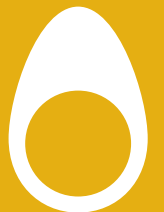


# The Chook Book

A resource for schools  
prepared by PIANZ, Egg Producers  
Federation of NZ, and Starters &  
Strategies Teacher's Magazine



PIANZ



Egg Producers  
Federation of  
New Zealand (Inc)

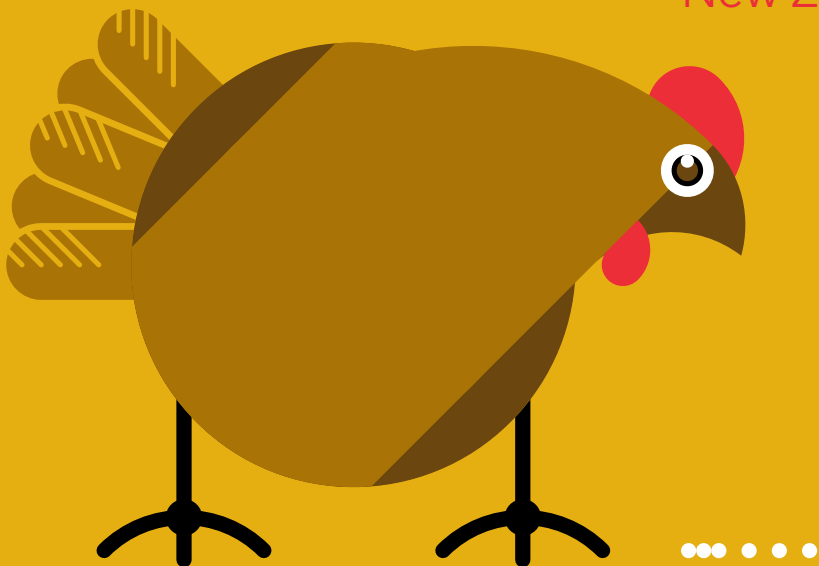
# Chicken farming in New Zealand



As well as being our most popular meat, our (round about) 3.6 million hens on 146 layer hen farms produce an amazing 1 billion eggs that we eat every year.

Did you know that chicken is the most popular meat in New Zealand?

Although keeping chooks in the backyard is the current trend, it's small compared to the past. About 100 years ago about half of New Zealand households ran chooks in their backyards and running chickens for eggs and meat continued to be popular until the mid-1950s.



# Exploring the poultry family

Chickens are part of the poultry family. This family includes geese, turkeys, ducks, guinea fowl and quail. Chickens are by far the most intensively farmed poultry and only a small number of farms farm other types of poultry in New Zealand.

**CLICK HERE** for information and pictures of many poultry types and answer the following:

## Student Activities One EXPLORING POULTRY

- Which type/s of poultry would you most like to keep in your garden?
  - Explain why
- What special measures would you have to take to keep your chosen poultry? For example:
  - What would you feed them with?
  - What type of run or special housing would you have to provide?
  - How would you keep them healthy and happy?
  - Can you eat the eggs?
  - What special things about this poultry would make them interesting to keep?

People all over the world use poultry for meat, eggs, feathers and even as pets. Today the chicken is by far the most popular member of the poultry family. We have come to rely on it as an important nutritious food source.

You will also know that the chicken is not native to New Zealand and was brought in from overseas. So what was the ancestor of the modern chicken?

**CLICK HERE** to find out about the ancestors of the modern chicken and complete the following.

## Student Activities Two ANCESTORS OF TODAY'S CHICKEN

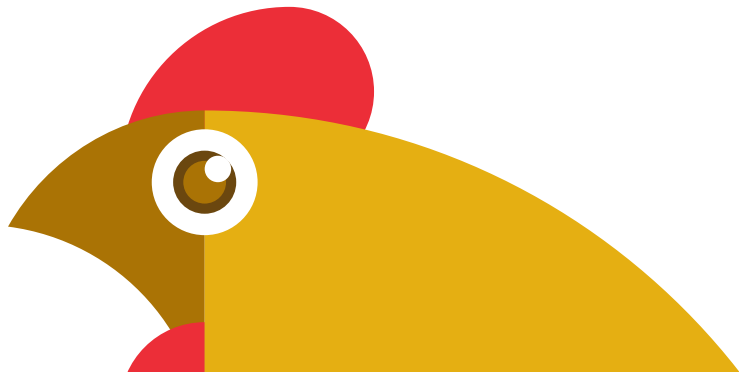
- Be able to answer and explain the following questions:
  - About how long ago was the chicken domesticated (tamed to be able to live with people)?
  - What was the most likely main ancestor of the domestic chicken?
  - What is the difference between the pure bred "fowl" of today and its use and the modern chicken used in the commercial poultry industry?



Colony cage farming chicken perch



A popular Christmas dinner - part of the poultry family



# Chickens in New Zealand - a short history

The famous English explorer Captain James Cook made three voyages of discovery to New Zealand. On his second voyage to New Zealand in 1773, he gave chickens to Maori in both the North and South Islands. In the early 1800s, missionaries and settlers also brought hens, which were mostly kept in small numbers for their eggs.

When the early European settlers arrived in New Zealand around 1840, many of them kept a few hens in their backyards for eggs. Chicken meat was a luxury then and only eaten once or twice a year - often a non-laying hen or an old rooster was used for meat. The settlers also ran poultry such as geese and turkeys, but chickens were by far the most popular.

**CLICK HERE** to discover more about the history of the poultry and chicken industry in New Zealand. Also check out the pictures on this page for further information about early developments in New Zealand.

## Student Activities Three HISTORY AND EARLY DEVELOPMENTS

- Be able to answer and discuss the following questions:
  - How did people keep chickens in their backyards in the early 20th century?
  - Why were mobile arks or chicken coops moved around the fields?
  - In what other ways did poultry farmers run their chickens?
  - When was the intensive system of indoor cages first used?
  - What is meant by "poultry" meat was very much a by-product of the egg industry. When and why did this change?



A modern-day mobile ark that can be moved around

# Why do we farm chickens?

**There are more chickens in the world than any other bird. In fact there are more than 50 billion chickens in the world that are used every year for the food they provide - both for meat and for their eggs.**

Chickens are so very popular as a source of food because both the meat and the eggs provide us with the proteins, vitamins and minerals we need to keep us healthy.

See page 13 for more information about the excellent nutritional value of poultry meat and eggs.

Chickens that are farmed for meat are called “meat chickens”; those farmed for eggs are called “layers” or “laying hens”. Animal health, welfare and wellbeing for meat chickens and layer hens are given the highest priority by our producers within the systems we use.

Stockmanship – the knowledgeable and skilful handling of hens that provides protection, comfort and respect for their needs – is the first standard set out in every poultry industry Code of Welfare.

New Zealand’s animal welfare standards are rated as amongst the best in the world.



Ross Chickens - a popular chicken meat breed



A modern egg incubator

## Farming chickens for meat

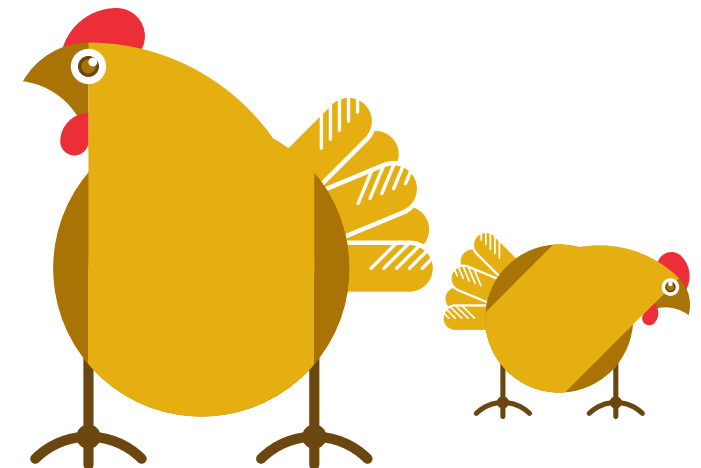
In New Zealand, meat chicken flocks are kept in large open sheds on a litter floor – not in cages as some people wrongly believe.

**CLICK HERE** to find out: the different names given to these sheds; how large the sheds are; how many chickens are housed this way on a typical farm and about how many chickens are housed per shed.

### Student Activities Four: FARMING CHICKENS FOR MEAT

**CLICK HERE** to find information about poultry meat farming in New Zealand and answer the following questions:

- New Zealand imports eggs of chickens from two main breeds of chickens. What are the names of these breeds and what countries do they come from?
- Find out what incubation is and where are the eggs incubated. Why is incubation carried out this way and how many generations are incubated before they are raised for meat production?





# More about farming meat chickens

The New Zealand meat chicken industry is modern, highly efficient and vertically integrated, with the chain of production from hatcheries, chicken farms and processing plants largely owned by four major companies: Tegel, Inghams, Brinks and Turks. Some companies also own and operate large feed mills. New Zealand meat chicken companies also sell and export their products under individual brands. Meat chicken farmers typically work for the companies on a contract management basis.

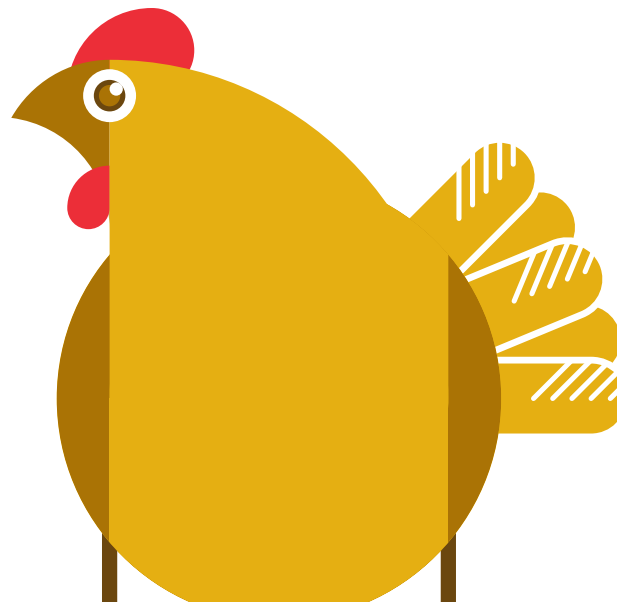
The two types of meat chicken farming systems used in New Zealand are barn, and free-range.

In barn systems, chickens are raised in large, open-plan poultry houses called "sheds", "houses" or "units". Sheds can be up to 150 metres long and 15 metres wide and hold up to 40,000 adult chickens.

Sheds are equipped with automated temperature and ventilation controls and feed and watering systems and have litter (wood shavings) floors so they remain dry underfoot. Careful attention is given to the stocking densities in the Code of Welfare for meat chickens.

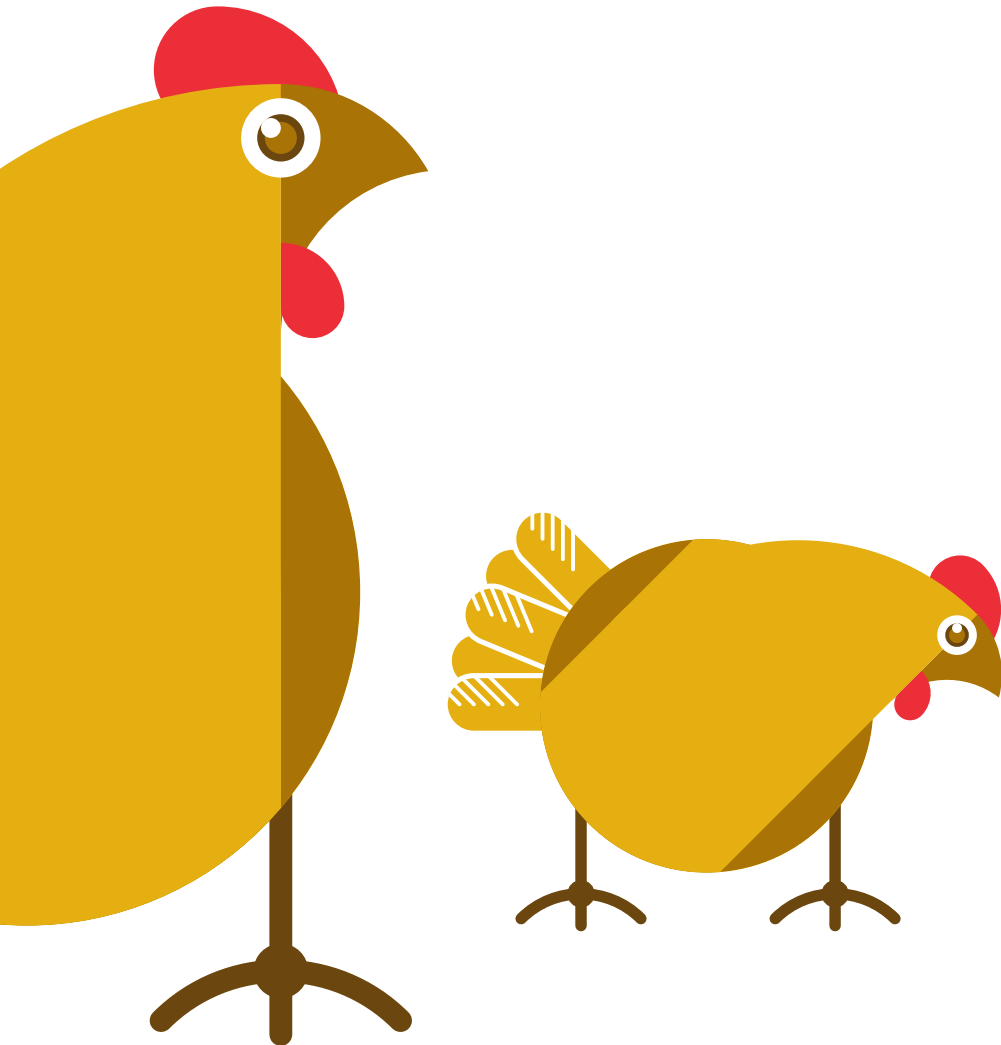
Free-range systems offer the same conditions as barn systems, with the addition that the hens are provided with access to outdoor ranging areas.

The infographic on this page contains facts and figures about meat chicken farming in New Zealand.



# Growing Poultry

The infographic on this page illustrates how meat chickens and some other types of poultry (turkeys and ducks) are raised in New Zealand.



1  
Chicks are delivered to the farm within hours of being born



2  
Welfare standards are high, with chicks delivered to clean sawdust-lined barns, with food and water within easy reach.



3  
The chicks are curious and soon make their way across the barn.



4  
They find the water quickly and begin to drink. Food is available to them in special feeder trays placed at the right height for them to access.



5  
Strict biosecurity rules are in place at all meat chicken farms. New Zealand is disease-free and high standards of welfare, biosecurity and safety apply throughout the industry.



6  
The chicks soon find their way around the barn and roam around at will. When they are 14 days old they can, if on a free-range farm, go outside.



7  
As the chicks grow, farmers constantly monitor their welfare, walking through the barns several times a day, checking equipment, food and water supply as well as the general health of the birds.



8  
The chickens grow to the required weights and are then taken for processing. Again, standards for transport and processing are extremely high.



9  
After processing, the chickens will be taken to supermarkets, butchers and other food outlets ready to be bought, cooked and eaten.

# Farming chickens for eggs

The Brown Shaver and Hyline Brown are the main breeds used for farming eggs in New Zealand. We farm chickens for eggs in several ways – in current cages (67%), free-range (17%), barns (2%), and a new development called colony cage farming (14%).

It is important to know that no matter which style a farmer chooses to use, the egg farmer always makes sure the needs of the hens come first.

The farmer is wanting to make a profit from selling eggs and without healthy, happy, disease-free hens, and people being able to afford to buy them, he will not be able to run an egg farm that makes a profit.

Making sure that animals are happy and healthy is called animal welfare. These days, more and more people around the world are very concerned that animals are well looked after and have what they need to be happy and healthy. Another way of saying this is “we must treat animals well and meet their needs”.

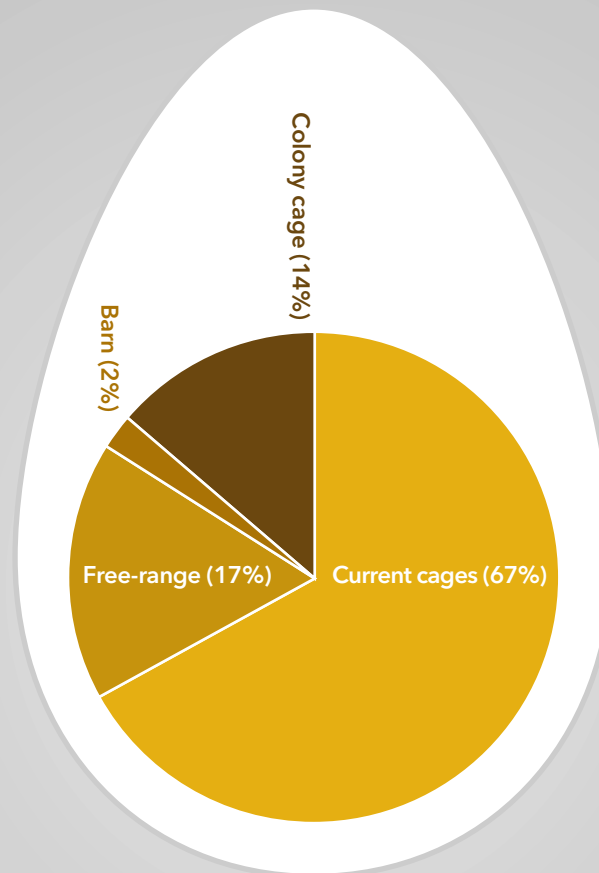
Animal welfare experts have come up with a list of five ways to make sure animals are well treated and these are called the Five Freedoms. Can you think what freedoms would be on this list?

**CLICK HERE** to find out more about these “egg-laying machines”.

**CLICK HERE** to discover the Five Freedoms and print them out for your group to discuss.

Did you know that farming of chickens in cages will no longer be allowed by 2022 and current cages will be replaced by colony cage farming?

What freedom(s) do you think this will improve for chickens?



## Student Activities Five: SUSTAINABLE FUTURE FOR NZ EGG FARMING

**CLICK HERE** to play the video “Sustainable future for New Zealand egg farming” about Colony farming.

Find answers to the following:

- Why is egg farming so vital to the feeding of people in the future and what makes eggs such a good choice?
- How many hens do we need just to produce the number of eggs New Zealanders eat every year?
- When do hens feel most secure and what is their strongest need? What other needs do hens have to keep themselves secure and happy? List the benefits that colony cage farming has over current cage farming and the advantages it provides for the hens.
- List the benefits that colony cage farming has over free-range farming – both for hens and for people who buy eggs.
- How does colony farming help a hen to be more like a hen?



Colony cage farming scratch area



# More about colony-laid eggs

Farmer Brown was one of the first New Zealand egg-producing companies to offer colony eggs to New Zealand shoppers. It is interesting to see and read the reasons why the company is offering colony cage eggs as well as current cage eggs.

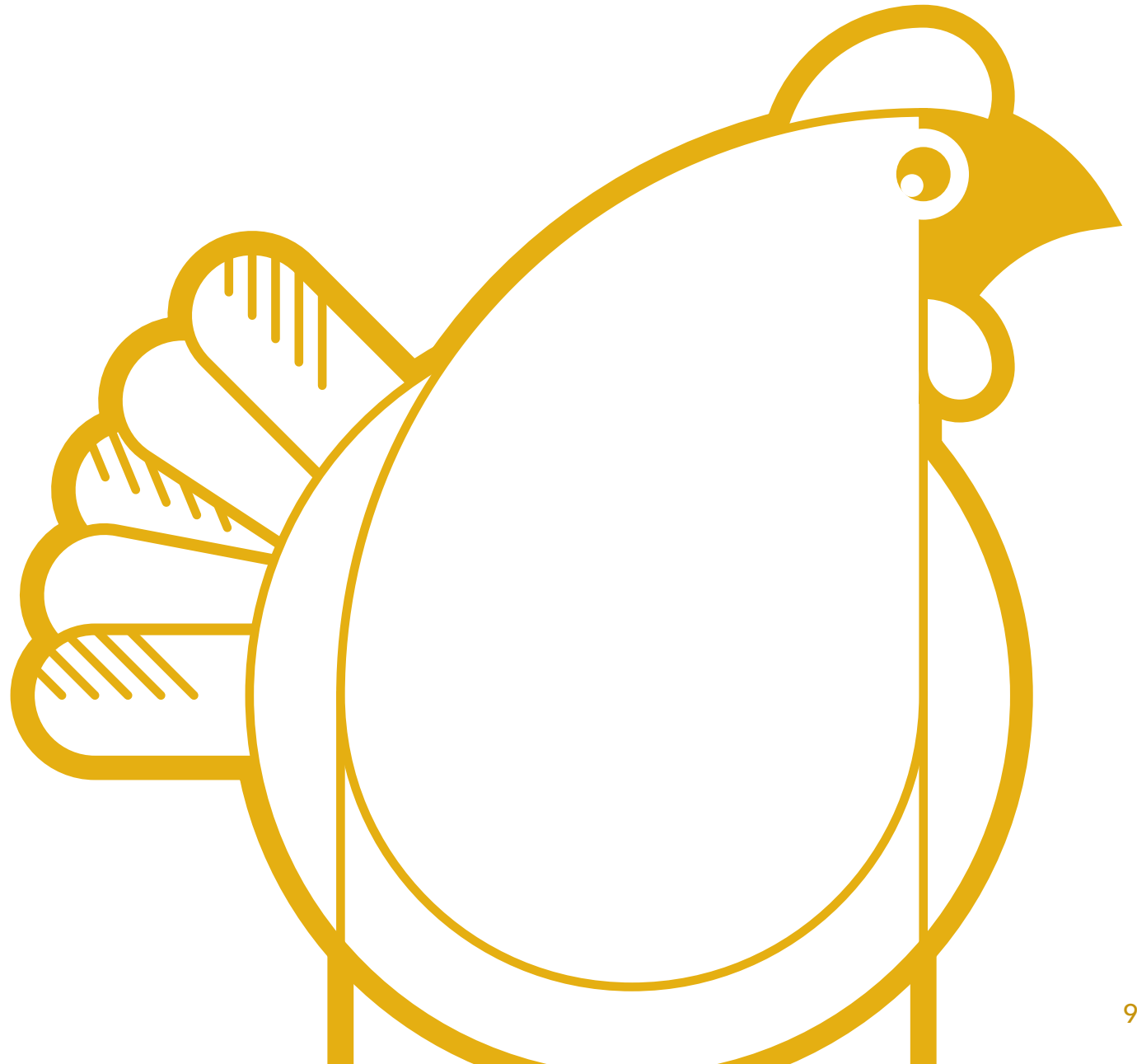
**CLICK HERE** to watch the video. After that, click on the FAQ (Frequently Asked Questions) to find more about the advantages they say that colony cage eggs will bring when current cages are phased out in New Zealand by 2022.

## **Student Activities Six: FARMER BROWN FAQs**

- Be able to answer and explain the following:
  - What benefits and freedoms do hens farmed in a colony cage system have over hens farmed in current cages?
  - How much extra will a shopper have to pay for a dozen colony cage-laid eggs compared with current cage-laid eggs?
  - Do you think that colony cage-laid eggs are still good value and will still be affordable for shoppers?
  - Why do you think that current cages are being phased out by 2022 as a way of farming eggs?



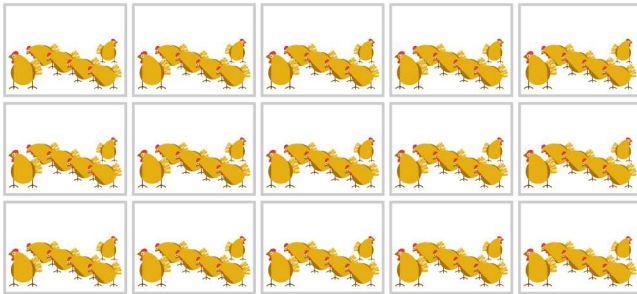
Colony cage farming of eggs in New Zealand



# Comparing methods of farming eggs

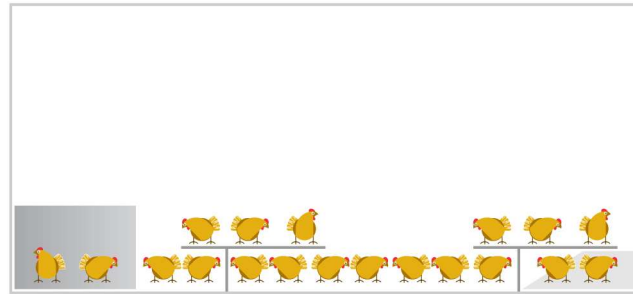
## Egg farming in New Zealand

The new Code of Welfare for layer hens covers all four egg farming methods used in New Zealand through a comprehensive set of welfare standards and rules.



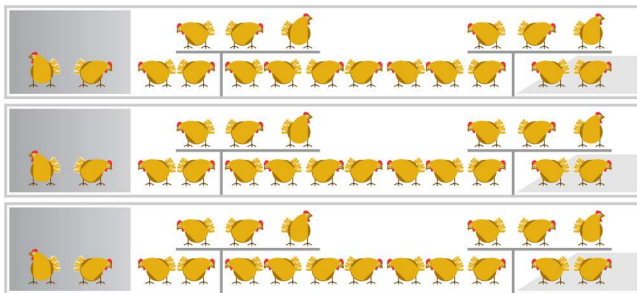
### CAGE – Can no longer be used after 2022

- ✓ Continuous food & water
- ✗ Perches, rest boxes, scratching areas
- ✗ Outdoor access
- ✓ Consistent egg quality
- ✓ **\$3.00 per dozen\***



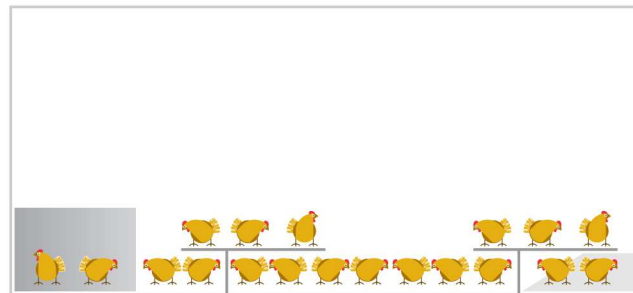
### BARN

- ✓ Continuous food & water
- ✓ Perches, rest boxes, scratching areas
- ✗ Outdoor access
- ✓ Consistent egg quality
- ✓ **\$6.15 per dozen\***



### COLONY – endorsed by the new Code of Welfare (Layer Hens) 2012

- ✓ Continuous food & water
- ✓ Perches, rest boxes, scratching areas
- ✗ Outdoor access
- ✓ Consistent egg quality
- ✓ **\$3.00 (10pk, 582g)\***



### FREE-RANGE

- ✓ Continuous food & water
- ✓ Perches, rest boxes, scratching areas
- ✓ Outdoor access
- ✓ Consistent egg quality
- ✓ **\$6.89 per dozen\***

## Student Activities Seven: WHICH METHOD WOULD YOU CHOOSE?

Study the diagrams above and write short statements to answer the following:

- If you were an egg farmer, which method of egg farming would you choose?
- Give reasons for why you would choose this method of farming over the other three?
- Which method of farming do you think best provides the birds with the “Five Freedoms”?
- As a shopper for eggs, would you mind paying extra for barn and free-range eggs rather than colony cage-laid eggs?

\* Based on lowest priced items via Countdown Online Shop, January 2016.

# Asking the experts about colony and free-range

Now that you have used the diagram to choose the system you believe is the best system of farming eggs, let's see what a world-leading expert on animal welfare from England (Professor Christine Nicol) says about colony cage farming.

In the UK, current cages were phased out in 2012 and were replaced with what they call "Furnished Colony Cages". In New Zealand they are called Colony Cages.

In the UK, just as in New Zealand, many people, including animal welfare groups, believe that free-range farming is the best system for the needs and health of the hens - but is it?

Dr Nicol has done a lot of scientific research on both colony cage and free-range farming and she has some up with some very interesting findings.

**CLICK HERE** to play her two videos: "Talking About: Furnished Colony Cages" and "Free-Range".



Professor Nicol  
A world-leading expert on animal welfare

## Student Activities Eight: VIDEO: TALKING ABOUT FURNISHED COLONY CAGES

Be able to answer and explain the following:

- Where did Professor Nicol once think was the best place for a hen to be brought up or run? Why does she now say it can be a horrible place for a hen?
- What has scientific research found are the three most important behaviours or needs for the birds? How do colony cages provide for these behaviours and needs?
- How do the birds share the space in the colony that provides more space for the hens to behave normally?
- Although we as humans see a colony as just another cage, how does Professor Nicol think birds see the colony?
- Through her research, what has she found out about the behaviour and physical condition of birds who are housed in these colony cages, and how do the stress levels for the birds compare with other systems of farming?
- How has scientific research been able to help colony farmers?



## Student activities nine: VIDEO: TALKING ABOUT FREE-RANGE

Be able to answer and explain the following:

- What is meant by "free-range"? What are the birds allowed to do?
- Although people may think that the hens like big open spaces, why do hens not like big open spaces and what does planting lots of trees and ferns encourage them to do?
- Why is it so important that the birds "feel at home" on the range and what matters most to free-range hens and makes them feel at home?
- Describe the best and most interesting free-range farming systems.
- What conditions make for the worst free-range-farming systems?
- What problems can free-range farming systems have when compared to colony systems and what can happen if the range is not managed well?
- Why do eggs from free-range systems cost more to buy?
- Are there any benefits for a farmer choosing to farm with a free-range system?

Now that you have heard Professor Nicol's views on colony cage farming and free-range farming, which system would you choose? Write a short statement giving your reasons for choosing one over the other.

# Meet some of our egg farmers

New Zealand has around 146 egg farms and most of these are owner-operated family businesses.

Although it is hard work with many early morning starts, all our egg farmers, no matter what system they use, are committed to producing high-quality eggs and making sure their hens are healthy, happy and disease-free.

Because of this our farmers are able to produce the 1 billion eggs we eat and use every year and look after the 3.6 million hens needed to produce this amount.



**Laurie Horsfall**  
Hawke's Bay Eggs



**Graeme Napier**  
Henergy



**Gwen Ewing**  
Ewing Poultry



**Karen Kelly**  
Glenpark



**Chris Martin**  
Wairarapa Eggs

## Student Activities Ten: VIDEO: MEETING SOME FARMERS

Now it's time to visit some of our farmers and find out why and how they chose egg farming, how they run their farms, the systems they use, why they really enjoy the hard work and what egg farming is all about for them. Click on the name of each farmer below to find this out and write a short statement about each farmer giving the reasons for their success and what egg farming and animal welfare means to them.





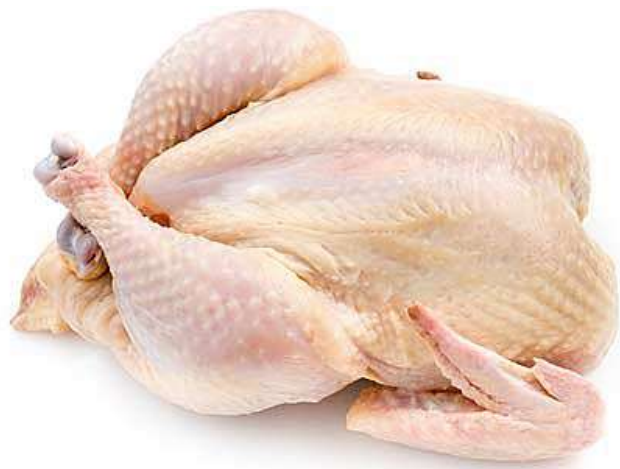
# Nutritional value of poultry meat and eggs

Did you know that New Zealanders on average eat 230 eggs each per year? It is also true that chicken is the most popular meat eaten in New Zealand.

As well as being a delicious and easy-to-cook food, another main reason for so much chicken meat and eggs being eaten is that they are foods full of important nutrients – the parts of food that provide us with energy, keep us healthy, allow us to grow, and keep our bodies functioning properly.

To help us understand the foods we must eat to keep us healthy we talk (classify) about them as “food groups”.

The four food groups are: breads and cereals; fruit and vegetables; milk and dairy products; lean meat and alternatives.



Poultry meat and eggs are an important and major part of the lean meat and alternatives food group. There is also another group called “extras” because they don’t fit in to any of the four main groups. Fats and oils, pastry and chips are part of the extras group.

The important thing to remember is that we need to eat a mixture of these groups every day – some more than others.

A diagram called the “food pyramid” helps us better understand the different food groups and how much of each group we should eat each day.

**CLICK HERE** to see the food pyramid (it can also be printed out).

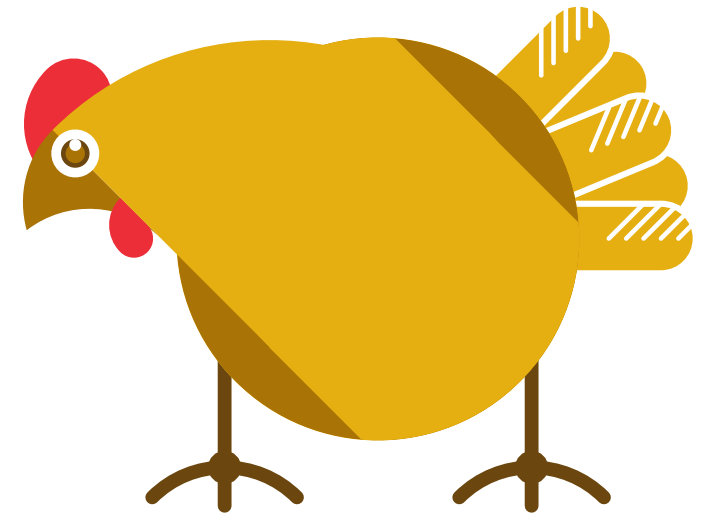
## Student Activities Eleven: NUTRIENTS IN POULTRY MEAT AND EGGS

Be able to answer and explain the following:

- Poultry meat is protein -rich and provides a wide variety of important nutrients. **CLICK HERE** to find out why we should eat poultry meat and make a list of the nutrients it provides.
- Eggs are often known as the perfect “whole food”.

**CLICK HERE** to discover what is meant by “whole food” and why we should eat more whole foods. Find out what is meant by nutritional-quality proteins and how the high-quality proteins found in eggs help the human body.

**CLICK HERE** to carry out further research into the proteins, fats, vitamins, minerals and antioxidants that eggs contain. Make a list of these and describe how each one helps keep us healthy.



# Learning about food safety behaviours

Have you or any members of your family become sick or felt ill after eating food?

Did you know that this is caused by germs on the food and is commonly called food poisoning?

The proper name for this is a “foodborne illness”.

The experts tell us that many people get sick because they don't follow some simple rules. Can you think of any simple rules for handling, storing and preparing food that would reduce the risk of foodborne illness?

Discuss these in your group and report back to the class.

Here's a clue. The rules are based on the 4Cs – that is Clean, Cover, Cook and Chill, and proper handwashing is another important rule.

## Student Activities Twelve: FOOD SAFETY RULES

Visit the following websites and play the following videos to find out the food safety rules to follow.

Write a short list of important rules we should to follow to help prevent foodborne illness – especially in summer.

**CLICK HERE** for food safety in the home (PDF).

**CLICK HERE** to find out what we must do before and during handling food (Video).

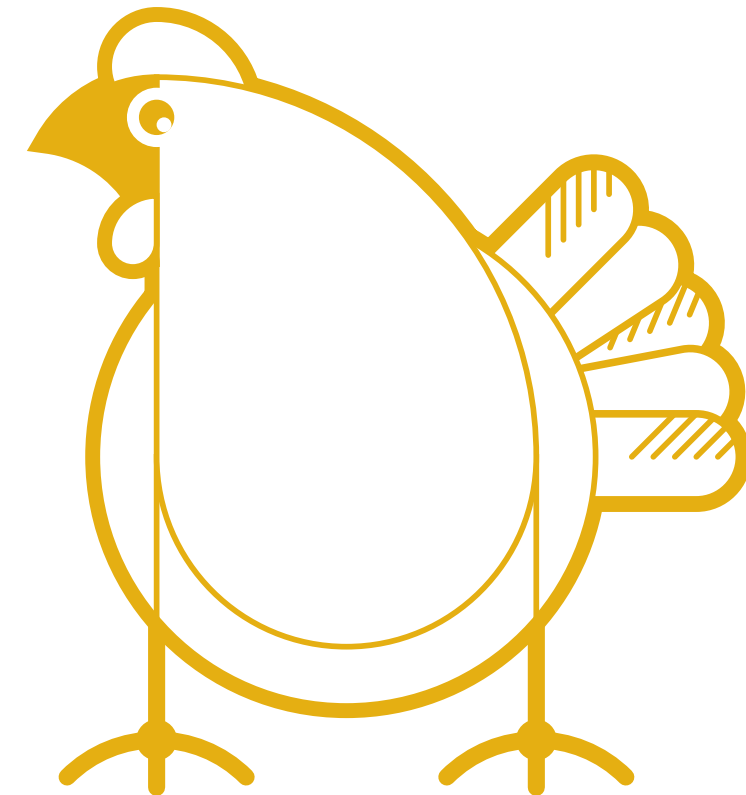
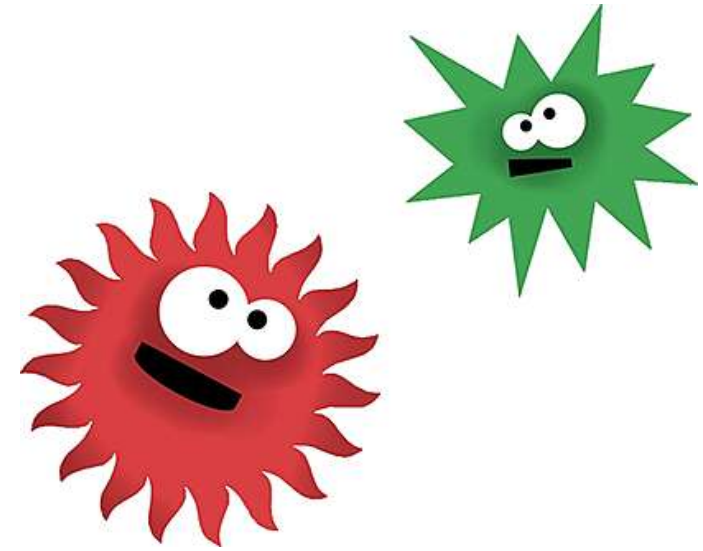
**CLICK HERE** to find out why keeping food covered is important and how to store meat and poultry in the fridge (Video).

**CLICK HERE** to find out the correct ways to store and cool food placed in the fridge (Video).

**CLICK HERE** for chicken and poultry safety tips (Website).

**CLICK HERE** to find food safety tips for preparing and cooking on BBQs (Video).

**CLICK HERE** to see a demonstration of proper hand washing. (Video).



### How to wash your hands

 <b>wash</b>	+	 <b>clean</b>	+	 <b>dry</b>
Wash hands thoroughly with soap and warm running water for at least 20 seconds (try singing "Happy Birthday" twice)		Clean under each fingernail using soap and a nail brush		Dry hands thoroughly (front, back and between fingers) for at least 20 seconds using a single use towel

www.foodsafety.govt.nz

# Poultry farming myths and facts

There are lots of misconceptions about chicken meat and Professor Ravindran, a poultry production and nutrition expert from Massey University, has written an article that rights the wrongs to make sure we know the true facts about chicken farming in New Zealand.

Below there are statements which are either true or false. **CLICK HERE** to visit the poultry farming facts and fallacies article and answer the following questions as either true or false.

1. New Zealand is the only country in the world where chicken meat is the most popular form of meat to eat.



Chicken meat is the most popular meat in the world

2. Poultry production is mainly about producing meat from chickens.
3. New Zealand is the only country in the world that does not have the three major chicken diseases.
4. New Zealand chickens are vaccinated so they don't catch the three major chicken diseases.
5. Layer chickens are fed the same feed as the meat-producing chickens.
6. Meat-producing chickens are slow-growing and take over 10 weeks before they are processed.
7. The eggs of the grandparents of the meat chickens come from Britain and the USA.
8. People go to the supermarket and they see much bigger chicken breasts on the shelves than they used to. But it's all through breeding, not from the use of hormones.
9. Hormones have never been used in chickens in New Zealand.
10. Pregnant women should not eat chicken meat.
11. Chickens grow faster in New Zealand than in other parts of the world.
12. Some people are concerned that antibiotics are used in New Zealand chicken feed to prevent disease so research is being carried out to see if alternatives, such as essential oils, spices and probiotics can be used instead.
13. Getting chicken meat right and making it as cheap as possible for consumers is what it's all about.
14. People should only eat a certain amount of chicken.
15. If chicken is well cooked, there is no problem with bacteria in chicken.
16. In New Zealand, meat chickens are raised in sheds with litter (wood shavings) floors to keep them dry underfoot, and careful attention is given to stocking density.
17. All countries in the world use grain that humans can eat to feed their chickens.
18. The grain feed to chickens in New Zealand is mostly not fit for human consumption.

