Stage 1&2

Virtual Hatchery Teacher Guide

Lesson Overview

This activity guide is designed to be used in conjunction with the Australian Eggs Virtual Hatchery video program available at australianeggs.org.au/education to encourage further learning about hens, chicks and egg production in Australia. The activities suggested in this guide link with the stages of development seen in the video program but can be used independently of it, both in the classroom and at home.

The below activities link with the Australian Curriculum areas of Visual Arts, Science and Health and Physical Education, and champion an inquiry-led approach to learning. Facilitators should be encouraged to provide support or extension options based on their students' needs and abilities.

Australian Curriculum Links

Full curriculum links for students in Foundation up to Year 6 are available on the download page for this resource at australianeggs.org.au/education.

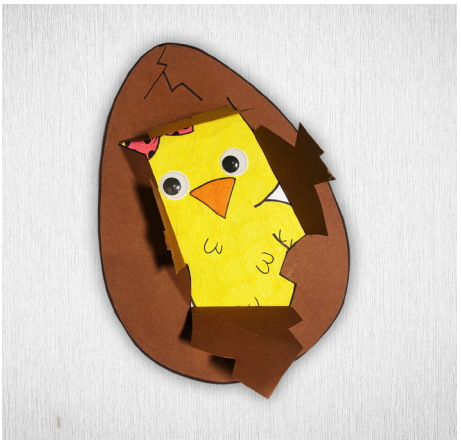
Learning Intentions

- Understand how chicks develop inside an egg
- Explore and investigate the properties of eggs
- Develop an understanding of the needs of living things
- Understand how eggs fit into a balanced diet

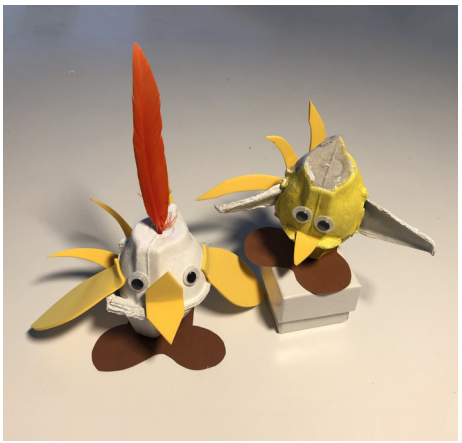
Teaching and Learning Activities

Art and Craft:

1. Create a 'hatching chick' picture using different materials showing the moment a chick breaks out of an egg. To create the craft shown, follow these instructions:
   - Draw a picture of a chick on white paper and colour.
   - Draw an outline of an egg on brown paper, complete with 'cracks' in the shell.
   - With scissors, carefully cut along the cracks so you can see through the egg.
   - Stick the chick behind the egg outline and add googly eyes so your chick can peek out!



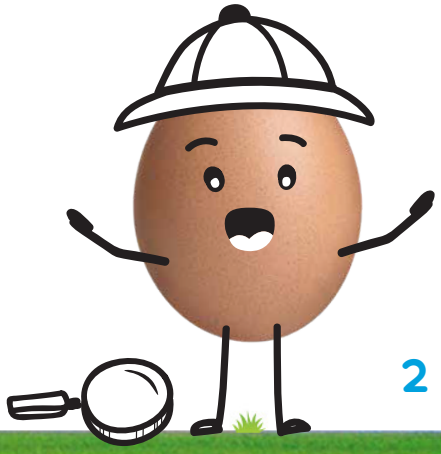
2. Create a 3D chick sculpture from an egg carton, or make a family of egg carton chicks!
   - Cut out 2 'cups' from an empty egg carton and stick them together to make the chick's body.
   - Cut out some wing shapes from the remaining cardboard and attach them to the body.
   - Decorate your chick with paint, feathers, a beak, feet and googly eyes!



3. Create a mosaic style picture using egg shells.

Discussion questions:

- What happens inside an egg?
- Examine how artists use natural materials such as feathers to create visual art.
- What cultures across history have recorded stories through mosaic?



Teaching and Learning Activities *(continued)*

Science Investigations:

1. Submerge an egg in a cup of vinegar overnight and investigate what happens. Make a prediction before observing the results.

2. Create a digital representation of how eggs get from the farm to our fridges.

3. Living things change and grow. Create a visual timeline of how you have changed as you've grown. Include some notes of what you are able to do at different stages.

Discussion questions:

- How can we best look after our growing bodies?
- What is a living thing?
- How do living things depend on their environment to survive?
- Where does our other food come from?
- What will you be able to do in the future that you can't do now?
- How strong is an egg shell?
- What other experiments can you do with eggs or egg shells?

Background information:

Eggshells are made of a similar material to our teeth and submerging them in vinegar breaks that material down, due to the acid in the liquid. This investigation shows us what can happen to our teeth when we regularly eat or drink acidic things like sour lollies, sugary drinks and starchy foods. To extend this activity, investigate what happens to an eggshell if it is brushed with toothpaste and then submerged in vinegar.

Health and Nutrition:

1. Explore the eggy recipes available at **australianeggs.org.au/recipes-and-cooking**.

2. Use your favourite veggies to make a delicious omelette with your family.

3. Design a breakfast, lunch, dinner and snack dish using eggs.

Discussion questions:

- What is a balanced diet?
- Why are eggs good for growing bodies?
- What is a 'sometimes' food?
- What was the last 'new' food you tried?

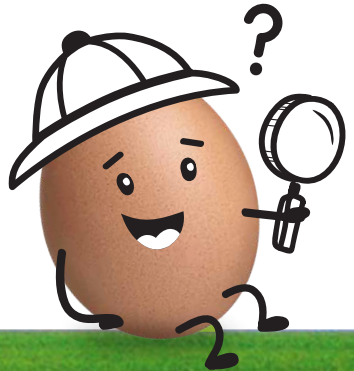
Teaching and Learning Activities *(continued)*

Links to interactive lessons available at **australianeggs.org.au/education**:

Stage	Lesson Plan	Description
Foundation	Helping Hands on the Farm	Examine jobs on egg farms and what children on farms might do. Make links between looking after farm animals and looking after pets.
Year 1	Eggs-actly where do eggs come from?	Investigate oviparous animals and the story of farm to fridge in reference to the Australian egg industry.
Year 2	What's inside an egg?	Discover how an egg forms and what happens inside before a chick hatches.
Year 3	To Lay or not to Lay?	Investigate what egg farmers need to do to ensure their hens are happy and whether their practices affect egg production.
Year 4	Sustainable Egg Farms	Learn what Australian egg farmers are doing to run sustainable and efficient farms and design a sustainable farm with minimal impact on the surrounding environment.
Year 5	The Power of Choice	Understand supply and demand in reference to the Australian egg industry and examine the production systems and the extent of consumer choice.
Year 5	The Big Egg Debate	Set up a class debate about what egg production system is the best for farmers and consumers.
Year 6	What About Welfare?	Examine animal welfare practices on Australian egg farms and consider the effect on egg production.

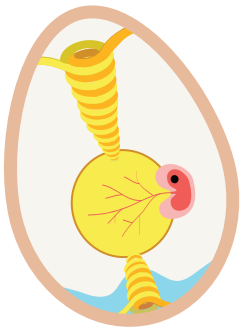
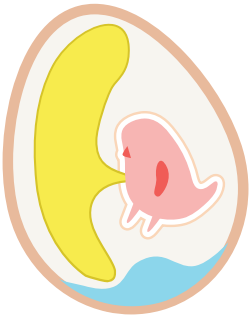
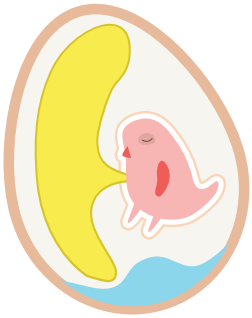
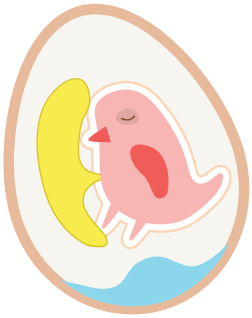
Vocabulary

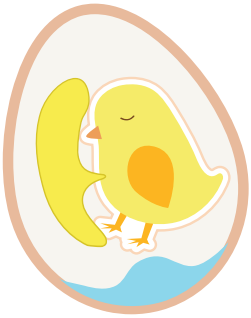
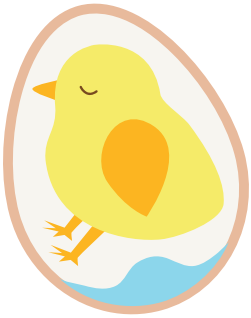
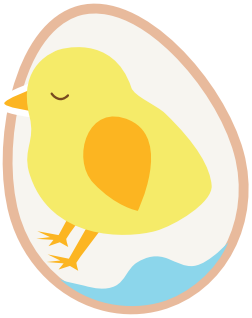
Word	Definition
Air cell	A space inside an egg which forms at the larger end as the membrane cools and contracts
Albumen	The white of an egg, made up of proteins and water
Blastoderm	The nucleus of the egg from which an embryo develops
Broiler	A young bird less than 10 weeks old
Brooder	A piece of equipment used to supply heat during the early stages of a chick's life
Brooding	A period in a young chick's life when they need extra heat
Candling	A process used by farmers to check the internal quality of their eggs
Chalazae	Rope-like structures inside an egg used to hold the yolk in place
Crop	A storage organ in the bird's digestive tract
Cuticle	The outer membrane of the shell
Deep Litter	Floor material used inside a coop, shed or hatchery
Embryo	A developing chick in the first stages of life inside an egg
Feed Hopper	A semi-automatic feeding system which stores and delivers hen feed
Fertile	Eggs which do contain chick embryos
Fowl	A word used to describe all poultry, including chickens, turkeys, geese, etc
Incubator	A machine which helps eggs to hatch
Infertile	Eggs which do not contain an embryo
Moult	When a bird sheds feathers and grows new ones
Pecking Order	The status in a flock of birds, headed by the lead bird
Preen Gland	An oil gland near the tail used to clean the feathers
Primaries	The long stiff feathers at the tip of the wing
Pullet	A female bird in her first laying season
Roost	A perch where birds sit to rest or sleep
Secondaries	The large wing feathers next to the body
Thermostat	A device for the regulation of the temperature inside a hatchery



More Information

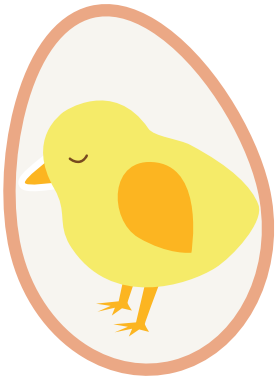
Chick Embryo Development:

Day 1	Day 4	Day 6	Day 8 - 10
The heart begins to form and pump blood through new vessels.	The leg and wing buds and tail are visible. The brain and nervous system are clear to see. The chick's heart is outside its body.	Eyes are formed.	Feather tracts start to form, the heart is taken inside the main body, bones start to form.
			

Day 12 - 15	Day 4	Day 20 - 21
Bones are completed, feather colour is visible, wings and legs are more developed.	The beak and claws are well formed and the chick's head turns under the right wing and towards the air sac as the amniotic supply is used up. The yolk is absorbed and the chick finds a good position to break out.	The egg tooth develops and the neck muscles get stronger. The beak pokes through the membrane to get to the air sac. The egg tooth breaks through the shell. The chick takes between 10 - 20 hours to free itself completely.
		

More Information *(continued)*

The Hatching Process:

The chick pokes a hole in the egg shell with its egg tooth.	The hole is widened into a line going around the egg as the chick turns inside.	The chick widens the opening by pushing its feet and head against the inside.
		

The shell breaks into two pieces and the chick starts to come out.	The chick sticks its feet out and pulls itself out of the shell.	Hatching is hard work! The chick has a rest before starting its new life.