

Schools Animal Ethics Committee (SAEC)

Standard Operating Procedure

Chicken egg hatching under the science curriculum using a commercial supplier

Approved 1 August 2023

Purpose

Only use this SOP when hatching chicken eggs in a classroom setting under the science curriculum using equipment and materials from a commercial supplier.

Introduction

Using animals to teach science is governed by the [Australian code for the care and use of animals for scientific purposes](#) (the Code). The Code requires that activities using animals to teach science must be justified as ethically acceptable. You will need to explain how the potential effects on animal welfare are outweighed by the potential benefits of the activity.

When using animals for science teaching and learning activities, their welfare must be the first consideration. This can be achieved at all stages of animal care and use by applying the principles of the 3Rs.

3R's	Considerations
Replacement of animals with other methods (alternatives)	<ul style="list-style-type: none"> Consider using alternatives such as 3D models showing the chicken life cycle, various multimedia documentaries or farm visits. Consider whether the benefits of animal use cannot be achieved using alternatives. For example, egg hatching provides students with the opportunity to observe a natural event they would not normally experience, and encourages them to develop respect for, and empathy with animals, establishing ethical understanding.
Reduction in numbers of animals used	<ul style="list-style-type: none"> Consider requesting between 10 – 12 eggs per activity, averaging a chick to student ratio of between 1:3 and 1:4 for handling, assuming a 70% hatch rate. Provide justification if the activity requires more eggs. Never use more eggs than the SAEC approved amount, as this will be a compliance breach.
Refinement of techniques used, in order to reduce adverse impacts on animals	<ul style="list-style-type: none"> Consider the housing and handling of chicks to ensure their welfare needs are met. Handling should only occur as per the SAEC Guidelines for chick handling which can be found on the Animal Ethics webpage.

Prerequisites

A checklist is available on page 5 of the SOP.

Obtain SAEC approval **before** starting the activity via the [Animal Ethics System](#). Starting the activity without approval will result in a compliance breach.

AISWA schools will need to check whether the school has a valid licence from the Scientific Licencing Unit at the Department of Primary and Regional Development (DPIRD). If not, the school must [apply for a licence](#), and not start the activity until they have their licence and SAEC approval.

Provisions for animals at the conclusion of their use must be made. Chicks can be collected by the supplier at the end of the activity, or rehomed at either the school or with staff/parents/carers following the [Transition of chicks from brooder to unheated accommodation](#) document. If the provisions change during the activity, an [amendment form](#) must be submitted to your sector's SAEC Executive Officer (EO).

To conduct these activities in the classroom, the course coordinator must either be competent in egg hatching and chick handling, or have access to a suitably experienced person able to provide advice on the set up of appropriate hatching and brooding facilities and egg and chick handling.

The name and position of at least one other person in the school who can assist with the chicks must be provided in case the course coordinator cannot continue the activity. Provide their experience with animals, as they will be the person taking care of the chicks in these circumstances.

Display of licence approvals and record keeping

- The Animal Use Licence must be displayed in the school's front reception area in an area readable by the public, as required by both the Code and the Animal Welfare Act 2002.
- Department of Education (DoE) and Catholic Education Western Australia (CEWA) teachers will receive a copy of the licence with their SAEC approval email.
- Associate of Independent Schools of Western Australia (AISWA) schools will display their current licence from DPIRD.
- SAEC will send the Certificate of Approval once the application is approved. Display this certificate close to where the animals are located, alongside the 'Animal use and health records'.
- Update the 'Animal use and health records' at least twice a day during the activity.

Project Overview

Chicken eggs will be hatched using an incubator and raised in a brooder box in a classroom setting to achieve educational outcomes in science, as specified by the Course Coordinator. Chickens are an appropriate species to use for this activity as they are easy to obtain, care for and handle, unlikely to harm children, and can show significant growth during the short time period. The animals will be held for a maximum of 12 days where they will be monitored and observed, and handled as chicks, at maximum, twice a day following the [Guidelines for chick handling](#). It is assumed that all chicks will participate in each approved activity and that the gender ratio of chicks will be unknown.

Approved Activity: Incubation

- The incubator must be placed in a room that can be locked when an adult is not present to supervise students' interactions.
- The incubator should be located away from the flow of traffic to minimise any accidental bumping, out of direct sunlight, away from draughts and shielded from outside temperatures.
- Incubators must not be placed in a food preparation area due to potential biohazards.
- Always follow the manufacturer's directions when setting up and operating the incubator.
- The incubator will be set at a temperature determined by the supplier. Check the incubator's thermometer with an accurate thermometer, taking the readings at the same level as the tops of the eggs, away from the source of incubation heat.
- Place a clean, dry chux cloth on the bottom of the incubator to prevent splayed legs in hatchlings.
- Stabilise the temperature and set all of the eggs in the incubator on their sides. Cluster eggs near the centre of the unit as the corners inside incubators are often cooler than the centre.
- Humidity should be higher in the final 3 days of incubation to soften the membranes inside the egg, making hatching easier. Place the provided water tray on the bottom of the incubator to maintain humidity and top it up daily with lukewarm water. Low humidity (< 50%) can result in a large air sac in the egg which can cause the chick to hatch weak. If the humidity is too high (> 70%) it can result in a small air sac that will be difficult to breakthrough and will not contain

enough oxygen for the chick to survive. If you are concerned about the humidity levels, use a hygrometer.

- It is important to ensure adequate ventilation by checking that the ventilation holes in the incubator are not blocked to provide sufficient oxygen to the embryos inside incubating eggs.
- Adjust the vents throughout the incubation period so they are fully open by hatching time.

Approved Activity: Hatching of Chicks

- Eggs are received at day 19 or 20 where a "day" is counted as a full 24 hours (eg. Day 1 would be the first 24 hours after setting the egg, Day 2 the next 24 hours etc.). If eggs are incubated on a Monday, it's usually a safe bet that they will hatch Tuesday or Wednesday at the latest.
- It can take up to six hours for the chick to fully hatch, and a further six hours for it to dry, fluff up and begin to move about. Since the chicks have reserves of yolk to draw on, they don't need to eat or drink for the first 24 hours after hatching and can be left in the incubator until the stragglers hatch.
- Once the hatched chicks have dried off and fluffed up in the incubator, move them from the incubator to the heated brooder box. Chicks can be moved in small groups with others at a similar stage of development if all chicks are not ready to be transferred.
- **Do not assist chicks with hatching from the egg. If a chick fails to hatch, it is because it is too weak to survive.**
- After 24 hours of the last chick hatching, remove any unhatched eggs from the incubator. Dispose of following the [Guidelines for disposal of dead animals](#).

Approved Activity: Brooding

- The brooder box should be placed in a room that can be locked when an adult is not present to supervise students' interactions.
- Set up the brooder box following the supplier's instructions at the same time as the incubator. Keep the box safe from predators in a draught free, warm environment. The box should contain soft, non-toxic bedding from the supplier and either an adjustable heating plate or a ceramic or infrared heat bulb lowered to within 150mm from the bottom of the box to mimic the external heat chicks need for survival.
- The suggested temperature for the brooder box in Week 1 is 32 – 35°C, and Week 2 is 30°C, however, chick behaviour is a better guideline of how much heat they require:
 - chicks dispersed throughout the brooder box are at the correct temperature
 - chicks huddling together close to the heat source need more heat
 - chicks staying away from the heat source need less heat.
- The heat source can be moved up or down to increase or decrease the heat as required.
- Feed and water must be available at all times from the time chicks are out of the incubator. Only feed chicks the supplied food or they will miss out on required nutrients.
- A small amount of the chick's feed can be spread on the brooder box ground to allow chicks to forage for environmental enrichment.
- Brooding of chicks in the classroom should not exceed 12 days after hatching before they are returned to the supplier or relocated to a suitable facility.

Approved Activity: Handling and Monitoring

- For how to handle chicks, please refer to the SAEC [Guidelines for chick handling](#).
- Frequently monitor the eggs and chicks at least twice a day, including on weekends and public holidays. Maintain a record of temperatures and observations using the 'Animal Use and Health Records' form throughout the activity.
- Provide the chicks with fresh food from the supplier and water daily, checking and refilling both throughout the day.
- To minimise the stress of relocation, it is better that the chicks stay in the classroom over the weekend and are checked twice daily at minimum. If this is not possible, transport the chicks in a secure brooder box, designed for safe travel, without removing the chicks from the box. Provide chicks with a portable heat source such as a heat pack or hot water bottle wrapped in

a towel and monitor the chicks for signs of stress during travel such as panting and rapid shrill cheeps. Chicks must be kept securely away from household pets.

- Consider the room temperature over weekends. Ensure that the brooder box is placed in a secure, cool position away from windows and sunlight.
- It is important to be aware of normal chick behaviour and signs of ill-health and distress in chicks. Consult a veterinarian immediately if the chicks are showing any signs of ill-health, deformity or distress such as diarrhoea, pasty bottoms (dropping stuck to the chick's vent area), discharge from the eyes, nostrils or mouth, listlessness and refraining from food and water.

Unexpected adverse events

An unexpected adverse event is any event that may have a negative impact on the wellbeing of an animal, including:

- death 24 hours after hatching
- illness or failure to thrive requiring veterinary intervention
- factors external to the project/activity that negatively impact animal welfare, such as power failures, inclement weather and emergency situations.

When an unexpected adverse event happens, an '[Unexpected adverse event report](#)' form and the 'Animal use and health records' must be submitted to your sector's SAEC EO. If the death occurs within 24 hours of hatching due to unsuccessful hatching, or obvious illness or deformity, the form is not required.

Advice from a veterinarian must be sought immediately if there are concerns for a chick's health. Do not contact your commercial supplier. Take immediate action to address any adverse impacts on animal/s in the event of an unexpected adverse event or emergency. This takes precedence over the activity completion.

Action must be taken in response to an unexpected adverse event to ensure students, staff and/or other animals are not inadvertently affected.

Emergency treatment may be required and, if necessary, animals must be humanely euthanased without delay following consultation by a veterinarian only. Check whether an office staff member can transport these chicks to the veterinary clinic named in your application.

Have a backup heat source in case the unexpected adverse event is a power failure during the incubation or brooding phase. Incubators should be insulated immediately using blankets or towels to maintain the temperature, while the temperature can be maintained in the brooder box by placing a wrapped heat pack or hot water bottle in with the chicks.

In the case of an unexpected adverse event where the school must be evacuated and where there is no risk to human life, move animals to the safest location.

Health and Safety

There is a small health risk of Salmonella when dealing with chickens. For prevention, staff and students must wash their hands with soap and water before and after handling eggs and chicks. Please refer to the [DPIRD website](#) for further information about biosecurity risks involving chickens.

Students with allergies or asthma may have these conditions triggered by the presence of chicks and sawdust. In these cases, follow the individual student's School Health Plan. Be aware of the School's Emergency policy in case of undiagnosed allergies.

Egg Hatching checklist

Before starting

- ☐ Have you applied for a Scientific Use Licence? (**AISWA Schools Only**)
- ☐ Do you have a Certificate of Approval from the Schools Animal Ethics Committee?
- ☐ Have you made provisions for the chicks at the end of the activity?
- ☐ If approved, has your activity changed from the approved application in any way? If so, submit an Amendment form to your sector's SAEC Executive Officer.
- ☐ Are you familiar with your school's emergency plan in case of undisclosed allergies?
- ☐ Can the room the chicks are housed in be locked when the room is unsupervised?
- ☐ Do you feel confident to complete this activity, or do you have access to a person who has done it before?
- ☐ Do you have a colleague who can take over if you need to suddenly take leave?

The day of the activity

- ☐ Display a copy of the Scientific Use Licence in the school's reception area.
- ☐ Display your Certificate of Approval close to where the chicks will be located.
- ☐ Place your 'Animal use and health records' close to where the chicks will be located.
- ☐ Bring in a blanket, towel, hot water bottle or heat pack in case of equipment failure.
- ☐ Brief the class on how they need to behave around the chicks.

When the eggs arrive

- ☐ Check the incubator is clean, then set it up following the supplier's instructions and line it with a clean, dry chux cloth.
- ☐ Check the temperature with a thermometer to see if the temperature in the incubator is correct. Once they are the same, place the eggs in the middle of the incubator.
- ☐ Check there is water in the water tray and that the incubator's vents are partially open.
- ☐ Check the brooder box is clean, then set it up following the supplier's instructions.
- ☐ Set up the heat plate or lamp and measure the temperature using a thermometer. It should be between 32 – 35 °C under the heat source.

Daily care

- ☐ Move fluffed up and standing chicks from the incubator to the brooder box.
- ☐ Completed the Animal use and health records for the morning observations.
- ☐ Refill the chick's feed dish and provide them with fresh water.
- ☐ Remove the chick droppings and replace these parts with fresh bedding.
- ☐ If necessary, adjust the heat lamp or plate based on the behaviour of the chicks.
- ☐ Complete the Animal use and health records for the afternoon observations.

If a chick is failing to thrive or dies

- ☐ Take chicks that are sick, injured or failing to thrive to the nominated vet.
- ☐ Follow the [Guidelines for disposal of dead animals](#) for unhatched eggs and chicks found dead.
- ☐ Submit an '[Unexpected adverse event report](#)' form to your sector's SAEC executive officer.

Collection of the chicks and equipment

- ☐ Organise a time for the supplier to collect the chicks and equipment.
- ☐ If the chicks are being adopted by members of the school community, check it was approved in your application. If not, submit an amendment before the activity ends.
- ☐ If adoption was approved, have the adopters complete and sign the rehoming letter.
- ☐ Log into the [Animal Ethics System](#) and submit your completion report within 14 days of the end of the activity. Remember to include the number of unhatched eggs in the comments.