

Ekka!
Presented by **RACQ**

ROYAL QUEENSLAND SHOW
AUGUST 7-15

WORKSHEET

2021 Hy-Line Brown School Egg Laying Competition

Proudly supported by



**HY-LINE LAYERS
AUSTRALIA**



STARTING DETAILS

SCHOOL	
STUDENT NAME (S)	
HATCH DATE	21 JANUARY 2021
AGE WHEN RECEIVED	
DATE/TIME OF ARRIVAL	
NUMBER OF HENS RECEIVED	$\frac{\text{SUM OF HEN WEIGHTS}}{\text{NUMBER OF HENS}}$
DIAGRAM OF HOUSING OF YOUR CHICKS	
FEED TYPES USED	

CARING FOR YOUR CHICKENS

Before your chickens arrive, ensure their enclosure is fully sanitised before setting it up with the following items:

- Bedding such as sawdust
- Clean food in an appropriate holder
- Clean water in an appropriate holder
- Heat lamp and light source (20 Lux)

Ensure the heat lamp has been turned on prior to the arrival of the chicks.

Your young chicks will need a safe, well ventilated pest proof environment with humidity between 40 and 60%. Your chick's behaviour will tell you if they are hot, cold or happy based on their distance from the heat light.

Q1: Explain why sanitising the area before the chicks arrive is important?

Q2: If the chicks are clustered around the heat lamp, identify what they are telling you.

Q3: If the chicks are clustered as far as possible away from the heat source, what should you do?

You will need to check your chicks twice daily and ensure that your hands are washed before and after handling the animals. You will need to monitor their feed and water intake using the method your class develops and note any issues or changes. Chickens dietary requirements will change as they age, use the information below to identify the appropriate food for each age group.

Q4: Explain why it is important that you wash your hands before and after handling chickens.

Animal health is important, keep your chicks separate from other chickens you have and consult your vet to see if you need to worm or vaccinate your animals. You will need to also keep an eye out for mites in your chicks, these will appear as little dark dots underneath their feathers.

Q5: Explain why it is important chickens of different ages are kept apart.

Information provided by Specialised Breeders Australia

FEEDING YOUR CHICKENS

Hy-line Brown hens require a well-structured nutritional program to ensure they achieve development and growth targets to reach 'egg-laying' maturity at the appropriate age.

Feed rations are often identified by an age range including 'starter,' 'grower' or 'layer' etc and most will provide adequate nutrition to your hens.

By ensuring your feed ration has adequate protein, energy, amino acids, vitamins and minerals (using the table below as a reference), your hens should be healthy, happy and ready for egg production.

Requirement (age/weeks)	Starter (0-6 weeks)	Grower (6-12 weeks)	Developer (12-15 weeks)	Pre-Layer (15 weeks-POL)	Early Layer (POL-50 weeks)
Feed to a body weight of (g) - cage reared	500	1170	1370	1490	
Feed to a body weight of (g) - floor reared	480	1050	1290	1430	
Age (weeks) approximate	0-6	7-12	13-15	16-17	18-50
Metabolisable energy kcal/kg	2900	2850	2750	2775	2800
Metabolisable energy mj/kg	12.14	11.93	11.51	11.61	11.72
Crude protein (nitrogen x 6.25), %	19.5	17.5	16	16.5	17.9
Calcium %	1	1	1.4	2.5	4.2
Phosphorus (available) %	0.45	0.43	0.45	0.48	0.46
Crude fibre%					3

Q6: Explain why a chicken at 11 weeks requires different feed than a chicken at 15 weeks.

Q7: Identify the feed you will be using for your chickens.

FEED CONVERSION TRIAL

Feed conversion rates help farmers understand how efficient their feed is, that is how many grams of feed is required for a gram of live weight gain. This will also assist farmers to budget their overall feed costs for their flock and select animals that may have a genetic predisposition to grow at a higher rate.

Q1: Explain the importance of growth rate on Agricultural industries.

Q2: Sometimes farmers will not select for high growth rate, identify an industry example when growth rate may not be the most important factor in genetic selection.

Q3: Calculating total feed used: In your experiment, it will be difficult to measure overall total feed used. As a class, brainstorm methods that could help you do this and develop a method to ensure the feed usage is as accurate as possible. Write your method below.

Q4: For your growth trial, identify:

Things you measured	
Things you changed	
Things you kept the same	

Q5: Record the following data for your poultry over the duration of your experiment:

1. Survivability = (number of day old chickens received – total mortality)/100%
2. Average Body Weight = total body weight (g) / number of birds
3. Feed conversion = total feed used (g) / total body weight (g)
4. Average age = age of hens starting at day zero (day of hatch)

	Survivability %	Average Weight	Feed Consumption	Feed Conversion Ratio
Arrival			Zero	Zero
Week 15				
Week 16				
Week 17				
Week 18				
Week 19				
Week 20				
Week 21				
Week 22				
Week 23				
Week 24				
Week 25				
Week 26				
Week 27				
Week 28				
Date of Final Assessment				
	Survivability % from arrival to completion of competition	Average weight at week completion of competition	Total feed consumed	Final feed conversion ratio
Totals				
Cost of Feed				

Q6: Using your data above, create a graph outlining the growth and feed consumption of your animals.



Q7: Describe the trends in your data.

Q8: Identify any issues you had in conducting your experiment.

Q9: Identify any abnormalities in your data and explain why these might have occurred.

Q10: If you were to conduct this experiment again, identify what changes you would make to improve your data.

Q11: What conclusions can you come to based on your data?

HELPFUL LINKS

- Hy-Line Brown - 'Feeding the Pullets'
<http://www.hyline.com/asp/redbook/redbook.aspx?s=6&p=52>
- Poultry CRC: Poultry Hub - 'Nutrient requirements of egg laying chickens'
<https://www.australianeggs.org.au/education>
- Australian Egg Corporation Limited
www.aecl.org
- Hy-Line Australia
www.hyline.com



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LEARNING RESOURCE

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CONTENT DESCRIPTORS–SCIENCE

<p>Living things have life cycles</p> <ul style="list-style-type: none">■ making and recording observations of living things as they develop through their life cycles■ describing the stages of life cycles of different living things such as insects, birds, frogs and flowering plants	ACSSU072
<p>Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends</p> <ul style="list-style-type: none">■ identifying and discussing numerical and visual patterns in data collected from students' investigations and from other sources■ using provided graphic organisers to sort and represent information	AC SIS068

LEARNING OUTCOMES:

Students will observe and record the growing pattern of chickens over 28 weeks. Students will use this data to describe the life cycle of chickens and identify growing patterns.

LEARNING MATERIALS:

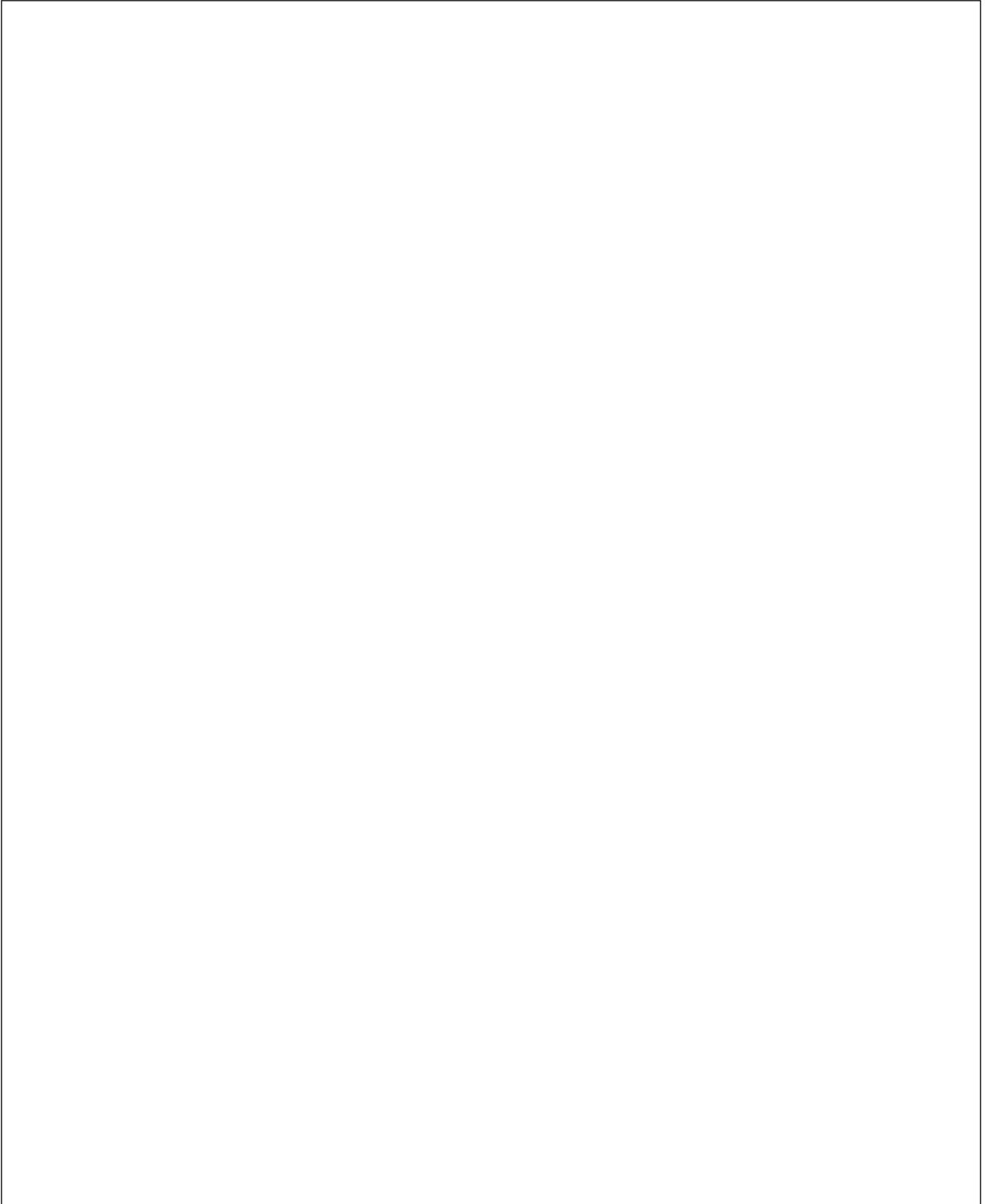
Teachers will have access to learning materials to assist with enriching the learning process.

For more information please contact the education coordinator at education@rna.org.au

LIFE CYCLE OF A CHICKEN:

Read the following passage and complete a drawing showing the life cycle of a chicken.

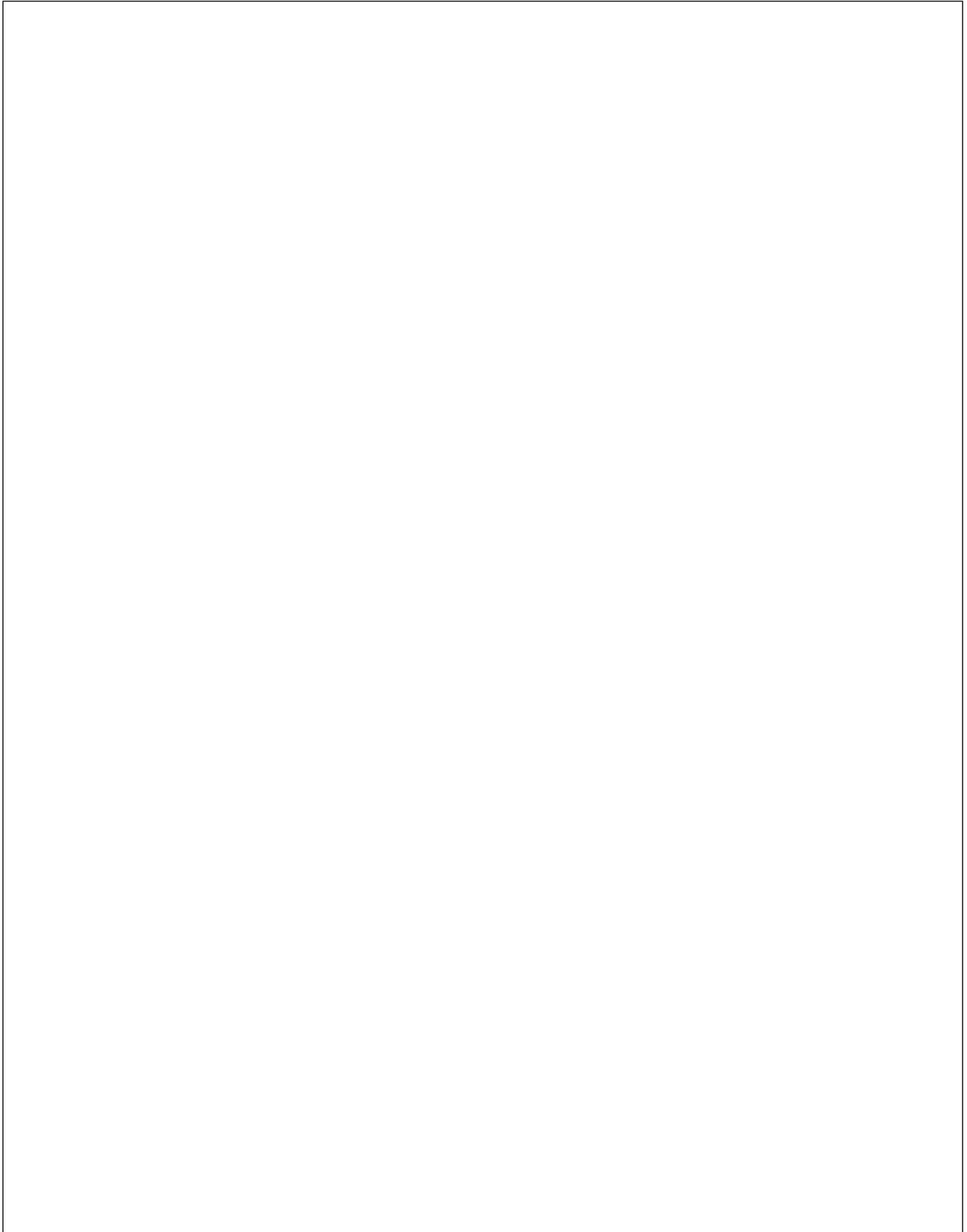
Once an **egg** is laid, it is **incubated** for 21 days before a **chick** is hatched. A chick is kept in a **brood** until it is 16 weeks old, it is then called a **pullet**. At this age it can mate and begin **laying** eggs.



For more information go to: <https://www.australianeggs.org.au/assets/australian-eggs/Uploads/The-journey-of-a-Egg-v2.pdf>

ANIMAL HOUSING:

It is important that chickens are well looked after. Look at the house you have your chicks in. Draw and label the important features including water, heat, food and bedding.



Class Question: How does the housing change for the chicken throughout its lifecycle?

CHICKEN GROWTH:

You might notice some changes in your chickens.

Question 1: What do you think might happen?

Activity 1: You are going to weigh your chickens over the next 22 weeks. Pick a day your class can weigh your chickens and set up the weighing station. You will need the following:



Question 2: What unit of measure should we use to weigh the chicks, why do you think this is the best?

CHICKEN GROWTH:

Answer the following questions:

Question 1: Describe what happened to the chickens.

Question 2: Calculate how much the chickens grew.

Question 3: What things helped the chickens grow?

Question 4: How did the needs of the chickens change over their lifecycle?
