven times as large as an ostrich egg. When humans came to the island, they were hunted to extinction; the last one died about 300 years ago. Their fossilized eggs are still found from time to time.

## Radical Reptiles

Most reptiles are also oviparous. These scaly creatures lay eggs with a tough, leathery shell. They often lay them in nests, either in the sand or under vegetation. Since reptiles are exothermic, they cannot incubate the eggs themselves. They count on heat from the sun or from rotting vegetation to keep the growing embryos alive. Most reptiles do not remain with the eggs, but a few, like alligators, will stay and defend them from predators.

## Amazing Amphibians

The name amphibian means “two lives.” These animals undergo a major change, called metamorphosis, in which they go from a life entirely in the water to one on land. Their eggs are laid in a mass in or near the water. They do not have a shell, but are jelly-like. Frog eggs hatch to produce tadpoles, which have gills to breathe as they swim underwater. Their tails shrink, and they begin to grow legs and develop lungs as polliwogs, and finally emerge from the water as adults.

## Fabulous Fish

Like amphibian eggs, most fish eggs also have no shell. They are also laid in a jelly-like mass in the water. An exception to this are the egg cases of certain sharks, rays and skates. These “mermaid’s purses” are sometimes found washed up on the beach.

## Interesting Invertebrates

By far, eggs are the main way invertebrates reproduce. Most lay thousands and thousands of eggs, only a small fraction of which will survive to adulthood.

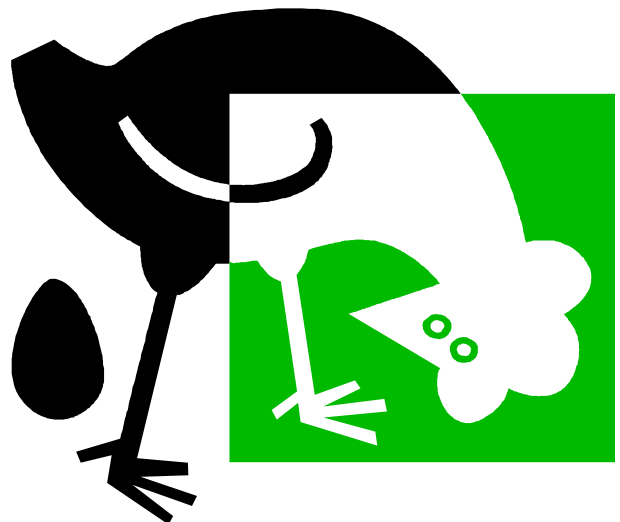
## Mysterious Monotremes

The vast majority of mammals are viviparous, but there are exceptions: the monotremes. The name monotreme means “one-holed,” referring to the **cloaca**, a single hole that serves the urinary tract, anus, and reproductive tract in monotremes.

There are three species of monotremes: the duck-billed platypus (*Ornithorhynchus*) and two spiny anteaters, or echidnas (*Tachyglossus* and *Zaglossus*). These mammals tiny eggs (less than 2 cm long) that have a leathery shell. The platypus lays her eggs on the bank of a stream, then curls around the eggs to protect them and keep them warm. Spiny anteaters lay a single egg in a temporary protective pouch on the mother's belly. After the babies hatch, the mothers nurse their young with milk from a gland on the mother's belly. Monotremes are only found in Australia and New Guinea.

## Egg Trivia

- The fastest omelet maker is American egg-centric Howard Helmer who can rustle up 427 omelets in 30 minutes.
- People have decorated and given eggs to each other in the springtime for hundreds of years, as a symbol of the new life which grows in the spring.
- Eggs provide lots of the essential nutrients for a balanced diet, including most of the vitamins the body needs and a wide range of important minerals, including iron and calcium.
- The color of an egg's shell depends on the breed of hen; it has no influence on the egg's nutritive values, functional properties, or taste. The brown color is given by a pigment called porphyrin that is secreted by the shell gland located in the hen's uterus.
- The largest egg in proportion to body size is laid by the kiwi. They are about the same size as chickens, but their eggs are almost as big as those of ostriches! The kiwi is also the only bird in the world that has its nostrils at the end of its beak.
- Although most eggs have one yolk, some can have more than one. The highest number of reported yolks in a hen's egg is nine, though this, of course is very rare.
- The largest hen's egg ever had five yolks and was 31cm around the long axis.
- The largest single chicken egg ever laid weighed a pound with a double yolk and double shell.
- The world's largest omelet was made in Madrid from 5,000 eggs by chef Carlos Fernandez. It weighed 1,320lbs.
- Research shows that people on a healthy diet can eat an egg a day without raising blood cholesterol levels.
- The longest throw of a fresh egg - without breaking it - is 98.51 meters. The record was set in Texas in 1978.
- While it is customary to throw rice at weddings in many countries, French brides break an egg on the threshold of their new home before stepping in- for luck and healthy babies.
- The world's most valuable eggs were ornaments made by the famous jeweler, Carl Fabergé, for the Russian ruler Tsar Alexander III, as a present for his wife. They were made of gold and decorated with jewels. Inside one of the eggs was a tiny hen with ruby eyes. Inside the hen was an even smaller crown with a ruby necklace hidden in it. The most expensive egg ever sold was the Faberge "Winter Egg" sold in 1994 for \$5.6 million.



# It Started With an Egg Suggested Reading List

Animals Alive and Well by Ruth Heller – not about eggs, but it can help students differentiate between egg layers and live bearers.

Birds by Mary Aubinais and Jean-Francois Martin

Birds by Susan Canizares and Pamela Chanko

Chickens Aren't the Only Ones by Ruth Heller

The Day the Day Got Loose by Reeve Lindbergh

Duck by Paradise Press

The Enormous Egg by Oliver Butterworth – chapter book, great for read-aloud!

An Extraordinary Egg by Leo Lionni

Frog by Paradise Press

Frogs by Susan Canizares and Daniel Moreton

Green Eggs and Ham by Dr. Seuss

It Started As an Egg by Kimberly Graves

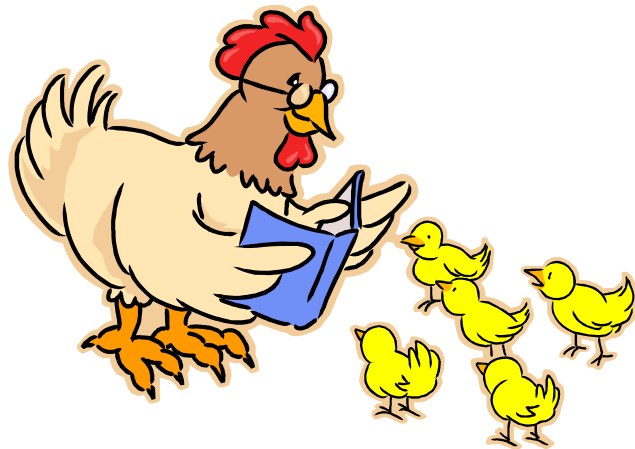
Little Green Frog by Rozanne Lanczak Williams

Look Who's Hatching by World Wildlife Fund

Make Way for Ducklings by Robert McCloskey

Rechenka's Eggs by Patricia Polacco

The Wide Mouthed Frog by Keith Faulkner



## Teacher Resources

Egg! by A.J. Wood

The Egg: A First Discovery Book by Gallimard Jeunesse and Pascale de Bourgoing

Egg: A Photographic Story of Hatching by Robert Burton

How and Why Animals Hatch From Eggs by Elaine Pascoe

## It Started With an Egg Internet Resources

[http://www.goldeneggs.com.au/childrens\\_activities/index.html](http://www.goldeneggs.com.au/childrens_activities/index.html) - lots of fun stuff! Jokes, puzzles, games, crafts, etc.

<http://www.aeb.org/> - American egg board – recipes, nutrition info, kid's section

<http://www.eggsedu.org.uk/> - great info, experiments, reproducible pages, teacher section, play script, and much more

<http://42explore.com/eggs.htm> - great links, info

<http://www.ovaprima.org/lessonplans.html> - lesson plans, resources

<http://www.royalalbertamuseum.ca/vexhibit/eggs/vexhome/egghome.htm> - online “eggs-hibition” of eggs from around the world

<http://www.AesopFables.com> – Aesop's Fables online. Download your favorite!

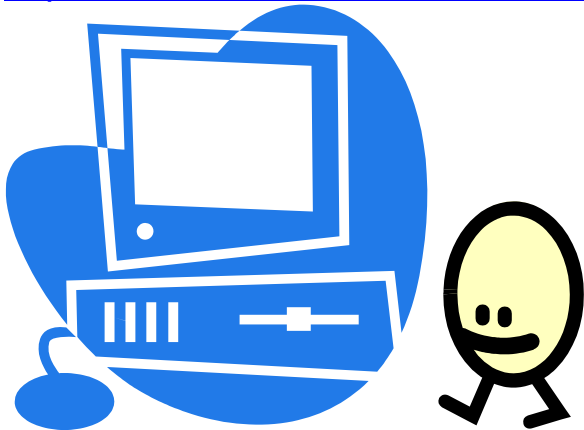
<http://www.msichicago.org/exhibit/chick/chick.html> - watch a chick hatch!

<http://www.angelfire.com/la/kinderthemes/escience.html> - Look Who's Hatching! – great egg-hatching activities and ideas

<http://lincoln.midcoast.com/~wps/baston/chicks.htm> - Mrs. Baston's Kindergarten class' chick hatching experience

<http://www.msstate.edu/dept/poultry/hatch.htm> - Information about hatching chicks

<http://www.ext.vt.edu/resources/4h/virtualfarm/poultry/poultry.html> - virtual poultry farm!



# It Started With an Egg

## Vocabulary

**Air cell** – a small pocket of air that forms at the wide end of the egg as it cools after it is laid. The fresher the egg, the smaller the air cell.

**Albumen** – the white of the egg. There are two layers: thick and thin. It provides protein and water to the growing embryo. It makes up 2/3 of the egg's weight (without shell)

**Allantois** – stores wastes of embryo. As it grows larger, it takes part in the gas exchange.

**Amnion** – membrane filled with amniotic fluid that surrounds and protects the embryo.

**Amphibian** – an exothermic, oviparous vertebrate that is covered with smooth, moist skin. They undergo metamorphosis.

**Bird** – an endothermic, oviparous vertebrate that is covered in feathers.

**Chalazae** – two twisted, white “strings” that anchor the yolk in the middle of the shell; they act as shock absorbers.

**Chorion** – membrane lining the shell. It allows the embryo exchange oxygen and carbon dioxide. Second line of defense against bacteria.

**Endothermic** – an animal that produces its own internal body heat to maintain its body temperature.

**Exothermic** – an animal that relies on heat sources outside its body to maintain its body temperature.

**Germinal disc** – spot where fertilization occurs; it will develop into the embryo. It appears as a small white spot or depression on the yolk.

**Mammal** – an endothermic vertebrate that has hair or fur and nurses its young. Most are viviparous.

**Metamorphosis** – a developmental process during which an animal goes through stages, most commonly egg, larva, pupa, and adult.

**Monotreme** – an oviparous mammal

**Oviparous** –reproduction by laying eggs that develop outside their body.

**Ovoviviparous** –reproduction by fertilized eggs that develop inside the female's body, but do not draw nutrients from it.

**Reptile** – an exothermic, usually oviparous vertebrate that is covered with dry, scaly skin.

**Shell** – the outer surface of the egg. It protects the embryo as it develops inside. It is porous, allowing for gas exchange, and is the first line of defense against bacteria.

**Vertebrate** – an animal with a backbone.

**Vitelline membrane** – membrane surrounding the yolk.

**Viviparous** – reproduction by fertilized eggs that develop inside the female's body and draw nutrients from it.

**Yolk** – the yellow part of the egg. This contains most of the egg's vitamins and minerals, including protein and fatty acids; it nourishes the developing embryo. It is about 1/3 of the egg's weight (without shell).

# It Started With an Egg

## The Enormous Egg

Content Area: Language Arts

**Skills:** storytelling, writing, creative thinking

**Objectives:**

TSW examine a picture of a large, unidentified egg.

TSW draw conclusions about what may hatch from the egg.

TSW write a story about what may hatch from the egg.

**Materials:**

- Picture of elephant bird and egg
- Writing paper
- Pencils
- Crayons or markers



**Procedures:**

*Anticipatory Set:*

Complete “Eggs-Traordinary Animals.” Review with the students what kind of animals come from eggs.

*Development of Lesson:*

1. Show the picture of the elephant bird egg, but do not identify it. This egg was found in Madagascar. What do you think could have hatched from it?  
Brainstorm ideas.
2. Ask the students to imagine that they found this egg. They took it home and it began to hatch. What happened next?
3. Have the students write and illustrate a story about what hatched from the egg they found. Older students may do this independently. Younger students may dictate their stories.

*Summary:*

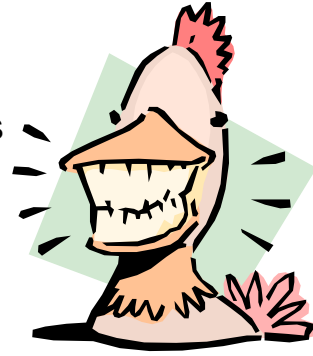
Share the stories. Publish them in a class collection. You may wish to share them with another class.

**Extensions:**

- Identify the egg as that of an elephant bird. Share some information about this amazing bird from the background information. Compare their eggs to birds still around today.
- Read The Enormous Egg by Oliver Butterworth to or with your students!
- Make your own enormous “String Eggs.”

# **It Started With an Egg The Yolk's on You!**

Content Area: Language Arts



**Skills:** language, listening

**Objectives:**

TSW listen to egg jokes.

TSW understand that many of the jokes use a play on words for humor.

TSW identify words that have “ex” in them.

TSW use the “ex” words to make up their own egg jokes or draw funny pictures.

**Materials:**

- “Egg Jokes”
- Paper
- Pencil
- Crayons
- Blackboard and chalk

**Procedures:**

*Anticipatory Set:*

Do you like jokes? Tell some of the egg jokes to the students. Ask them what they have in common. Most use the word “egg” in the joke.

*Development of Lesson:*

4. Identify the use of “egg” as a play on words. Is the way the word “egg” is used the way we usually use it? How is it different? It is part of another word that sounds like “egg,” and is often very silly. We call this a play on words.
5. What are the words that are used to make the joke funny? What was the original word? List them on the board.
6. What do these words have in common? They all have “ex” in them. Brainstorm other “ex” words and put them on the board.
7. Ask the students to change the words into “egg” words. Put them on the board next to the original “ex” word.
8. Have the older students make up their own jokes. They may illustrate them, if they wish. Younger students may choose a word and draw a funny picture to go with it (ex. Experiment = egg-speriment = picture of an egg in a laboratory)

*Summary:*

Share the jokes and pictures. Enjoy a good laugh!

**Extensions:**

- Host a comedy club for other classes or parents! Tell egg jokes, put on egg skits, enjoy egg snacks, play egg games, and other egg-citing events.

# It Started With an Egg

## Egg Jokes

Q. How do chickens fit inside their eggs?  
A. Eggs-actly!

Q. How do chickens get their eggs to market fast?  
A. Federal Eggs-press!

Q. How do you cook an egg in the summer?  
A. Sunny side up!

Q. Why did the chicken cross the road?  
A. The rooster egged her on!

Q. Why did the chicken stop halfway across the road?  
A. She wanted to lay it on the line!

Q. Why did the egg cross the road?  
A. It wanted to get to the Shell station!

Q. What do you call a chicken in a shell suit?  
A. An egg.

Q. What do you call an egg that goes on safari?  
A. An egg-splorer.

Q. What do you call a city of 2 million eggs?  
A. New York City.

Q. What do you call a naughty egg?  
A. A practical yolk-er!

Q. What kind of egg that lives by the ocean?  
A. An egg shell!

Q. What did Snow White name her chicken?  
A. Egg White!

Q. What did the egg do when it heard these jokes?  
A. It cracked up!

Q. What do you get when you cross an egg with a Martian?  
A. An egg-stra terrestrial

Q. Why did the egg hide?  
A. He was a little chicken.

Q. Why did the egg go to Switzerland?  
A. He wanted to go yolk-eling.

Q. What did the chick say when his mom laid an orange?  
A. Look what marmalade!

Q. What did the hen say?  
A. How egg-straordinary!

Q. What day do eggs fear?  
A. Fry-day.

Q. Where did the chicken go on vacation?  
A. Sandy Eggo

Q. What do chickens grow on?  
A. Egg plants!

Q. How long does it take an egg to cook?  
A. It depends what it's making.

Q. How many eggs can you eat on an empty stomach?  
A. One. After that, your stomach isn't empty.

Q. How can you drop an egg 6 feet without breaking it?  
A. Drop it 7 feet. It won't break for the first 6!

Knock, Knock!      Who's there?  
Omelet.              Omelet, who?  
Omelet smarter than I look!

Knock, Knock!      Who's there?  
Egbert.                Egbert, who?  
Egbert no bacon!

Two eggs were being boiled in a pan.  
One egg said "Yow! It's hot in here!"  
The other egg said, "EEEEK! A talking egg!"

Silly Sam wanted to make an omelet. The recipe said to start by separating two eggs. So, Sam put one egg in the kitchen and one egg in the hall.

Did you hear the one about the egg?  
It's not all it's cracked up to be.

# It Started With an Egg

## Songs

### Content Area: Music, Science, Language Arts

Music is a great way to sharpen grammatical skills and, at the same time, present new material or check for understanding in a new and exciting way. Kids really connect with it, so it also makes a great memory tool. Not only that, it's FUN!

#### Egg in the Nest

*(chant)*

Here's an egg in a nest up in a tree.

*Cup left hand, place right fist in it*

Who laid it? Whose can it be?

*Shrug shoulders*

A hard, smooth egg will hatch to find

*Cup hands together, then open up*

The little eagle that grew inside!

Here's an egg in the sand down by the sea.

*Hold left hand flat, place right fist on it*

Who laid it? Whose can it be?

*Shrug shoulders*

A tough, leathery egg will hatch to find

*Cup hands together, then open up*

The little turtle that grew inside!

Here's an egg in the pond that's like jelly.

*Cover right fist with open left hand*

Who laid it? Whose can it be?

*Shrug shoulders*

A soft, squishy egg will hatch to find

*Cup hands together, then open up*

The little frog that grew inside!

Repeat for other birds, reptiles, and amphibians!

#### Did You Ever See an Egg?

*(sung to "Did You Ever See a Lassie")*

Did you ever see an egg, an egg, an egg,

Did you ever see an egg

And wonder what's inside?

It could be a (egg-laying animal),

Or a (egg-layer), or a (egg-layer).

Did you ever see an egg

And wonder what's inside?

Fill in the blanks with as many animals as you can !

#### Little Bird

*(chant)*

One little bird with feathers of blue;

Flew beside the green one

And then there were two.

Two little birds singing in a tree;

The red bird came to join them

And then there were three.

Three little birds, wishing there were more;

Along came the purple bird

And then there were more.

Four little birds happy to be alive;

Found a little yellow one,

And then there were five.

Five little birds as happy as can be;

Singing beautiful songs for you and me!

#### Oviparous Animals

*(sung to "Mary Had a Little Lamb")*

Baby turtles hatch from eggs,

Hatch from eggs, hatch from eggs,

Baby turtles hatch from eggs,

Yes they do.

Baby Frogs...

Baby Chickens...

Baby Alligators...

Repeat for other oviparous animals, and end with:

They are all oviparous,

Oviparous, oviparous.

They are all oviparous

Because they all lay eggs!



# It Started With an Egg

## Eggs-Traordinary Animals

Content Area: Language Arts, Science

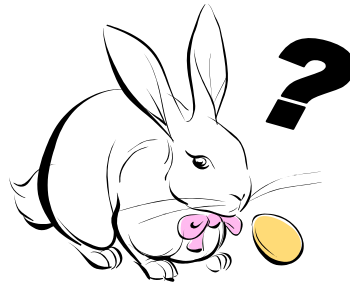
**Skills:** listening, sorting, recall

**Objectives:**

- TSW listen to a story about animals that lay eggs.
- TSW identify eggs as one way animals have babies.
- TSW understand that some animals do not lay eggs.
- TSW distinguish between animals that do and do not lay eggs.

**Materials:**

- It Started As an Egg by Kimberlee Graves (younger students) or Chickens Aren't the Only Ones by Ruth Heller (older students)
- Chicken egg (you may wish to hard-boil it)
- Animal cards
- Animal chart
- Tape



**Procedures:**

*Before You Start:* Make the animal cards: Use the picture bank to copy and cut out pictures of egg-laying animals from the book and non- egg-laying animals that are familiar to the students. Mount the pictures on heavy paper or index cards. Laminate them for durability, if you wish.

Make the chart: Make a poster with three columns labeled “lays eggs,” “does not lay eggs” and “not sure.” You may wish to use a chalkboard.

*Anticipatory Set:*

Show the students the egg. What is it? Where do we get eggs? What will hatch out of it? Many animals lay eggs. We call these animals Oviparous.

*Development of Lesson:*

1. Do all animals lay eggs? No. Show the students the pictures of the animals. Have the students place the animals in a column on the chart. Allow them to place them in any column they think is right.
2. Read the story. Ask the students to recall the animals in the story. They are all oviparous.
3. Have the students take another look at the chart. Do they need to make any changes? Make changes, as needed.

*Summary:*

Were they surprised by any of the answers? If there are any problems, refer to the story. (Some children think that rabbits lay eggs. Animals Born Alive and Well by Ruth Heller may help with this and other questions about viviparous animals)

**Extensions:**

- Take a closer look at the amazing egg by doing “Eggs-Periments

# It Started With an Egg

## The Great Egg-Scape

Content Area: Science

**Skills:** matching, listening, recall

**Objectives:**

TSW name 3 kinds of animals that lay eggs.

TSW identify the kinds of eggs they lay.

TSW discriminate between the eggs they lay.

TSW match the egg to the animal that laid it.



**Materials:**

- 2 small bowls
- Chicken egg (you may wish to hard-boil it)
- Reptile skin (if available) or small basket ball
- Raisins
- Large pearl tapioca
- Sand or oatmeal
- “Eggs-Traordinary Animals” animal cards (birds, reptiles, and amphibians only)
- “It Started With an Egg” Songs

**Procedures:**

*Before You Start:* Use the picture bank to make enough bird, reptile and amphibian cards so that each child has one. Prepare the egg-samples: put oatmeal or sand in one bowl, and place a few raisins on top. These are the reptile eggs. For the amphibian eggs, fill the bowl halfway with warm water. Add a tablespoon of the tapioca and let it soften. You will need to do this at least half an hour ahead of time.

*Anticipatory Set:*

Complete “Eggs-Traordinary Animals.” Ask the students to name some animals that lay eggs. Encourage them to name many different kinds of animals. Are these animals all the same? Neither are their eggs. Different kinds of animals lay different kinds of eggs.

*Development of Lesson:*

1. Show the picture of the eagle. Ask the students to identify the animal. What kind of animal is it? It is a bird. What does it have covering its body? Feathers!
2. Where do birds lay their eggs? In a nest! Show the chicken egg and allow the students to touch it. Bird eggs have a hard, smooth shell.

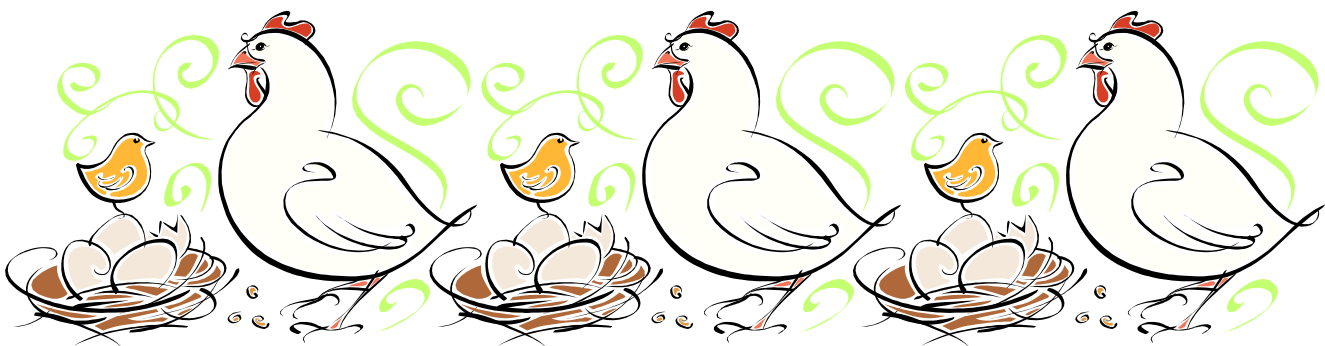
3. Show the picture of the turtle. Ask the students to identify the animal. What kind of animal is it? It is a reptile. Show the other reptile pictures and ask the students to identify the animals. These are reptiles, too. What do they have covering their bodies? Dry, scaly skin! If you have any reptile skin available to you, bring it in and allow the students to feel it. If not, let them feel the basketball, explaining that reptile scales feel a lot like the ball – bumpy and dry.
4. Where do reptiles lay their eggs? In the sand! Show the reptile “eggs” and allow the students to touch them. Reptile eggs have a tough, leathery shell.
5. Show the picture of the frog. Ask the students to identify the animal. What kind of animal is it? It is an amphibian. What does it have covering its body? Wet, slippery skin!
6. Where do amphibians lay their eggs? In the water! Show the amphibian “eggs” and allow the students to touch them. Amphibian eggs are soft and jelly-like.
7. Set the egg-samples on a table or in the middle of your circle. Give each child a card with a picture of a bird, reptile, or amphibian.
8. Ask the children to decide what kind of animal they have, and match their animal to the eggs they lay.

*Summary:*

Go over the answers. Discuss any errors. Sing “Egg in the Nest.” Have the students act it out.

**Extensions:**

- Create a room display by doing “Eggs-Travelanza”
- Read An Extraordinary Egg by Leo Lionni. What might happen if an alligator hatched a bird’s egg? Or a bird hatched a frog egg? Make up your own eggs-traordinary egg story!
- Practice looking for differences by doing “What Sort of Eggs are These?”



# It Started With an Egg

## Eggs-Ploration

Content Area: Science

**Skills:** observation, fine motor

**Objectives:**

- TSW observe an egg.
- TSW identify parts of an egg.
- TSW record observations about the egg.



**Materials:**

- Eggs-Ploration Student Page (older students)
- Raw eggs (one per cooperative group)
- Plastic or other non-porous plate or bowl (one per cooperative group)
- Pencils or crayons
- Hand lenses

**Procedures:**

*Anticipatory Set:*

Show the students an egg. Review what they have learned about eggs so far. Today, we are going to take a closer look at the egg!

*Development of Lesson:*

1. Older students: Divide the class into cooperative groups. Give each group an egg, plate, hand lens, and Eggs-Ploration page. Have the students go through the investigation, recording their findings on the Eggs-Ploration page.
2. Younger students: Divide the class into cooperative groups. You may wish to do this as a class with the youngest students. Give each group an egg, plate, and hand lens. Guide their investigation by asking them the questions on the Eggs-Ploration sheet and having them share their responses.
3. Label the parts of the egg, either individually or as a group.

*Summary:*

Discuss the class' findings. Complete the activity in "Inside Eggs."

**Extensions:**

- Continue to "eggs-plore" the possibilities with some "Eggs-Periments!"
- Use your eggshells to make the "Eggshell Garden." Observe your plants as they sprout. Make a chart that shows how much they have grown.

Name \_\_\_\_\_

## Eggs-Ploration!

1. Examine the eggshell. What does it look like?

How does it feel?

Look again, this time using the hand lens. Do you notice anything new?

2. With the teacher's help, carefully crack the egg onto the plate. *Save the shells!*

Look at the white part of the egg. This is the albumen. It gives the chick water and some of its food as it grows. How does it feel?

How does it smell?

3. Now look at the yellow part of the egg. Can you find a small white spot? This is the germinal disc that will develop into a chick. The yellow part is the yolk. It is the chick's main food as it grows. How does it feel?

How does it smell?

How is it different from the white?

4. Look inside the shell for a thin, papery membrane. Pull some of it out. Is it stretchy?

How does it feel?

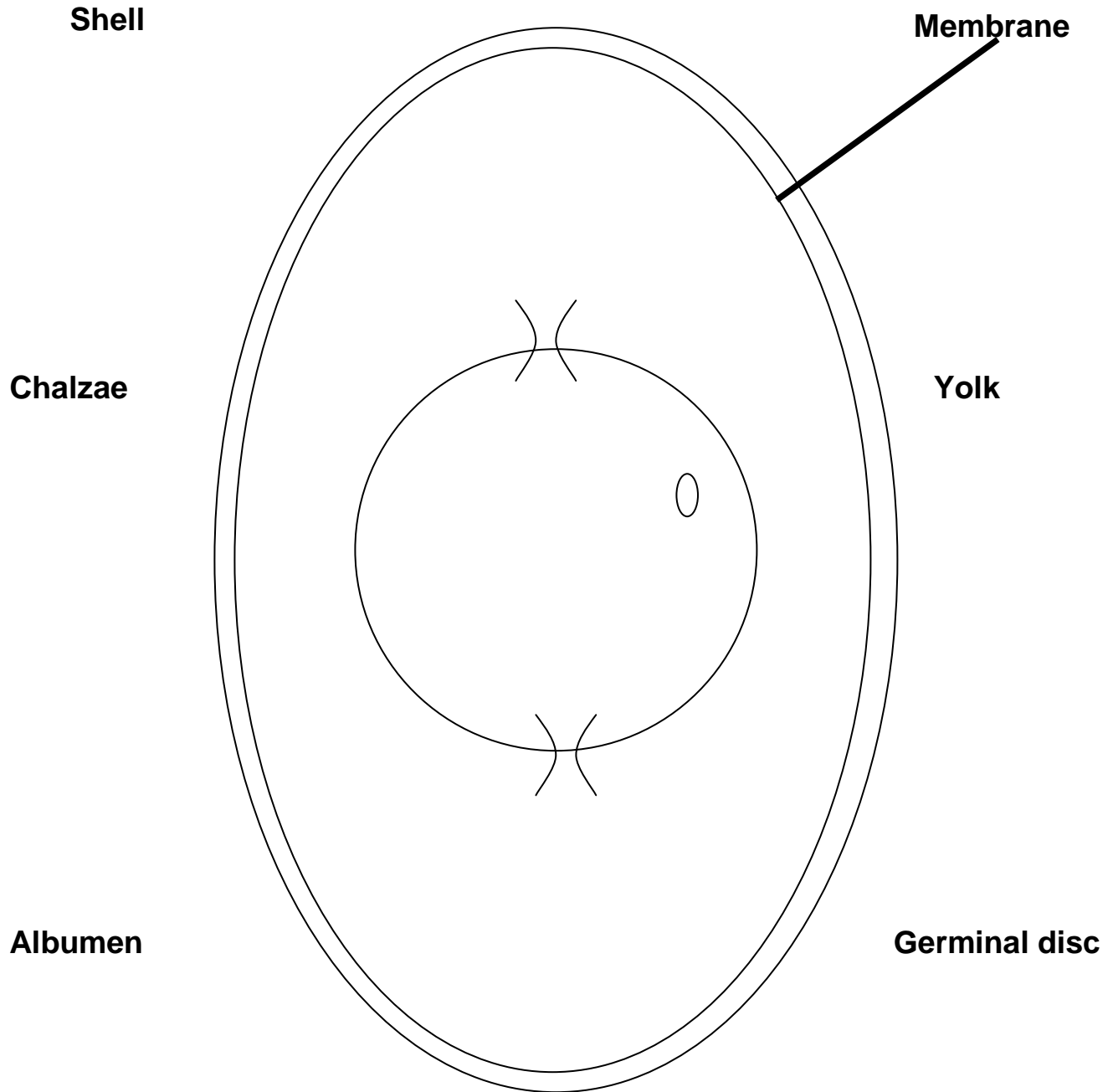
Let it dry for five minutes. Is it still stretchy?

How has it changed? Why do you think that happened?

5. Look for some white "strings" attached to the yolk. These are the chalazae. They help keep the yolk in the middle of the egg. How do they feel?

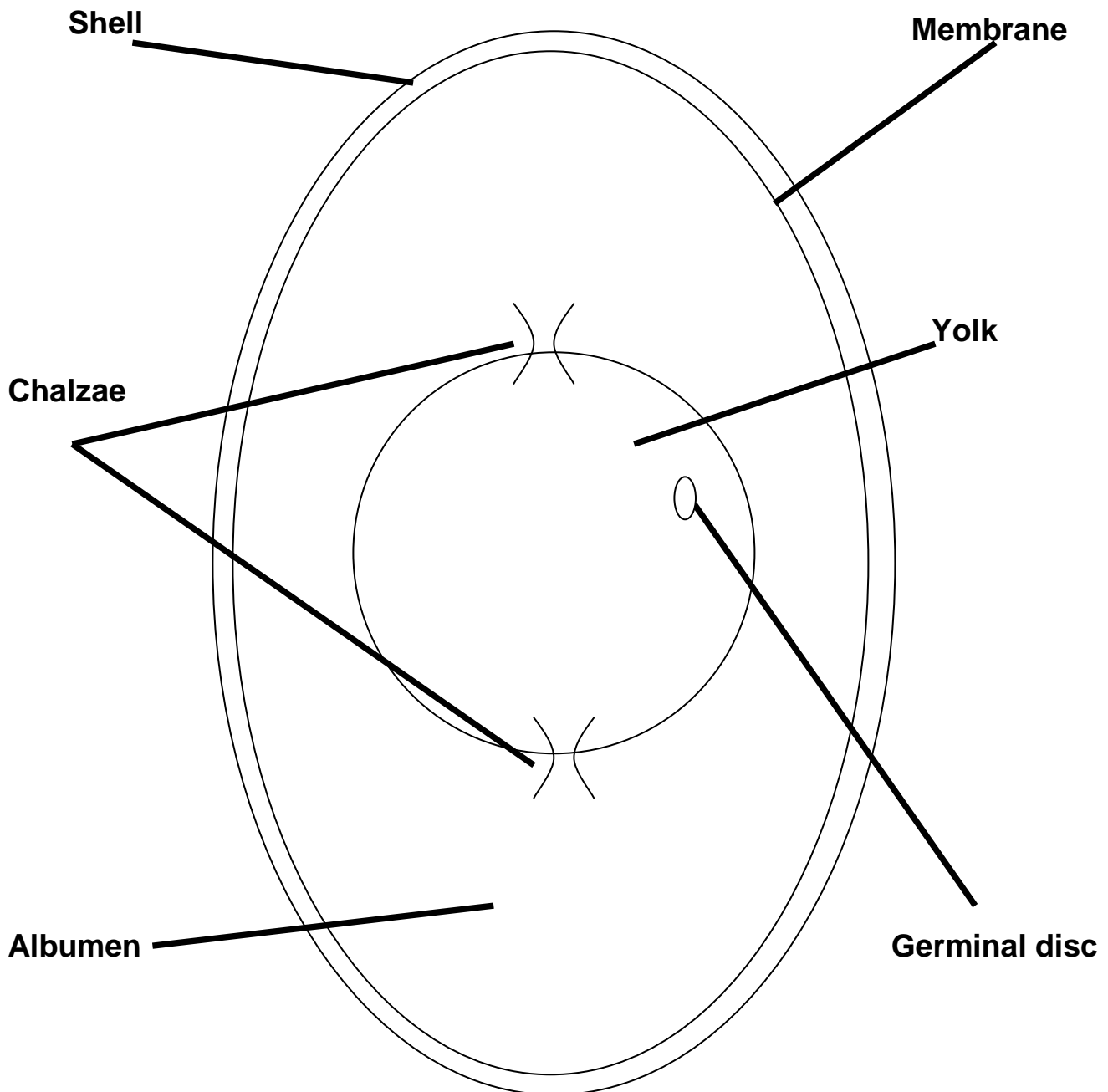
How are they different from the other parts?

6. Label the parts of the egg below. The first one is done for you.



## Eggs-Ploration! Student Page Key

1. Answers will vary. Students should note that the shell is smooth and hard. Under the hand lens, they may be able to see some dimpling. These are the tiny pores in the eggshell.
2. Answers will vary. Students should note that there is both thick and thin albumen, and that it is clear.
3. Answers will vary. Students should note that the yolk is a different color, thicker, and opaque.
4. The membrane should be stretchy when still wet. As it dries, it loses elasticity and becomes brittle. This is due to loss of moisture.
5. Answers will vary. The chalzae may feel slightly stringy. They are different because they are solids, rather than liquids, and they do not have a thin membrane containing them.
- 6.



# It Started With an Egg

## Inside Eggs

Content Area: Science, Art

**Skills:** fine motor, identification

**Objectives:**

TSW identify the parts of an egg.

TSW explain the function of each part.

TSW create a model of an egg.



**Materials:**

- White cardstock (8 ½ “ x 11)
- 3” yellow construction paper circles
- 1” pieces white string or yarn
- Plastic wrap or cellophane (2 per student)
- Glue
- Stapler
- Markers
- Scissors

**Procedures:**

*Before You Start:* Cut the white cardstock into egg shapes. Cut the center out of it, leaving a ring about ½” wide. You will need 2 of these per student.

*Anticipatory Set:*

Complete “Eggs-Ploration.” Discuss what the students learned about the parts of the egg. Now we will make our own model egg.

*Development of Lesson:*

1. What was the outside of the egg called? (shell) What does it do? (contains the egg, protects the embryo, keeps out bacteria). Give each student a shell. Have them label it.
2. Inside the egg, there was something that looked like this (pull out a sheet of plastic wrap). What is it called? (albumen or egg white) What does it do? (provides water and protein/food for the embryo). Give each student one sheet of plastic wrap. Put glue around the edge of the shell and glue it down. Have them label it.
3. In the center of the egg is a bright yellow circle (show circle). What is it called? (yolk) What does it do? (main food source for embryo) Give each student a yellow circle. Have them label it and glue it in the center of the albumen.

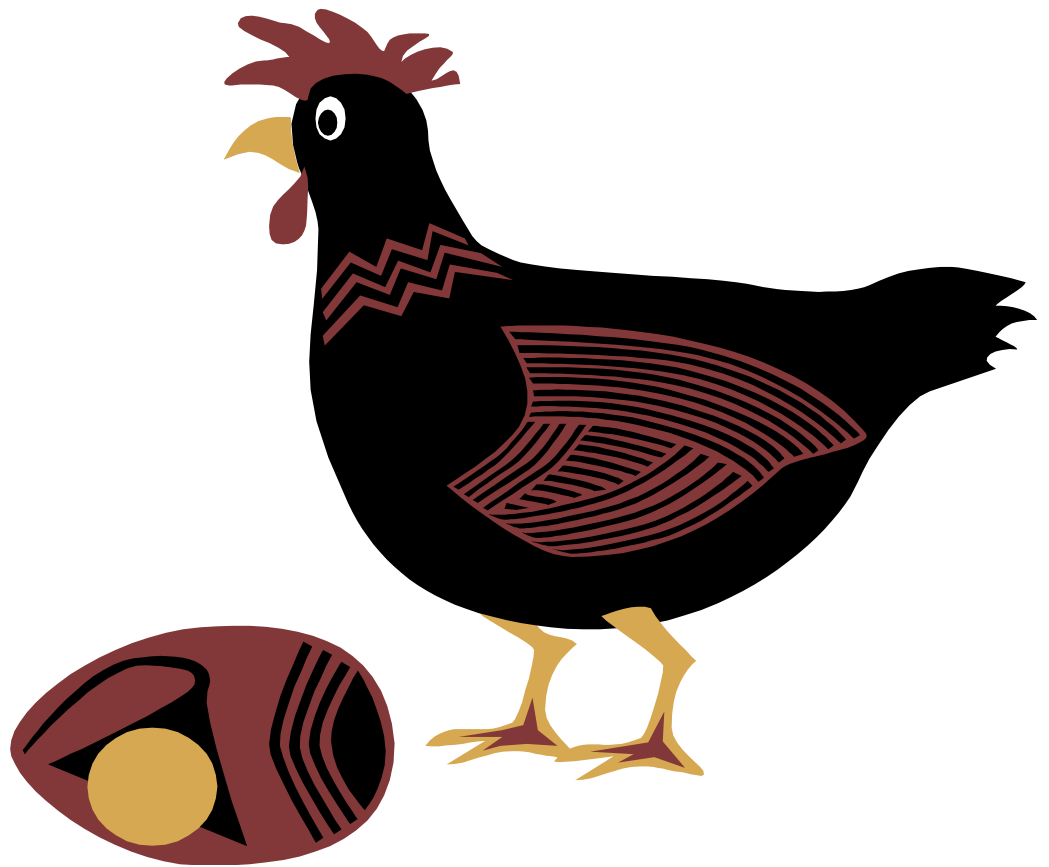
4. How did the yolk stay in place? (chalzae) What did they look like? (white strings) Give each student 2 white strings. Glue one on either side of the yolk. Have them label them.
5. Give the students another piece of plastic wrap. Place it over the egg parts, and hold in place with a line of glue around the edge.
6. Glue the other shell on top, sandwiching all the other parts in between. Staple around the edges to secure. Trim off any plastic wrap that hangs over the edge.

*Summary:*

Hang your egg models up in your classroom!

**Extensions:**

- Try your hand at other egg-straordinary art activities!



# It Started With an Egg

## Eggs-Periments

Content Area: Science

Each of these investigations will help your students discover more about the nature of eggs. Even the youngest students are capable of and benefit from scientific investigation. Each experiment can be done individually, as cooperative learning groups, or as a class demonstration. Choose the format that best suits your students.

**Skills:** observation, critical thinking, deductive reasoning

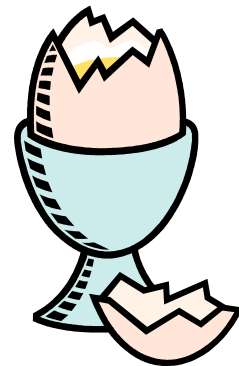
### **Objectives:**

TSW use the scientific method to learn more about eggs.

TSW use observation and discovery to discriminate between raw and cooked eggs.

TSW investigate the structural integrity of eggs.

TSW investigate the chemical properties of eggshells.



### **Raw or Cooked?**

#### ***Materials:***

- Raw chicken eggs (1 per group)
- Hard-boiled chicken egg (1 per group)
- Raw or Cooked? Student Sheet

#### ***Procedures:***

*Before You Start:* With a permanent marker, label the raw eggs “A” and the cooked eggs “B.”

*Anticipatory Set:*

Review what the students have learned so far about eggs and their structures. Show them the two eggs. Explain that one egg is raw and one is cooked. Today you will figure out which egg is which.

*Development of Lesson:*

1. Divide the class into pairs or cooperative groups. Give each a raw egg, a cooked egg, and a bowl. Give older students the Raw or Cooked? Student Sheet.
2. Have the students use their observation and deductive skills to complete the student sheet. Older students record their observations. Guide younger students’ investigation by asking them the questions on the student sheet and having them share their responses. ***Remind them to work gently and carefully with the eggs!***

*Summary:*

Discuss your findings. Did they predict correctly? Did cooking the egg make it behave differently? (Yes) How? (Spin differently) Why do you think that is? (Egg center is now a solid, not a liquid)

### Extensions:

- Now that you know that eggs behave differently after cooking, give your eggs the **Spin Test!** A hard boiled egg will spin longer and faster than a raw egg because the loose liquid in the raw egg acts as a brake.
  1. Make predictions about which will spin faster, a raw or hard-boiled egg.
  2. Make a chart of the children's responses. (you may wish to graph them)
  3. Spin your eggs! Check out your predictions. Were you right?
- What happens if you shake a raw egg? Will you end up with **Scrambled Eggs?** Try it! Shake your raw egg fast for about 15 seconds. Carefully crack your egg open (younger students may need assistance). What happened? (The yolk is intact, not scrambled) Why? (The chalazae act like shock absorbers, keeping the yolk in place)

### Walking on Eggshells

#### **Materials:**

- Raw chicken egg
- Clean, empty eggshells (from Eggs-Ploration)
- Plastic tray
- Blocks or other small weights
- Picture of girl standing on ostrich eggs (from Picture Bank)



#### **Procedures:**

*Before You Start:* Clean and trim empty eggshells so that they will sit level

*Anticipatory Set:*

Ask students what they know about the strength of an eggshell. Most will probably tell you that they break easily. How can a mother bird hatch her eggs without breaking them? (allow students to survive) Let's find out how strong eggshells really are.

*Development of Lesson:*

1. Arrange the eggshells in a square on the floor. Space them as evenly as you can. This works best on a smooth, even, hard surface (tile vs. carpet).
2. Gently place the plastic tray on top of them.
3. Show the students your blocks. Let them feel their weight.
4. Ask the students to predict how many blocks the eggs will hold before they crack. Record their predictions.

5. Stack the blocks on the tray, one at a time. Place them gently – do not drop them on! Continue adding blocks until they begin to crack or until you run out of blocks.
6. Count the blocks. Compare the number to the predictions. How did you do?

### *Summary:*

Discuss the results. Were you surprised at how much weight the eggs held? Show the picture of the girl standing on ostrich eggs. What do you think makes the eggshell so strong? The shape of the shell makes it strong.

### **Extensions:**

- Try some other “eggs-traordinary” feats of strength:
  - **The Stand.** Take 2 cartons of eggs and remove the lids. Cut the cartons in half, widthwise. Form these 4 pieces into a square. Place the tray on top of these eggs. Ask a student to **CAREFULLY** step onto the tray. This must be done slowly and carefully, distributing the student’s weight as evenly as possible. The eggs will hold. (The eggs must stay in the cartons to keep them on end, not for any strength added by the carton)
  - **The Squeeze.** Hold an egg between the heels of your hand, lengthwise. Squeeze as hard as you can, applying even pressure to both ends. The egg will hold.

### **Rubber Eggs**

#### ***Materials:***

- Raw chicken eggs
- Clear plastic cups
- Vinegar
- Plastic spoon
- Copies of My Egg Journal (older students)



#### ***Procedures:***

##### ***Anticipatory Set:***

What happens when you drop an egg? (it breaks) Demonstrate this for the students. We are going to make an egg bounce.

##### ***Development of Lesson:***

1. Allow each of the children to place a raw egg into a clear plastic cup. This will allow the students to observe the chemical reaction on the entire egg.
2. Completely cover each of the eggs with vinegar (it is very important to completely cover the entire shell!)
3. Set the eggs in a place where they can easily be observed without needing to be moved for at least three days.

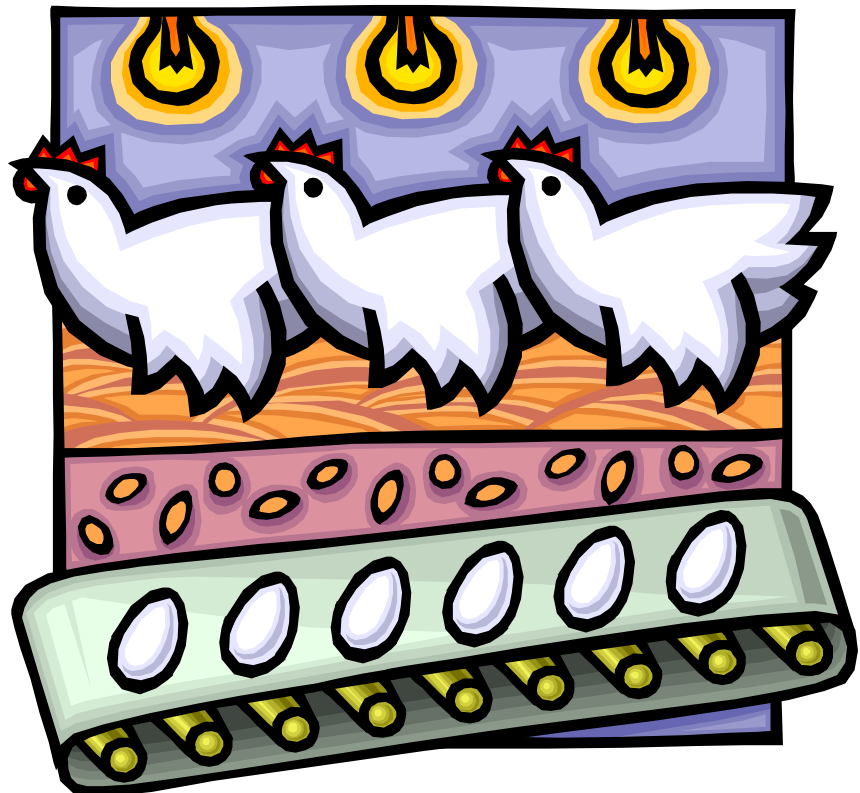
4. Have students carefully observe the chemical reaction on their egg. Keep a running journal on how much shell has disappeared. Have students write where they think the shell has gone and why it disappeared. Older students may do this independently. Younger students may do this cooperatively or as a class.
5. VERY CAREFULLY remove the eggs with a plastic spoon. \*There should be a thick waxy film on the egg.
6. One at a time, have students drop their egg (about 4 to 5 inches).
7. Have entire class watch and record how many times each student's egg was dropped before breaking.

*Summary:*

What happened to the egg shell? Why do you think it happened? Discuss students' guesses about the happenings of the egg shell. The shell was changed by the vinegar. This is called a chemical reaction. The vinegar combined with the calcium carbonate in the eggshell, making it turn rubbery. Discuss why one egg survived more drops than others. (more of the shell was replaced, the shell was thicker, etc.)

**Extensions:**

- The chemical reaction they just observed so dramatically is the same one that helps them color eggs. Try making some "Marbled Eggs" to demonstrate this!



Name \_\_\_\_\_

## Raw or Cooked?

1. Does egg 1 look different from egg 2?
2. Does egg 1 feel different from egg 2?
3. Does egg 1 smell the same as egg 2?
4. Shake the eggs. Do you hear anything?  
Egg 1?  
Egg 2?
5. Roll the eggs on your paper. Do you hear anything?
6. Spin the eggs gently. Does egg 2 spin the same as egg 1?
7. Which egg do you think is raw? Why?
8. Crack the egg you think is cooked. Were you correct?

# My Egg Journal

By \_\_\_\_\_

<p><b>Day 1</b> My egg looks like this:</p>	<p>I saw this happening:</p> <p>I think it happened because:</p>
<p><b>Day 2</b> My egg looks like this:</p>	<p>I saw this happening:</p> <p>I think it happened because:</p>
<p><b>Day 3</b> My egg looks like this:</p>	<p>I saw this happening:</p> <p>I think it happened because:</p>

I think the shell went \_\_\_\_\_ because

# It Started With an Egg

## What Sort of Eggs Are These?

Content Area: Math

**Skills:** sorting, listening, observation, critical thinking

### **Objectives:**

- TSW make observations about the eggs given to them.
- TSW determine criteria for sorting the eggs.
- TSW sort the eggs according to the student-determined criteria.
- TSW explain their criteria for sorting the eggs.

### **Materials:**

- 12 multi-colored plastic eggs
- Rice
- Beans or beads
- Jingle bells



### **Procedures:**

*Before You Start:* Put some rice, beans, or jingle bells in some of the eggs. Be sure that there is a variety of colors and contents. Some eggs should also be left empty. Make a set for each cooperative group.

*Anticipatory Set:*

Review what the students know about animals that lay eggs. Are they all the same? Are their eggs all the same? We can tell the difference by looking closely.

*Development of Lesson:*

1. Divide the class into cooperative groups. Give each group a set of eggs.
2. Ask the students to look at their eggs. Remind them to pay close attention to everything about them. Encourage them to pick up the eggs to discover the sounds that some of them make.
3. Ask the students to sort their eggs.

*Summary:*

When they have finished sorting, ask the groups to share how they sorted their eggs. How else could they sort their eggs? Try sorting them again a new way!

### **Extensions:**

- Shake the eggs. Try to guess what is inside. Carefully open them. Were you right?
- Before the students sort their eggs, estimate the number of eggs they have. Count them. How did they do?
- Graph your eggs! After sorting, use the eggs to make a line graph.

# It Started With an Egg

## Eggs in the Nest

Content Area: Math

**Skills:** logic, fine motor, counting, color identification, problem solving, strategy

**Objectives:**

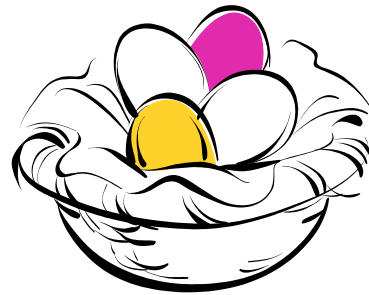
TSW place eggs in particular cups in the “nest.”

TSW identify one color as “their” color.

TSW use problem solving skills to meet victory conditions of three different games.

**Materials:**

- Egg cartons (9 cups per pair)
- 5 plastic eggs, color A (one per pair)
- 5 plastic eggs, color B (one per pair)



**Procedures:**

*Before You Start:* Make the nests: Cut the egg carton in half. Cut one half into two strips of three egg cups. Attach one strip (staples work well) to make a 3x3 grid. Use the other strip to make subsequent nests. Decorate, if you wish, to make it look more nest-like.

*Anticipatory Set:*

Where do birds lay eggs? (in nests) Do birds want other birds to lay eggs in their nest? (no)

*Development of Lesson:*

1. Divide the students into pairs. Give each pair a set of eggs and a nest. You and your partner are birds trying to lay your eggs in the same nest. To decide which of you gets to use the nest, you will be playing several games. The winner gets to use the nest. \*Note: Older students may play all the variations. For younger students, you may wish to stay with one game.
2. Game 1: egg-tac-toe: one player is brown, one is white. Put eggs in a space. The first to get a complete row wins.
3. Game 2: take turns to place an egg of either color in a space. The first to complete a row of either color wins.
4. Game 3: play like game 1 or game 2. The first to complete a row LOSES.

*Summary:*

Play the games to determine a “winner.” You may want to play “round robin” style!

**Extensions:**

- Play some other “egg-citing” games.

# It Started With an Egg

## Recipes

### Content Area: Math, Science

Cooking with children is a great way to introduce many basic math concepts such as comparing volume, weight and quantity. As you make these recipes with your children, have them count the ingredients, weigh them, measure them, and compare the amounts of different ingredients. You can even graph them! Basic science concepts in chemistry (dissolving = solutions, combining/mixing = compounds) and physics (states of matter: room temperature = liquid, frozen/chilled = solid, boiling = gas) may also be demonstrated. All that, plus a yummy treat to eat!

#### Sailboat Eggs

- Hard-boiled eggs, peeled and halved
- 1 ½ tsp. mayonnaise (per egg)
- 1/8 tsp.\* mustard (per egg)
- ¼ tsp. ketchup (per egg)
- Toothpicks
- Raisins, marshmallows, grapes, etc.

*\*Note: 1/8 t. = about 1 squeeze*

Directions:

1. Remove the yolk from both sides of the egg with a spoon. Place them in a small bowl.
2. Mash the egg yolks with a fork. Mix in the other ingredients.
3. Use a spoon to fill the egg halves with the egg mixture.
4. Place a toothpick into each half egg. Place raisins, marshmallows, etc. on the toothpick.
5. Note: This is messy but it is good.

#### Eggs in a Nest

- 1 package butterscotch chips
- 3 c. chowmein noodles
- Jellybeans
- Waxed paper

Directions:

1. Melt the butterscotch chips in a heatproof bowl in the microwave.
2. Gently stir in chowmein noodles till coated. Give each child a spoonful of noodles on a piece of waxed paper.
3. Mold the noodles into the shape of a nest.
4. Put in three jelly beans to represent eggs.
5. Enjoy!



## Eggs in the Sand

- 2 c. oatmeal
- 1/3 – 2/3 c. honey
- Raisins (about 1 T. per student)
- Waxed paper

### Directions:

1. Remind the students that reptiles lay their eggs in a nest in the sand, then cover them up.
2. Put the oatmeal in a large bowl. Add the honey. Stir until it all sticks together to make “sand.”
3. Give each child a spoonful of “sand” on a piece of waxed paper.
4. Mold the “sand” into the shape of a nest.
5. Put in the raisins to represent eggs. Press them in, then cover them over.
6. Enjoy!

## Frog Egg Pudding

*Put this together the morning before and enjoy it the next day!*

- 1 cup large pearl tapioca
- 3 cup brown sugar
- 4 cup water
- 1 dash salt
- 1 ½ tsp. vanilla extract
- 1 cup chopped English walnuts (optional: you may wish to substitute mini chips, raisins, or chopped fruit)
- Whipped cream topping
- Crock pot

### Directions:

1. Remind the students that frogs lay their eggs in ponds. Place the crock pot in the middle of the table. This your pond. Add the water.
2. Have the frogs lay their eggs! Add the tapioca pearls and let it soak overnight (8 hrs.) *\*Note: if you do this in the morning, at the end of the day you can start the cooking process.*
3. Add brown sugar and salt and cook for 12 hours on low. Stir once in a while. The tapioca becomes clear and the texture is gelatinous at the end of the cooking period.
4. Let cool. Add vanilla, a bit more salt if needed, and the walnuts (if desired).
5. Transfer to a shallow serving bowl and spread top liberally with whipped cream topping.



# It Started With an Egg

## Eggs-Travaganza

Content Area: Art, Science, Math

**Skills:** fine motor, recall, sorting, animal identification

### **Objectives:**

TSW identify pictures of animals that lay eggs.

TSW cut out pictures of animals that lay eggs.

TSW use the pictures to create a collage.

### **Materials:**

- 5 egg-shaped pieces of paper (one set of large eggs for younger students; one set of smaller eggs per student or cooperative group for older students)
- Magazines, calendars, etc.
- Scissors
- Glue

### **Procedures:**

*Before You Start:* Cut out the appropriate size and number of egg shapes. Label the egg-shapes: Birds, Reptiles, Amphibians, Fish, Other Egg Layers.

*Anticipatory Set:*

Review the kinds of animals that lay eggs. Ask the students to give examples.

*Development of Lesson:*

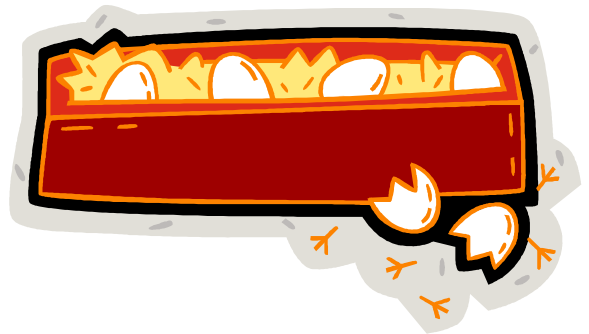
1. This can be done cooperatively with younger students. Older students may do this individually or in cooperative groups.
2. Look through old magazines, calendars, etc. for pictures of animals that lay eggs and cut them out. You may wish to do this ahead of time for younger students.
3. Sort the pictures according to the labels.
4. Glue them onto the appropriate egg-shape.

*Summary:*

Display your animal eggs-travaganza!

### **Extensions:**

- Make a bulletin-board showing where the different kinds of eggs are found (in a nest in a tree, in a pond, in the sand, in the ocean, etc.)



# It Started With an Egg

## Ukrainian Eggs (Pyansky)

Content Area: Art, Language Arts, Social Studies

**Skills:** listening, fine motor, geography

### **Objectives:**

TSW describe pyansky.

TSW locate Eastern Europe on a map.

TSW understand the cultural value of pyansky.

TSW create Ukrainian eggs.

### **Materials:**

- Decorated egg (real or plastic)
- Picture of Ukrainian egg (from picture bank)
- Rechenka's Eggs by Patricia Polacco
- World map
- White crayons
- Water colors or tempera paint
- Paintbrushes
- White paper, cut into egg shapes

### **Procedures:**

#### *Background:*

Egg decorating in Eastern Europe dates back well over 1000 years. The intricate designs and colors all have special symbolic meaning. Over the years, some of these meanings have changed, but the way they are made has remained basically the same. Pyansky, a Ukrainian word for very intricately decorated eggs, comes from the Russian word meaning “to write.” A tool called a “kistka” is used to draw designs on the eggshell with wax. The egg is then dyed with a light color. The areas waxed stay white. This process is repeated, with increasingly darker colors, until the design is formed. Different villages and regions developed their own unique designs and styles.

In ancient times, these eggs were given as gifts to family, friends and neighbors. They were given for good luck, to ensure a good harvest, to express feelings, to bless weddings, and to give comfort at funerals. Today, they are still exchanged to wish good fortune, health and happiness.

#### *Anticipatory Set:*

Hold up the decorated egg. What is this? Have you ever decorated eggs? In some parts of the world, decorating eggs is a real art. Show picture of the Ukrainian egg.

#### *Development of Lesson:*

1. Read Rechenka's Eggs. Discuss what happened in the story. People have been decorating eggs for a long time. They still give them as gifts to wish people good luck. Share some of pyansky’s background.

2. The eggs they decorated are called pyansky. Pyansky is a Ukranian word. Locate Eastern Europe on the world map. Today we are going to make our own pyansky!
3. Give each student an egg shaped paper and white crayon. Draw designs on the paper with the white crayon. Be sure to press hard and put a heavy coat of wax on the paper.
4. Paint over the drawings with the watercolors or tempera. You may wish to use more than one color on each egg! Watch the designs appear.
5. Allow them to dry.

*Summary:*

Use your eggs to decorate the classroom. You may wish to follow the tradition of giving them as gifts to another class, to classmates, or to loved ones. Older students may write their good wishes on the back of the eggs.

**Extensions:**

- Try dyeing eggs the way they would have in ancient times – with plants! Follow the directions for “Naturally Colored Eggs.”
- Use scrap paper, pipe cleaners, google eyes, or any other crafty stuff to make “Egg Creates!”



# It Started With an Egg

## Crafts

### Content Area: Art, Science, Math

Crafts are a fun way to improve your students' fine motor skills, matching, and counting. They also give you the opportunity to review the different forms and functions of each part of the animal. Each of these crafts uses a pattern for at least one portion of the craft. They can be found following the instructions.

#### **Chick 'n' Egg**

Materials:

- 9" x 12" yellow construction paper (1 per student)
- Orange fun foam (or construction paper) beak (1 per student)
- Whole (12") orange pipe cleaners (1 per student)
- 1/4 orange pipe cleaners (2 per student)
- Yellow craft feathers (optional)
- Glue stick
- Scissors
- Large google eyes (2 per student)
- Hole punch

Directions:

1. Cut the yellow construction paper in half, width-wise (2 – 9" x 6" pieces). Cut an egg shape from one of them.
2. Punch two holes near the large end of the egg. Push the whole pipe cleaner through the holes, ends to the front. These are the legs.
3. Twist the cut pipe cleaners around the bottom of each leg, about an inch from the bottom. These are the feet.
4. Fold the other half sheet of yellow paper in half. Trace and cut out the student's hand. These are wings. Glue them on.
5. Glue on the orange beak. Glue on or draw eyes. Add craft feathers, if you wish.

#### **Egg Creates**

Materials:

- Colored eggs (hard-boiled or plastic)
- Glue
- Colored paper
- Scissors
- Markers
- Assorted craft materials: pipe cleaners, google eyes, feathers, pompoms, etc.
- Paper towel tubes, cut into 1" pieces

Directions:

1. Give each student a colored egg and a paper towel tube section. Place the egg in the towel tube section to hold it steady.
2. Make an egg creature! Use the craft materials to decorate the egg. Cut ears, legs, noses, etc. from the colored paper.
3. Add details like faces with markers.
4. Display your egg creations!

## **Naturally Colored Eggs**

### Materials:

- Eggs
- White vinegar
- Natural materials (see list below)
- Saucepan
- Measuring cup
- Measuring spoons

### Directions:

1. Put the eggs in the saucepan. Add enough water, a cup at a time, to cover them.
2. Cover the pan and bring to a boil. Reduce heat and simmer for 10 minutes.
3. Carefully uncover the eggs and add 1 tablespoon of white vinegar per cup of water.
4. Add one of the following natural materials to the water. The amount of each material you will need will depend on how much water you have and how dark you want the color to be.

<b>Material</b>	<b>Color</b>
Fresh beets, cranberries, radishes or frozen raspberries	Pinkish red
Yellow onion skins	Orange
Orange or lemon peels, carrot tops, celery seed or ground cumin	Pale yellow
Ground turmeric	Yellow
Spinach leaves	Pale green
Yellow Delicious apple peels	Green-gold
Canned blueberries or red cabbage leaves	Blue
Strong brewed coffee	Beige to brown
Dill seeds	Brown-gold
Chili powder	Brown-orange
Purple or red grape juice or beet juice	Grey

These are just a few of the possibilities. Try other (edible) materials, too!

5. Simmer for 15 minutes. Remove the pan from heat.
6. Remove the eggs – careful, they’re hot! – and refrigerate in their carton.

## **Tissue Printed Eggs**

### Materials:

- Hard-boiled eggs
- Small pieces of brightly colored tissue paper
- Water
- Paintbrushes

Directions:

1. Give each child an egg.
2. Place a piece of tissue paper on the egg. "Paint" over it with water.
3. Remove the tissue paper. It should leave a brightly colored spot on the egg.
4. Repeat this over the entire surface of the egg.
5. Allow to dry.

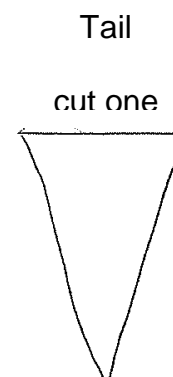
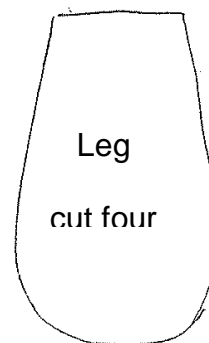
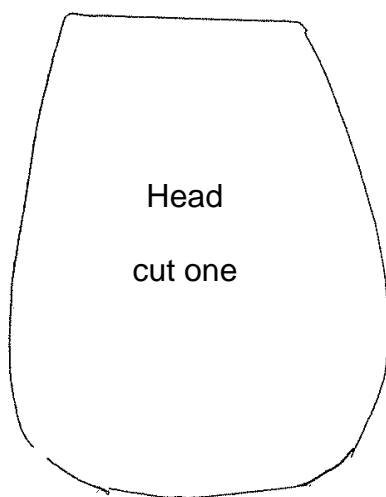
## Turtle Shells

Materials:

- White paper plates
- Small green, yellow, brown tissue paper squares
- Green construction paper
- Small google eyes
- Turtle templates
- Crayons or markers
- Glue
- Scissors
- Stapler

Directions:

1. Trace and cut the turtle head, legs, and tail from green construction paper.
2. Cut a slit in the paper plates to the center. Overlap the ends and staple to form a dome. This is the turtle's shell.
3. Glue the tissue paper squares onto the turtle shell.
4. Glue the head, legs, and tail to the underside of the shell so that they poke out from under it.
5. Glue on the google eyes. Draw a face and toes with the markers or crayons.



## **Marbled Eggs**

### Materials:

- Hard-boiled eggs
- 1 teaspoon food coloring
- 1 cup hot water
- 1 tablespoon salad oil
- 1 tablespoon white vinegar
- Small bowl

### Directions:

1. Mix the water, food coloring, oil and vinegar in a small bowl.
2. Gently drop the eggs into the water. Leave them there until you get the desired shade.
3. Eggs made this way will have a marbled appearance: the oil coats part of the shell to form a barrier to the coloring. The vinegar is prevented from reacting with the egg shell, which then prevents the color from being deposited.
4. Repeat this with other colors, if you wish.

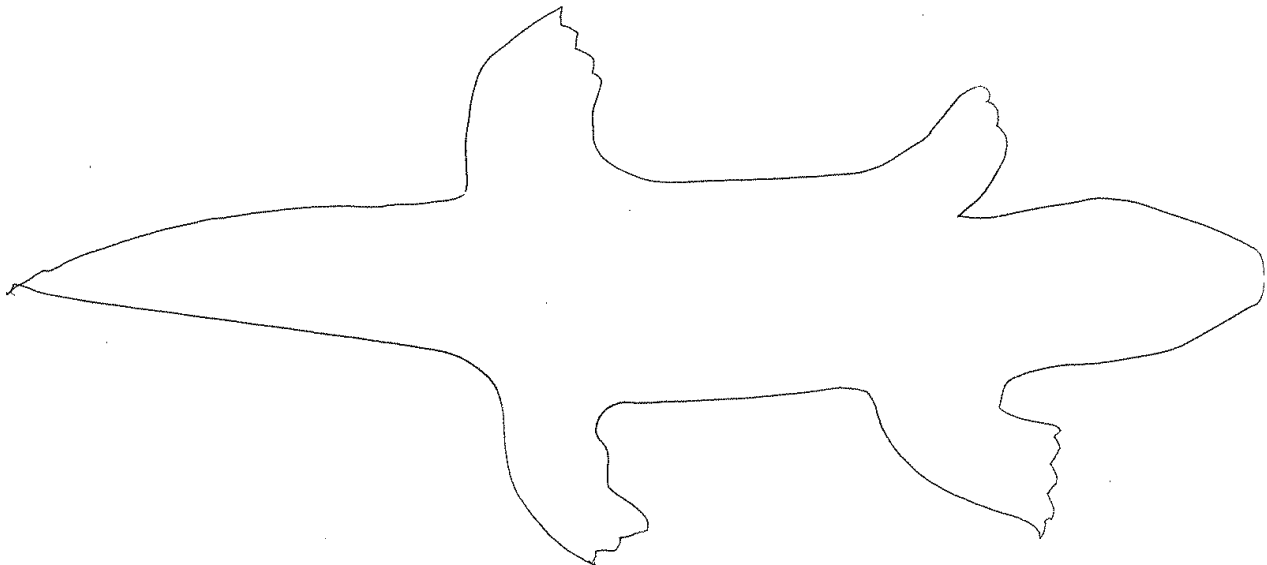
## **'Gator Eggs**

### Materials:

- Green fun foam sheets
- Green construction paper
- Hole punch
- Small google eyes
- Baby alligator template
- Glue
- Plastic eggs
- Scissors

### Directions:

1. Trace and cut the baby alligator from green fun foam.
2. Glue green construction paper punch "scales" on it.
3. Glue on the google eyes. Allow all glue to dry completely.
4. Curl the alligator up and place it in the egg.



## **String Eggs**

### Materials:

- Yarn or string
- Balloons
- White glue
- Glitter (optional)
- Small bowl
- Scissors

### Directions:

1. Fill the bowl with glue. Soak the yarn or string in it.
2. Blow up the balloon. Wrap the yarn around it. Wrap in different directions to get an interesting pattern.
3. Roll in glitter, if you wish. Allow to dry completely. This may take anywhere from 24 – 36 hrs.
4. Carefully pop the balloon and remove the broken pieces.
5. Hang your eggs to decorate the room!

## **Eggshell Garden**

### Materials:

- Eggshell halves, cleaned
- Egg carton
- Potting soil
- Spoon
- Water
- Marigold seeds

### Directions:

1. Remove the lid from the egg carton.
2. Add one or two spoonfuls of potting soil to the eggshell halves.
3. Sprinkle marigold seeds and gently cover with soil.
4. Add a spoonful of water to each shell.
5. Place the eggshells in the empty egg carton.
6. Put the carton in a sunny spot and watch your garden grow!
7. When the plants have grown large enough to replant, gently crush, but don't remove, the eggshell. Plant them in the garden or in a flowerpot.



## **It Started With an Egg Picture Bank Activities**

### **1. Animal Bingo – Content Area: Science**

Give each student a copy of the blank bingo card and picture bank page. Allow them to choose and cut out (coloring is optional) nine animals and glue them in the spaces. \*Note: if you have made animal cards for other games, they may use these and change the arrangement on their cards each game, if desired.

Call out the animals by name or give simple clues for the students to guess which animal you are describing.

### **2. Card Games – Content Area: Math**

Make cards by cutting out the animal pictures, mounting them individually on 3"x5" cards and laminating them for durability.

A. **Concentration** (2 sets of cards)

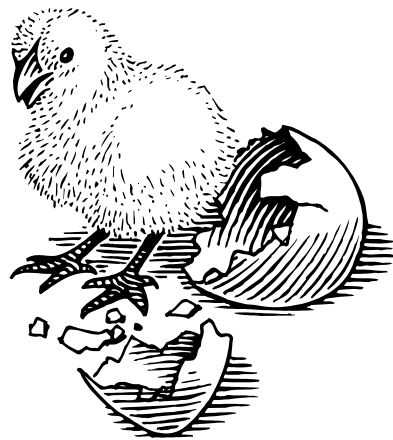
B. **Go Fish** (2 sets of cards)

### **3. Action Art – Content Area: Art, Science, Social Studies**

Using animals from the picture banks and other conservation images, have the students create posters, buttons, bumper stickers, etc. to promote the awareness of wildlife and the importance of preserving wild spaces.

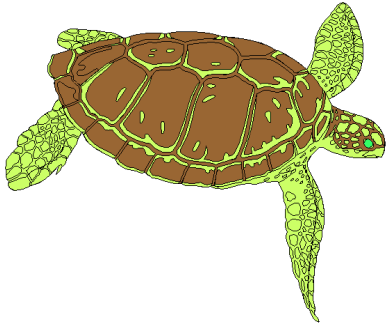
### **4. Habitat Scenes – Content Area: Art, Science**

Have the students draw the habitat of an animal from the picture bank, then color, cut out, and glue that animal or animals from the picture bank to include in their habitat scene. You may also wish to enlarge the pictures to life size using a wall projector. Students can color or paint the animals, and use them to decorate the classroom.



It Started With An Egg  
Picture Bank

Turtle



Screech owl



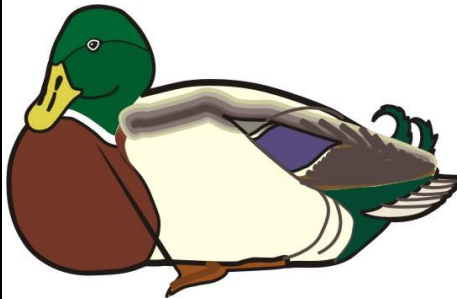
Eagle



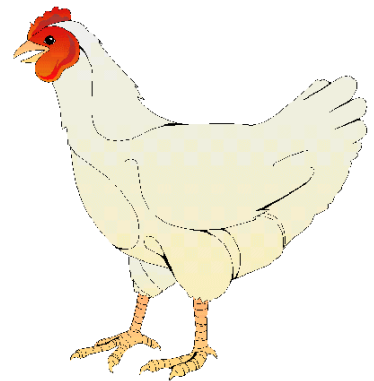
Snake



Mallard duck



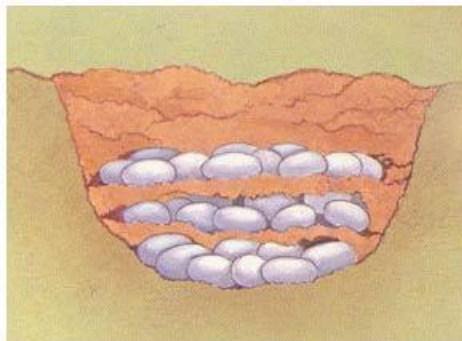
Chicken



Bird Eggs



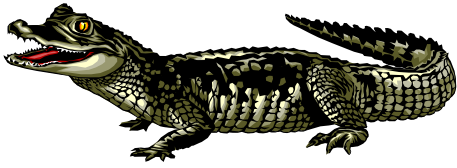
Reptile Eggs



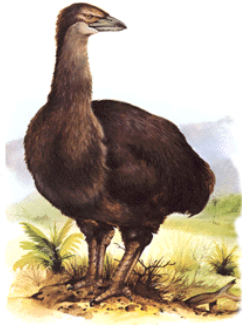
Amphibian Eggs



Crocodile



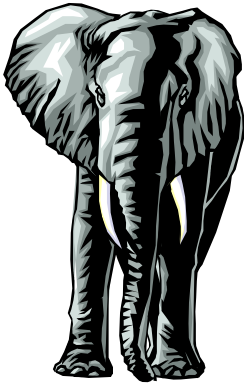
Elephant Bird



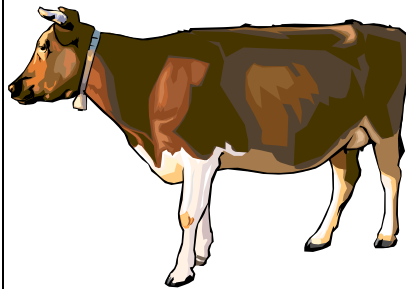
Elephant Bird Egg



Elephant



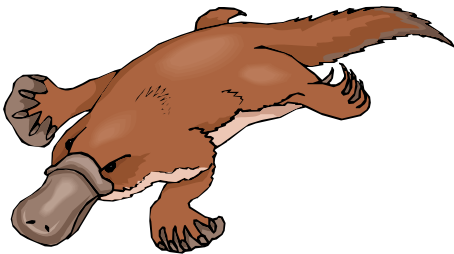
Cow



Echidna



Platypus



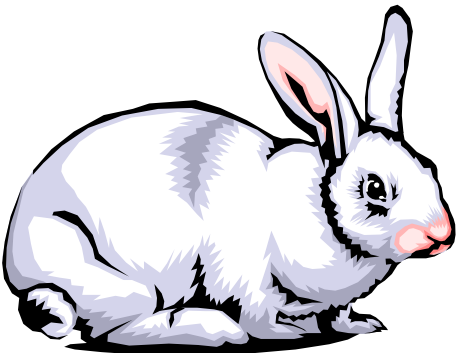
Ladybug



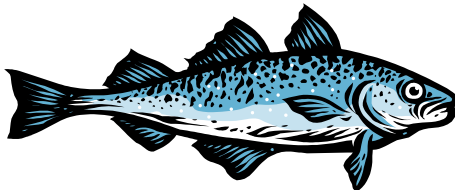
Frog



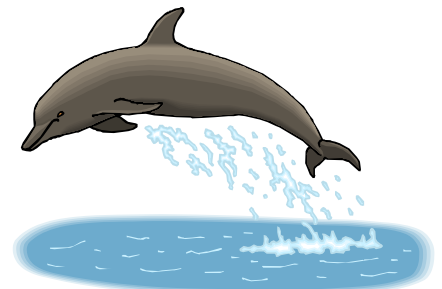
Rabbit



Fish



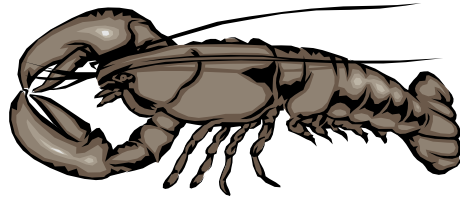
Dolphin



Spider



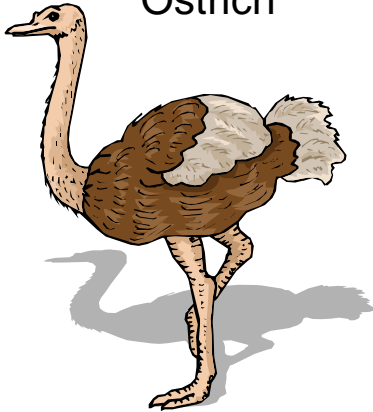
Lobster



Ant



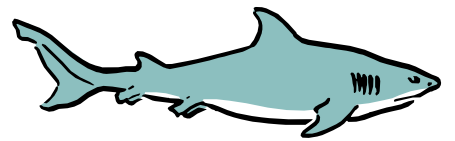
Ostrich



Hummingbird



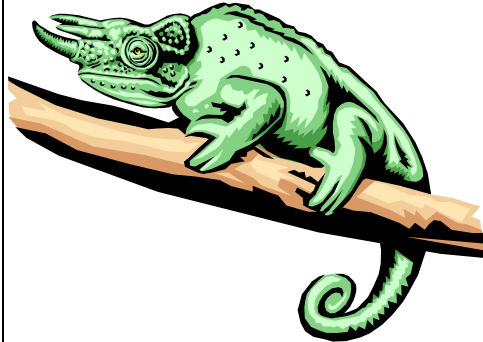
Shark



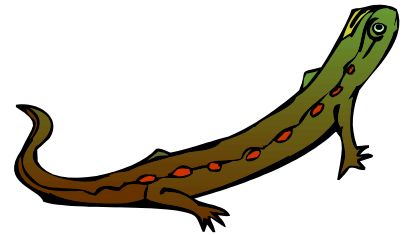
Penguin



Chameleon



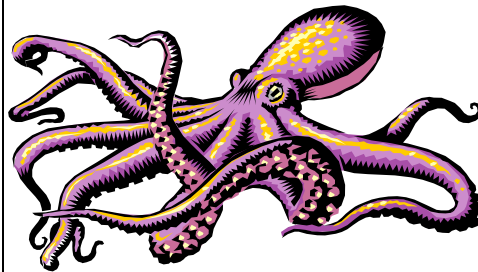
Salamander



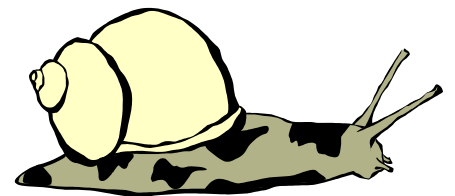
Seahorse



Octopus



Snail



Dog



Butterfly



Cat



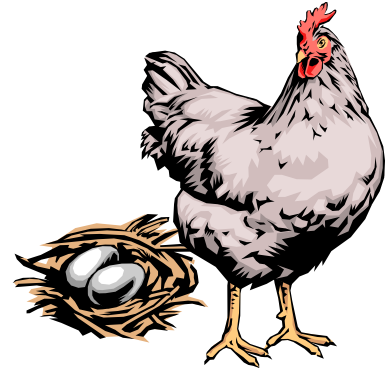
Ukrainian Egg



Girl Standing on Ostrich Eggs



Chicken and Eggs



# It Started With an Egg

## Egg-Cellent Animal Relays

Content Area: Active/Creative Play, Science

**Skills:** gross motor, following directions, recall

### **Objectives:**

TSW identify oviparous animals.

TSW describe the way the oviparous animals move.

TSW move like the oviparous animals in a relay race.

### **Materials:**

- “Eggs-Traordinary Animals” animal cards (turtle, bird, crocodile, fish and frog)

### **Procedures:**

#### *Anticipatory Set:*

Review what the students have learned so far about oviparous animals. Ask the students to name some oviparous animals.

#### *Development of Lesson:*

1. Show them the animal cards. Review the ways they move. Birds – fly (flap arms); crocodiles – walk on hands and feet, legs wide; snakes – slither on belly; turtle – crawl on elbows and knees; frogs – hop from a squatting position, fish – swim (make swimming motions with hands).
2. Play in a large, open area. Establish a start and finish line.
3. Divide the class into 2 – 4 teams. Have each team sit in a squad behind the starting line.
4. Have the students go out, one at a time, to the finish line. Hold up a picture card to announce the way they are to move. You may change the animals on each race or on each student.
5. When they reach the finish line, they are to sit in their squad. The first squad to have all their members seated behind the line wins.

#### *Summary:*

Talk about how it felt to move like the animals. Which animal would they like to be? Why?

### **Extensions:**

- Play some other “egg-cellent” games!



# It Started With an Egg

## Games

### Content Area: Active/Creative Play, Science

Games are a fun and active way to improve your students' gross motor skills while reinforcing scientific concepts such as predator/prey, locomotion, and natural history.

#### **Egg-Spllosion! (Hot Potato)**

Materials: plastic egg

To Play:

1. Sit in a circle.
2. Hand one student the plastic egg.
3. Pass the plastic egg around the circle. You may sing one of the egg songs, if you wish.
4. When the teacher calls out "Egg-spllosion!", whoever has the egg has been caught. If they can name an oviparous animal or answer a question about eggs, they continue in the game. If not, they must spend one round in the center of the circle. They may return to play the following round.
5. Play until everyone has a turn.

#### **I Found a Nest Full of Eggs**

Materials: none

To Play:

1. Sit in a circle.
2. The leader starts by saying, "I found a nest full of eggs and out hatched a(n) \_\_\_\_\_." (name an oviparous animal, ex. turtle)
3. The next person around the circle repeats the sentence, adding an animal of their own. "I found a nest full of eggs and out hatched a turtle and an eagle."
4. Continue around the circle, each person repeating and adding to the list until someone is unable to repeat the list correctly.
5. Start the game again, starting with the next person in the circle.

#### **Penguin Parents**

Materials: foam football

To Play:

1. Most birds build nests, but emperor and king penguins do not – it's too cold! Instead, they carry their eggs on top of their feet, tucked under their belly feathers.
2. Try it out! Balance the football on top of your feet.
3. Try to walk/waddle across the room without dropping the egg!
4. You may want to try this as a relay race. If the egg is dropped, they must stop, recover the egg, and start again where they dropped it.

## **Egg Toss**

Materials: plastic eggs

To Play:

1. Pair up the students. Have them stand facing their partner, close enough to shake hands.
2. Give one partner in each pair a plastic egg. Have them toss the egg to their partner.
3. After a successful catch, take a step back and toss it again.
4. The pair that successfully tosses it the farthest wins.

## **Egg Roll**

Materials: plastic eggs

To Play:

1. Play this in an open area. Establish a start and finish line.
2. Give each student a plastic egg. They are to roll it to the finish line with their NOSE.
3. When they have mastered this, add some obstacles, such as a chair to go around, a tunnel to go through, etc.

## **Egg Carry**

Materials: plastic eggs, plastic spoons

To Play:

1. Play this in an open area. Establish a start and finish line.
2. Give each student an egg and a spoon. Place the egg on the spoon and carry it to the finish line. Younger students may hold it in their hands. Older students may hold it in their mouths.
3. You may wish to run this as a relay race. If they get really good, add obstacles, or make them move in different ways (crawl, touch the floor every other step, skip, etc.)

