

School Enrichment Chicken Embryology: An Intracurricular Approach

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Introduction

Chicken embryology has become a typical program for 4-H youth professionals for school enrichment programs which have become the predominant 4-H delivery mode (Diem, 2001). According to Burrows and Zaremba (1982):

One of the original reasons for establishing 4-H as a federally funded youth development program was to give youth extra educational opportunities not realized in rural schools. Today, that philosophy extends to complementing or enriching the curriculum in *all* schools. (p.18)

National 4-H (2006) and others also have documented the disconnection between youth and commercial agricultural production. Chicken embryology is a way to introduce 4-H and agriculture into the classrooms of students that may have never heard about either. Horton, Krieger, and Halasa (2013) also say that elementary school teachers are less likely to enjoy science as well as feel confident about teaching it. Making chicken embryology school enrichment programs more intracurricular has the possibility to increase student knowledge about 4-H and agriculture in addition to easing teachers into teaching more science in the classroom and later gaining confidence in that subject area to teach for the future.

Chicken Embryology is a popular 4-H school enrichment program in Florida 4-H. Arnold, Bourdeau, and Nagele (2005) state that 4-H programs are designed to enhance the development of important life skills in youth in a natural, welcoming, positive atmosphere. Therefore, 4-H school enrichment programs should include these aspects. The "Targeting Life Skills Model" is what all programs should be

maintaining. In addition, the “Essential Elements of 4-H” should be included to best represent 4-H in a school enrichment experience. The essential elements of 4-H are belonging, mastery, generosity, and independence. These 4 elements relate to the four “H’s” of 4-H (Martz, Mincemoyer, & McNeely, 2009). The Head is mastery, Heart is belonging, Hands is generosity, and Health is independence (Kress, 2004). These four elements can also be interchangeable. Table 1 shows the four essential elements of 4-H.

<p>Belonging</p> <p>Positive Relationship with a caring adult An inclusive environment A safe environment</p>	<p>Mastery</p> <p>Engagement in Learning Opportunity for Mastery</p>
<p>Independence</p> <p>Opportunity to see oneself as an active participant in the future Opportunity for self-determination</p>	<p>Generosity</p> <p>Opportunity to value and practice service for others</p>

Table 1. The Essential Elements of 4-H. Source: Kress, C. (2004) Essential Elements of 4-H Youth Development. National 4-H Headquarters, CSREES USDA, www.national4-hheadquarters.gov/library/Essential_Element-Satellite.ppt

The 4-H “Targeting Life Skills Model” in Figure 1 shows how the essential elements of 4-H relate to life skill development as well as the types of life skills that are developed in the 4-H program. According to Norman and Jordan (2012), life skills are competencies that assist people in thriving in the environments in which they live. In addition, positive youth development programs identify life development skills within the targeted competency areas that are age appropriate to the youth in the program and offer experiences to teach skills. Skills are best learned through practice, many

experiences in 4-H teach or reinforce skills, with the use of the experiential learning model, must be provided (Norman & Jordan, 2012).

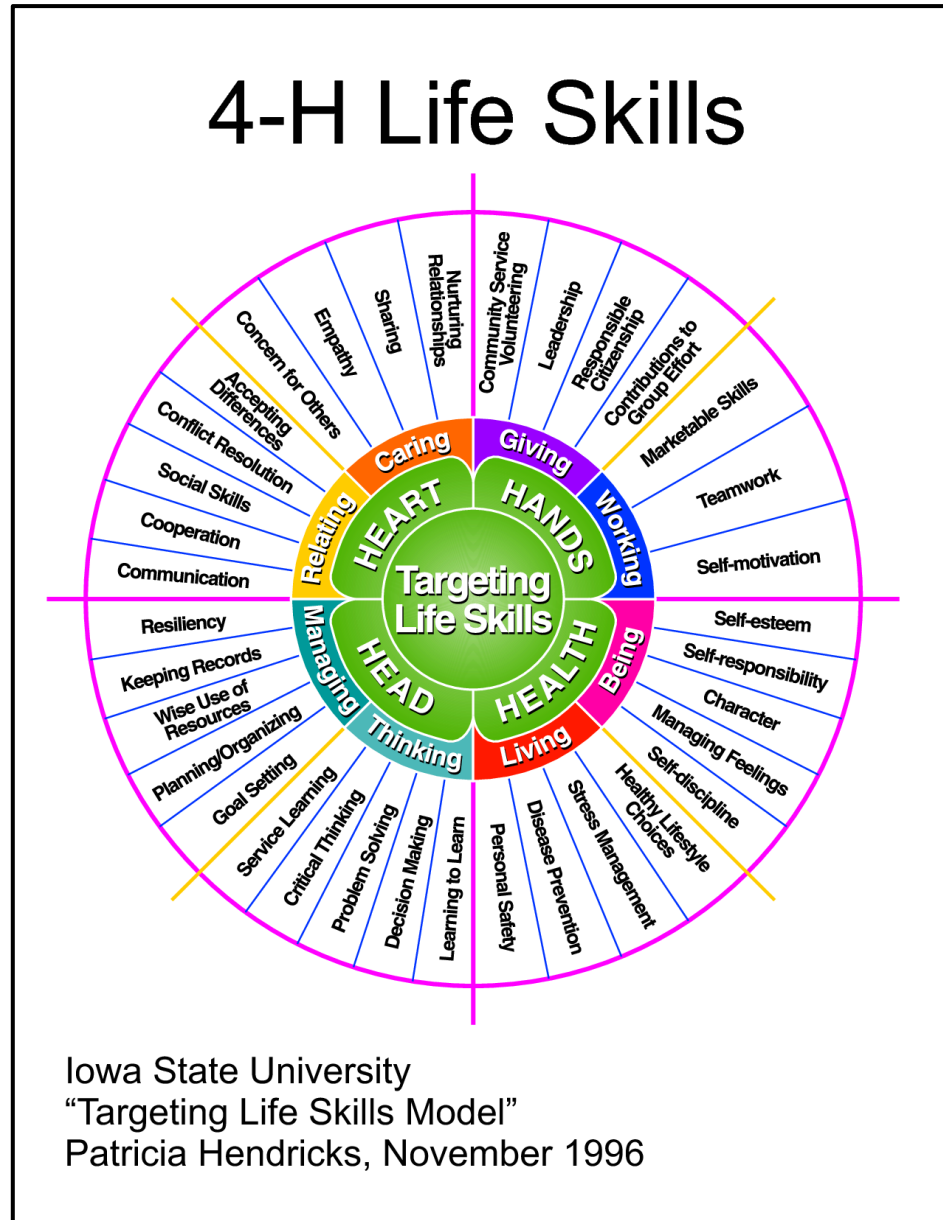


Figure 1. Iowa State University's "Targeting Life Skills Model." Source: <http://www.docstoc.com/docs/39882716/4-H-Life-Skills>

Showing that Florida 4-H School Enrichment programming is impactful, purposeful, and meaningful is important. 4-H professionals are an integral part of helping youth have a

meaningful experience and gain skills needed to transition into adulthood (Arnold, 2005). Thousands of students each year are impacted by this program. Unfortunately, the embryology curriculum currently offered for teachers does not have objectives and is mainly a book of experiments. In my experience, teachers do not use these books because they require too much preparation and clean-up. The teachers that I have spoken with want lessons that tie in with what they are learning and require no extra setup or take down, but still provide youth with an understanding of chicken embryology. The purpose behind this study is to see how effective lessons that are tied into current standards that teachers can readily utilize are. Thirty lessons that incorporate Next Generation Sunshine State Standards and Common Core Standards were developed. These lessons focused on areas of mathematics, language arts, reading, writing, art, music, social studies and health.

Having a study that can prove that 4-H School Enrichment Chicken Embryology teaches youth through experience and has lessons with evaluation to back up that it has an impact on youth would be beneficial. The objectives of this study are:

1. Examine the effectiveness of 4-H School Enrichment Chicken Embryology.
2. Examine the effectiveness of 4-H School Enrichment Chicken Embryology with lessons that incorporate active learning and chicken embryology.
3. Demonstrate the importance of integral lessons in 4-H School Enrichment Chicken Embryology.
4. Validate the effectiveness of the lessons in a 4-H School Enrichment Chicken Embryology Program.

Key Terms

1. 4-H- The nation's largest youth organization. Maintained by the Cooperative Extension Service through the Land Grant Institution. Originally agriculture based, but now focuses on youth life skill development and preparing youth for adult life (Scott, 2012).
2. Life skill development- Preparing youth with the skills necessary for adulthood.
3. Cooperative Extension Service- A non-formal educational program implemented in the United States designed to help people use research-based knowledge to improve their lives.
4. Chicken Embryology- The study of the smallest building block of life; an embryo as it develops into a chicken.

Limitations

As with all studies, there are limitations. Identifying limitations is a way for the study to be more credible. Some of the limitations for this study are:

1. The sample selected responding to the questionnaire.
2. The sample population because they are the only people participating.
3. Teachers/School may restrict information about youth and/or the class.
4. Receiving enough response from a questionnaire that will be returned to the researcher.
5. Validity of the questionnaire may be exhausted because of non-response.

Assumptions

Once again, creating credibility in a study is also considering all of the assumptions that are made. This study assumes that:

1. All youth that participate in a 4-H School Enrichment Chicken Embryology Program have some kind of knowledge/behavioral gain.
2. Parents and teachers of youth that participate will see a difference in their child after having an experience with the embryology program as compared to before.
3. Information given by both youth is honest and factual.

Literature Review

There has been no research other than a recent study on a similar curriculum that has been created by Ohio State. Horton, Krieger, and Halasa's study involved teacher's expectations of their curriculum, not the effectiveness of the curriculum. However, they do say that,

Every teacher surveyed agreed that the ChickQuest curriculum engages and excites students about science. Moreover, teachers became more confident about teaching the life cycle. As a result, the Akron Public School District committed to teaching ChickQuest to all third-graders during the following school year. (p. 3)

Seeing exactly how effective a curriculum is beneficial to the many different stakeholders that are involved in the programs. Effectiveness can prove that funds are needed to fuel a program as well as prove how necessary a 4-H Professional's job is in bringing these possibilities to schools.

Theoretical Foundation & Research Design

The study was a simple pre and posttest styles evaluation. This will determine what the youth knew before they experienced the program as well as what knowledge they gained after the program. A survey/evaluation was created to address the basics that are taught in the introduction to embryology and what they learn throughout the experience. The evaluation is short and general to chicken embryology. Some questions include:

What is the seatbelt for the egg?

How long are chicken eggs in the incubator?

Do all bird eggs that are placed in an incubator hatch?

Methods

Purposive sampling is the measure that the study used. These participants were selected because they participated in a 4-H school enrichment embryology program. The study tabulated information from all participating third grade classes. Youth were given a questionnaire at the end of their experience. The ultimate goal was to receive all distributed surveys for data compilation. The population of the sample will not be homogenous because the only characteristic they have in common is that the children participated in a school enrichment program in 3rd grade.

The ability of the study to be general along with the sample is higher because of the use of purposeful selection. It is very possible to replicate this study in any state

that has an established embryology school enrichment program. The same methods of sample selection can be copied.

Data was collected through a multiple question questionnaire as described in the research design section. In the beginning of the project, the purpose and meaning of the study was explained, while assuring them of their anonymity on a letter home for parents to read, sign, and return to the teacher. After the evaluations were collected, the data was compiled and a conclusion on whether the curriculum was effective was made. The Institutional Review Board at the University of Florida did grant approval for the study.

Conclusion

This study was a way to demonstrate the effectiveness of 4-H School Enrichment Chicken Embryology experiences and examine the effectiveness of an intracurricular curriculum. This study demonstrates the importance of 4-H School Enrichment Chicken Embryology experiences by examining the knowledge gain of youth by questionnaire as well as. Lastly, this study validates the outcomes of 4-H School Enrichment Chicken Embryology experiences with an intracurricular curriculum

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Lesson 1- Language Arts

Time: 25-30 minutes

Sunshine State/Common Core Standards:

CCSS.ELA-Literacy.RL.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

CCSS.ELA-Literacy.RL.3.2 Recount stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text.

CCSS.ELA-Literacy.RL.3.3 Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events.

Objective:

The student will be able to identify the main characters, feelings of the characters, the setting, and overall thoughts of the story, *The Little Red Hen*, with 90% accuracy based on class discussion, and journal entry.

Materials:

Journals Crayons/Coloring Pencils

Activities:

Reading/Comprehension

The Little Red Hen

From EnchantedLearning.com

Once upon a time, there was a little red hen who lived on a farm. She was friends with a lazy dog, a sleepy cat, and a noisy yellow duck.

One day the little red hen found some seeds on the ground. The little red hen had an idea. She would plant the seeds.

The little red hen asked her friends, "Who will help me plant the seeds?"

"Not I," barked the lazy dog.

"Not I," purred the sleepy cat.

"Not I," quacked the noisy yellow duck.

"Then I will," said the little red hen. So the little red hen planted the seeds all by herself.

When the seeds had grown, the little red hen asked her friends, "Who will help me cut the wheat?"

"Not I," barked the lazy dog.

"Not I," purred the sleepy cat.

"Not I," quacked the noisy yellow duck.

"Then I will," said the little red hen. So the little red hen cut the wheat all by herself.

When all the wheat was cut, the little red hen asked her friends, "Who will help me take the wheat to the mill to be ground into flour?"

"Not I," barked the lazy dog.

"Not I," purred the sleepy cat.

"Not I," quacked the noisy yellow duck.

"Then I will," said the little red hen. So the little red hen brought the wheat to the mill all by herself, ground the wheat into flour, and carried the heavy sack of flour back to the farm.

The tired little red hen asked her friends, "Who will help me bake the bread?"

"Not I," barked the lazy dog.

"Not I," purred the sleepy cat.

"Not I," quacked the noisy yellow duck.

"Then I will," said the little red hen. So the little red hen baked the bread all by herself.

When the bread was finished, the tired little red hen asked her friends, "Who will help me eat the bread?"

"I will," barked the lazy dog.

"I will," purred the sleepy cat.

"I will," quacked the noisy yellow duck.

"No!" said the little red hen. "I will." And the little red hen ate the bread all by herself.

This is also available by book. [The Little Red Hen](#) by Carol Ottolenghi.

Discussion

Who was the main character in the story? The little red hen.

Who were the other characters? The lazy dog, sleepy cat, and noisy yellow duck.

What was the setting? A farm.

What did the little red hen do? She planted seeds, cut the wheat, took the wheat to be milled into flour, and baked the bread.

Why did the little red hen tell the lazy dog, sleepy cat, and noisy yellow duck they could not eat the bread? Because she did all of the work to make the bread (answers may vary).

How would that make you feel if you were the little red hen? Answers will vary.

If you were the little red hen what would you have done differently? How could you have changed the other animals' minds about helping? Answers will vary.

Journal

Draw the story in your chick journal.

It can be the whole story, the end of the story, or just the main parts of the story.

Take It Further For Agricultural Literacy:

Explore how bread is made, see if any of these books are in your library!

Bread, Bread, Bread by Ann Morris

Bread Comes to Life by George Levenson

Tony's Bread by Tomie dePaola

Everybody Bakes Bread by Norah Dooley

Lesson 2- Mathematics

Time: 30 minutes

Sunshine State/Common Core Standard:

CCSS.Math.Content.3.NF.A.1 Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.

Objective:

The student will be able to make predictions about hatching percentages utilizing fractions to see what the possible outcome could be on a worksheet after classroom discussion.

Materials:

White Board Dry Erase Markers Fraction Worksheet

Activities:

Discussion

We know that fractions are parts of totals. For example, if we have 6 apples and 3 are red apples and 3 are green apples that 3 out of 6 apples are either red or green.

(This can also be taken further to say the $3/6$ is equivalent to $1/2$ if the material has already been learned)

Let's think about what is in our incubators, if we have 26 eggs in our incubators and 18 have a baby chick in them what is the fraction? $18/26$.

Provide additional examples of numbers on the board. Some examples are:

12 out of 15 eggs hatched

16 out of 20 chicks hatched on the 20th day

7 out of 10 eggs had a chick inside when candled

2 out of 12 eggs were dropped

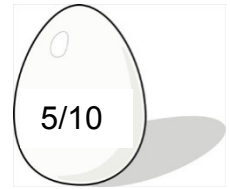
Worksheet 1

Name: _____

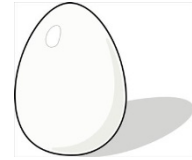
Eggciting Fractions!

Directions: Write the fraction in the egg provided to the right.

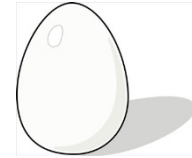
Example: 5 eggs are cracked out of the 10 eggs in the incubator. What is the fraction?



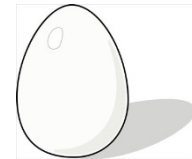
1. 15 chicks hatched and 5 eggs did not hatch. What is the fraction?



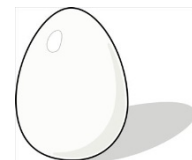
2. A total of 22 eggs are in an incubator, if 19 of the eggs hatch what is the fraction?



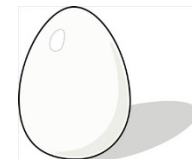
3. 3 out of 10 eggs are cracked and did not hatch. What is the fraction?



4. Ms. Davis accidentally dropped 4 eggs when she was candling them. There were a total of 17 eggs in the incubator to start. What is the fraction?

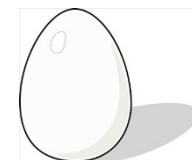


5. 18 eggs hatched into chicks on the 20th day, and those chicks are now in the brooder box, 7 have started hatching, but are not out yet. What is the fraction?

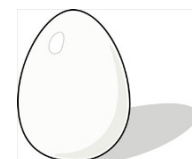


Making Predictions:

How many eggs are in your incubator?



How many do you think will hatch? What is the fraction?



How many do you think will not hatch? What is the fraction?

Lesson 3- Science

Time: 10 minutes

Sunshine State/Common Core Standard:

SC.3.L.14.1: Describe structures in plants and their roles in food production, support, water and nutrient transport, and reproduction.

Objective:

The student will be able to identify and label the parts of an egg when provided a diagram of the egg after a class activity and discussion.

Materials:

Egg Paper Plate

Activities:

Discussion and Experience

What do you think the inside of an egg looks like? Almost all of us have seen one one time or another. What is in the center of the egg? Yolk. What color is it?

Yellow/orange. **What is the clear stuff around the yolk called?** The white or albumen.

Discuss in further detail that the white is the albumen if needed.

Let's crack open this egg and look at the insides.

Crack open egg onto paper plate (if you have an elmo this is a great way to show the class all at once).

What is the yolk? The center yellow circle. **Can you see the albumen? Do you see the white twisted string like things holding the yolk in place? That is the chalaza (pronounced kuh-lay-zuh). The chalaza is the "seatbelt" for the yolk so that it doesn't roll around in the egg and stays in place when the egg is moved. If we look at the inside of the eggshell we will see something that looks like white skin,**

which is the membrane. This membrane also helps to make the air cell at the top of the egg. Can you see where the air cell is? While we are talking about membranes, there is another membrane that goes around the yolk. It is called the vitelline membrane. The vitelline membrane is a clear casing that protects the yolk, or vitelline. It is kind of hard to see but it holds the yolk in the circle shape that it is. Next is the germinal disc. The germinal disc is a slightly white spot on the yolk that will hopefully develop into a chick. Eggs that are not fertilized have a slight coloration that is harder to see. Can you see the germinal disc? Lastly, let's look at the shell. The shell is the hard part that is the outer part of the egg. It protects all of the parts on the inside and is made of calcium.

Now that we have gone over the parts of the egg, here is a worksheet for you to color and fill in the blanks of the parts of the egg.

Lesson 4- Science

Time: 15 minutes

Sunshine State/Common Core Standard:

SC.3.L.14.1: Describe structures in plants and their roles in food production, support, water and nutrient transport, and reproduction.

Objective:

The student will be able to identify and label the parts of an egg when provided a diagram of the egg after a class activity and discussion.

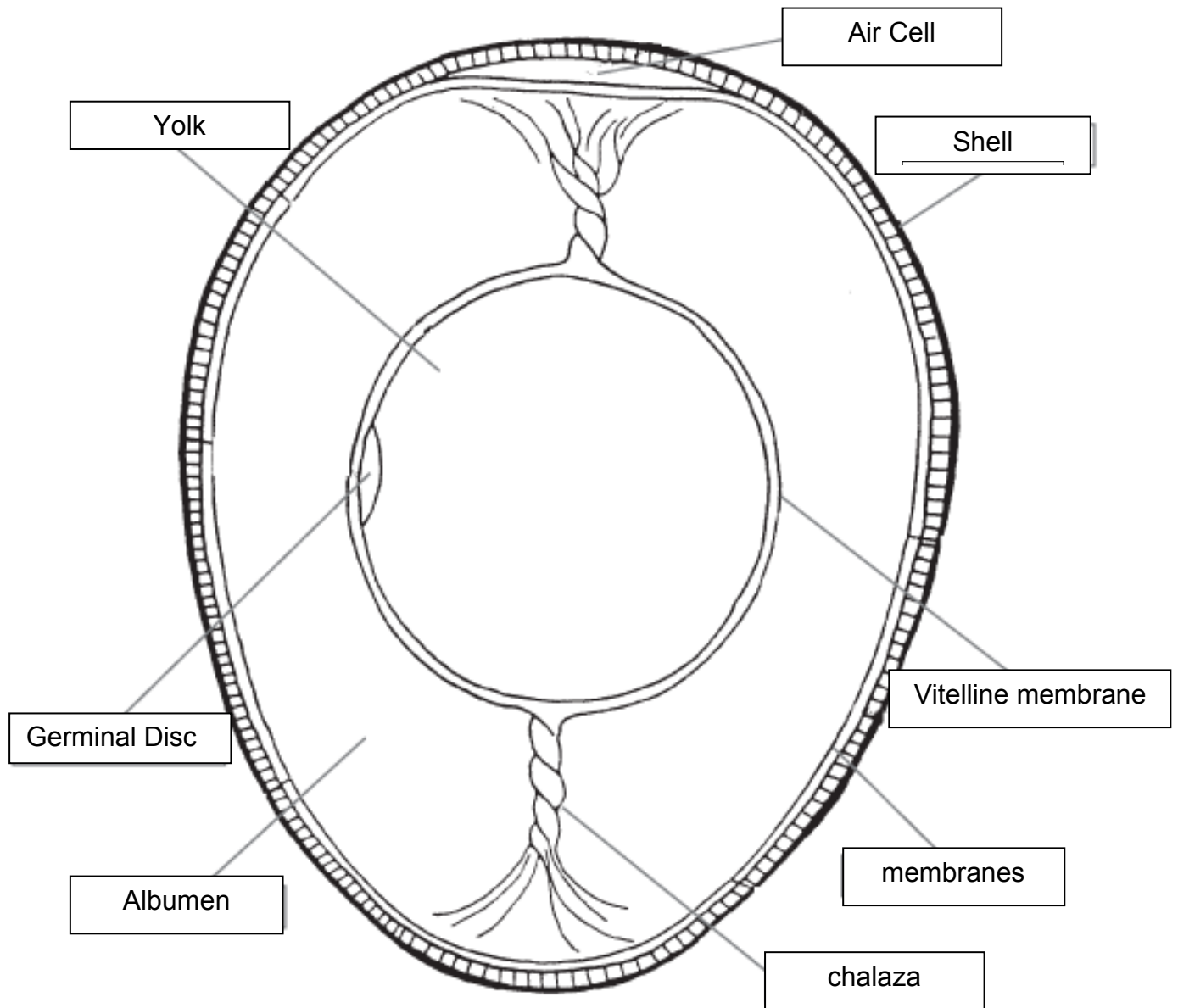
Materials:

Crayons/Colored Pencils Parts of the Egg Worksheet

Activities:

Egg Parts

Color each part of the egg a different color and label each part of the egg.



Use each word only once:

air cell
germinal disc
vitelline membrane

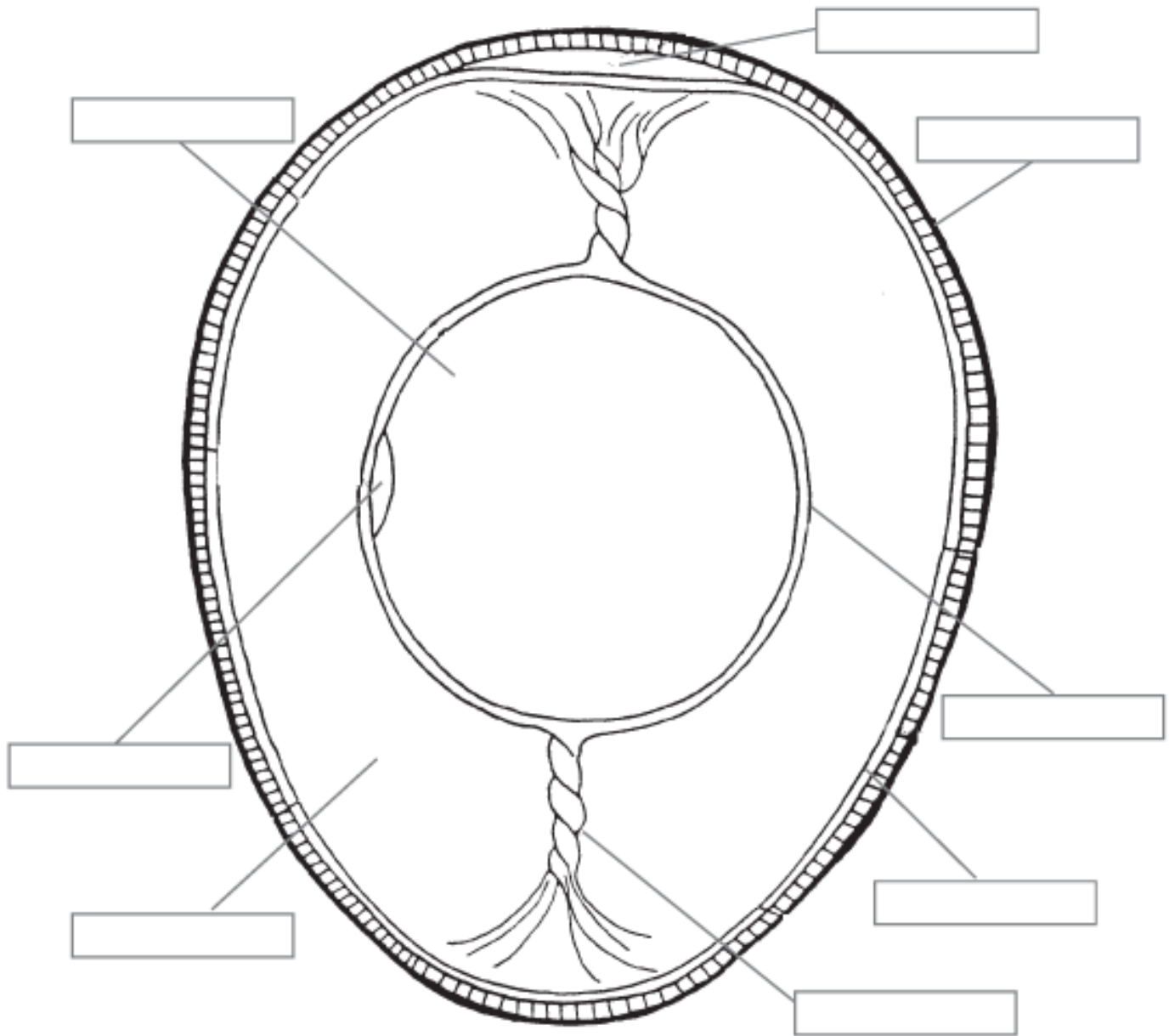
albumen or white
membranes
yolk

chalaza
shell

Name: _____

Egg Parts

Color each part of the egg a different color and label each part of the egg.



Use each word only once:

air cell
germinal disc
vitelline membrane

albumen or white
membranes
yolk

chalaza
shell

Lesson 5- Health

Time: ~1 hour

Sunshine State/Common Core Standard:

HE.3.B.3.3: List healthy options to health-related issues or problems.

Objectives:

The student will be able to identify a variety of healthy protein choices.

The student will be able to make informed decisions when choosing to eat eggs.

Materials:

Eggs Paper Plates Forks Hot Plate/Griddle Microwave Non-stick Spray Salt
Pepper Salsa Cheese Low-fat Milk Lunchmeat (Ham) small whole wheat tortillas
Food Critique Worksheet

Activities:

Cookery of Eggs

How many of you eat eggs? How often do you eat them? What are the different ways to eat eggs? Scrambled, over easy, omelet, boiled, deviled. (Answers will vary).
Eggs are an excellent source of protein and vitamins that are good for us. They can be a great snack or meal! We are going to explore some healthy ways to make and eat eggs.

The ways we are going to cook eggs are: scrambled, boiled, pan fried, and omelet, and even a breakfast burrito! (You can change this based on availability of products).

Recipes from <http://www.incredibleegg.org/recipes/collection/simply-eggs>

Have students record their results (Name of dish, smell, look, taste, thoughts, and what tomato face they circle) on the Food Critique Worksheet and put in their journals.



Basic Hard-Boiled Eggs



For easier peeling, use eggs that are 7 to 10 days old. Pack hard-boiled eggs for lunch. Slice or cut into wedges for tossed salad. Dice for egg salad. Color and decorate for Easter.

Prep Time: 1 minute

Cook Time: 9-15 minutes

Servings: As desired

Ingredients

EGGS

Directions

- Step 1** PLACE eggs in saucepan large enough to hold them in single layer. ADD cold water to cover eggs by 1 inch. HEAT over high heat just to boiling. REMOVE from burner. COVER pan.
- Step 2** LET EGGS STAND in hot water about 12 minutes for large eggs (9 minutes for medium eggs; 15 minutes for extra large).
- Step 3** DRAIN immediately and serve warm. OR, cool completely under cold running water or in bowl of ice water, then REFRIGERATE.

incredible!

Basic Fried Eggs



Serve fried eggs for breakfast, in sandwiches or on top of steaks, burgers or hash. For a cleaner shape, break eggs into custard cups before sliding them into the pan.

Prep Time: 1 minute

Cook Time: 6-8 minutes

Servings: 2 to 4 servings

Ingredients

- Butter
- 2 to 4 EGGS
- Salt and pepper

Directions

- Step 1** For Over-Easy or Over-Hard Eggs: HEAT 2 tsp. butter in nonstick skillet over medium-high heat until hot.
- Step 2** BREAK eggs and SLIP into pan, 1 at a time. IMMEDIATELY reduce heat to low.
- Step 3** COOK SLOWLY until whites are completely set and yolks begin to thicken but are not hard, 5 to 6 minutes. SLIDE turner under each egg and carefully FLIP it over in pan. COOK second side to desired doneness. SPRINKLE with salt and pepper. SERVE immediately.
- Step 4** For Basted Eggs: COOK as for Over-Easy or Over-Hard Eggs, but use 2 Tbsp. butter. COOK until edges turn white. Begin BASTING eggs with butter from pan. COVER pan between bastings and CONTINUE COOKING until whites are completely set and yolks begin to thicken but are not hard.
- Step 5** For Steam-Basted Eggs: COOK as for Over-Easy or Over-Hard Eggs, but use 1 tsp. butter or a light coating of cooking spray. COOK until edges turn white. ADD 1 tsp. water to pan. Cover pan tightly. CONTINUE COOKING until whites are completely set and yolks begin to thicken but are not hard.



Basic Microwave Scrambled Eggs



Microwave scrambled eggs done in less than 3 minutes. Add diced meat, shredded cheese or chopped veggies for a more interesting breakfast or snack.

Prep Time: 1 minute

Cook Time: 2 minutes

Servings: 1 serving

Ingredients

- 2 EGGS
- 2 Tbsp. milk
- Salt and pepper

Directions

- Step 1** → BEAT eggs, milk, salt and pepper in microwave-safe bowl until blended.
- Step 2** → MICROWAVE on HIGH 45 seconds: stir. MICROWAVE until eggs are almost set, 30 to 45 seconds longer. SERVE immediately.

Spinach, Ham & Cheese Omelet



This fast classic savory egg, spinach and cheese omelet is an excellent source of protein and vitamin D.

Prep Time: 5 minutes

Cook Time: 5 minutes

Servings: 1 to 2 servings

Ingredients

- 2 EGGS
- 2 Tbsp. water
- 1 tsp. butter
- Salt and pepper
- 1/4 cup shredded Italian cheese blend (1 oz.)
- 1/4 cup baby spinach
- 1/4 cup finely chopped ham

Directions

- Step 1** BEAT eggs and water in small bowl until blended.
- Step 2** HEAT butter in 7 to 10-inch nonstick omelet pan or skillet over medium-high heat until hot. TILT pan to coat bottom. POUR IN egg mixture. Mixture should set immediately at edges.
- Step 3** GENTLY PUSH cooked portions from edges toward the center with inverted turner so that uncooked eggs can reach the hot pan surface. CONTINUE cooking, tilting pan and gently moving cooked portions as needed.
- Step 4** When top surface of eggs is thickened and no visible liquid egg remains, season with salt and pepper. PLACE cheese on one side of omelet; top with spinach and ham. FOLD omelet in half with turner. With a quick flip of the wrist, turn pan and INVERT or SLIDE omelet onto plate. SERVE immediately.



Microwave Egg & Cheese Breakfast Burrito



Whip up an on-the-go Mexican-style breakfast with a quick and easy microwave egg scramble.

Prep Time: 2 minutes

Cook Time: 45-60 seconds

Servings: 1 serving

Ingredients

- 1 flour tortilla (6-inch)
- 1 EGG
- 1 Tbsp. shredded Mexican cheese blend
- 1 Tbsp. salsa

Directions

- Step 1** LINE 2-cup microwave-safe cereal bowl with microwave-safe paper towel. PRESS tortilla into bowl. BREAK egg into center of tortilla. BEAT egg gently with a fork until blended, being careful not to tear tortilla.
- Step 2** MICROWAVE on HIGH 30 seconds; stir. MICROWAVE until egg is almost set, 15 to 30 seconds longer.
- Step 3** REMOVE tortilla with paper towel liner from bowl to flat surface. TOP egg with cheese and salsa. FOLD bottom of tortilla over egg, then fold in sides.

Name: _____

Food Critique

Dish:

Smell:

Taste:

Look:

Thoughts:

Circle one:



Dish:

Smell:

Taste:

Look:

Thoughts:

Circle one:



Dish:

Smell:

Taste:

Look:

Thoughts:

Circle one:



Dish:

Smell:

Taste:

Look:

Thoughts:

Circle one:



Dish:

Smell:

Taste:

Look:

Thoughts:

Circle one:



Lesson 6- Social Sciences

Time: 20 minutes

Sunshine State/Common Core Standards:

SS.3.G.1.1: Use thematic maps, tables, charts, graphs, and photos to analyze geographic information.

Objectives:

The student will be able to locate the top 10 egg producing states on a given map.

The student will be able to explain why chicken egg production is located in the top 10 egg producing states.

Materials:

Map of the United States Sticky Notes Numbered 1-10 Copies USA Map Handout

Activity:

Egg Production

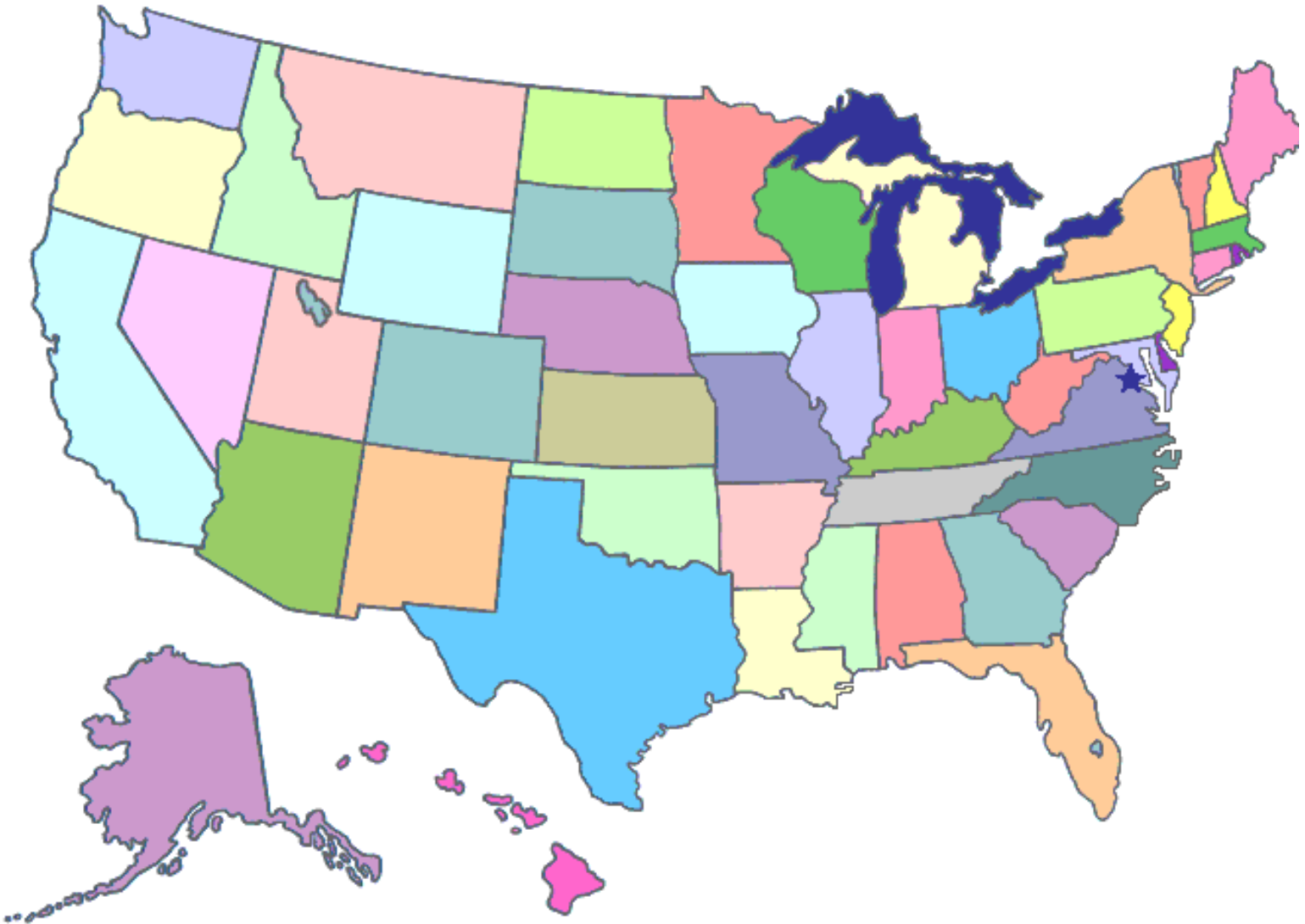
Where do the eggs that we get from the grocery store come from? Farms. That's right, but where are the farms that the eggs come from located? Here is a map of the United States. I have a list of the top 10 egg producing states in the United States for the year 2012. When I say a state, raise your hand and I will give you a sticky note with the number that it is in production numbers and you can go up and place it on the map. These numbers come from how many layers, or egg producing chickens each state has.

Also, while I call the states out, mark on your map by placing a number 1, 2, 3, or etc. We will start at number 10, which produces the least out of the 10.

- | | |
|---------------------------------------|---|
| 10. Georgia- 8,492,000 layers | 5. California- 19,092,000 layers |
| 9. Nebraska- 9,245,000 layers | 4. Pennsylvania- 23,683,000 layers |
| 8. Minnesota- 9,359,000 layers | 3. Indiana- 25,802,000 layers |
| 7. Michigan- 12,188,000 layers | 2. Ohio- 27,944,000 layers |
| 6. Texas- 14,671,000 layers | 1. Iowa- 51,504,000 layers |

Name: _____

Map of United States



Top 10 Egg Producing States

1. _____

6. _____

2. _____

7. _____

3. _____

8. _____

4. _____

9. _____

5. _____

10. _____

Lesson 7- Writing

Time: 35 minutes

Sunshine State/Common Core Standards:

LACC.3.W.1.3: Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.

Objectives:

The student will be able to write a narrative story with details, transitional words, and in proper five paragraph format.

Materials:

Journal

Activity:

Writing Prompt

The Magic Egg

You have received a mysterious package from a friend. Inside is a very unusual egg. Write a story about what happens next. What does the egg look like? Does the egg hatch? What is inside it? Provide a small illustration at the end.



Prompt and image from k12reader.com

Lesson 8- Language Arts

Time: 35 minutes

Sunshine State/Common Core Standards:

LACC.3.RI.2.4: Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.

Objectives:

The student will be able to define vocabulary words with the assistance of a dictionary.

The student will be able to write vocabulary words in a sentence by utilizing context clues.

Materials:

Journals Dictionaries

Activity:

Vocabulary Assignment

Define the following vocabulary words and then write each one in a sentence.

- 1. Germ Spot**
- 2. Yolk**
- 3. Chalaza**
- 4. Egg**
- 5. Vitelline Membrane**
- 6. Albumen**
- 7. Air Cell**
- 8. Membrane**
- 9. Shell**
- 10. Incubator**

Lesson 9- Mathematics

Time: 25 minutes

Sunshine State/Common Core Standards:

MACC.3.NBT.1.3: Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9×80 , 5×60) using strategies based on place value and properties of operations.

Objectives:

The student will be able to demonstrate how to multiply, divide, add, and subtract using decimals and whole numbers.

Materials:

Eggciting Math! Worksheet

Activity:

Addition, Subtraction, Multiplication, and Division

Eggciting Math!

Read each problem carefully. Show your work below the crack in the shell. Remember to show your work and label your answers.

If large eggs are on sale for \$1.89 a dozen, how much will 4 dozen cost?

$$\begin{array}{r} \$1.89 \\ \times 4 \\ \hline \$7.56 \end{array}$$

There are 12 eggs in a dozen. How many eggs are in 2 dozen? **24**
3 dozen? **36**
4½ dozen? **54**

$$\begin{array}{r} 12 \\ \times 2 \\ \hline 24 \end{array}$$

$$\begin{array}{r} 12 \\ \times 3 \\ \hline 36 \end{array}$$

$$\begin{array}{r} 12 \\ \times 4 \\ \hline 48 \\ +6 \\ \hline 54 \end{array}$$

How many dozen eggs can Tony buy if they sell for \$1.75 a dozen and he has \$5? Will he get any change back? If so, how much?

$$\begin{array}{r} \$1.60 \\ \times 3 \\ \hline \$4.80 \end{array}$$

3 dozen eggs

$$\begin{array}{r} \$5.00 \\ - \\ \hline \end{array}$$

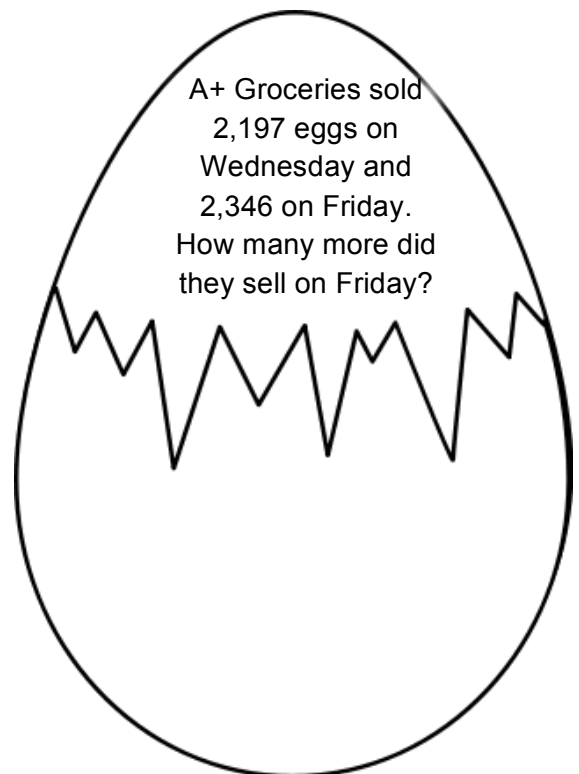
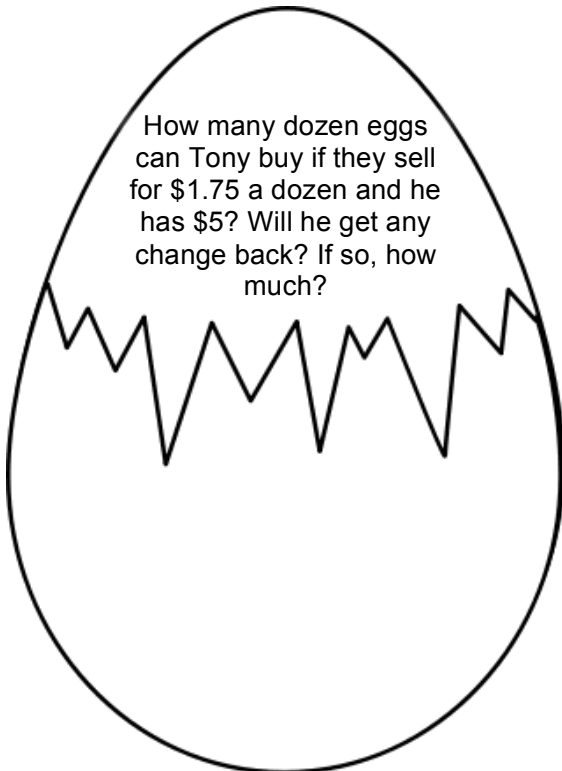
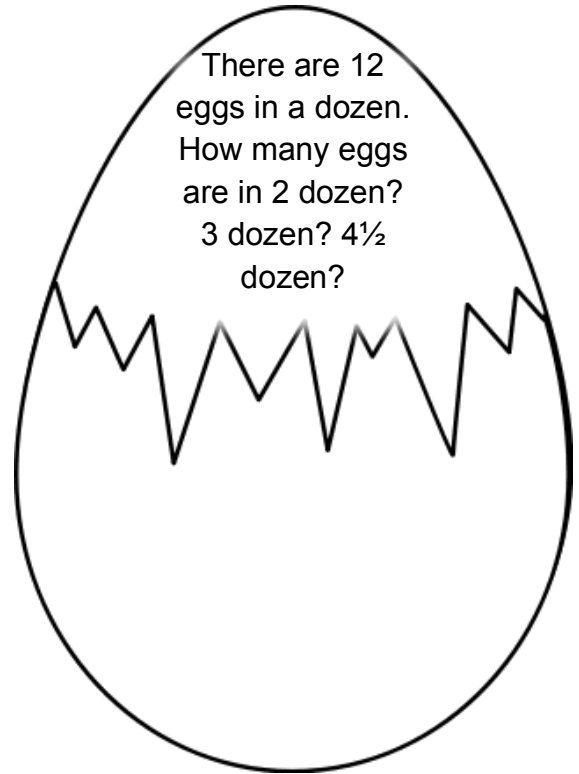
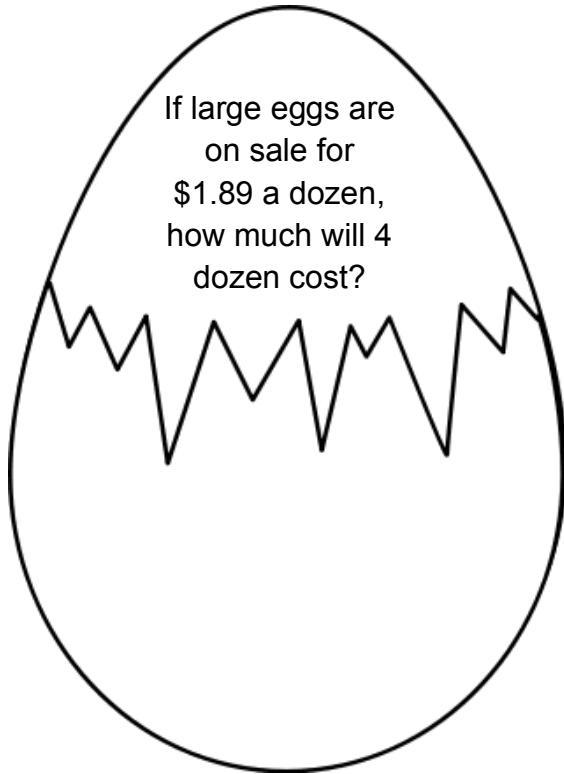
A+ Groceries sold 2,197 eggs on Wednesday and 2,346 on Friday. How many more did they sell on Friday?

$$\begin{array}{r} 2346 \\ - 2197 \\ \hline 149 \end{array}$$

Name: _____

Eggciting Math!

Read each problem carefully. Show your work below the crack in the shell.
Remember to show your work and label your answers.



Lesson 10- Language Arts

Time: 20 minutes

Sunshine State/Common Core Standards:

LACC.3.RL.2.5: Refer to parts of stories, dramas, and poems when writing or speaking about a text, using terms such as chapter, scene, and stanza; describe how each successive part builds on earlier sections.

Objectives:

After reading the poem, *Baby Chick* by Aileen Fisher, the student will be able to comprehend what the poem's meaning is.

The student will be able to write a poem of their own.

Materials:

Journals *Baby Chick* poem by Aileen Fisher

Activity:

Poem

After handing out the worksheet with the poem on it and reading the class the poem discuss what they think the meaning of the poem is.

Baby Chick

Peck

Peck

Peck

on the warm brown egg.

OUT comes a neck.

OUT comes a leg.

How

does

a chick,

Who's not been about,

discover the trick

of how to get out?

-- Aileen Fisher

What do you think the poem's meaning is? How do we know to say the word "out" louder than the rest of the words? Is this a happy or sad poem? Is it stating a fact or asking a question? What did you think of the poem? Do you like it? Is it exciting or boring? What else could we do to make the poem more exciting, speak faster or louder?

Name: _____

Baby Chick

By Aileen Fisher

Peck
Peck
Peck
on the warm brown egg.
OUT comes a neck.
OUT comes a leg.

How
does
a chick,
Who's not been about,
discover the trick
of how to get out?

Write your own poem about an egg, a baby chick, or chicken like Aileen Fisher did.

Draw a picture that shows your poem on the back.

Lesson 11- Science

Time: 25-30 minutes

Sunshine State/Common Core Standards:

SC.3.L.15.1: Classify animals into major groups (mammals, birds, reptiles, amphibians, fish, arthropods, vertebrates and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors.

Objective:

The student will be able to identify the appropriate life stages of a chick as it develops in an egg.

Materials:

Chick Calendar Journals

Chickoscope Website (<http://chickscope.beckman.uiuc.edu/explore/embryology/>)

Activities:

Exploring the Development of Baby Chicks

You know that we have baby chicks (hopefully) developing in eggs in our incubator. How do you think they develop? Do the feathers grow first? What about when they get their beak? We are going to explore how a baby chick develops by looking at the Chickoscope and our development calendars. With the Chickoscope, look at pictures in color and discuss specific development details. Look at the development from early on, days 3-6, and then later on like days 15-18. Have students write down in their journals and then discuss what things they see that are different from the beginning to end.

Lesson 12- Science

Time: 25-30 minutes

Sunshine State/Common Core Standards:

SC.3.L.15.1: Classify animals into major groups (mammals, birds, reptiles, amphibians, fish, arthropods, vertebrates and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors.

Objective:

The student will be able to differentiate the appropriate life stages of a chick as it develops in an egg.

Materials:

Chick Calendar Journals Chick Growth Worksheet

Chickoscope Website (<http://chickscope.beckman.uiuc.edu/explore/embryology/>)

Activities:

Chick Growth Worksheet

The goal of this assignment is for students to be able to tell how living things change.

We know what baby chicks look like in the egg while they develop. But can we tell the difference between chicks that are in early development from chicks in late development? Let's do this activity to find out.

Think-Pair-Share: Have students do this on their own, then share with a neighbor to see what they have and finally share as a whole class and discuss the answers.

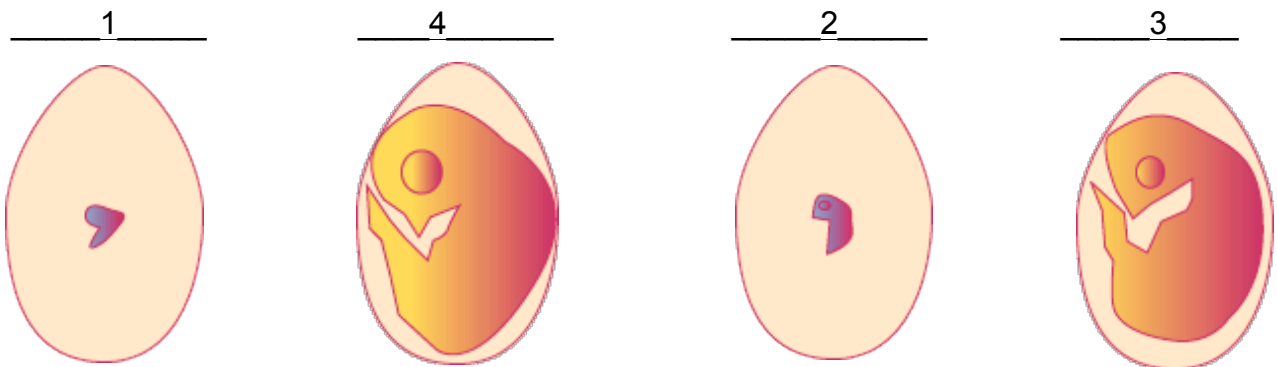
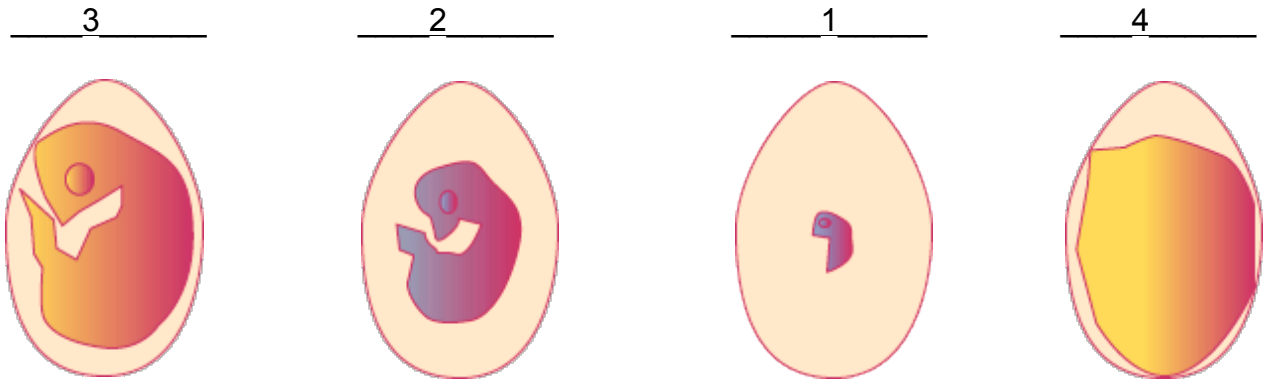
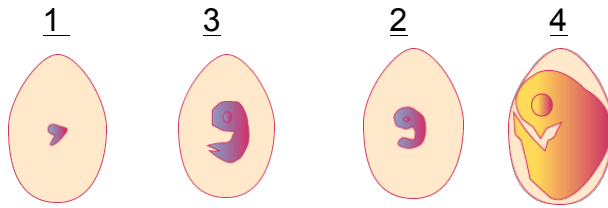
Answer Key

Name: _____

How Do Living Things Change?

Directions: Put the chicks in the eggs in the right order, from youngest to oldest. The oldest is 4 and the youngest that came first is 1.

Example:

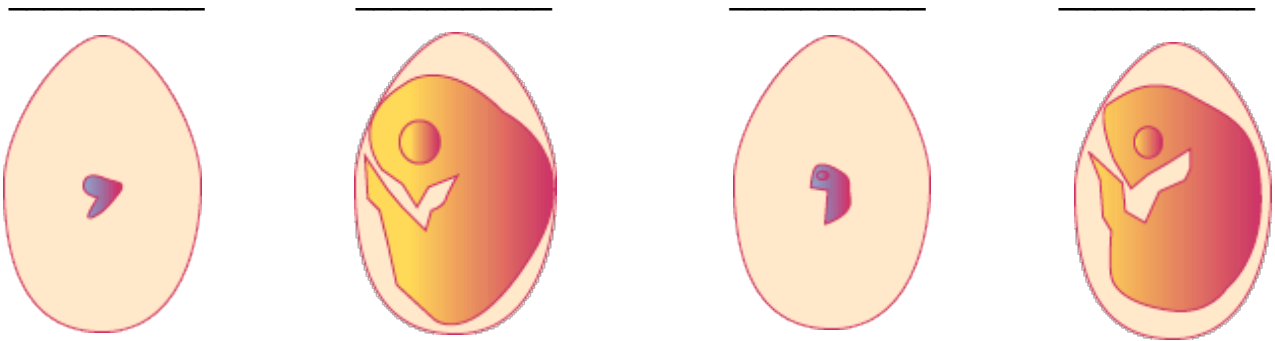
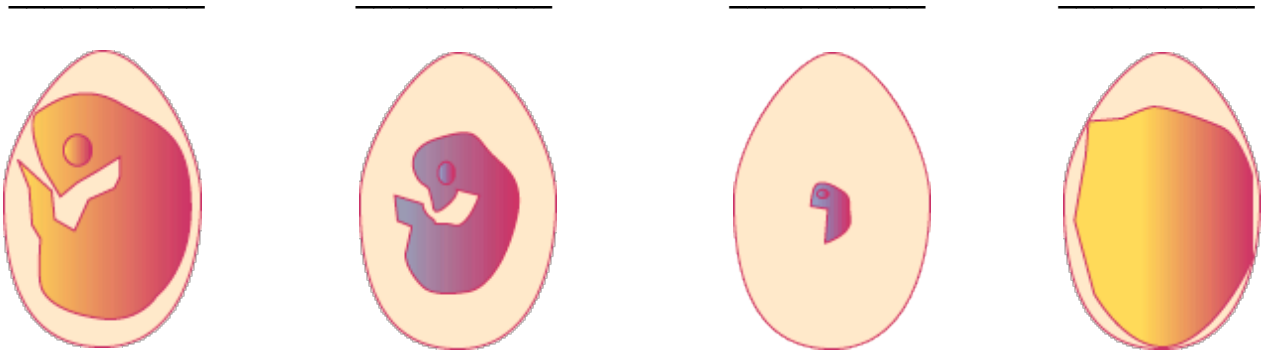
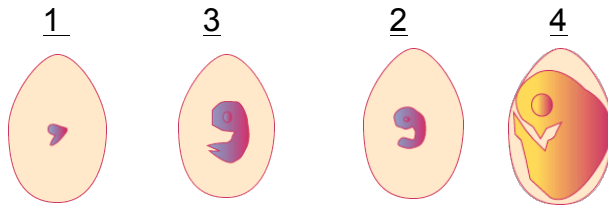


Name: _____

How Do Living Things Change?

Directions: Put the chicks in the eggs in the right order, from youngest to oldest. The oldest is 4 and the youngest that came first is 1.

Example:



Lesson 13- Science/Math

Time: 25-30 minutes

Sunshine State/Common Core Standards:

SC.3.P.8.1: Measure and compare temperatures of various samples of solids and liquids.

MACC.K12.MP.5.1: Use appropriate tools strategically.

Objective:

The student will be able to measure temperature by using a thermometer in a variety of settings.

Materials:

Thermometers Journals Cups of water Incubators

Activities:

What is temperature?

Temperature is the measure of how hot or cold something is. When you are sick you use a thermometer to tell your temperature, how much of a fever, or how hot your body is. The incubators have to be a certain temperature to keep the chicks in the eggs developing. Who can tell me what that temperature is? 100 degrees Fahrenheit. In the United States we use Fahrenheit to measure temperature for weather, cooking, and for body temperature. However, in the other parts of the world and in science Celsius is used to measure temperature. (In case they ask: Fahrenheit, created by German Scientist Daniel Gabriel Fahrenheit, used salt water as his 0 degree point. Meaning that when salt water freezes a mercury thermometer will read 0 degrees. 32 degrees is when fresh water freezes and 212 degrees is when water boils. Celsius, invented by Swedish Astronomer Anders Celsius, is based on fresh water freezing at 0 degrees and 100 degrees is when water boils.) Let's check the temperature in the incubator and record our data on our worksheet. Let's also check some other areas in the classroom. We could see how hot the hot water out of the bathroom faucet is or how cold the cold water coming out of the water fountain is, how cold or hot our classroom is, and see if the temperature in the incubator changes, or fluctuates.

Name: _____



How COLD or HOT is it?

Directions: Using a thermometer measure items in your school to find out how hot or how cold they are. If you can think of more to measure fill them in in the bottom rows.

For example: The classroom measures 75 °F.

Object being tested	Temperature of object (°F)
Example classroom	75 °F
My Classroom	
Incubator first time	
Hot faucet water	
Cold faucet water	
Water from drinking fountain	
Incubator second time	

Lesson 14- Language Arts

Time: 25-30 minutes

Sunshine State/Common Core Standards:

LACC.3.RL.2.4: Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language.

Objective:

The student will be able to solve the crossword puzzle made of words learned in class.

Materials:

Eggciting Criss-Cross Words!

Activities:

Vocabulary Crossword Puzzle

Using the words we have learned so far about embryology, solve the crossword puzzle. Your journal could help solve some of the clues.

Answer Key

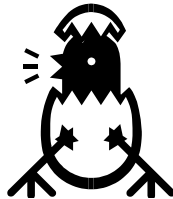
Name: _____

Eggciting Criss-Cross Words!

Directions: Use the clues to fill in the blanks with words related to embryology.

The crossword puzzle grid is filled with the following words:

- Across:**
 - 2. SHELL
 - 4. ALBUMEN
 - 6. AIRCELL
 - 8. EMBRYO
 - 10. YOLK
 - 12. TEMPERATURE
 - 14. GERMINAL DISC
- Down:**
 - 1. CHICK
 - 3. SHICK
 - 5. CHICK
 - 7. HUMID
 - 9. EMBRYO
 - 11. HEN
 - 13. PORE

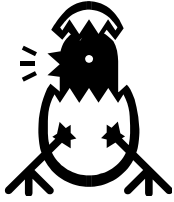


Across

2. Hard protective outer covering of an egg.
4. White of an egg, supplies the embryo with food and water.
5. Baby chicken.
6. Pocket of air at the large end of the egg.
8. Earliest stage of growth/development of an organism.
10. Yellow of the egg, the primary food source for the embryo.
12. How hot or how cold something is.
14. "White spot" on the yolk where the embryo develops.

Down

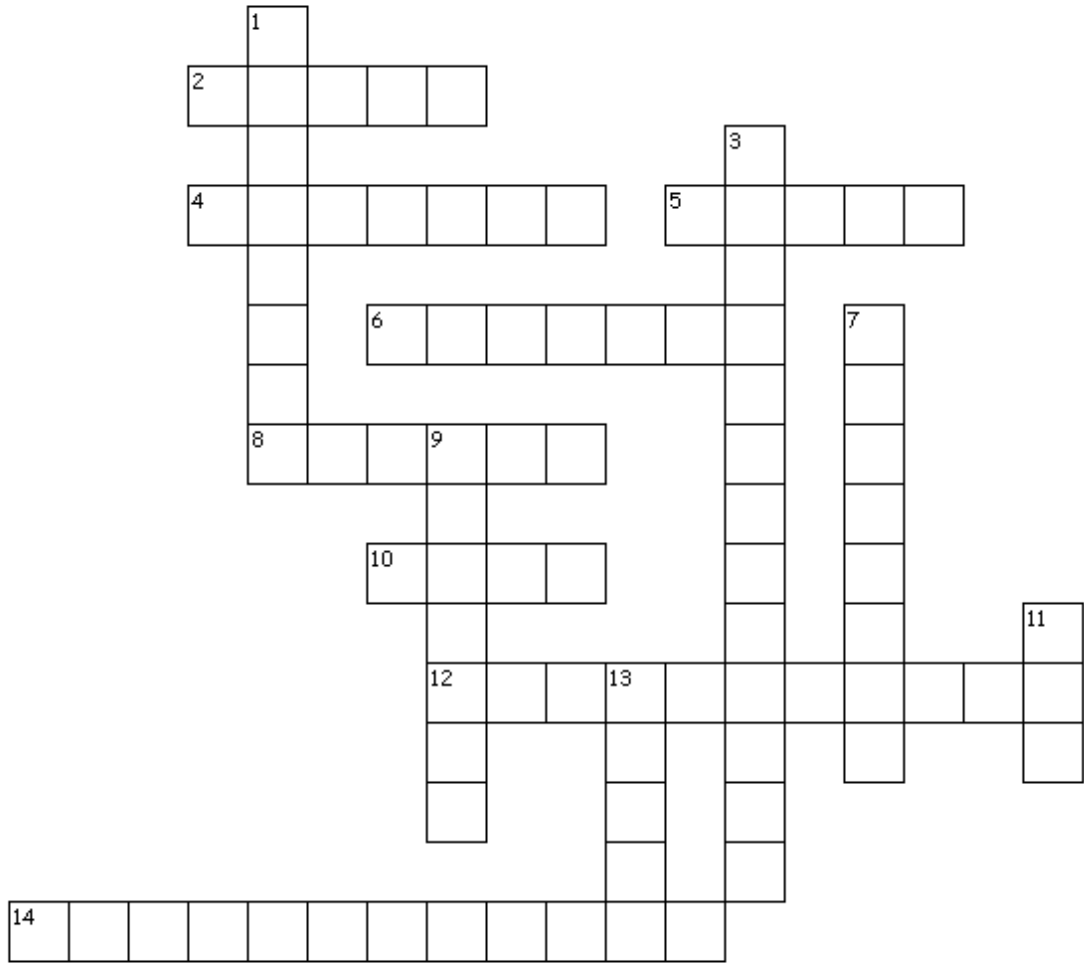
1. Two twisted cords at each end of the yolk.
3. Two thin layers inside of the shell.
7. Water in the air.
9. Male chicken.
11. Female chicken.
13. Tiny holes that let air and water in and out of the egg.



Name: _____

Eggciting Criss-Cross Words!

Directions: Use the clues to fill in the blanks with words related to



embryology.

Across

- 2. Hard protective outer covering of an egg.
- 4. White of an egg, supplies the embryo with food and water.
- 5. Baby chicken.
- 6. Pocket of air at the large end of the egg.
- 8. Earliest stage of growth/development of an organism.
- 10. Yellow of the egg, the primary food source for the embryo.
- 12. How hot or how cold something is.
- 14. "White spot" on the yolk where the embryo develops.

Down

- 1. Two twisted cords at each end of the yolk.
- 3. Two thin layers inside of the shell.
- 7. Water in the air.
- 9. Male chicken.
- 11. Female chicken.
- 13. Tiny holes that let air and water in and out of the egg.

Lesson 15- Language Arts

Time: 25-30 minutes

Sunshine State/Common Core Standards:

LACC.3.RL.2.4: Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language.

Objective:

The student will be able to research the definitions and write the word from embryology in a sentence.

Materials:

Journals

Activities:

Vocabulary Words

Using a dictionary, define the following words, and then write the word in a sentence.

Incubator

Pores

Embryo

Chalazae

Humidity

Temperature

Fertilize

Egg Tooth

Albumen

Hatch

Lesson 16- Science

Time: 25-30 minutes

Sunshine State/Common Core Standards:

SC.3.L.15.1: Classify animals into major groups (mammals, birds, reptiles, amphibians, fish, arthropods, vertebrates and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors.

Objective:

The student will be able to differentiate breeds and sexes of chickens and compare and contrast their characteristics.

Materials:

Similarities and Differences worksheet Computer Projector

Activities:

Chicken Breeds

Go online to: <http://www.mypetchicken.com/chicken-breeds/breed-list.aspx> or search APA list of chickens online. Choose some breeds to look at with students and talk about their characteristics, also compare male to female chickens.


There are many different types or breeds of chickens, white, spotted, brown, black, red, and even mixed colored and they all have different characteristics. There are also male and female chickens that have different characteristics too. Work in pairs to discuss the similarities and differences in chicken breeds and sexes. Discuss egg characteristics too (available on website). Is the hen a good layer? What do the eggs look like? Come together as a group and discuss what characteristics were thought of.




Name: _____

Similarities and Differences

Directions: Compare and contrast the characteristics of chicken breeds and sexes.

Contrast: _____ _____ _____ _____ _____ _____ _____	Black Australorp	Frizzle	Contrast: _____ _____ _____ _____ _____ _____ _____
			

Compare:

Contrast: _____ _____ _____ _____ _____ _____ _____	Rooster	Hen	Contrast: _____ _____ _____ _____ _____ _____ _____
			

Compare:

How similar are all four chickens? How different are they? Please explain.

Lesson 17- Science

Time: 25-30 minutes

Sunshine State/Common Core Standards:

MACC.3.MD.2.3: Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.

Objective:

The student will be able to interpret data and organize it in a frequency table and solve problems.

Materials:

Chicken breeds! Worksheet

Activities:

Chicken Breeds!

We have looked at the differences in chicken breeds and sexes, which one did you like best? If we were to pretend that we are going to be chicken farmers what breeds should we choose? Do we want them for eggs? What about for show? Some people have special chickens that they raise to show the breed in competition like the fair. Have you ever seen chickens at the fair? They are there to compete for a prize.

Use the Chicken Breeds! Worksheet to see what breeds we would have on our chicken farm.



Name: _____

Chicken Breeds!

Directions: Use the information provided to create a frequency table and answer the questions related to the table.

The students in your class voted for their favorite chicken breeds. They put the information in a frequency table. How many more students chose Frizzle over Rhode Island Red?

_____ 2 _____.

How many students chose White Leghorn Chickens over Frizzles? What about Rhode Island Reds?

_____ 2. 4. _____.

Favorite Chicken Breeds	
Breed	Tally
White Leghorn	III
Frizzle	I
Rhode Island Red	

What numbers are you comparing? How many students chose a certain breed of chicken over another breed of chicken.

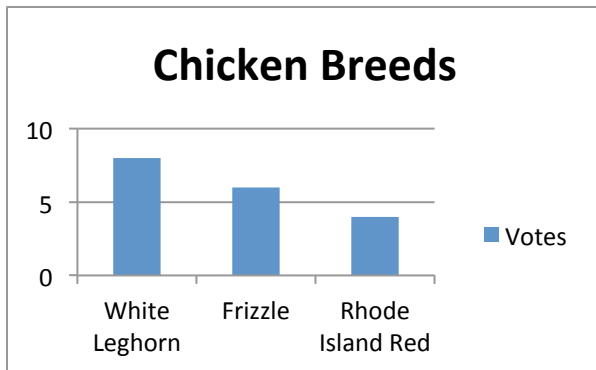
What information do you need to use? The tally marks of how many students chose White Leghorn, Frizzle, or Rhode island red chickens.

What do you need to find? What breed our class wanted most for our chicken farm.

How will you use this information? To see which breed our class wanted most.

Why are you using this information? To find what chicken breed our class wanted for our future chicken farm.

Draw a bar graph of the information from the frequency table.





Name: _____

Chicken Breeds!

Directions: Use the information provided to create a frequency table and answer the questions related to the table.

The students in your class voted for their favorite chicken breeds. They put the information in a frequency table. How many more students chose Frizzle over Rhode Island Red?

_____.

How many students chose White Leghorn Chickens over Frizzles? What about Rhode Island Reds?

Favorite Chicken Breeds	
Breed	Tally
White Leghorn	
Frizzle	
Rhode Island Red	

What numbers are you comparing? _____

What information do you need to use? _____

What do you need to find? _____

How will you use this information? _____

Why are you using this information? _____

Draw a bar graph of the information from the frequency table.

Lesson 18- Mathematics

Time: 25-30 minutes

Sunshine State/Common Core Standards:

MACC.3.OA.1.3: Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

Objective:

The student will be able to multiply rows and columns of eggs in an incubator and in egg cartons to get a final product.

Materials:

Egg cartons Plastic Easter eggs (or whatever else that may suffice)

Eggceptional Products! Worksheet

Activities:

Eggceptional Products! Worksheet

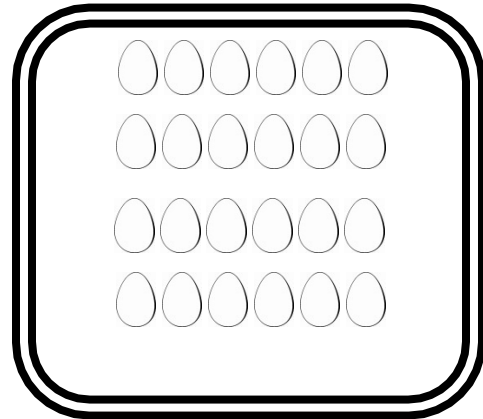
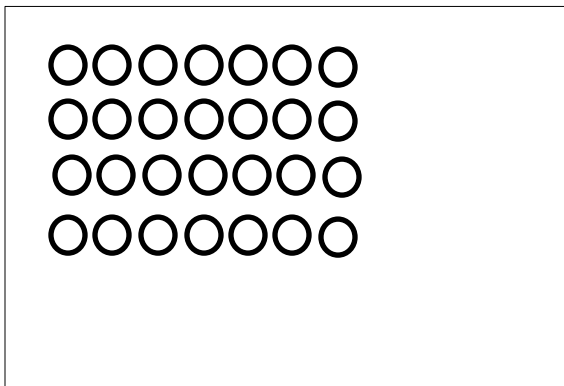
How many eggs do we have in the incubator? How did you know how many are in there? Did you count them? How did you count them? One by one? Did you multiply one row of eggs by a column of eggs? Here's a worksheet to show how you can use something like an incubator or an egg carton to be a real life array.

Name: _____

**E G G C E P T I O N A L
P R O D U C T S**

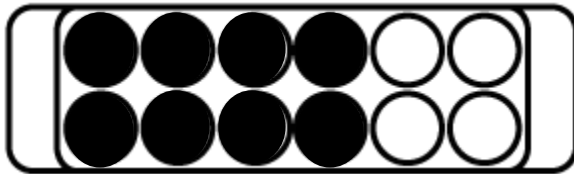
1. There are four rows of eggs with six eggs in each row in the incubator. How many eggs are there? 24

Draw an array of the 4 rows of 6 eggs. Draw your array in the incubator as eggs.

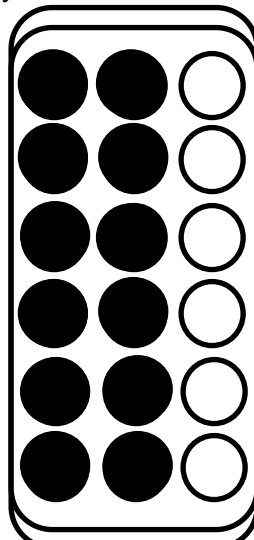
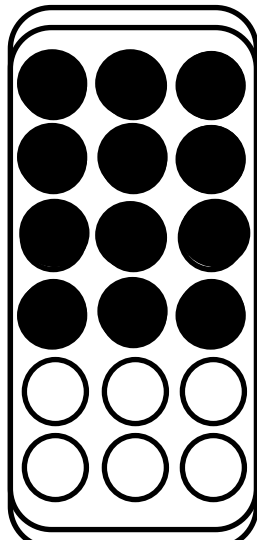


Incubator

2. If there are 8 eggs in an egg carton, what array can be made in an egg carton?
Fill in the empty holes in the carton.



3. If there are 12 eggs in the carton how many different arrays can you make?
Fill in the cartons to show your arrays.

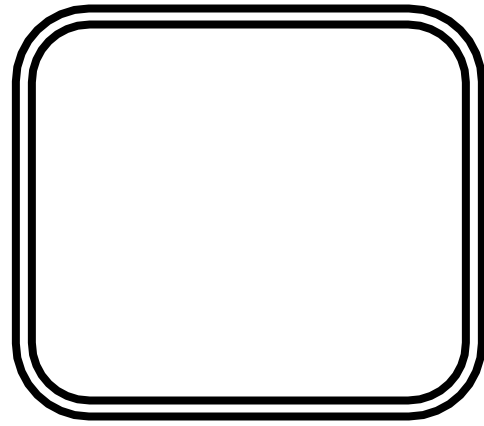


Name: _____

E G G C E P T I O N A L P R O D U C T S

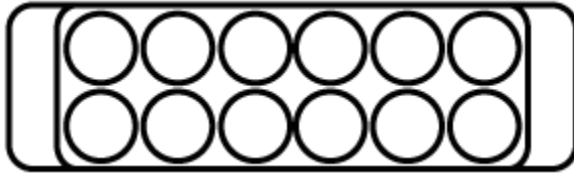
1. There are four rows of eggs with six eggs in each row in the incubator. How many eggs are there? _____

Draw an array of the 4 rows of 6 eggs. Draw your array in the incubator as eggs.

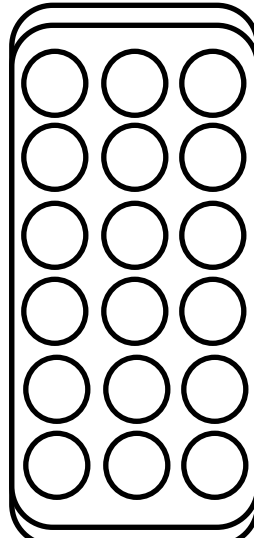
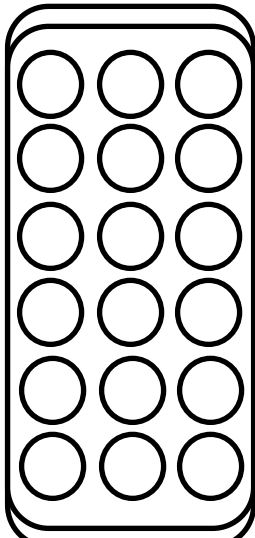


Incubator

2. If there are 8 eggs in an egg carton, what array can be made in an egg carton?
Fill in the empty holes in the carton.



3. If there are 12 eggs in the carton how many different arrays can you make?
Fill in the cartons to show your arrays.



Lesson 19- Music

Time: 25-30 minutes

Sunshine State/Common Core Standards:

MU.3.S.1.2: Create an alternate ending to a familiar song.

Objective:

The student will be able to listen to a song and create a new ending to the song with the help from classmates.

Materials:

Youtube accessibility speakers Journals

Activities:

21 Days Song

Go to: <http://www.youtube.com/watch?v=pVWxgwyxsUU>

Listen to the song as a class, discuss the parts of the song. Have the students get into groups of four and write either a new ending or add another stanza to the song. What happens next?

Lesson 20- Mathematics

Time: 25-30 minutes

Sunshine State/Common Core Standards:

MACC.3.NF.1.3: Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.

Objective:

The student will be able to add and subtract fractions that look like eggs.

Materials:

Eggstraordinary Fractions Worksheet

Activities:

Eggstraordinary Fractions

We know how to add fractions of things together to make a whole item or more than or less than a whole item. Use the pieces of eggs to see what fractions they make.

Answer Key


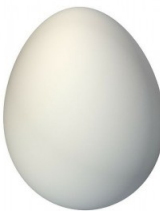

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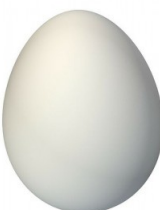

Eggceptional Fractions


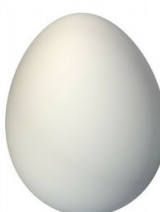

Directions: Add or subtract the eggs, or pieces of eggs to find the sum or difference.

1.  +  = 1

2.  +  = 1 1/2

3.  +  +  = 2

4.  -  = 1/2

5.  +  -  = 1


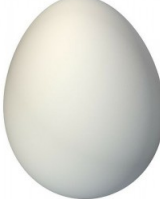

Name: _____

Eggceptional Fractions


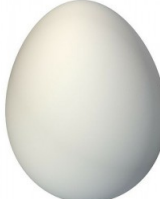

Directions: Add or subtract the eggs, or pieces of eggs to find the sum or difference.

1.  +  = _____

2.  +  = _____

3.  +  +  = _____

4.  -  = _____

5.  +  -  = _____

Lesson 21- Language Arts

Time: 25-30 minutes

Sunshine State/Common Core Standards:

LACC.3.RI.1.3. Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

Objective:

The student will be able to determine the cause and effect for scenarios given.

Materials:

What Happened? Worksheet

Activities:

Worksheet

We all know what cause and effect is. Who can tell me what cause and effect is?

Answers will vary. **What are some examples of cause and effect? Now that we have reminded ourselves what cause and effect is let's do this worksheet about chickens and cause and effect.**

Answer Key



Name: _____

What Happened ?

Match the correct cause to the correct effect.

<u>Cause</u>	<u>Effect</u>
The hen sat on her nest all night. <i>C.</i>	An egg was in the nest the next morning. <i>T. A</i>
1. The sun came up. <i>C.</i>	1. The hen is nesting in the hen house. <i>T. A</i>
2. Chicken eggs incubated for 21 days. <i>C.</i>	2. The hen is protecting her baby chicks. <i>T. A</i>
3. The chicks got mud in the water dish. <i>C.</i>	3. The rooster crowed. <i>T. A</i>
4. The hen laid eggs. <i>C.</i>	4. The pen needs more fresh water. <i>T. A</i>

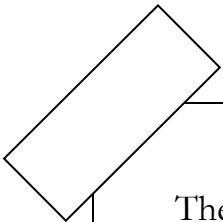
<p>5. A fox got in the hen house.</p>	<p>5. Baby chicks hatched out.</p>
---------------------------------------	------------------------------------



Name: _____

What Happened ?

Match the correct cause to the correct effect.



<u>Cause</u>	<u>Effect</u>
<p>The hen sat on her nest all night.</p>	<p>An egg was in the nest the next morning.</p>
<p>1. The sun came up.</p>	<p>1. The hen is nesting in the hen house.</p>
<p>2. Chicken eggs incubated for 21 days.</p>	<p>2. The hen is protecting her baby chicks.</p>
<p>3. The chicks got mud in the water dish.</p>	<p>3. The rooster crowed.</p>

4. The hen laid eggs.	4. The pen needs more fresh water.
5. A fox got in the hen house.	5. Baby chicks hatched out.

Lesson 22- Science

Time: 25-30 minutes

Sunshine State/Common Core Standards:

SC.3.N.1.3. Keep records as appropriate, such as pictorial, written, or simple charts and graphs, of investigations conducted.

Objective:

The student will be able to record data from candling eggs and draw what the chick and/or egg looked like.

Materials:

Journals

Activities:

Journal

Every student in the class must have a chance to see a candled egg. You may be able to use a mobile phone's flashlight with the lights off under an Elmo (if available) to show all of the class at once. Today we are going to take a look at the inside of our eggs and see how our baby chicks are developing. I want all of you to pay close attention. You will need to write down what you see and then draw a big picture of the egg. After you have drawn what the baby chick inside the egg looks like write a prediction or hypothesis about what you think the chick will look like the next time we candle the eggs.

Lesson 23- Art

Time: 30-45 minutes

Sunshine State/Common Core Standards:

VA.3.C.1.1. Use the art-making process to develop ideas for self-expression.

Objective:

The student will be able to evaluate breeds of chickens and create their own breed.

Materials:

Journals

Activities:

Pick-A-Chick

Let's think about the different breeds of chickens (it may be helpful to have some examples printed out or bring some up online from the APA American Poultry Association). What are some of the traits, or characteristics that they have? Let's look at some breeds like Leghorn, Americauna, and Bantam. Why would you choose an Americauna breed of chicken? Because it is a good egg layer. Answers will vary. I want you to come up with the characteristics that would want in your own breed of chicken that you can make up. When you are done, draw what you want your chicken to look like. Work with a partner and then we can share our chicken breeds with the class.

Lesson 24- Language Arts

Time: 30-45 minutes

Sunshine State/Common Core Standards:

LACC.K12.L.3.6. Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.

Objective:

The student will be able to recognize words that are specific to chickens through a word search.

Materials:

All About Eggs Word Search

Activities:

Word Search

Using the words we have learned so far about embryology, solve the word search.



NAME: _____ DATE: _____

All About Eggs

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

Answer Key

- CHALAZA
- GERMINA
- SHELL
- MEMBRAN
- YOLK
- ALBUMEN
- CHICK
- EGG
- AIRCELL
- INCUBATOR
- HUMIDITY
- TEMPERATURE
- HEN
- ROOSTER
- EGGTOOTH



NAME: _____ DATE: _____

All About Eggs

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

CHALAZAE
 GERMINALDISC
 SHELL
 MEMBRANE
 YOLK
 ALBUMEN
 CHICK
 EGG
 AIRCELL
 INCUBATOR
 HUMIDITY
 TEMPERATURE
 HEN
 ROOSTER
 EGGTOOTH

Lesson 25- Language Arts

Time: 30-45 minutes

Sunshine State/Common Core Standards:

LACC.K12.L.3.6. Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.

Objective:

The student will be able to recognize words that can be made out of other words.

Materials:

Make-A-Word Worksheet

Activities:

Make-A-Word

This worksheet we are about to do is a little difficult, but can be fun too. You will be given a word and then you have to see how many words you can make from that one word. For example, if you are given the word “wonderful” how many words can you make from it? Answers will vary. Some words that I think of are flower, found, fun, red, run, folder, and there are plenty other words too.

Answers will vary, the ones provided on the answer key are examples.

Answer Key

Name: _____

Make-A-Word

How many words can you make from the words CHICKEN and HATCHING?

Print one word on each line.

CHICKEN

- | | |
|-----------------------|-----------------------|
| 1. check _____ | 6. chick _____ |
| 2. nice _____ | 7. ice _____ |
| 3. neck _____ | 8. inch _____ |
| 4. hike _____ | 9. hen _____ |
| 5. chin _____ | 10. ink _____ |

HATCHING

- | | |
|----------------------|------------------------|
| 1. chat _____ | 6. at _____ |
| 2. hat _____ | 7. chain _____ |
| 3. cat _____ | 8. giant _____ |
| 4. act _____ | 9. night _____ |
| 5. ha _____ | 10. thing _____ |

Can you think of more than 10 words for CHICKEN and HATCHING?

Name: _____

Make-A-Word

How many words can you make from the words CHICKEN and HATCHING?

Print one word on each line.

CHICKEN

1. _____ 6. _____

2. _____ 7. _____

3. _____ 8. _____

4. _____ 9. _____

5. _____ 10. _____

HATCHING

1. _____ 6. _____

2. _____ 7. _____

3. _____ 8. _____

4. _____ 9. _____

5. _____ 10. _____

Can you think of more than 10 words for CHICKEN and HATCHING?

Lesson 26- Science

Time: 50-60 minutes

Sunshine State/Common Core Standards:

SC.3.N.3.2. Recognize that scientists use models to help understand and explain how things work.

Objective:

The student will be able to recognize the parts of the egg and create a visual display with the help of a partner and provided materials.

Materials:

Journal pipe cleaners markers pens glue pom poms Styrofoam etc...

Activities:

Create An Egg

Similar to cell structure activities, students will take objects and create an egg. For example, a pom pom could be the yolk, pipe cleaners the shell, and so on. What we are going to do is take some of the craft pieces that we have in the classroom and create an egg from those pieces with your imagination. Get with a partner to do this project. **It can look however they want as long as it follows the basics of what an egg is.** Be sure and label all of the parts and be sure to put your names on your papers.

Lesson 27- Language Arts

Time: 25-30 minutes

Sunshine State/Common Core Standards:

LACC.3.1.3.4 Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies.

Objective:

The student will be able to recognize the differences between facts and opinions.

Materials:

Fact and Opinion Worksheet

Activities:

Worksheet

We all know what fact and opinion is. Who can tell me what they are? Answers will vary. **What are some examples? Now that we have reminded ourselves what fact and opinion are let's do this worksheet about chicken facts and opinions.**

Answer Key

Name: _____

Fact or Opinion?

Directions: Tell whether the statements below are a fact or an opinion.

Example	Chickens have an odor. <i>Fact</i>	Chickens smell bad. <i>Opinion</i>
	Chicken feet are creepy. Opinion	Chicken feet have toes. Fact.
	It takes 21 days for chicks to hatch. Fact.	Chicken eggs must be 100 ⁰ F to hatch. Fact.
	Some breeds of chickens are pretty. Opinion	Hens like laying eggs. Opinion

Roosters crow loudly. Opinion	Baby chicks do not have feathers. Fact.
Hens are mean. Opinion	Hens protect their baby chicks. Fact.
Make up your own fact about chickens.	Make up your own opinion about chickens.

Name: _____

Fact or Opinion?

Directions: Tell whether the statements below are a fact or an opinion.

Example	Chickens have an odor. <i>Fact</i>	Chickens smell bad. <i>Opinion</i>
	Chicken feet are creepy.	Chicken feet have toes.
	It takes 21 days for chicks to hatch.	Chicken eggs must be warm to hatch.

Some breeds of chickens are pretty.	Hens like laying eggs.
Roosters crow loudly.	Baby chicks do not have feathers.
Hens are mean.	Hens protect their baby chicks.
Make up your own fact about chickens.	Make up your own opinion about chickens.

Lesson 28- Language Arts

Time: 25-30 minutes

Sunshine State/Common Core Standards:

LACC.3.RI.1.1. Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

Objective:

The student will be able to recollect information from a given text and answer questions.

Materials:

What is Embryology? Informational Text Journals

Activities:

Reading

Read the following information about embryology. When you are finished reading answer the questions following the passage.

What is Embryology?

Embryology is the study of how embryos grow and develop. What kinds of things grow and develop from embryos? All plants and animals develop from embryos. Just as a lima bean is the embryo of a lima bean plant, a fertilized chicken egg is an embryo of a chicken. You are learning how a chicken develops in an egg.

First of all chicken eggs are usually hatched on the farm with a mother hen. In your case you are hatching baby chickens in your classroom, where you cannot have the mother hen sit on the eggs. You need an incubator to hatch the eggs in your class. An incubator is a box that provides and maintains a favorable environment for hatching fertile eggs. Four factors are very important to insure the success of hatching fertile eggs in an incubator. They are temperature, humidity, ventilation, and turning the eggs regularly. Temperature is the most important of these factors. Humidity is the measure of moisture, or water, in the air while ventilation is movement of fresh air through the incubator. Turning each egg several times daily prevents the embryo from sticking to the shell.

To set up your incubator you must consider the four factors mentioned above as well as location. The location of your incubator should be placed so that it is free from drafts of air and direct sunlight. Temperature is most important when considering the effectiveness for a good hatch. The ideal temperature in

a still-air ventilated incubator is 100 degrees. Ventilation provides oxygen for the embryo to develop while the gases given off by the embryo need to be removed from the incubator. Lastly, turning eggs is important from the second to the eighteenth day. All eggs should be turned a minimum of three times per day.

Questions: Answer on your own sheet of paper.

1. What is an incubator?
2. What are the four factors that are important for hatching eggs?
3. What is the ideal temperature for hatching eggs?
4. How many times should eggs be turned each day? Why do we turn the eggs?
5. What is ventilation? Why do the eggs need it?

Lesson 29- Writing

Time: 35 minutes

Sunshine State/Common Core Standards:

LACC.3.W.1.3: Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.

Objectives:

The student will be able to write a narrative story with details, transitional words, the use of sequences and in proper five paragraph format.

Materials:

Journal

Activity:

Writing Prompt

You have just been given an incubator and 15 chicken eggs. Write a story about the journey of a developing chick inside the egg. Be sure to include step by step information as well as your own creativity for this story.

Lesson 30- Social Studies

Time: 35 minutes

Sunshine State/Common Core Standards:

SS.3.C.3.1. Identify the levels of government (local, state, federal).

Objectives:

The student will be able to describe the levels of government through learning about Pecking Order.

Materials:

Deck of Cards Journal

Activity:

Pecking Order

Dominance structure is an important feature of how chicken relate to members of their species. Have you noticed that Pecking order, or the urge to fit into social hierarchies, is also powerful in humans? For example, the armed forces depend upon a hierarchical structure for efficiency and discipline. We see hierarchical

structures in corporations and other organizations as well as in peer groups and on playgrounds. Sometimes a person so badly wants a higher place in that hierarchy that they turn into a bully. Most of us can give examples of how bullying behavior affects our lives, or lives of people we know. Luckily, we humans have the ability to reason through this and find much more peaceful ways of settling our disputes. Such discussions are a valuable part of the preparation and follow-up for this simulation game about pecking order.

Main Idea

In this game, each person will find their place in a "pecking order" based on the value of a playing card, which they will chose at random. The highest ranking card is a king, followed by queen, jack, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, and Ace.

Directions

Each player choses a playing card. WITHOUT looking at it, each places the card above their forehead so that others can see it.

The players interact with one another for 5 minutes. The goal is to interact with people who are at the top of the pecking order. However, players do not know the hierarchical value of their own card. They can only guess this by the way others react to them.

At the end of the 5 minutes, and still without having seen their own card, each player lines up according to the place they perceive they fall in the pecking order.

Finally, all players look at their cards and check to see how closely the line formed based on everyone's perceptions.

Answer in Journal

1. How accurate was the pecking order? Did most of the players know where they should stand?

2. Reflect on this experience and write in your journal. Did you correctly perceive where you stood in the pecking order? What did it feel like when people reacted to you the way they did? How does it feel to be in a position of higher or lower status?

3. What examples can you find of how humans are similar and different from animals with regard to social dominance? Define the word "humane" and use it in your journal writing.