

Schools Animal Ethics Committee (SAEC)

Standard Operating Procedure

Chicken egg hatching under the science curriculum using school or personal equipment

Approved 1 August 2023

Purpose

Only use this SOP when hatching chicken eggs in a classroom setting under the science curriculum without using a commercial supplier for equipment and materials.

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.
- Association 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.

Obtaining eggs

Source fertile eggs and transport them to the school. It is preferable to pick up the eggs you plan to incubate directly from the supplier. Transport the eggs to school in an egg carton placed in an insulated container on the floor of the car to prevent sliding.

Note that eggs have different requirements during different stages of the incubation period. For example, eggs need to be turned daily from Days 1 – 17 of the incubation period. If the activity has a longer incubation period, consider choosing an incubator that has automatic egg turning.

Approved Activity: Incubation

- Check that the incubator is clean and has been tested and tagged for electrical safety.
- Sanitise the incubator before use. Wipe the electrical parts clean with a dry cloth, then spray them lightly with an alcohol solution that will evaporate away. Wash and disinfect the floor, hatching tray and water apparatus with a weak bleach solution as these parts usually get the dirtiest.
- 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.
- Place a clean, dry chux cloth on the bottom of the incubator to prevent splayed legs in hatchlings.
- Set the incubator to 37.5°C. Check the incubator's thermometer with an accurate thermometer, taking the readings at the same level as the tops of the eggs will be, away from the source of incubation heat.
- Stabilise the temperature of the incubator for 24 hours prior to receiving the eggs following the manufacturer's instructions.

- Set all 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.
- Maintain humidity levels following the manufacturer's directions. Low humidity can result in a large air sac in the egg which can cause the chick to hatch weak. If the humidity is too high 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. Humidity should be between 50 – 55% from days 1 – 18 of incubation, and 65 – 70% for the final 3 days of incubation to soften the membranes inside the eggs, making hatching easier. Only use lukewarm water to top up the apparatus that controls humidity. Monitor humidity daily.
- 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

- 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 draught free, warm environment away from predators in a room that can be locked when an adult is not present to supervise students' interactions.
- The brooder box must be a clean, secure structure and can be made of a variety of materials such as plastic, glass, wood, cardboard or wire with flyscreen, wire, or a partial lid that still allows air flow on the top. The size of the brooder box should allow for each chick to have an area of at least 200cm² (a rectangle 20cm long by 10cm wide) per bird.
- Set up the brooder box at the same time as the incubator. The box should contain soft, non-toxic bedding such as natural wood shavings, fine chips or sawdust, 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 brooding 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.
- Brooding of chicks in the classroom should not exceed 12 days after hatching before they are returned to the supplier, rehomed to a community member or relocated to a larger brooder box in preparation for keeping them at your school's chicken coop.
- Wash and disinfect the brooder box with a weak bleach solution after use and store securely.

Food and water

Fresh food and water must be available at all times from the time the chicks enter the brooder box and placed away from the heat source. Chicks must be fed a chick starter crumble as feed for older animals does not contain the required nutrients.

Food and water dishes should be appropriate for the age of the chicks. Feeders should have enough cover to prevent chicks kicking their bedding into their feed, however, the cover should not allow for perching as chicks may excrete into their food. A small amount of the chick's feed can be spread on the brooder box ground to allow chicks to forage for environmental enrichment. Water dishes should be shallow to avoid chicks drowning.

Approved Activity: Handling and Monitoring

- For how to handle chicks, please refer to the [Handling Chicks SOP](#).
- 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.
- 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 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.

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?
- ☐ Have the electronic devices been tagged and tested by an electrician?

The day before the activity

- ☐ Check the incubator is clean, then set up the incubator by following the manufacturer's instructions and line it with a clean, dry chux cloth.
- ☐ Leave the incubator for 24 hours to stabilise the temperature. Check the temperature with a thermometer to see if the temperature in the incubator is correct.
- ☐ Clean the brooder box.

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

- ☐ Place the eggs on their side in the middle of the incubator.
- ☐ Check the humidity and that the incubator's vents are partially open.
- ☐ Set up the brooder box with bedding, feed and water dishes.
- ☐ 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

- ☐ Clean the equipment and organise for the chicks to be taken to their new home.
- ☐ 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.