

Eggs, The Inside Story

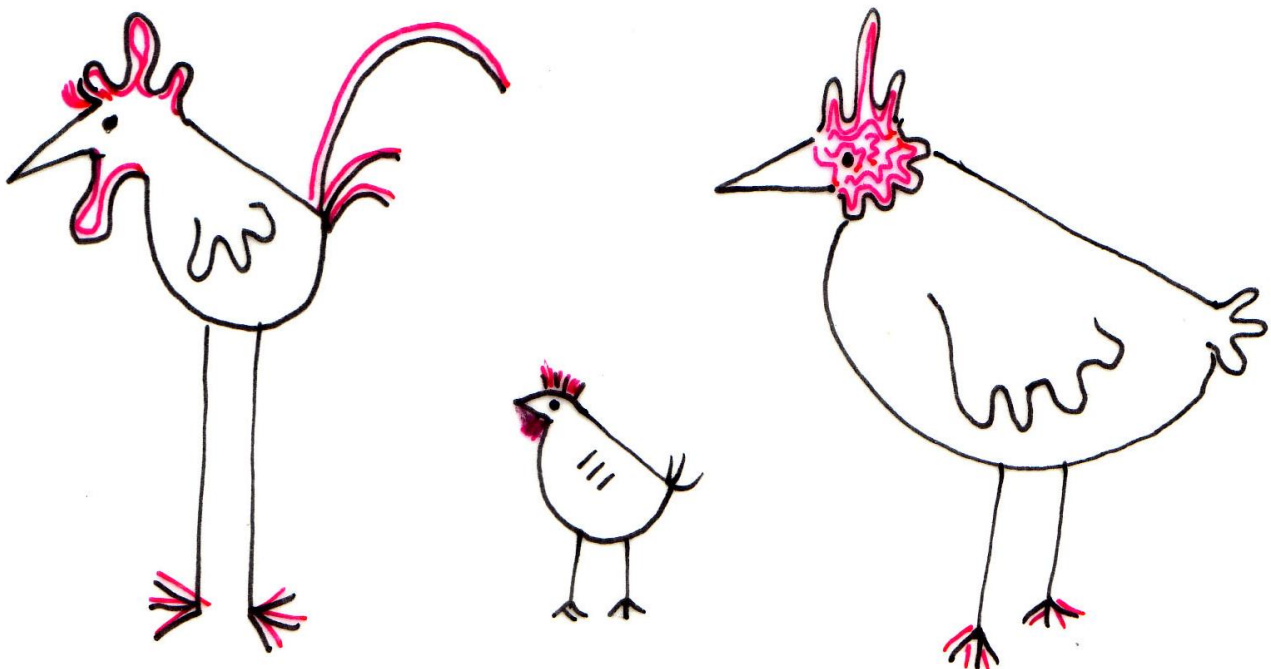


Table of Contents

Content	Page
Unit Plan Overview	3
Worksheets	9
Looking at Eggs.....	10
Science Experiments 1	12
Chicken Sayings	13
Measuring Eggs	14
Spelling Activities	15
Science Experiments 2	18
Factual Recount (Experiments)	20
Lifecycle of a Chicken.....	21
Chicken Anatomy	22
Temperature and Time	23
Egg Production Worksheet.....	24
Maremma Dogs	25
Commercial Egg Preparation Procedures.....	27
Egg Production Spreadsheet.....	28
Chicken Breeds.....	30
A Brief History of Egg Production.....	32
People Who Work in Egg Production	34
Designing and Making Activity	36
Chook House Mathematics.....	37
Word Search Close	38
Eggs in Food.....	39
Why Eggs are Good for Us	40
Pikelets	41
Supermarket Eggs.....	43
Library Research	44
Teacher Information	50
Display Cards	51
Visual Arts Lessons	52
Children’s Book List	55
Drama, Music and PE Activities	56

Eggs, The Inside Story - A Science Based Unit for Students aged 9-11 years

Science

Students develop knowledge of eggs through observing, experimenting, researching and recording. They investigate the lifecycle of chickens, egg production methods and the processing of eggs. They develop an understanding of the importance of eggs in our diet. The welfare of chickens and the issue of sustainability is addressed.

English

The context of chickens and egg production provides students with numerous opportunities for listening, reading, viewing, speaking, writing and creating. Students work with a variety of text types for recording, reporting, presenting and interpreting information.

Mathematics

Students make estimations and measure eggs. They make calculations on the cost of eggs and setting up a backyard chicken house. They analyse data in tables and present data in the form of graphs. Students help calculate the cost of equipment required for the school chicken pen proposal.



The focus of this integrated unit is for students to develop their knowledge and understanding about eggs, chickens and the egg production industry in Australia. The new Australian National Content Descriptors from the Australian Curriculum, Assessment and Reporting Authority have been used. Activities have been included that would be suitable for the World Poultry Science Association (WPSA) schools competition.



History

Students read about the history of egg production, appreciate why changes have occurred and create a timeline. They also learn that cultural aspects affect the development of our language by researching the meaning of some of our common sayings.

Creative Arts

A number of activities, using a variety of materials and processes have been provided for teachers to use.

PE and Health

Students understand the place of eggs in our diet and how diet is managed in egg production. Safety issues when cooking are identified. PE activities are included.

Assessment

A number of worksheets have been developed for this unit. Many activities and worksheets could be used for assessment purposes.

Technology

Activities provide opportunities for using digital technology in teaching, research, calculation and presentation.

Content Descriptions	Learning Experiences	Resources
<p>• Science With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge (AC SIS064)</p> <p>Suggest ways to plan and conduct investigations to find answers to questions (AC SIS065)</p> <p>• English Use metalinguage to describe the effects of ideas, text structures and language features of literary texts (AC ELT1604)</p> <p>Create literary texts that explore students' own experiences and imagining (AC ELT1607)</p> <p>Understand, interpret and experiment with a range of devices and deliberate word play in poetry and other literary texts, for example nonsense words, spoonerisms, neologisms and puns (AC ELT1606)</p> <p>• Mathematics Use scaled instruments to measure and compare lengths, masses, capacities and temperatures (AC MMG084)</p> <p>• English Incorporate new vocabulary from a range of sources into students' own texts including vocabulary encountered in research (AC ELA1498)</p>	<p>Activity 1 Looking at eggs.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Students observe, discuss, and test their predictions about eggs. They read about birds and discuss their unique features, some of which have given rise to sayings that have been incorporated in our language. They measure eggs and do cost calculations.</p> </div> <p>Introductory lessons Science: Questions to ask the class Where do these eggs come from? Can you describe the eggs? How are they different? Can you list the different colours? Is colour significant in any way? Can you suggest reasons for the different sizes? <i>The Story of Eggs - p11</i> What shape are the eggs? Why? Describe the shell and learn about its features. <i>The Story of Eggs - p12</i> Discuss how you can tell if an egg is fresh. Why is this important? Test by putting an egg in a bowl of water. <i>The Story of Eggs - p49</i> Discuss how you can tell if an egg is boiled. Why is this important? Test if egg is boiled. Break some eggs into a saucer. Ask students to identify the parts and discuss observations. Complete the "Looking at Eggs" worksheet. Display and discuss a collection of images of poultry and eggs. <i>Poultry Agskills: A Practical Guide to Farm Skills p4, 7-11.</i></p> <p>Interesting website: http://en.wikipedia.org/wiki/File:Oeufs002b.jpg What other eggs can be eaten e.g. eggs of fish?</p> <p>English: Read "What makes a Bird a Bird" by M. Garelick Discuss the information, text structure and language features in the book. Use the list of chicken sayings to develop activities involving reading, researching, interpreting, illustrating, and oral presentation. Write a report about chicken eggs.</p> <p>Maths: Measure the dimensions and mass of eggs. Undertake calculations on the cost of eggs.</p> <p>Visual Arts: Choose one or more activities on the Visual Arts sheet.</p> <p>Library Research: There is a series of library research/information skill activities in the Library Research section that should be introduced with this activity.</p> <p>Spelling: There are word lists and activities to complement the class spelling program to be introduced with this activity.</p>	<ul style="list-style-type: none"> • Collect a variety of hen eggs. Include eggs that are small, medium, large, extra large, white, brown, pink and freckled -use fresh eggs if possible. • One old egg - required for the freshness test. • One hard-boiled egg - for boiled egg test. • "Looking at Eggs" worksheet. • A collection of images of poultry. • Book "Poultry Agskills: A Practical Guide to Farm Skills" by D Brouwer • Book "The Story of Eggs" The Workboot Series Kondinin Group • "Science Experiments 1" worksheet. • "Spelling Activities" worksheet. • Book "What makes a Bird a Bird" by May Garelick, illustrated Trish Hill. • "Bird Sayings" worksheet. • "Measuring Eggs" worksheet. • "Visual Arts" sheet <p style="text-align: center;">Additional Information</p> <p>Always wash your hands after you have been touching broken or uncooked eggs.</p> <p>Interesting Facts: Australian consumers prefer brown eggs while Americans prefer white eggs. Some consumers think brown eggs are healthier than other colours. This is not true.</p>

<ul style="list-style-type: none"> • Science Compare results with predictions, suggesting possible reasons for findings (AC SIS216) Represent and communicate ideas and findings in a variety of ways such as diagrams, physical representations and simple reports (AC SIS071) • English Create literary texts that explore students' own experiences and imagining (AC ELT1607) • Visual Arts Experimenting with a variety of methods of decorating eggs, traditional and modern. Appreciating the history of decorated eggs in different cultures. 	<p>Activity 2 Experiments with eggs.</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>Students undertake experiments with eggs and discuss their findings. They write recounts of the experiments on worksheets. They undertake decorating egg activities in Visual Arts.</p> </div> <p>Science: Discuss experiment techniques. Collect resources for the experiments. Ask students to predict what will happen. Divide students into groups and provide each group with an experiment or do as a whole class. Report and discuss the results. Record findings on the Factual Recount worksheet. Experiments: Floating an Egg in Salt Water, Strength of an Egg, Bouncing Eggs and Egg in a Bottle. http://cocopreme.hubpages.com/hub/Egg-tremelyFunandEasyEggExperiments English: Writing activities - poetry writing about eggs. Suggestions – shape, colour, texture, potential for food or new life. - recount on each science experiment. Visual Arts: Colouring and decorating eggs. The CD “Eggs Resource Kit” file <i>WBS Egg Kit.pdf</i>, p143-157 has a number of creative activities.</p>	<ul style="list-style-type: none"> • “Science Experiments 2” worksheet. • Materials for cleaning up. • “Factual Recount (Experiment)” worksheet • Book “The Story of Eggs” The Workboot Series Kondinin Group p55 • “Factual Recount (Experiment)” worksheet • Chicken Eggs, “Visual Arts” sheet • CD “Eggs Resource Kit” The Workboot Series, Kondinin Group, 2007. <p style="text-align: center;">Additional Information</p> <p>Remind students to wash their hands after handling eggs.</p>
<ul style="list-style-type: none"> • Science Living things have life cycles (AC SSU072) • English Create literary texts. Understand that social interactions influence the way people engage with ideas and respond to others for example when exploring and clarifying the ideas of others, summarising students' own views and reporting them to a larger group (AC ELA1488) 	<p>Activity 3 Looking at lifecycles of oviparous animals</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>Students investigate the role of eggs in the lifecycle of chickens. They look at the basic anatomy of a chicken and graph time and temperature.</p> </div> <p>Science: Chickens belong to a group of animals that are oviparous. Introduce the lesson with the word oviparous and discuss briefly. Draw/display the lifecycle of a chicken and discuss the various stages. Provide the Lifecycle of a Chicken worksheet with pictures of eggs, hens, chickens, and roosters for Students to make a chicken lifecycle for their workbooks or to display. Display the egg diagram used in Activity 1. Discuss the parts in relation to the development of a chicken. <i>The Story of the Eggs – p10</i>. Incubating Eggs Discuss hatching, naturally and in an incubator. List the conditions required for eggs to hatch. (fertile eggs, broody hen or incubator, constant temperature, suitable humidity level and quiet area) http://www.poultryhub.org/bird-health-and-disease/raising-backyard-chicken/</p>	<ul style="list-style-type: none"> • Book “Poultry Ag Skills A Practical Guide to Farm Skills” • Lifecycle of a Chicken worksheet • DVD From Hatchery to Home – incubator section only • Temperature and Time worksheet • Chicken Anatomy worksheet • Visual Arts sheet

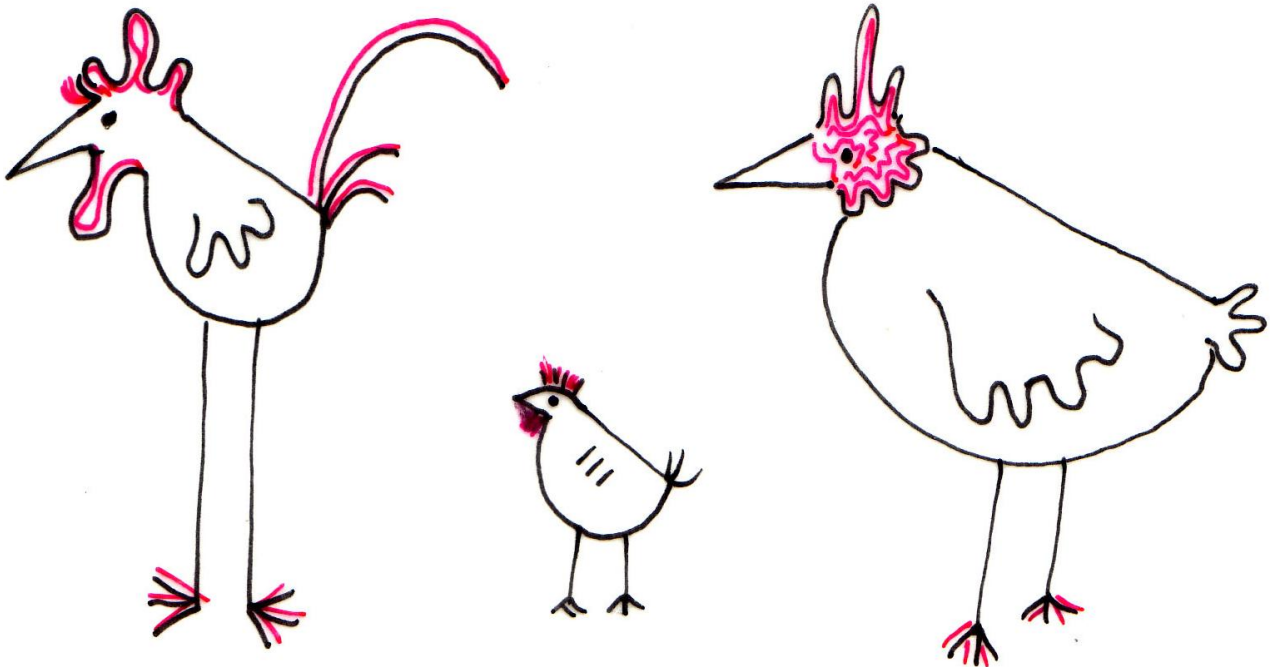
<ul style="list-style-type: none"> • Mathematics Construct suitable data displays, with and without the use of digital technologies, from given or collected data. Include tables, column graphs and picture graphs where one picture can represent many data values (ACMSP096) • Visual Arts Represent the features of chickens using wool. 	<p>DVD From Hatchery to Home – incubator section only. (At this stage, the teacher could have the class hatch eggs using an incubator and fertilised eggs. <i>Poultry Ag Skills A Practical Guide to Farm Skills - p15 -18</i>. You will need a small incubator and some fertilised eggs to hatch some chickens in the classroom. Ask the parent body, a local high school or the local chicken breeders association, if you are interested. This is a worthwhile activity as it generates many educational experiences as well as enjoyment.)</p> <p>English: Write a joint class explanation of the lifecycle of a chicken.</p> <p>Maths: Use the Temperature and Time worksheet to graph the times involved in the chicken lifecycle and the temperatures involved in hatching.</p> <p>English: Label the various external features of a chicken on the Chicken Anatomy worksheet. Talking/Listening activity. Class debate “Which came first the chicken or the egg?” Students could collect and present six “Why the Chicken Crossed the Road” jokes.</p> <p>Visual Arts: Making chickens from woollen pompoms. See Visual Arts sheet.</p>	<p>Additional Information Note: ovoid - egg shaped solid. oviform - egg shaped, oval, ellipsoidal. Only unfertilised eggs are sold for eating. Many mathematical activities are available if you hatch eggs with an incubator e.g. recording the feed and water calculations after hatching, mass of chickens over a number of weeks.</p> <ul style="list-style-type: none"> • suitable for the World Poultry Science Association (WPSA) schools competition.
<ul style="list-style-type: none"> • Science With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge (ACSIS064) • English Use comprehension strategies to build literal and inferred meaning to expand content knowledge, integrating and linking ideas and analysing and evaluating texts (ACELY1692) • Maths Construct suitable data displays, from given or collected data. (ACMSP096) 	<p>Activity 4 Methods of egg production</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>Students investigate the three main methods of commercial egg production. They learn about the preparation of eggs for sale using a flowchart. They interpret and graph data.</p> </div> <p>Science: Production Where do people buy their eggs - supermarkets, farmers’ markets, friends, organic produce stores and others? Discuss. Display a collection of egg cartons obtained from a supermarket. For example, barn laid, cage, free-range, organic, omega 3, etc. What information do the cartons provide? Make a list of the different types of eggs available for sale. Use egg carton labels to assist. List the main types of egg production, (barn laid, free-range and cage) used by commercial and backyard producers. Watch the DVD, “It all starts with an Egg”, and fill in the Egg Production worksheet by listing the features of each method in the table and discuss the advantages and disadvantages. Discuss the issue of sustainability. What efforts do produces make to be sustainable?</p> <p>English: Appreciate the role of Maremma dogs in the production of free-range eggs.</p> <p>Maths: Analyse and graph data regarding egg production.</p> <p>Science: The steps in commercial egg preparation from farm to store Brainstorm the processes involved in preparing eggs for sale. Record ideas on the board. Complete the Commercial Egg Preparation Procedure worksheet. Compare the students’ efforts with their original ideas and confirm with the teachers copy in the Teachers Help folder.</p>	<ul style="list-style-type: none"> • A collection of egg cartons from a supermarket. • Book “The Story of Eggs” The Workboot Series Kondinin Group • DVD “It all starts with an Egg” • Egg production worksheet • Maremma Guard Dogs worksheet • Spreadsheet calculations worksheet • Preparing eggs for sale. The Story of Eggs - p34. • Commercial Egg PrepProc worksheet • DVD ‘Finding the Good Egg: Egg Candling-What to Look For’ • Processing Eggs. The Story of Eggs - p36-38. • Visual Arts sheet.

	<p>Create a class wall chart illustrating the processes. (Group students and allocate one stage to each group. Add computer-generated captions.) Watch the DVD ‘Finding the Good Egg: Egg Candling-What to Look For’ What happens to the eggs that are rejected during the above process? Make a class display of labels/products which use the rejected eggs from the candling process e.g. mayonnaise. Visual Arts: Activities from the Visual Arts sheet.</p>	<p>Additional Information Research the invention of modern egg cartons.</p>
<ul style="list-style-type: none"> • Science Living things, including plants and animals, depend on each other and the environment to survive (ACSSU073) Represent and communicate ideas and findings in a variety of ways such as diagrams, physical representations and simple reports (AC SIS071) • English Use comprehension strategies to build literal and inferred meaning to expand content knowledge (ACELY1692) • Maths Solve problems involving purchases and the calculation of change to the nearest five cents with and without digital technologies (ACMNA080) • History Sequence historical people and events (ACHHS081) • Visual Arts 	<p>Activity 5 Welfare of Chickens</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>Students reflect on the responsibilities of caring for animals/chickens. They design and make a model chicken house incorporating safety and comfort requirements. They calculate the costs involved in backyard chicken raising. They appreciate the wide variety of chicken breeds and the developments in commercial egg production.</p> </div> <p>Display the Breeds poster and discuss the content. Students use the information on the poster to complete the Chicken Breeds worksheet. Brainstorm the basic requirements and responsibilities when caring for an animal. Develop a list for keeping chickens. <i>Poultry Agskills: A Practical Guide to Farm Skills, p 29-31.</i> Compile a list of people who care for chickens in the egg production industry. Complete the People Who Work in Egg Production worksheet. Consider environmental affects of egg production. <i>The Story of Eggs – p58-59.</i> Project: Read and explain the Design and Make worksheet. Have students design and make a model chicken house as outlined. Maths: Look at the dimensions of chicken pens and complete cost calculations for building a chicken house and pen. Reflect on the benefits and disadvantages of various production methods from Activity 4 English: Read about and discuss issues of animal welfare and what various government agencies are doing to ensure all animals are treated fairly. Read the Brief History of Egg Production worksheet and complete the questions and timeline. Research: Interview grandparents about their memories of chicken raising when they were young. Report findings and discuss differences. Visual Arts: Rooster painting activity from Visual Arts sheet.</p>	<ul style="list-style-type: none"> • Chicken Breeds in Australia poster • Book Poultry Agskills: A Practical Guide to Farm Skills, p 29-31 • Book “The Story of Eggs” The Workboot Series Kondinin Group p 58-61. • Chicken Breeds worksheet • People Who Work in Egg Production worksheet • Design and Make worksheet • Chicken House Mathematics worksheet • Brief History Egg Production worksheet • Visual Arts sheet <p>Additional Information</p> <ul style="list-style-type: none"> • Suitable for the World Poultry Science Association (WPSA) schools competition.
<ul style="list-style-type: none"> • Science Natural and processed materials have a range of physical properties; These properties can influence their use 	<p>Activity 6 Eggs in our diet</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>Students investigate the nutritional value of eggs. They perform calculations involved in buying eggs.</p> </div> <p>Science: Nutrition</p>	<ul style="list-style-type: none"> • Food Triangle poster • Book “The Story of Eggs” The Workboot Series Kondinin Group p 42-44, 50-51.

Poultry Industry Teaching Resource

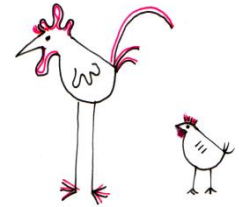
<p>(ACSSU074)</p> <ul style="list-style-type: none"> • Maths Solve problems involving purchases and the calculation of change to the nearest five cents with and without digital technologies (ACMNA080) • English Understand how texts vary in complexity and technicality depending on the approach to the topic, the purpose and the intended audience (ACELA1490) 	<p>Display a Food Triangle poster. Explain the purpose of the poster. Place words from the Display Card sheet around the room as a stimulus for discussion. Explain why eggs are such an important part of our diet? <i>The Story of Eggs – p42-44</i>. Look at how often eggs are eaten. Complete the table in the Eggs in Food worksheet and discuss the findings. Survey the class for favourite egg based food. Tally and create picture graph of the results. Discuss egg allergies in some people and people on a vegan diet. English: Complete the worksheet “Why Eggs are Good for Us” Science: Cooking What properties do eggs have that are useful in cooking? <i>The Story of Eggs – p50-51</i>. Can you boil an egg? Conduct a survey of parents for different boiling egg methods. Look at variations and test results in a class cook off. Make a list of accidents that could occur when cooking eggs e.g. burns, scalds. Compile a list of precautions to be taken. English: Look at recipe format/procedural text using pikelets as an example. Maths: Perform calculations involved in buying eggs.</p>	<ul style="list-style-type: none"> • Eggs in Food worksheet • Why Eggs are Good for Us worksheet • Display Card words • Pikelets worksheet • Supermarket Eggs worksheet <p>Additional Information</p> <p>Safety issue Care to be taken when cooking in the classroom – suggest parent helper be considered.</p>
<p>Sustainability Priority OI.9 Products and built systems and environments can be designed and/or managed to improve both people’s wellbeing and environmental sustainability.</p> <ul style="list-style-type: none"> • Science Living things, including plants and animals, depend on each other and the environment to survive (ACSSU073) • English Plan, draft and publish imaginative, informative and persuasive texts containing key information and supporting details for a widening range of audiences, demonstrating increasing control over text structures and language features (ACELY1694) 	<p>Activity 7 Proposal for a School Chicken Pen</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>Students prepare a submission, proposing a school chicken pen and egg production project with a vegetable garden and could involve the parent community, the local community, the school canteen, students and teachers.</p> </div> <p>Research: Look on you local council website for their regulations on keeping poultry in your local area. Discuss the reasons for these regulations and why they have become necessary. Brainstorm: List the advantages and disadvantages of setting up a school chicken pen. The issue of sustainability should be considered. Decide on a design and site with consideration for water and security. Investigate the, materials required, costs, suitable breeds, suppliers, a care routine (consider weekends and school holidays), and what to do with the eggs, manure and used straw. Consider planting suitable vegetation around the fence for screening and inside the chicken pen. Space for the storage of food and equipment is also necessary. Develop a vegetable garden where waste products from the chicken pen can be used. Produce can be used in school cooking activities or sold in the canteen or school market. Invite parents to be involved. Talk to local people who have backyard chickens for more information. Written Submission: Construct and present a submission (exposition) to the school principal or school council explaining why a chicken pen would be good for the school. This may be an exercise or a genuine request.</p>	<ul style="list-style-type: none"> • Poultry CRC www.poultryhub.org/ • Chicken Breeds in Australia poster • Book “The Story of Eggs” The Workboot Series Kondinin Group p 58-61. <p>Additional Information</p> <ul style="list-style-type: none"> • Suitable for the World Poultry Science Association (WPSA) schools competition.

Worksheets



Looking at Eggs

Name _____



Most of the eggs we eat come from chickens. A female chicken is called a _____. A male is called a _____ or cockerel and the babies are called _____. A young hen is known as a _____. Other eggs that are eaten are quail, duck and goose eggs.

1. What egg colours did you observe in the activity? _____

The producers class all eggs that are not white, as brown.

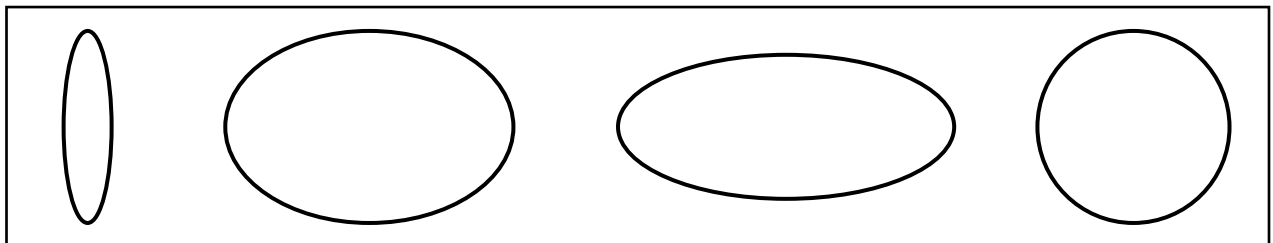
2. What is the most popular egg colour in Australia? _____

What is the most popular egg colour in America? _____

Is there any difference in the content of eggs with different coloured shells? _____

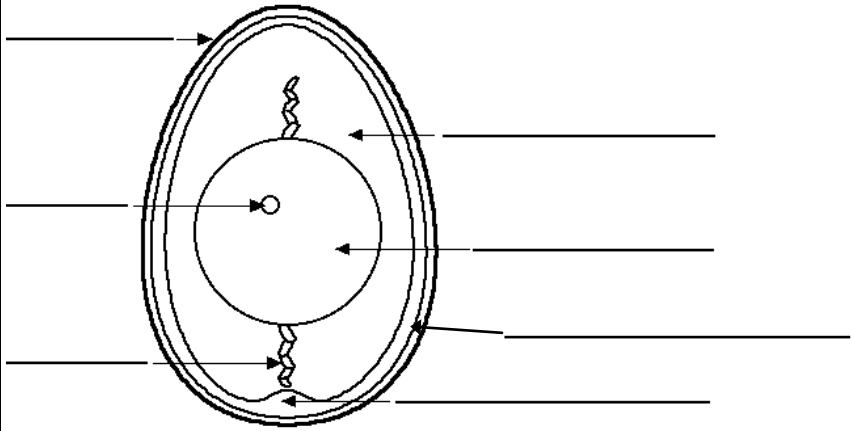
3. Not all the eggs laid by hens are the same size. Explain why this happens?

4. Some birds lay round eggs and others lay eggs with one very pointy end. The eggs of hens are different. In the box, colour the shape of a hen's egg brown.



5. Eggs are protected by their hard _____. This is made up mainly of a type of calcium carbonate called calcite. Shells are rigid but _____

6.

<p>Add the following words to the diagram.</p> <p>yolk, albumen, shell, air cell, chalaza cord, germinal disc, shell membrane.</p> <p>Colour the yolk yellow.</p>	
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7. **Research** the importance of each of the following parts of an egg.

yolk _____

albumen _____

shell _____

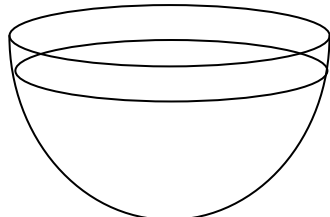
air cell _____

chalaza cord _____

germinal disc _____

shell membrane _____

8. Complete the drawing to show a **fresh egg** in the bowl of water.

	<p>As the egg gets older the air cell gets bigger causing the egg to _____ in a bowl of water however, thin or cracked shells will also cause the egg to rise slightly.</p>
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9. **Interesting Egg Facts**

Which large Australian bird lays big, green eggs? _____

Which bird lays a pale blue egg? _____. Hint: The colour duck egg blue is a popular paint colour.

Which bird lays the smallest egg? _____

Which New Zealand bird, about the size of a chicken, lays an egg six times the size of a chicken egg? _____

Science Experiments 1

1. Freshness Test

You will need

eggs
glass bowl
water

Instructions

Half fill the bowl with water.
Place the eggs gently in the bowl.

Explanation

The fresh eggs will sink.
Less fresh eggs will float slightly because the air cell becomes larger with age.
Older eggs are still useful for cooking cakes and biscuits.
Rotten eggs however need to be discarded.
This test is only a guide as weak, cracked or light shells can also cause an egg to float.
The use-by date on the carton is the best guide of freshness.

2. Boiled Egg Test

You will need

boiled egg
fresh egg
smooth level surface
paper towel

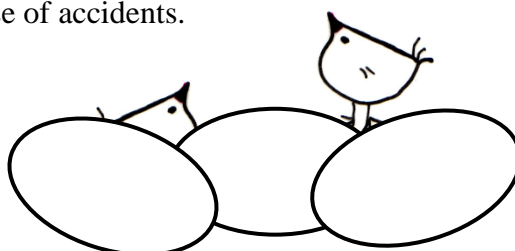
Instructions

Mark the boiled egg with a pencil.
Carefully spin the eggs, one at a time.
Observe the difference.
Ask students to suggest reasons for the differences.
Spin the eggs and then put your finger on them to stop them.
Observe what happens when you try to stop the spinning of the eggs.

Explanation

The boiled egg will spin faster. The raw egg will spin slowly. The reason for this has to do with the insides. The boiled egg is one solid piece therefore the whole egg spins in the same direction. The raw egg has liquid inside which moves separately from the shell. The movement of the inside of the raw egg keeps the whole egg from spinning quickly.
When trying to stop the eggs from spinning the boiled egg should stop immediately. The raw egg will keep spinning for a moment because the liquid inside the egg will keep moving.

Have paper towel ready in case of accidents.



Chicken Sayings

Teacher Information

Use the list of chicken sayings to develop activities involving reading, researching, interpreting, illustrating, and oral presentation.

Suggested Activities

1. Students locate their own chicken sayings and present to the class orally, with their meanings.
2. As above, but illustrate in their workbooks.
3. Compile a class list of chicken sayings.
4. Each student is given a number of sayings from the list below, to explain and illustrate in cartoon form. Use A4 or Art paper. Divide the sheet into squares for each illustration. Ask students to write the saying at the bottom of each cartoon.
5. Chicken saying from other countries could also be researched.
6. Students mime the sayings.

Chicken Sayings

Don't put all your eggs in the same basket.

Like a chook with its head chopped off.

Don't count your chickens before they hatch.

Strut your stuff.

Playing chicken.

Chickens come home to roost.

The rooster makes all the noise but the hen rules the roost.

The rooster rules the roost but the hen rules the rooster.

A hen's party.

Like walking on egg shells.

There's a pecking order.

Stop preening.

Fine feathered friends.

Fussing like an old hen.

Not all it is cracked up to be.

Feeling cooped up.

When chickens had teeth.

Being clucky.

Can't boil an egg.

Being cocky.

Wake when the rooster crows.

Strutting around.

He's a bad egg.

Stop crowing.

No spring chicken.

Nest egg.

Chicken fed.

As scarce as hen's teeth.

You'll be left with egg on your face.

Feather your nest.

A feather in your cap.

Cock of the walk.

Don't brood over it.

Chick flick.

He rules the roost.

Flown the coop.

Like a mother hen.

Stuck in my craw.

Other bird sayings

The early bird gets the worm.

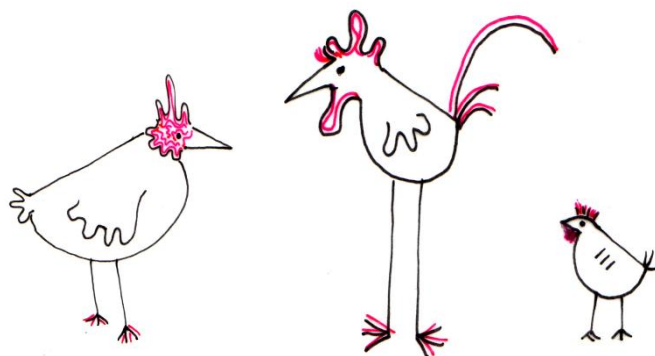
Sing like a bird.

Birds of a feather flock together.

Like water off a duck's back.

Lovely weather for ducks.

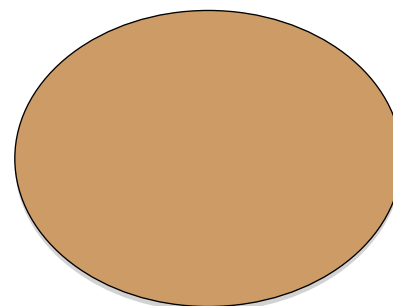
A bird in the hand is worth two in the bush.



Measuring Eggs Name: _____

Length

1. Estimate the length of a chicken egg. _____ cm.
2. Estimate the width of a chicken egg. _____ cm.
3. Estimate the height of a chicken egg. _____ cm.



Compare your estimates with another student and revise if necessary.

4. Measure the length of a chicken egg. _____ cm.
5. Measure the width of a chicken egg. _____ cm.
6. Measure the height of a chicken egg. _____ cm.

Mass

7. Use a set of kitchen scales to measure the mass of an egg carton. _____ g.
8. Use a set of kitchen scales to measure the mass of a dozen eggs. _____ g.
9. Estimate the mass of one egg. _____ g. How did you make this estimate?

-
-
10. Measure the mass of one egg. _____ g. What was the difference from your estimate? _____ g. Estimate the mass of 1/2 dozen eggs. _____ g.

Money

11. If a dozen eggs cost \$4.80, how would you use a calculator to find the cost of each egg? _____
12. If you used 6 eggs to make scrambled eggs, provide two ways the cost of the eggs could be calculated. _____ x _____ = \$ _____ , _____ ÷ _____ = \$ _____
13. If a recipe used 3 eggs, provide two ways the cost of eggs could be calculated _____ x _____ = \$ _____ , _____ ÷ _____ = \$ _____.
14. If you bought 4 dozen eggs, how much would they cost? _____

Spelling Activities

Choose the correct word

1. My brown _____ has a beautiful, long tail. (rabbit, truck, rooster)
2. The _____ of chickens were scratching in the farmyard. (flock, swarm, herd)
3. The _____ farmer had lots of chickens. (chairs, poultry, books)
4. I like tiny, fluffy _____. (chicks, swim, fast)
5. The nest was lined with soft _____. (wire, lay, feathers)

Word building

Add a prefix or suffix to make new words. (prefixes – un, non) (suffixes - s, es, ed, ing, ly)
e.g. cluck – clucks, clucked, clucking

crow _____

scratch _____

crow _____

roost _____

lay _____

Sentence writing

Write each of the following words in sentences that *show you understand their meaning*.

organic _____

healthy _____

mature _____

domestic _____

speckled _____

Scrambled Words

Unscramble the following words from List 5

cfnee _____ durga _____ ofrol _____ hggtnili _____ aroetdrp _____

Silent Letters

Comb has a silent “b”. Write five other words that have a silent ‘b’ as the last letter.

1. _____ 2. _____ 3. _____

4. _____ 5. _____ N.B. Not from the lists.

Riddles

Choose five words from the list and write a simple riddle for each one. Read to the class who write down their correctly spelt answer

Who am I?

I have a beautiful long tail.

I wake the chickens up in the morning.

I do not lay eggs.

Who am I?

Who am I?

I live in a large, cosy barn.

I laid my first egg today.

The hens clucked loudly.

Who am I?

Alphabetical order

Write your spelling words in alphabetical order, along the lines. One list only.

Dictionary Meanings

Use a dictionary to find the meanings of the words in **bold** in the spelling lists.

pullet _____

scavenger _____

moult _____

broody _____

organic _____

Word families

Write five words ending in 'atch' as in hatch.

Word Usage

Write sentences using these words correctly. **lay, laying and laid.**

Spelling Rules /Generalisations

There are many of these. Work through your list or address those your class is having difficulties with.

Homophones

Underline the correct word from those in the brackets.

The clever hen found a way (threw, through) the barnyard fence.

The farmer had to (saw, sore) the (bored, board) for the new coop.

The egg is graded by (weight, wait) before it is put in the carton.

The wheat fed to chickens is a (serial, cereal).

Homonyms

Write the correct words on the line. (breed, crows, wattle)

This _____ of chicken will _____ next spring.

When that rooster _____, he is louder than all the _____ sitting in the tree.

The hen under the _____ tree has a bright, red _____.

Synonyms

Words with similar meanings such as big / large. Write synonyms from the lists for

chook _____, rooster _____, spotty _____, group _____,

yard _____, tame _____, cluck _____, pen _____.

Antonyms

Words with the opposite meaning such as big / small. Write antonyms from the lists for

black _____, old _____, sick _____, immature _____

inorganic _____, hen _____, free-range _____.

Spelling Bingo

Children write ten words from the class list on a piece of paper. A time limit is set. The teacher calls out words from the list, and children underline the word if it is on their list.

When they have ten words they call out, Bingo. The words are checked and if all are correct, the person is declared the winner and can call out the next list for the class.

Word Basketball

Divide the class into two groups. Provide a bucket and a soft ball. Line the teams up facing each other with the bucket at an appropriate distance from the 'in team'.

The teacher reads a List word out and the first player spells it. If correct, student throws the ball into the bucket. If they are successful, the team gets a point and the teacher continues.

Swap teams so everyone has a turn.

Word Baseball

Baseball is played in a similar way using three bases and a pitcher. The pitcher calls out the List words. If correct, the player moves to first base.

Wall List

Write the weekly list or theme words and place on a wall in the class. Encourage the children to add relevant words to the list as they arise during their activities.

Word Lists

List 1

chicken
rooster
cockerel
pullet
poultry
flock
chook
comb
wattle
feather

List 2

cluck
crow
scratch
ruffle
roost
moult
breed
lay
hatch
broody

List 3

colour
white
yellow
speckled
brown
organic
healthy
mature
young
domestic

List 4

protection
production
industry
chemical
production
vegetarian
omnivore
oviparous
system
consumer

List 5

manure
barn
fence
caged
free-range
guard
floor
lighting
scavenger
predator

List 6

carton
dozen
batch
candling
albumen
yolk
weight
package
label
storage

List 7

growth
monitor
commercial
reproductive
formation
welfare
disease
nutrition
standard
behaviour

List 8

farmer
tractor
turkey
bantam
gizzard
flighty
warmth
cackle
coop
comfort

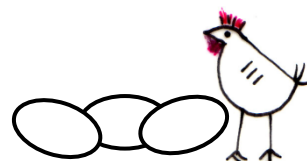
Science Experiments 2

1. Sink or Float

Will an egg sink or float in normal water? What effect will salt have?

You will need

salt
tablespoon
2 clear glasses
warm water
2 raw eggs



Instructions

Place the two glasses of warm water on a table. Add about 10 heaped tablespoons of salt to one of the glasses and stir until the salt is dissolved in the water.

Place an egg in each glass and observe what happens. The egg in the normal water will sink to the bottom while the egg in the salt water will float to the top.

Expand on the experiment by mixing the two types of water. Remove the eggs from the glasses. Empty about half of the salt water. Then pour the plain water into the salt water cup up to the amount the glass had before. Place the egg in the cup. The egg will float in the middle of the cup.

Make the egg rise to the top again by removing the water. With the egg still in the glass, begin slowly removing the water a spoonful at a time. The egg will rise higher and higher as each spoonful is removed.

Explanation

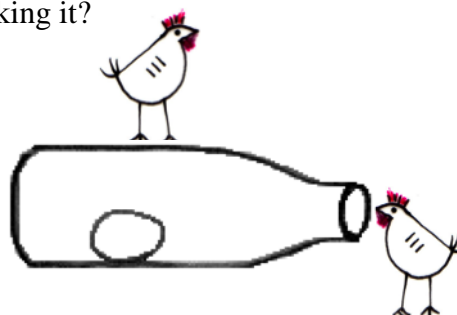
The egg in salt water floats to the top while the egg in normal water sinks to the bottom. The egg floats in salt water because of density. Salt water is denser than the egg thereby causing the egg to rise to the top. The egg is denser than normal water, though, which is why it sinks to the bottom when in the cup of normal water.

2. Egg in a Squeeze

Can you get an egg through the neck of a bottle without breaking it?

You will need

small glass bottle
matches
paper
peeled hard-boiled egg



Instructions

Scrunch up the paper and push it into the neck of the bottle.

Turn the bottle upside down and ask an adult to light the paper.

Stand the paper upright as the paper burns.

Quickly place the peeled, hard-boiled egg into the neck of the bottle, with the pointy end down, and watch what happens.

Explanation

The burning paper heats the air inside the bottle, which expands and some escapes past the egg.

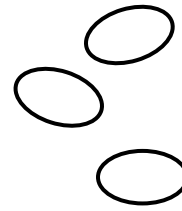
When the paper stops burning the air remaining inside the bottle cools, lowering the air pressure inside the bottle. The higher air pressure outside the bottle, forces the egg through the neck and into the bottle.

3. Bouncing Eggs

Can you make an egg bounce?

You will need

2 fresh eggs
2 glasses
water
white vinegar
glass bowl



Instructions

Put an egg in a glass of water. Put the other egg in a different glass filled with vinegar. After three hours see if you can notice a difference between the eggs. The egg in the water should look the same while the egg in the vinegar will have changed. Touch the egg in the vinegar to see how it feels. The shell will feel soft like a water-filled balloon. Leave both eggs in their glasses for seven days. After that time, take the egg out of the vinegar. Check to make sure the shell has completely dissolved. The egg should feel leathery. Wash the egg with water. Let the egg dry completely for a day or two. When the egg is dry see how high you can bounce it before it breaks.

Explanation

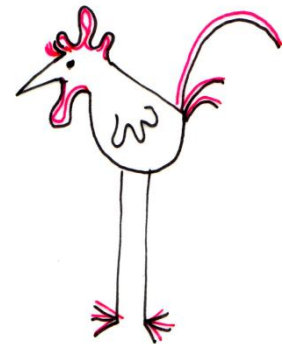
When the eggshell comes in contact with the vinegar, a chemical reaction takes place. The vinegar (an acid) reacts with the calcium carbonate of the shell, making it soften and, over time, disappear. This process is called decalcification. The egg in water does not change.

4. Weight Lifting

Predict how many books eggs will support before they break.

You will need

3 eggs
newspaper
a stack of books
knife
paper towel



Instructions

Lay several sheets of newspaper flat on a tabletop. Position two of the eggs in the middle of the newspaper so that they are a few centimetres apart. Now lay one of the books on top of the eggs. Continue placing books on top of the eggs until the eggs crack. Record the number of books supported. Now gently crack the remaining egg with the knife so that the egg is in two nearly-equal parts. Clean the yolk out of the shell halves. Spread clean newspaper on the tabletop. Sit the egg halves upright in the middle of the newspaper a few centimetres apart. Now lay a book on top of the eggs. Keep placing books on top of the eggs until the shells crack. Was there a difference in the number of eggs supported? Were you surprised by the strength of the eggshells?

Explanation

The curved shape of eggshells distributes the weight of the book over the entire egg so it is able to support more weight than a single point could.

Factual Recount (Experiment) Name _____

Aim: *(What are we trying to find out?)*

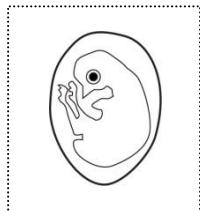
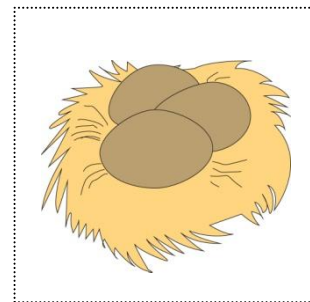
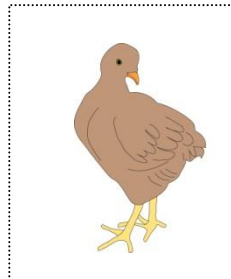
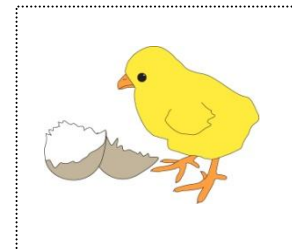
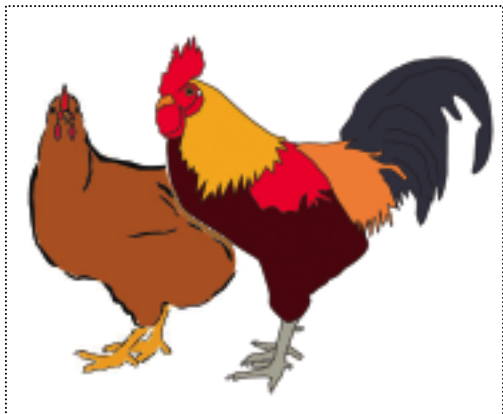
Method Recount: *(What did we have to do?)*

Results: *(What did we see?)*

Conclusion: *(What did we find out?)*

Life Cycle of a Chicken

Cut out the pictures and use them to create a chicken lifecycle in the box below.
You will need to draw some arrows.

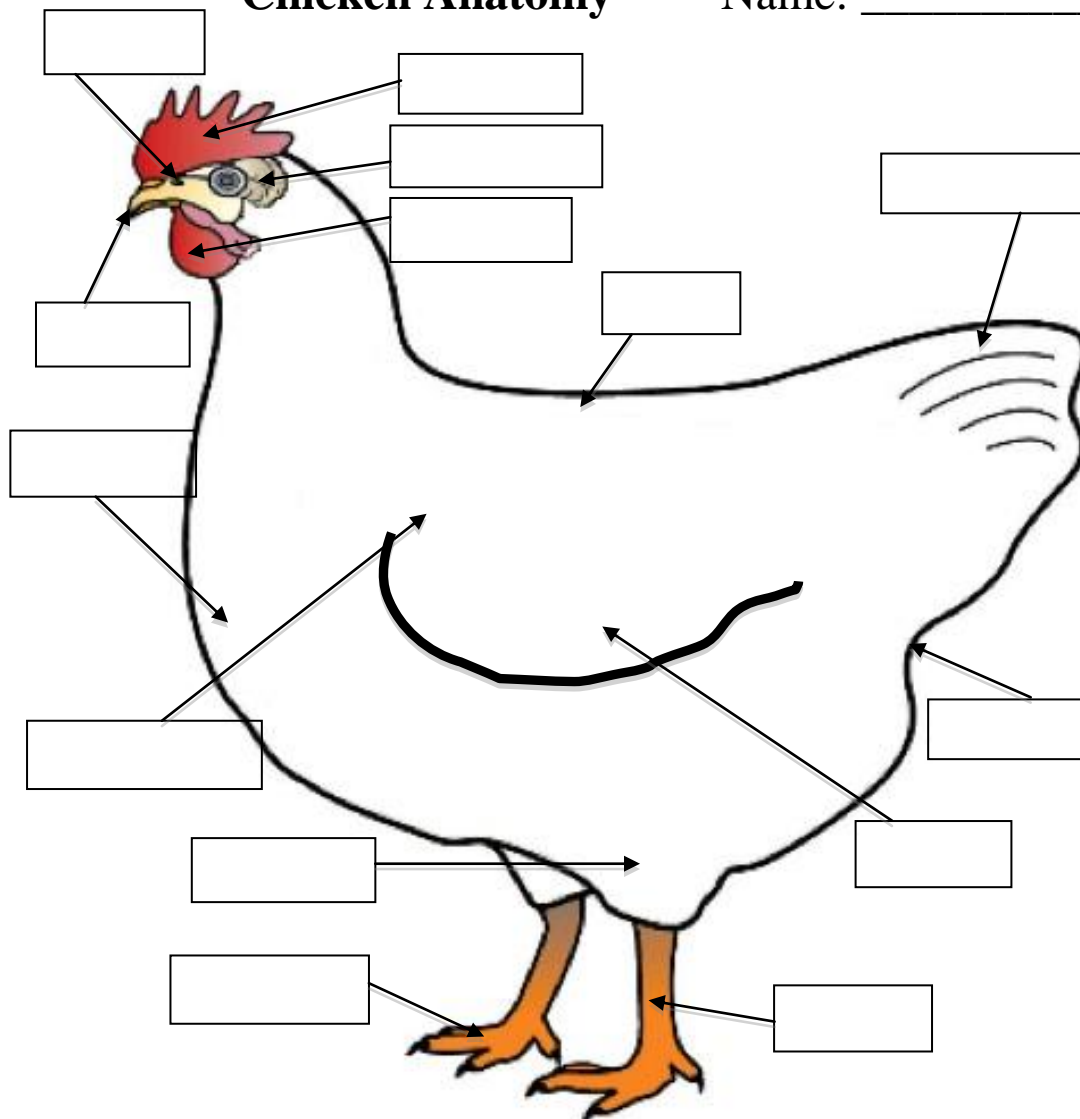


Lifecycle of a Chicken

Name: _____

Chicken Anatomy

Name: _____



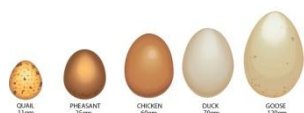
Use these words to label the chicken

foot
tail
shank
comb
beak
nostril
wattle
breast
shoulder
cloaca
back
wing
earlobe
thigh

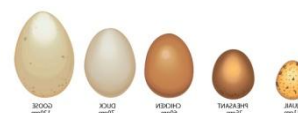
Hatching Chickens Naturally and in an Incubator

Under natural conditions chickens live for 8-10 years. To live a full and healthy life they need the correct environmental conditions to breed, grow and produce eggs. A rooster and a hen are needed to produce fertile eggs. In early spring a hen may start to go broody (clucky) and lay a batch of 12-15 eggs. After about 21 days the chicks hatch from the eggs. During the incubation period the hen provides all the environmental conditions needed to hatch the eggs. During this time she only leaves the nest for food and water.

Hatching eggs in an incubator either in the backyard or in commercial situations requires humans to provide the correct environmental conditions – temperature, humidity (an amount of moisture in the air), light, ventilation and movement. There is a lot of science and technology employed to imitate the natural process of hatching eggs. What a marvel a hen is!



Temperature and Time



Name: _____

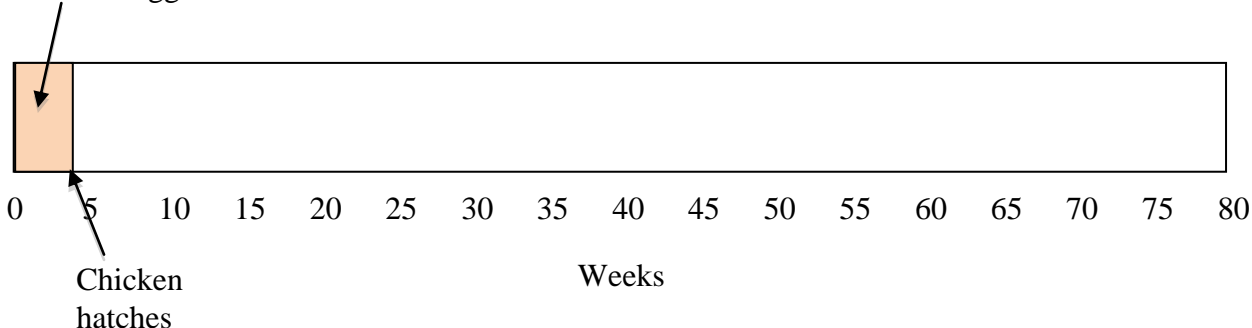
When **hatching** eggs the temperature should be kept constant at about 37-38°C. After 21 days the chicks hatch. After the chicks hatch the temperature in the incubator should be kept at 33°C for the first week and reduced 0.5°C a day until it reaches 24°C. When hatched naturally, the hen keeps the eggs/chicks warm.

The chickens grow for about 20 weeks and then the pullets start to lay eggs. They usually lay eggs for about 50 weeks and then producers may induce a moult (a period where no eggs are laid and old feathers are replaced) by changing their diet and reducing the amount of light for 2-4 weeks. When a full diet and lighting is returned the hens start laying again. Under natural conditions hens live for 8-10 years.

Tasks

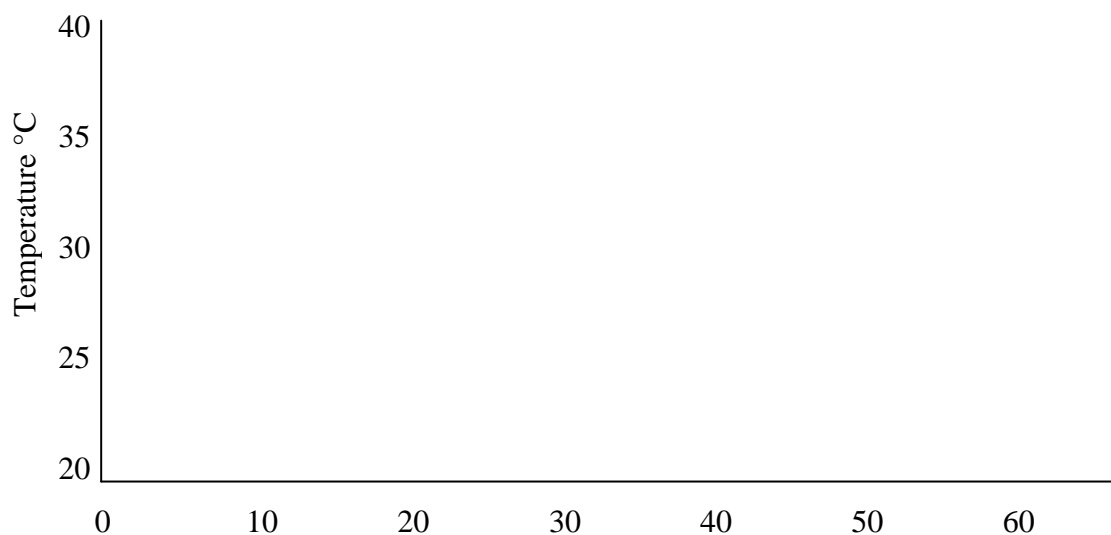
1. Use a scale of 1cm = 5 weeks to show a graph of the first year or so of the life of a chicken. The first entry has been completed for you.

Chicken in egg



2. Use the information above to draw a line graph of the temperature requirements of eggs and baby chickens on the axes below.

Temperature Requirements for Eggs and Chicks



Egg Production Worksheet Name _____

1. Where does your family buy their eggs? Circle the answer.

a supermarket, a small shop, organic food store, a farm, your family farm

2. What are the three main types of eggs that people buy from a supermarket?

3. What information is on the labels of the egg cartons? _____

4. Explain why some people prefer the following eggs.

Organic _____

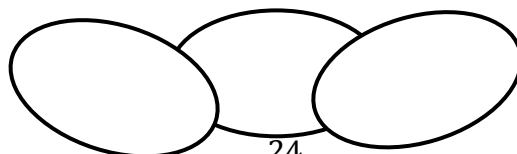
Omega 3 _____

Vegetarian _____

5. Watch the DVD “It All Starts With An Egg” and add the information to the table.

Barn Laid Eggs	
Advantages	Disadvantages
Free-range Eggs	
Advantages	Disadvantages
Cage Eggs	
Advantages	Disadvantages

What efforts do producers make to be sustainable? _____



Maremma Guard Dogs Name _____

Read the information below and answer the questions.

The tall, white dogs in with a flock of free-range chickens are not family pets. They are Maremmas, a breed of dog, from the mountains of Italy, bred to protect herds of sheep and goats against wolves, lions and bears. They have been used as livestock guard dogs for hundreds of years.



Maremmas were introduced into Australia in 1982, and are now used to protect free-range chickens, and other farm animals, against wild dogs, dingoes and hawks. These dogs are trained to bond with the animals they protect and live outside with them at all times. They are fed in the yard and become very attached to the animals they guard. They can appear inactive during the day but this changes during the night when they prowl and bark out warnings to any intruder. Although they are given kennels or sheds to sleep in, like most dogs they do not like storms and have been known to take shelter with their owners during violent thunderstorms.

Maremmas do not make good pets in suburban areas, as they need lots of space for exercise, and commands like, 'sit, stay, drop and down' do not interest them. Known for being wary and aloof, they respond well to praise but only give a cuddle when they want to. They have a long, thick coat that needs brushing regularly.

Many people are using these amazing dogs to help keep their farm animals safe from a range of predators. If you look at some very old paintings of shepherds and their flocks, you can often find a Maremma in those artworks.

Questions

1. What is special about Maremmas? _____

2. In which country were Maremmas first bred as livestock guard dogs?

3. When are they most active? _____

4. Which one of the predators would only worry chickens in the daytime? _____

5. Name three animals that prey on livestock. _____

6. Write the meaning of the following words that are used in this report.

a. livestock _____

b. bond _____

c. free-range _____

d. suburban _____

e. predators _____

f. aloof _____

7. Not all free-range chicken producers use Maremmas to guard their chickens. Name other ways chicken producers keep their animals safe. _____

8. Circle other animals that might be a problem for chicken producers in Australia.

mice, sharks, rats, cats, goannas, tigers, sheep, snakes, crows

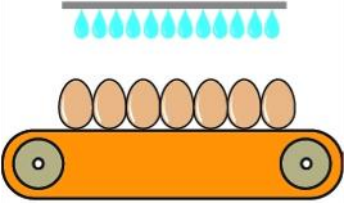
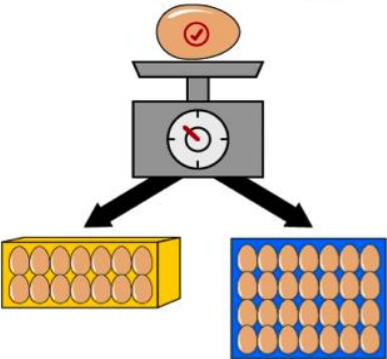
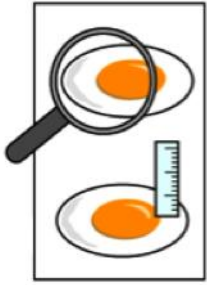

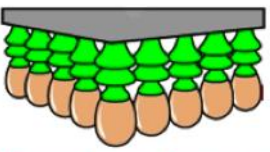
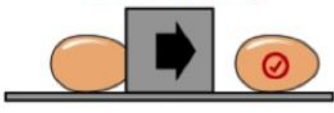
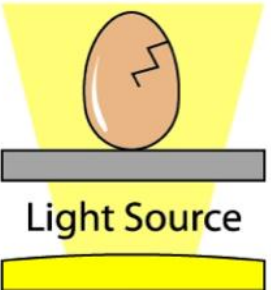


9. What is it about storms that some animals and people do not like?

Draw two Maremma in a paddock with a flock of chickens, a shed and some food containers.



Commercial Egg Preparation Procedures

Form groups of three. Cut out the nine processes in the preparation of eggs for sale. Give three processes to each person in the group. As a group, place the processes into order.

<p>Washing and Re-oiling</p>  <p>Eggs are cleaned and re-oiled to keep them fresh.</p>	<p>Grading by weight</p>  <p>Eggs are weighed and sorted into different sizes and packed.</p>	 <p>Quality Testing</p> <p>Egg white and yolk are tested for quality.</p>
 <p>Receival</p> <p>Refrigerated trucks deliver eggs from the farm.</p>	 <p>Suction heads move eggs to conveyer</p> <p>Suction heads pick up the eggs and place them on the conveyer belt.</p>	<p>Stamping</p>  <p>Some grading rooms stamp eggs to identify the farm of origin.</p>
<p>Candling</p>  <p>Eggs are tested for internal and shell defects.</p>	 <p>Coolrooms</p> <p>Eggs are stored in a coolroom until graded and packed.</p>	 <p>Packing</p> <p>Eggs are put in cartons with a 'use-by date' before storage and distribution to retailers.</p>

Egg Production Spreadsheet

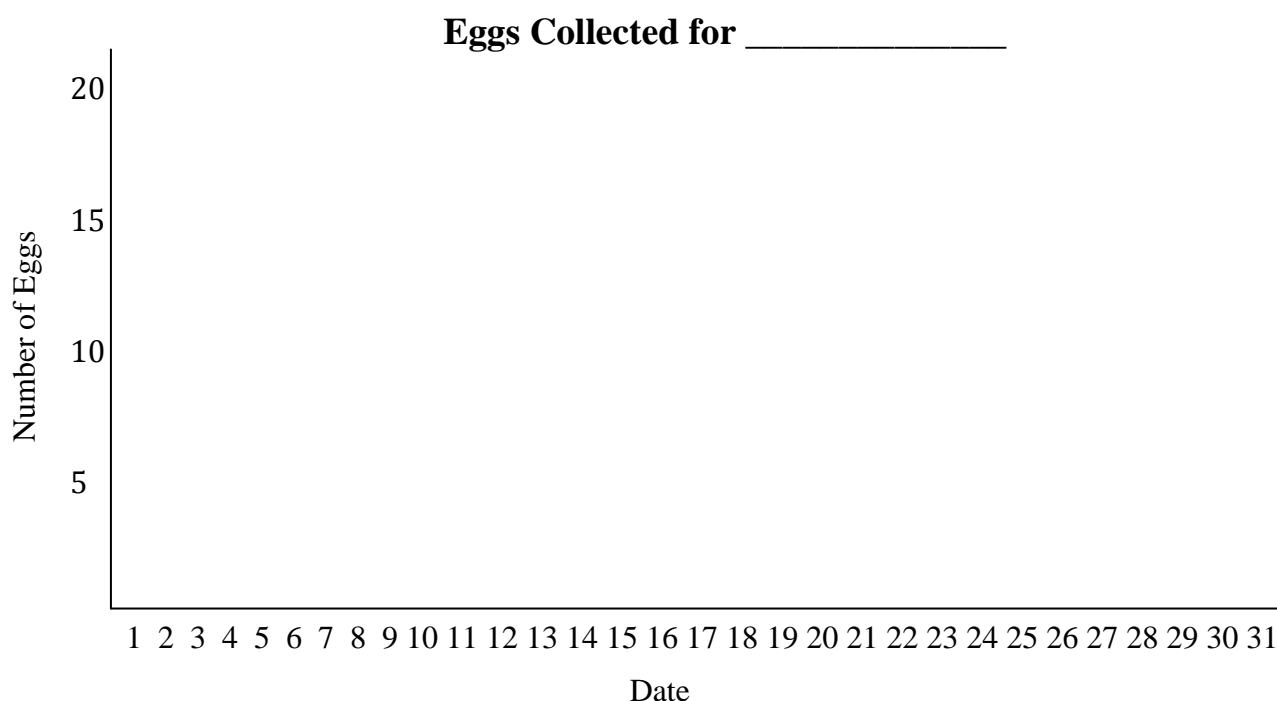
The class spreadsheet of income and expenses for the month is given below. Use the spreadsheet to answer the questions on the following page.

Egg Production for October				Hens	24			
Date	Eggs	Expenses			Income			
		Item	Quantity	Unit	Cost	Dozen	Price	Income
1-Oct	20	Feed	1	\$18.00	\$18.00	0	\$3.00	\$0.00
2-Oct	18					0	\$3.00	\$0.00
3-Oct	17					2	\$3.00	\$6.00
4-Oct	20					2	\$3.00	\$6.00
5-Oct	18					2	\$3.00	\$6.00
6-Oct	19					2	\$3.00	\$6.00
7-Oct	15					2	\$3.00	\$6.00
8-Oct	21					1	\$3.00	\$3.00
9-Oct	20					0	\$3.00	\$0.00
10-Oct	16					0	\$3.00	\$0.00
11-Oct	18					3	\$3.00	\$9.00
12-Oct	18					3	\$3.00	\$9.00
13-Oct	17					2	\$3.00	\$6.00
14-Oct	20					2	\$3.00	\$6.00
15-Oct	20					1	\$3.00	\$3.00
16-Oct	17					0	\$3.00	\$0.00
17-Oct	16					0	\$3.00	\$0.00
18-Oct	14					3	\$3.00	\$9.00
19-Oct	21					2	\$3.00	\$6.00
20-Oct	20	3	\$3.00	\$9.00				
21-Oct	15	2	\$3.00	\$6.00				
22-Oct	19	0	\$3.00	\$0.00				
23-Oct	18	0	\$3.00	\$0.00				
24-Oct	17	3	\$3.00	\$9.00				
25-Oct	16	2	\$3.00	\$6.00				
26-Oct	19	3	\$3.00	\$9.00				
27-Oct	20	3	\$3.00	\$9.00				
28-Oct	21	2	\$3.00	\$6.00				
29-Oct	18	1	\$3.00	\$3.00				
30-Oct	19	0	\$3.00	\$0.00				
31-Oct	17	0	\$3.00	\$0.00				
		3	\$3.00	\$9.00				
				Total	\$72.00		Total	\$138.00
Total	564							
Dozen	47			Profit	\$66.00			

Spreadsheet Questions

Name: _____

1. For which month of the year has data been provided? _____
2. How many eggs were collected on the 19th day of the month? _____
3. How many eggs were collected for the month? _____
4. Circle the operation that was used to calculate the total number of eggs collected for the month. addition, subtraction, multiplication, division
5. How many dozen eggs were collected for the month? _____
6. Circle the operation that was used to calculate the number of dozens of eggs collected for the month. addition, subtraction, multiplication, division
7. Circle the operation that was used to calculate the income from the sale of eggs each day. addition subtraction multiplication division
8. What was the total income from the sale of eggs for the month? \$_____
9. What was the total cost of feed for the month? \$_____
10. How much profit was made from the sale of eggs for the month? \$_____
11. Circle the operation that was used to calculate the profit from the sale of eggs.
 addition subtraction multiplication division
12. How many eggs were unsold at the end of the month? _____
13. Use the data in the spreadsheet to make a column graph of the eggs collected for the month.



Chicken Breeds Name: _____

Reading for Information Activity.

Use the information on the CRC Poster, **Chicken Breeds in Australia**, to answer the following questions.



1. What are the two major classifications of chickens?

a. _____ b. _____

2. Explain the differences in the feathers of the two main breed types.

3. There are bantams that have been developed as _____ types of large breeds and those that are _____ or unique breeds.

4. Commercial breeds have been developed to optimise either _____ or _____ production. Name the three main breeds in each group.

Group 1 _____

Group 2 _____

5. Write three features of both layer hens and broilers.

Layer hens _____

Broilers _____

6. Traditionally game birds were bred for _____.

7. Cock fighting is illegal in many countries now, so why do people keep game fowl?

8. **Rare breeds:** match the description with the breed.

Houdan

Araucana

Frizzle

Cochin

Hamburgh

blue shelled eggs,
fast growers,
odd looking

lay many small, white eggs,
sometimes called Everlayer,
active and flighty, good flyers

red eyes,
outward curling feathers,
gentle nature

enormous amounts of feathers,
calm, good pets,
heavily feathered legs means
they require short grassed areas,
originated in China

five toes on each foot,
V-shaped comb divided into
two parts like butterfly wings,
calm, placid nature

9. Two breeds, the _____ and the _____ have feathered legs.

10. Which two breeds are obviously bred in Australia? _____

11. a. Name two breeds suitable for cold climates. _____

b. Name two breeds suitable for warm climates. _____

12. Name two crested breeds. _____

13. Silkies are popular with adults and children as pet birds. Give reasons for this.

14. If you were setting up your own backyard chicken pen with six hens (enough for eggs for four people), which hens would you choose? _____

15. Give at least three reasons why a particular breed appeals to you. You can have a mix of breeds. _____

16. On the map of the world, put the number on the country these birds came from originally. Use the information on the poster for this task.

- 1.** Belgian d’Uccle, **2.** Cochin, **3.** Australorp, **4.** Ancona, **5.** Orpington,
6. Houdan, **7.** Polish, **8.** Indian Game, **9.** Malay Game, **10.** Old English Game



A Brief History of Egg Production

The first domestic fowl were brought to Australia onboard the First Fleet in 1788. Over a period of years, the original flock of chickens, turkeys, geese, and ducks increased in number. It wasn't long before people in towns and on farms were keeping their own chickens as they provided eggs, feathers and meat. Ducks, turkeys and geese were also kept. In time, guinea fowl and pheasants were introduced.

As time went by a commercial egg farming industry developed. Until the 1950's, chickens were kept in sheds and had access to a yard with high fences that kept foxes out. Flock numbers ranged from hundreds to a few thousand. In cities and towns it was convenient to buy eggs at the local shop and store them in the fridge. Keeping chickens in backyards became less popular. Local councils introduced regulations to set limits on the number of chickens that could be kept and the distance a pen could be from neighbouring dwellings. In country areas chicken yards remained popular.

In the 1960's, layer cages were introduced and the number of commercial chicken farms increased. In the late 1970's, sheds that could house up to 100,000 layer hens in multiple layers of cages were common. Eventually some farms housed 500,000 hens in cages. New developments and changing attitudes to how animals were treated caused people to consider changes to the way they farmed. As a result, in 2001 regulations were introduced to set limits on the number of hens in each cage. Today, cage egg production remains the most popular form of production. Free-range and barn laid egg production methods are increasing in number as a response to consumer demand and producer preference. Concerns for the environment and sustainable production practices have also led to changes in the way that waste products are disposed of and disease is managed.

With an increasing interest in organic and home-grown food, keeping backyard chickens continues to be popular with many people. They are great for eating kitchen scraps and garden pests. Scratching among the fruit trees and vegetables they quickly find beetles, bugs and grubs to eat. Used straw from nest areas, mixed with their manure, can be used as garden mulch. To make sure they are getting all the necessary nutrients, they are also fed grain. With such an interesting variety of chicken breeds available, keeping chickens can be a worthwhile, enjoyable activity for the family.

Questions True or false.

There were no domestic fowl on the ships of the First Fleet.	true	false
The early settlers had no use for chickens or ducks.	true	false
In the 1950's commercial chicken farming was developing.	true	false
People have to protect their chickens from foxes.	true	false
Free-range eggs are not produced in Australia.	true	false
Local council regulations do have to be followed.	true	false
Health and welfare issues only apply to the health on humans.	true	false
Backyard growers can use manure from the chickens on their gardens.	true	false
Chickens are omnivores.	true	false
People can keep chickens in their backyard for egg production.	true	false

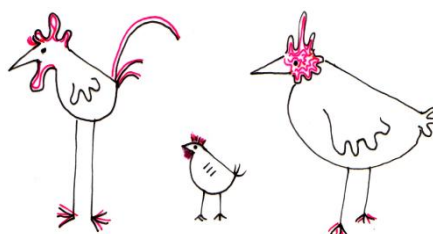
Follow up Activities.

1. Timeline. Create a timeline by first highlighting the dates or time references in the passage. Record the dates and relevant information in the table below.

Date	Development

2. Sustainability. Use a dictionary to find a definition of sustainability.

Discuss concerns about sustainability in the egg production industry and what producers are doing to minimise the impact on the environment. Organic egg production is one example. What other developments are taking place.



People Who Work in Egg Production

There are many people involved in each part of the egg production industry. Some are listed below. Can you match their title with their correct description?

The completed information could be used as **role play cards**.

Egg producer

Researcher

Veterinarian

Nutritionists

Market Managers

Breeders

Health and Welfare

Read carefully and decide where each description should be placed and then cut and paste into the correct box.

They work with the egg producers to identify and treat sick, diseased or injured hens. Sick hens are removed from the laying sheds until they recover. This is done to prevent the spread of any infectious diseases. Non-infectious diseases are diagnosed and remedies suggested. They may give vaccinations, medicines or suggest a special diet.

They are the people or corporations who own the egg production farms. They will be involved in cage, free-range or barn egg production. They provide the chickens with a safe, healthy environment, plenty of nutritious food, clean water and egg laying areas.

When the egg producer needs food for his chickens he knows that these people have developed chicken food that will keep his hens healthy and produce good quality eggs. The food contains a variety of grains plus vitamins and minerals. These people are constantly working on new products to improve the quality of the eggs we eat.

These people are involved in breeding chickens. Some chickens are bred especially for laying eggs. They are different from chickens that are bred for meat production. There are other people who breed chickens for showing. Their chickens are called Fancy Breeds and are shown at special shows. Many people enjoy that activity.

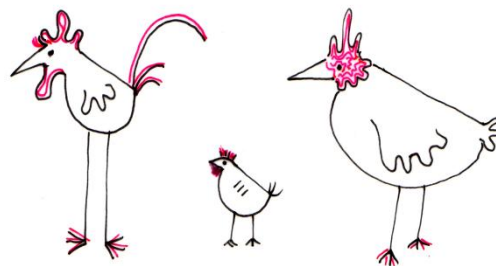
These people help to make sure all chickens are kept in conditions that are not stressful or harmful. Their aim is to ensure the hens are not treated cruelly and are able to do the things they like to do. They ensure that hens are housed according to regulations set by the Australian Egg Industry and ensure disease prevention is enforced.

It is the task of these people to undertake research to find answers to the problems of egg producers. They find ways to improve egg production techniques by developing better equipment for housing the hens, collecting the eggs, and grading and packaging processes.

When a product is sold to consumers, there is a need to advertise so that people are attracted to that product. Developing eye-catching cartons, catchy slogans and advertisements is the job of this group of people.

Designing and Making Activity

Teacher Information for designing and making a model of a chicken house with a fenced area for a small flock of chickens.



1. Brainstorming activity to list what is needed when you build chicken housing. The safety and comfort of the chickens has to be taken into account.

Consideration needs to be given to their protection from wind, rain, heat, cold, draughts and predators. They need space for walking, scratching, feeding, resting, roosting and laying eggs. Hen houses can be portable or fixed.

2. Make a list on the board, smart board or other. Check with the list given in *Poultry Agskills: A Practical Guide to Farm Skills*, p 31

3. If the project is to be used as an assessment task, let the children know what aspects will be assessed e.g. suitability of design, all requirements included, suitable materials used, realistic.

4. Decide on a size requirement depending on display space available in the classroom and time limit for the project.

5. Brainstorm a list of materials for making a model. Recycle whenever possible. If necessary suggest paddle pop sticks, balsa off cuts, strong cardboard, mesh (onion bags), string, bottle caps.

6. Discuss any other issues that arise.

7. Design the house on paper first. This is an important step of the project and could be done at school or as homework.

8. Collect materials and build the model either at home or in class.

9. Completed model and design are displayed, admired and assessed.

10. The students could:

- give an oral presentation explaining the features of their work,
- photograph their construction progress and write an explanation to be included with the completed model,
- photograph their work and display, with their explanation, in the school newsletter or on the school website.



Name _____ Date due. _____

Design and Make Activity

Instructions Design and make a chicken house with a fenced area for a small flock of chickens.

The safety and comfort of the chickens has to be taken into account.

Consideration needs to be given to their protection from wind, rain, heat, cold, draughts and predators. They need space for walking, scratching, feeding, roosting, resting and laying eggs. Hen houses can be portable or fixed.

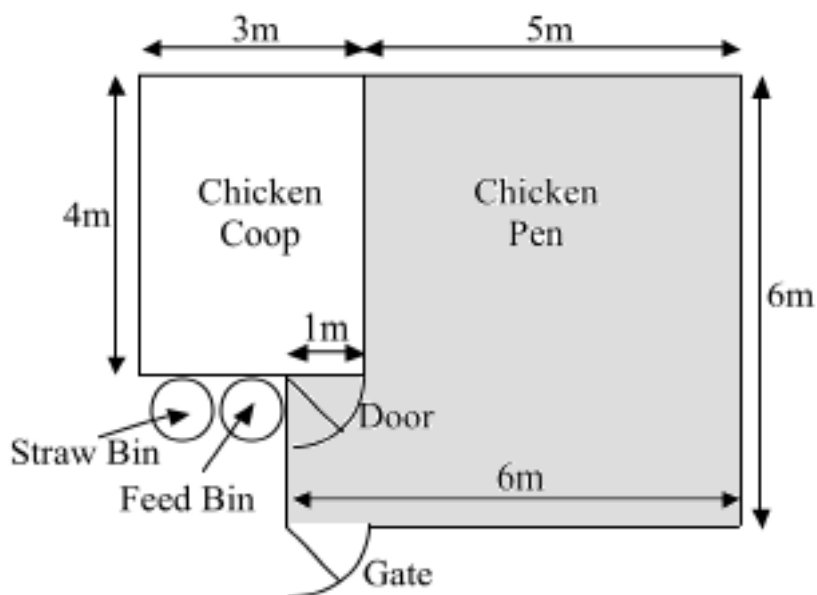
Refer to class list for requirements.

Prepare a design on paper first, and then make a small model using your design.

Include an explanation and photographs.

Chook House Mathematics Name: _____

The plan of a class chook pen and house is provided. Show your working on the back of the page or in your workbook.



1. What is the area of the chicken house? _____ m²
2. What is the area of the chicken pen? _____ m²
3. What is the perimeter of the chicken house? _____ m
4. What is the approximate diameter of the bins? _____ m
5. What is the length of the fence around the chicken pen? Do not include the chicken house wall. _____ m
6. Wire costs \$3.75 per metre. The cost of wire for the fence = \$_____
7. Posts cost \$12.80 each. If 10 posts are needed, the cost of posts = \$_____
8. If a gate costs \$45, the cost of materials for the fence = \$_____
9. Labour is \$27.50 per hour. If 7 hours are needed, the cost of labour = \$_____
10. The total cost of building the fence = \$_____
11. Nest boxes are 30cm wide, how many fit along the 3m wall of the house? _____
12. If 2 rows of boxes are provided at \$2.65 each, the cost of nest boxes = \$_____
13. If the cost of 2 roosts is \$5.60, what is the cost of each roost? \$_____
14. If 24 pullets were bought for \$84, what was the cost of each pullet? \$_____
15. The roosts are placed along the 4m wall. How many pullets roost per metre? _____
16. If 7 litres of fresh water is provided each day. Each pullet drinks about _____ ml
17. A 20kg bag of food is bought each week. Each pullet eats about _____ g a day?
18. If the cost of each bag is \$18, each pullet costs about \$_____ a month to feed.
19. On average 18 eggs are collected a day. If eggs are sold to the canteen for \$3 a dozen, what is the approximate income for the month? \$_____

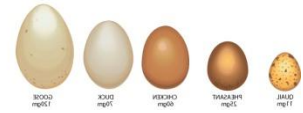
Word Search Close

g	p	u	l	l	e	t	s	b	s	y	i	f
n	b	o	c	y	l	h	r	r	u	d	n	s
i	r	c	h	o	e	s	e	n	z	o	c	a
l	o	y	i	l	c	h	t	o	f	o	u	l
d	o	z	c	k	t	e	s	g	m	r	b	b
n	d	o	k	a	r	n	o	i	e	b	a	u
a	y	n	e	z	i	d	o	z	e	n	t	m
c	c	f	n	o	c	a	r	z	g	c	o	e
p	o	u	l	t	r	y	b	a	g	s	r	n
s	m	a	r	e	m	m	a	r	d	u	c	k
a	b	c	s	r	o	t	a	d	e	r	p	y

Colour the answers in the grid. Answers can go up, down diagonally, left and right. Write the answers in the sentences below.

- The _____ used its egg tooth to crack open the egg shell.
- There are a _____ eggs in a carton.
- The proud _____ strutted around the farmyard.
- The _____ farmer had chickens, ducks and geese.
- After a few weeks the young chicks develop _____ .
- The sick hen's _____ was flopping to the side.
- When a chicken sits on a batch of eggs it is said to be _____ .
- Chickens have grit in their _____ to help them digest food.
- The largest part of an egg is _____ .
- Foxes are major _____ for backyard and free-range chickens.
- The process of _____ involves using a light to see inside eggs.
- Farmers use an _____ to hatch large numbers of eggs.
- Young female chickens are called _____ .
- Who am I? I am a dog that guards a flock of chickens. Answer: _____
- An _____ fence is often used to help protect chickens from predators.

Eggs in Food



It is surprising how often we incorporate eggs in our diet. Sometimes it is obvious and other times it is not so obvious.

All of the foods below can contain eggs. For example, meat pies may have eggs in the pastry and tempura batter can contain eggs.

In the table, write the following foods beneath the meal in which you would normally eat them.

Circle the foods that you have eaten in the last week.

boiled eggs baked custard biscuits pikelets lemon delicious pudding
 meat pie egg sandwich egg salad ice-cream rissoles fried eggs
 crumbed cutlets chocolate cake prawns in tempura batter meringue
 scrambled eggs cheese soufflé egg and bacon pie slices pavlova
 frittata poached eggs sponge cake bacon quiche fruit buns omelette
 cheesecake battered fish mayonnaise lasagne cup cakes egg custard
 crepes lamingtons meatballs

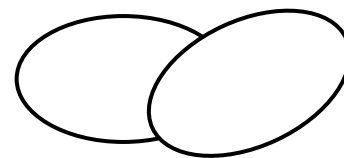
Breakfast	Morning Tea	Lunch	Afternoon Tea	Dinner

Why Eggs Are Good For Us

Name _____

Cloze passage.

Read the passage several times, then fill in the missing words on the lines. Read again to make sure it makes sense.



There are many reasons why eggs are an important part of our diet. Eggs are natural, nutritious and delicious. They contain lots of protein, and many _____ and vitamins. Our bodies need protein to _____ and repair the cells that make up _____ skin, hair, nails, teeth, muscles and organs. _____ plays an important part in helping our _____ function and grow normally. Eggs contain all _____ vitamins we need, except vitamin C, which is _____ in fruit and vegetables. One of the _____ important minerals found in eggs is iron. _____ is used to carry oxygen in the _____ and to produce energy. Some eggs have _____ omega 3s added, and others, have extra minerals _____. This is a trend to make eggs _____ more attractive to consumers. Some people are _____ to eggs and others with cholesterol problems _____ not eat eggs. However for most people eggs are a safe and nutritious part of their diet.

Missing Words

our, minerals, body, extra, allergic, Protein, added, build, the, most, blood, even, Iron, found, do

Egg Storage - spelling activity

Circle the incorrect word and write the correctly spelt word on the line. There is one mistake in each line.

To make shore eggs stay as fresh as possible for as long as possible, place _____ them in there carton in the refrigerator. They are packed with the pointed _____ end down, to protect the yolk and prevent damage to the air sell. The cartons _____ are designed too slow down moisture loss and prevent eggs absorbing strong _____ smells from other foods in the fridge threw the pores in their shells. A boiled _____ egg, in the shell can be stored in an airtight container in the refrigerator four _____ up to three days.

Cooking with Eggs - punctuation activity

Eggs are easy to cook and can be used in many different ways. Eggs can be boiled, fried, poached, coddled, baked, scrambled and made into omelettes. They can also be mixed with other ingredients to make cakes, biscuits, custards, quiches, pavlovas, pancakes, sauces and many more things that we like to eat every day. Beaten eggs can be used to coat fried foods such as fish and to hold the meat of rissoles and meatballs together. Beaten eggs are also used to put a shiny glaze on buns and sweet breads. Bakers and food manufacturers also use eggs.

What are your three favourite egg dishes – give reasons? If you do not eat eggs, explain why? Answer in sentences and use correct punctuation and spelling.

Pikelets

Name: _____

Ingredients

1 cup self raising flour	1 egg
a pinch of salt	1 cup of milk (with 1 teaspoon of vinegar added)
2 tablespoons sugar	2 tablespoons of melted butter
¼ cup teaspoon of bicarbonate of soda	
Extra butter for frying	

Method

Sift the flour, salt, sugar and soda into a bowl.
 In another bowl, beat the egg with the milk and melted butter.
 Using a wooden spoon, make a well in the centre of the flour mixture.
 Add the egg mixture to the well and stir gently.
 Draw the flour in from the sides as you stir.
 Batter should be slightly lumpy.
 Grease and heat a heavy-based frypan for a short time.
 Put tablespoons of the batter onto the pan.
 Cook until bubbly on top and brown underneath.
 Turn to brown on the other side.
 Transfer to a plate and cover with a clean tea towel until ready to eat.
 Serve with butter and golden syrup, honey or jam.
 Makes about 10.

Activities

- Circle the correct text type
information report, explanation, discussion, procedure, narrative, recount
- Underline all the **verbs** in the recipe.
- What do you notice about the position of the verbs in the lines? _____

- Which description best fits this text type?

Lots of interesting adjectives and adverbs to add interest
 A complicated plot with a variety of characters
 A list of requirements and clear instructions without unnecessary detail
 A series of events recalled in correct sequence

- Name other examples of this text type. _____

f. Find words or phrases that describe:

place _____

in what manner _____

time _____

g. Use the same text type, to describe how you would make pikelets (or a dish of your choosing, preferably with one or more eggs.)

Supermarket Eggs Name: _____

Show your working for each problem.

1. What is the cost of 3 doz. 700g barn laid eggs? _____ = \$_____
2. Cost of one egg from 1 doz. 700g cage eggs? _____ = \$_____
3. What is the approximate mass of each egg in a 10 pack of 550g eggs?
_____ = _____g
4. What is the approximate mass of each egg in a 1 doz. carton of 700g eggs?
_____ = _____g

Supermarket Egg Prices

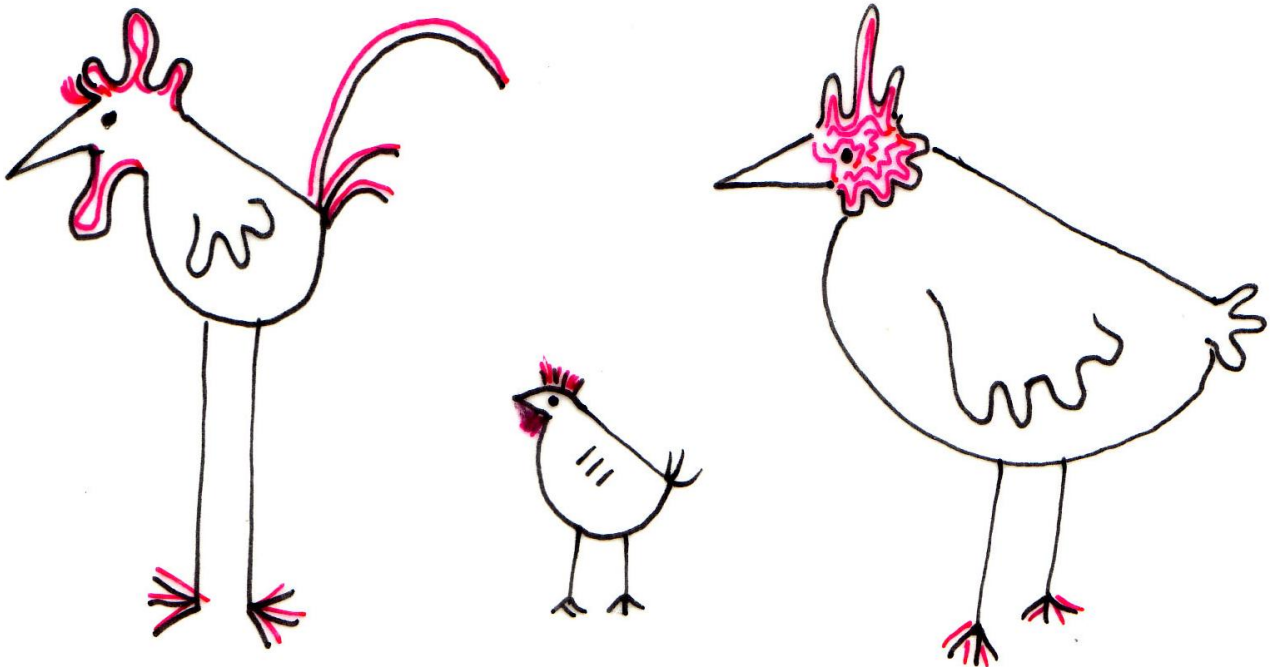


1 doz. 700g cage eggs	\$4.68
1 doz. 700g barn laid eggs	\$4.92
1 doz. 700g free-range eggs	\$6.24
1 doz. 600g cage eggs	\$4.08
1 doz. 600g free-range eggs	\$5.88
10pack 550g free-range eggs	\$6.40
10 pack 700g cage eggs	\$2.90
½ doz. 330g ecco-eggs	\$3.96
½ doz. 350g free-range eggs	\$3.18

5. What is the cost of 1 doz. ecco-eggs? _____ = \$_____
6. What is the difference in cost when buying 1 doz. 600g cage eggs and 1 doz. 600g free-range eggs? _____ = \$_____
7. For a BBQ 2 doz. 600g free-range eggs and 1 doz. 700g free-range eggs were bought. What was the total cost of eggs? _____ = \$_____
8. A cake recipe needed 3 eggs. If ecco-eggs were used, what was the cost of the eggs? _____ = \$_____
9. If your family bought 1 doz. barn laid eggs each week for a year, what is the total cost? _____ = \$_____
10. It costs a farmer \$0.95 to produce 1 doz. 700g cage eggs. If the farmer sells eggs to the supermarket for \$2.40 a dozen, how much profit does the farmer make?
_____ = \$_____. How much profit does the supermarket make?
_____ = \$_____.
11. A pallet has 8 boxes of eggs and each box has 10 1 doz. cartons of eggs. How many eggs are on the pallet? _____ = _____ eggs.
12. **Extension (Use a calculator)** Which is the best value, 1 doz 600g cage eggs or 1 doz. 700g cage eggs? _____, _____

Answer _____

Library Research



Library Research Activities

Name: _____

Activity	Task	Check
1	Use a dictionary to find the meaning of the words below <i>comb, wattle, fowl, clutch, poultry, domestic, consumer, producer, gizzard, free-range</i> Extension: <i>vegetarian, oviparous, omnivore, herbivore</i> Provide your answers on the worksheet provided	Student
		Teacher
2	Use an encyclopaedia, reference book or the Internet to find information on one of the birds in the list: <i>turkeys, ducks, geese, quail, pheasant or guinea fowl</i> Read the information and find key words.	Student
		Teacher
3	Write an Information Report on the worksheet provided using the key words from the previous activity. Include a diagram or an illustration.	Student
		Teacher
4	Children's Books Search your school library for a picture book about chickens. Borrow the book, practice reading it then arrange to read it to a younger student at your school, a class member or the whole class. Have some questions ready to ask your listeners.	Student
		Teacher
5	Eggs and Art Use reference materials to find information on one of the following: <i>Art and Tempera paint, Fabergé Eggs, Eggs and Easter, The Tradition of Decorated Eggs</i> Write your information on the worksheet provided and plan the layout of your presentation page.	Student
		Teacher
6	Publish the information gathered in Activity 5 in a suitable format on an A4 page. This is to be part of an art display so illustrate your work artistically.	Student
		Teacher

Library Research: Activity 1

comb _____

wattle _____

fowl _____

clutch _____

poultry _____

domestic _____

consumer _____

producer _____

gizzard _____

free-range _____

vegetarian _____

oviparous _____

omnivore _____

herbivore _____

Find these words (and others) in the grid below

d	e	l	t	t	a	w	a	s	h	e	l	l	g	c
u	g	i	z	z	a	r	d	i	c	e	t	t	o	o
c	n	t	c	h	i	c	e	n	r	r	a	m	o	n
k	a	t	e	r	o	v	i	n	m	o	b	u	s	s
o	r	z	s	u	o	r	a	p	i	v	o	g	e	u
v	e	g	e	t	a	r	i	a	n	i	f	s	g	m
i	e	b	y	r	t	l	u	o	p	b	z	o	t	e
p	r	e	p	r	o	d	u	c	e	r	t	z	w	r
l	f	o	w	o	m	c	i	t	s	e	m	o	d	l
t	r	y	l	f	c	l	u	t	c	h	e	n	e	h

Library Research: Activity 2

Name of bird: _____

Keywords: Read the information and write only the keywords (important words) in the correct sections.

Classification (What is it?)

Description (What does it look like?)

size - _____

colours - _____

feathers - _____

legs - _____

head features - _____

Movement (How does it move?)

Food (What does it eat?)

Habitat (Where does it live?)

Breeding habits (nest, number of eggs)

Extra Information (interesting facts)

References

Library Research: Activity 5/6 - Art and Eggs

Title: _____

Introduction

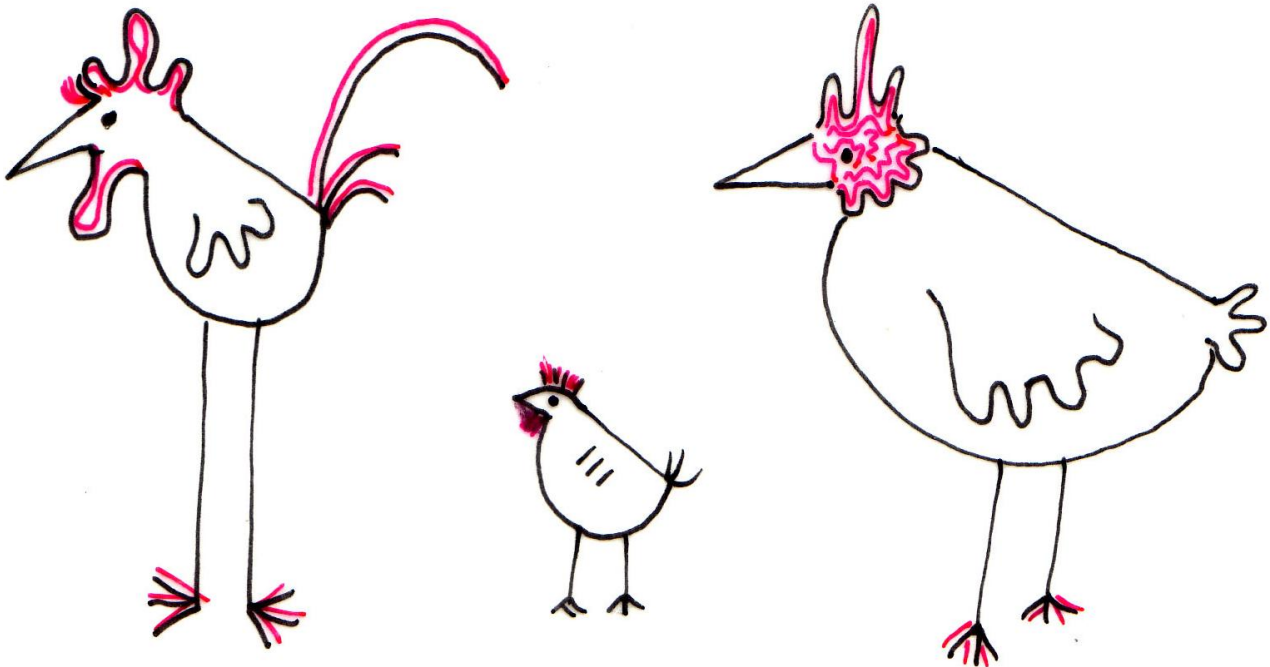
Body

Conclusion

Wall Display Design

In the box to the right, plan the layout of your design. Show the placement of illustrations and text. The page can be portrait or landscape. The text can wrap around illustrations. Be imaginative!!

Teacher Information



Display Cards

Print out, cut out and use on the board or wall to reinforce the children's knowledge of these aspects of eggs.

natural

delicious


nutritious

protein

vitamins

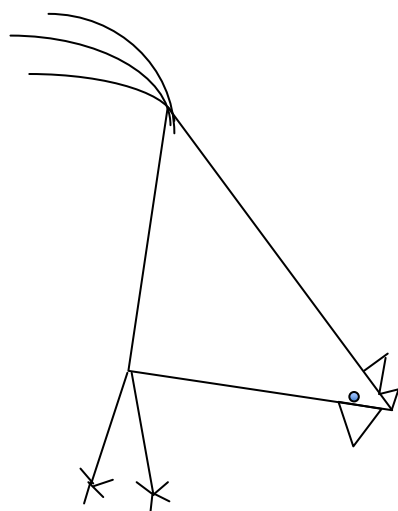
minerals

Visual Art Lessons

Title and Procedure	Equipment/ Preparation
<p style="text-align: center;">Rooster Painting</p> <p>Display and discuss farmyard animal art from previous centuries. Find examples in your school library or the Internet. Students will: draw a border on art paper to represent a picture frame, place the rooster on the page in desired position - glue carefully, sketch in a rural background. Consideration should be given to perspective. Paint or colour the rooster and background keeping in mind the style of artwork.</p>	<p>Teacher: enlarge the rooster outline provided. Hens if needed. Rooster outline, art paper, drawing pencil, coloured paints, crayons or pencils, glue and scissors Perspective and historical elements.</p> 
<p style="text-align: center;">Modern Rooster Painting</p> <p>Display and discuss modern art works. Display works by modern artists such as Picasso Students will: draw their own rooster and add a modern background using brighter colours with paint or crayons. Make rooster outline available to students if needed.</p>	<p>Prints of modern artists' works. Most school libraries have these. Art paper, watercolours, pencils, crayons and glue.</p>
<p style="text-align: center;">Triangle Chickens - Farmyard Scene</p> <p>Discuss the environment that chickens live in. List some of the features you would find. Use for background. Demonstrate how to turn the triangle into a chicken. See illustration. (Semi-circles could also be used.) Students will: design their background, paste triangles on to paper and using the black pencils or pens, draw heads with beaks, wattles and combs, tails and legs. Provide time to practise drawing the chickens first.</p>	<p>Small, coloured triangles, fine, black texta pens or black coloured pencils, paints, art paper and glue. Corney, D. E. 1981, Handwork Skills & Themes, Belair Publications, Adamstown Heights, p28.</p>
<p style="text-align: center;">Origami Ducks</p> <p>Locate an origami duck pattern and demonstrate folding the duck. Work with the class as they fold their first duck. Assist students who are having problems. Paste the ducks onto a class frieze or have students make several birds for their own poster.</p>	<p>Pattern for origami duck. Paper for folding and background</p>

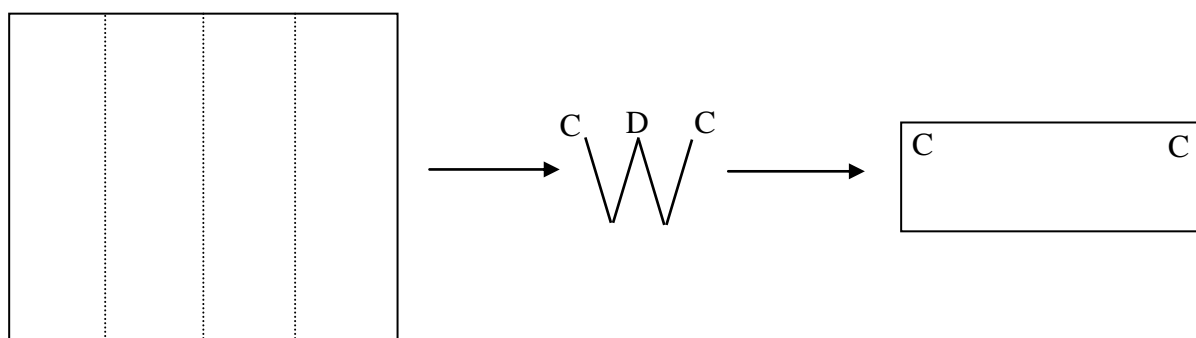
<p style="text-align: center;">Chicken Eggs</p> <p>Decorated egg artwork ideas can be found on the CD “Eggs Resource Kit” The Workboot Series, Kondinin Group, 2007, p143-157.</p>	<p>Dye with food colouring, or paint eggs or pattern with texta pens. Hard-boiled eggs or blown eggs.</p>
<p style="text-align: center;">Create a Fancy Breed Rooster</p> <p>Display unusual breeds of chickens and discuss. Ask the children to create their own ‘Fancy Breed’. Draw the bird and decorate using coloured feathers, shiny, coloured paper, paints and pencils. Students give their bird a name and display in the classroom.</p>	<p>Images of chickens e.g. Poultry Hub Breeds Poster Coloured feather from craft suppliers or art shops. Shiny paper, glue, paper and colouring materials.</p>
<p style="text-align: center;">3D Chickens</p> <p>Chickens can be made using pompoms. Make two small pompoms from wool. Glue on felt or paper beaks and eyes. Add plaited wool legs and display in the classroom.</p>	<p>Polystyrene balls and covered, crumpled-paper balls can also be used for the head and body of the chicken.</p>
<p style="text-align: center;">Origami Quackers</p> <p>Movable quackers are made from paper. They can be used to make hand puppets by adding a comb, wattles, eyes and fringed neck glued over a cardboard roll handle.</p>	<p>Corney, D. E. 1981, Handwork Skills & Themes, Belair Publications, Adamstown Heights, p46-47</p>
<p style="text-align: center;">Egg Carton Chickens</p> <p>Use half an egg carton as the head and body of the chicken. Cover with feathers of scalloped paper. Add a comb, wattles, beak, eyes, wings and feet.</p>	<p>Egg cartons, coloured paper, scissors and glue.</p>
<p style="text-align: center;">Chicken mobile</p> <p>Use a square or circle to make a chicken. Fold your shape in half to make a triangle or semi-circle for the body. Glue the two halves together after adding curled paper strips for a tail, thin rectangular paper legs and triangles of paper for the beak, wattles and comb. Add white circles (black centre drawn in) for eyes. Hang several from a hoop or strip of cane.</p>	<p>Coloured paper squares or circles, scissors, glue, string and thin cane.</p>

Triangle Chickens



Instructions to make a Quacker

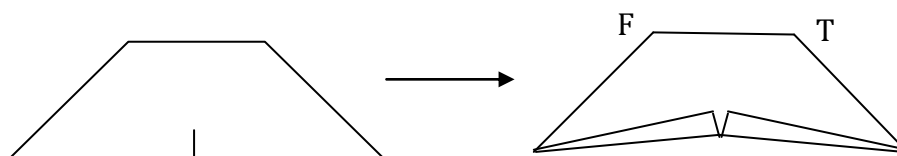
1. Fold an A4 into quarters and fold in a 'w' shape as illustrated.



2. Fold the four corners labelled 'C' inwards and the double sheeted corner labelled 'D' (at each end) down (one on each side) as illustrated.



3. Make a small cut at the centre of the longest side and fold the edges back as illustrated.



4. Place your index finger at position 'F' and your thumb at position 'T', open the quacker with your other hand and squeeze your thumb and index figure together and release. Repeat to make the quacker close and open.

Children's Book list

These books could be used with the unit.

What Makes a Bird a Bird? by May Garelick

Featherbrain by John Yeoman (Animal Welfare Issues)

A Chook Called Harry by Phillip Gwynne and Terry Denton (Aussie Bites Series)

Chook Shed Snake by Phil Cummings (Omnibus Mates Series)

Tilly Lays an Egg by Terry Golson

Louise: The Adventures of a Chicken by Kate DiCamillo

The Problem with Chickens by Bruce McMillan

How the Ladies Stopped the Wind by Bruce McMillan

Minerva Louise Series by Janet Stoeke

Amelia Ellicott's Garden by Lillian Stafford

Hattie and the Fox by Mem Fox

Rosie's Walk by Pat Hutchins

The Painter who Loved Chickens by Olivier Dunrea

Chicken Dance by Tammy Sauer and Don Santat

Daisy Comes Home by Jan Brett

Henny Penny Traditional

The Little Red Hen Traditional

The Goose that Laid the Golden Egg Traditional

Egghead by Claire Scott (Behaviour issues for older primary)

Farmer Schultz's Ducks by Colin Thiele

Web site http://wonder.riverwillow.com.au/home_education/english/farmer-schulz.htm

Duck for a Day Meg McKinlay

Mr Dumby's Duck by Colin Thiele

Eggs, The Inside Story – Drama Activities

Activity	Other suggestions
<p>Partner activities Ask students to make the following shapes: an eggcup and a spoon, a saucepan and a lid, an egg in an eggcup, a hen and chicken, feeding chickens.</p>	<p>Warm Ups: Give instruction for students to find different areas in the room e.g. stand on your own, with a partner, crouch down low, move near a window, along the floor, in a group.</p> <p>Dramatise traditional stories The Little Red Hen, Henny Penny and Humpty Dumpty Freeze Frames with a narrator Role play various people involved in the industry Write short sketches of incidents that could happen on a farm Write and dramatise a modern Little Red Hen story</p>
<p>Movement Move like a boiling egg in a saucepan, an egg rolling down a slope, an egg being scrambled</p>	
<p>Miming A hatching chicken - begin inside the egg and mime the process until the chicken is fully hatched. A chicken in farmyard - scratching in the grass; drinking, stretching its wings and feet, sitting on a nest, dust bathing and sleeping with head under wing. Rooster - strutting, crowing, preening and fighting.</p>	
<p>Combined activity Use the above movement and add sounds like clucking and crowing. Combine sounds and movements in a sequence. Move around in a class group, repeating the sequence several times. Finish with head under wing, sleeping.</p>	

Eggs, The Inside Story - Music Activities

Activity	Instructions
Singing	ABC Sing 1989, The Tennessee Wig-Walk
Appreciation/Listening	Petrovich Musorgsky, Pictures of an Exhibition Antonio Vivaldi, The French Hen
Create a 'Chicken Yard' Soundscape	Discuss the sounds you would hear in a chicken yard. Using percussion instruments recreate the sounds. Practise and perform for an audience.

Eggs, The Inside Story - P.E. Games

Activity	Instructions
<p>Dance / Movement The Little Red Rooster <i>The Rolling Stones</i></p>	Dance routine or assembly item
<p>Dance /Movement The Chicken Dance</p>	Vary this well-known dance by adding different formations e.g. stand in two rows, facing each other, then back to back. Make a rectangle, then a circle. Finish in a random group formation.
<p>Games Egg and spoon races, Rob the nest. Fox and Rabbits could become Fox and Chickens.</p>	Use well-known games but give a new title for a day!