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| **SOP No:** | **20** |
| **SOP** | **Domestic Fowls (Chickens)** |
| **Scientific Name:** | ***Gallus domesticus*** **Varietal range difference:** Both layers and broilers are available in a range of breeds. |
| **Category:** | **2, 3, 4, 5** |

**Approved activities:**

| Activity | Category |
|---|---|
| a. Capture, restraint, and handling of chickens | 3 |
| b. Taming of chickens | 3 |
| c. Training and grooming of turkeys for showing | 3 |
| d. Administration of in-water drench treatments to chickens | 3 |
| e. Collection of faecal samples from chickens (Non-invasive) | 2 |
| f. Measurement of growth and body weight of chickens (non-invasive) | 2 |
| g. Measurement of body temperature of chickens (invasive) | 3 |
| h. Measurement of respiration and heart rate of chickens (non-invasive) | 2 |
| i. Measurement of mild dietary effects including palatability preferences in chickens | 3 |
| j. Loading and unloading of chickens for transport | 3 |
| k. Transport of chickens | 3 |
| l. Collection of a blood sample from chickens (invasive) | 5 |

**Where an activity is not listed in this SOP, approval must be sought from the Animal Ethics Committee and confirmed before it can be undertaken.**

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| **Approval Level:** | |
| **Authority:** | **Government Schools** – Department for Education and Childhood Development Animal Ethics Committee<br>**Independent and Catholic Schools** – Non-Government Schools Animal Ethics Committee |
| **Authority Approval Date:** | 1 August 2010 |
| **Last update** | 3 July 2023 |
| **Disclaimer:** | *This document may be updated at any time. You should check the web site regularly to ensure that you are meeting the most recent recommendations. If you note any concerns with the information provided (inadequate, incorrect) please contact the relevant AEC* |
| **Licensing Requirement:** | Not applicable |
| **Compliance Requirement:** | The keeping of this species requires approval from the school principal or the NGSAEC. It is recommended that this Standard Operating Procedure be followed as a minimum in the provision of appropriate care and housing for this species. |

**Physical Attributes:**

- **Size: Breed dependent**
- **Weight: Breed dependant (e.g. Bantam hen – 150mm high, 500gm bodyweight vs. large fowl, 700mm high, 6kg BW).**
- **Weight at birth:** 20g - 40g
- **Range of breeding ages:** six months to seven years, depending on breed. Some birds may continue to lay longer than seven years but this is not recommended practice.
- **Body temperature:** 39.5ºC (+/- 0.5ºC)
- **Heart rate:** 150 - 400 beats/minute
- **Respiration rate:** 12 - 36 breaths/minute

Chick: chicken less than six weeks old Pullet:
chicken less than one year old Cockerel:
young male rooster
Layer: chicken that is laying eggs older than one year
Rooster: adult male chicken

Broody: mother hen who is sitting on eggs to hatch them or sitting on chicks that have already hatched

**Behaviour:** Housing and husbandry practices must allow chickens to express their normal behaviours. As chickens are flock animals, a minimum of two should be kept at a time. A healthy domestic chicken's normal behaviour is characterised by alertness, with an erect carriage.

These include:

- Foraging behaviour: chickens need to forage for food by scratching and pecking as they investigate their surroundings. If they are not allowed to forage, they peck, pull and tear at objects and other chickens, often developing feather-pecking behaviour.
- Locomotive behaviour: hens will walk 1km - 1.5km per day if space permits. They will also fly to elevated perches if provided with the opportunity.
- Resting behaviour: chickens prefer to roost on higher rather than lower perches. They may rest by standing, lying, sleeping, or dozing.
- Comfort behaviours: preening, stretching, flapping, dust bathing, sunbathing and body shaking that help to keep the birds' feathers in decent shape.
- Social behaviour: chickens develop stable groups, with birds holding various ranks within these groups.
- Nesting and laying behaviour: chickens need adequate nesting sites or they become stressed and develop abnormal behaviours.
- Enriched environments reduce fear and stress in chickens so allowing these normal behaviours to be expressed must be encouraged.

**Environment:** **Housing/Space: It is no longer deemed acceptable to keep chickens in cages as a routine practice.** In minimum confines, a chicken must be able to turn around without losing its normal stance, have room to flap its wings and be able to walk and forage. Outdoor runs should provide a minimum of 7.5 $m^2$ per bird, although more space is desirable. Food and water should be easily accessible. Nesting materials must be clean, dry, and friable and absorb moisture (e.g. clean, dry, untreated sand, rice hulls, straw, or wood shavings). Nesting boxes are recommended to provide a clean area for hens to lay and nest. Young layer hens, called pullets, will reach point of lay between 16 – 24 weeks of age depending upon breed. If available, plastic drums of 15L- 25L capacity, with the bases cut out, leaving small lips to hold back nesting materials, should be available at the ratio of one nesting box for every three or four birds. Nests should be dark and allow isolation between birds to avoid egg damage and aggressive behaviour by some birds during nesting.
**Movement:** Adequate perch space must also be provided to accommodate all the birds at once (e.g. 150 mm of perch space per bird).
**Water:** A clean, adequate supply of water, placed in a cool shaded area, is required
**Temperature**: Environmental temperature is important for bird survival rates particularly at a young age. Day-old chicks require an environment at 33ºC by using an artificial heat source. This temperature should be reduced by 3ºC every week until it reaches 21ºC at 28 days of age. This heat source should continue to be provided until they reach approx. six weeks of age, after which they can be moved into larger, outdoor housing. A thermometer should be used to assess environmental temperature. The chicks themselves can also act as useful indicators of temperature: if it is too hot, they disperse away from the source and the lamp height may need to be raised. If it is too cold, they huddle together and the lamb height needs to be lowered. Ensure that the chicks are provided with an enclosure big enough that they can move away from the heat source at one end. For layers, the preferred temperature range is 20ºC - 28ºC. Temperatures below l0ºC and above 32ºC cause stress and are unacceptable.
**Lighting:** Shedded birds must have a reasonable amount of light, with cycles of light and darkness. If they are kept in the light all the time, they may panic and smother themselves in the event of a blackout
**Covering**: All pens whether indoor or outdoor must be covered and secured to protect the birds from predators.
**Shelter:** Should be sufficient to protect them from climatic extremes – temperature, wind, rain, and direct sunlight.

**Cleaning:** Ammonia build-up in intensive situations must be prevented: it causes distress to poultry as well as to humans. This can be done by reducing the number of birds and improving ventilation.

**Feeding:**

**Diet**: Suitable food includes pellets, crumbles, mash, small amount of green feed and grit. Commercially-prepared food is recommended, as it meets all the birds' nutritional needs. Newly born chicks' nutritional needs are different to those of a pullet or layer hen and should be purchased accordingly. Some contain parasite preventatives and therefore eggs should not be consumed when these are fed.
**Daily requirements**: Adult fowls require approx. 150 - 200g of pellets per day fed over two feeds (morning and night). These requirements do vary with diet quality, bird breed and physiological status and environmental conditions. Demand feeding is recommended especially with meat breeds birds that can overeat and gain weight too quickly causing health problems (e.g. leg issues from body being too heavy). Along with commercial food diets, a clean, adequate supply of water, placed in a cool shaded area, is required. If automatic nipple drinkers are used, they should always be fitted with fail-safe mechanisms. Adult birds drink up to 500mL - 1L per day and water should be changed daily.
**Supplementary feeding:** Chickens can be offered vegetables, fruit, grains, and seeds and grasses a supplement to the commercial diet.
**Equipment:** Food and water feeders, and automatic nipple drinkers

**Breeding:**

**Incubation period:** 19 - 21 days
Schools are advised to contact an experienced poultry veterinarian or animal industry representative before embarking on poultry farming enterprises. Schools wanting to undertake egg-hatching programs (e.g. Living Eggs Program) are encouraged to review those listings in the Resources section of this document prior to undertaking this activity.

**Handling:**

**Humans**: Chickens must be handled calmly and with care to prevent distress and injury to them. Adults should always supervise handling, especially of young birds. Only handle chickens when necessary and encourage handling from an early age to reduce the stress on the birds. Chasing of birds should not occur, this is stressful and may result in birds injuring themselves. If using a catching hook, the bird should be drawn towards the handler firmly but not so quickly as to damage the legs including joints. Firmly and quietly transfer the bird to the holding position. The holding position involves restraining one hock joint between the index finger and thumb, and the other hock joint between the third and fourth fingers. The bird's breast, or keel bone, sits comfortably on the palm of the hand with the bird's head pointing towards the handler's body and the vent away. When walking with a bird, its head can be tucked under the carrier's upper arm. The non-holding arm can be used to assist with restraining the bird and prevent the wings from flapping.
**Equipment**: catching hook, towels.
**Transport**: See AEC Poultry transport Compliance checklist and Section B 10: Poultry transport of the Australian Animal Welfare Standards and Guidelines – Land Transport of Livestock document listed in the Resources section of this document.

**Hygiene:**

After handling or working with domestic fowl, thoroughly wash hands with soap and running water for at least 15 seconds. Dry hands with clean paper towel or an air dryer. Turn off the tap with the paper towel if possible.

**Disease prevention:**

Schools are encouraged to seek advice from Veterinarians and Animal Industry Representatives and to develop an animal management plan. This plan should outline a calendar of routine husbandry events and treatments (e.g. vaccinations) the school will undertake throughout the year. This is particularly important not only for poultry welfare but to ensure compliance with withholding periods where poultry are utilised for meat production. Treatments must be documented in the appropriate records. Schools should also develop a farm biosecurity plan to assess risks to their enterprise. Consideration should be given to other animal species being kept at the school.

**Signs of illness:**

Indicators:

- failure to thrive or grow;
- change in natural demeanour;
- listless or lethargic;

- diarrhoea;
- nasal discharge and / or sneezing;
- nervous signs or paralysis;
- inactivity: head under wing, feathers ruffled, isolated from group;
- pale or purple comb;
- frequent shutting of eyes;
- little response when touched or pushed; or
- pecked at by another fowl.

Birds' health should be monitored daily and preferably more often.

**Treatments:** Schools are encouraged to develop relationships with veterinarians and animal industry representatives (e.g. fodder store) familiar with poultry. These contacts can be used for disease diagnoses, treatment options and dietary, husbandry and welfare advice. Veterinarians can also assist with emergencies, particularly where euthanasia is needed. Treatments must be documented in the appropriate records.

**Euthanasia:** Where an injury or illness is such that recovery is unlikely then poultry must be euthanised by a veterinarian. Schools should contact their local veterinarian to discuss emergency treatment options prior to an event occurring when keeping poultry. Any **adverse event** including death must be reported to the NGSAEC using the **Adverse Events form**. Forms must be returned to the NGSAEC within seven days of the event occurring.

**Disposal/fate planning:** A fate plan should be considered before using chickens in any programs. As social, flock animals, chickens must not be re-homed in isolation with a minimum of two should be housed together. Chickens can be sold privately at auction or consigned to registered processors. Chickens must not be released into the wild.

**Holiday and weekend care:** It is preferred that poultry remain onsite for quarantine reasons and are not mixed with other livestock offsite, while being used for school activities. Poultry can be taken offsite however with the permission of the school principal and the carers and on advice from a Veterinarian. Staff should provide carers with animal care and record-keeping instructions, emergency contacts and provide appropriate equipment and food. Poultry must be checked daily, records kept and any problems reported to the school immediately whether kept onsite or taken offsite.

**Approved activities:** **Where an activity is not listed in this SOP, approval must be sought from the Animal Ethics Committee and confirmed before it can be undertaken**.

**Activity:** a. **CAPTURE, RESTRAINT AND HANDLING OF CHICKENS**

**Category:** Category 3

**Objective:** To instruct students in methods of capturing and restraint for handling of chickens

Before students attempt these tasks, they should be familiar with chicken behaviour and be instructed to move quietly and slowly. Avoid handling chickens for lengthy periods and return them to feed and water as soon as possible after handling. Always ensure that each chicken has one or more others in proximity or view to avoid stress and dangerous to the handler.

**Activity** **b. TAMING OF CHICKENS**

**Category:** Category 3

**Objective:** To instruct students in methods of taming chickens

Chickens should be tamed as early as possible to avoid stress when handling them. Older chickens that have been handled extensively and are well tamed, will be the most suitable to purchase for the school environment. Older, untamed chickens may

never settle in and are likely to become stressed when handled extensively by students.

**Activity:** **c. TRAINING AND GROOMING OF CHICKENS FOR SHOWING**

**Category:** Category 3

**Objective:** To instruct in methods of preparation of chickens for showing, including grooming, and washing.

Chickens are very trainable and will easily respond to food rewards, coming up to a feeding pen when called or at a routine feed time. Short training sessions should be undertaken in a quiet area free from distractions or predators. Chickens familiar with handling should be used for training sessions where possible. After washing chickens should be dried off as much as possible to prevent hypothermia and kept in a suitable environment out of the cold until dry.

**Activity:** **d. ADMINISTRATION OF IN-WATER DRENCH TREATMENT TO CHICKENS**

**Category:** Category 3

**Objective:** To instruct students in the procedures for the administration of drenching treatments to chickens in water

Drenching is an important part of any preventative health program when housing chickens. Faecal testing is recommended to determine if and what types of internal parasites are to be treated. When treating for parasites, all chickens should be treated at the same time. These activities need to be documented in the appropriate records. Chickens should be dosed according to the product labelling with a species appropriate and age-suitable product. Ensure the dose is calculated accurately. As this is an in-water medication, chickens do not need to be handled. Consult your animal industry representatives or Veterinarian for product advice.

**Activity:** **e. COLLECTION OF FAECAL SAMPLES FROM CHICKENS (NON-INVASIVE)**

**Category:** Category 2

**Objective:** To instruct students in the process of collection of faecal samples from chickens using a non-invasive technique

Ensure that staff and students wear gloves and follow strict hygiene procedures when collecting faecal samples. Fresh faeces can be easily collected from the housing pen floor.

**Activity:** **f. GROWTH MEASUREMENTS OF GROWTH AND BODYWEIGHT OF CHICKENS**

**Category:** Category 2

**Objective:** To instruct students in methods of measuring growth and body weight of chickens

The animal's growth can be recorded by measuring the width of a chicken's body parts (e.g. girth). A soft plastic tape measure can be used to measure different body parts. Two handlers are required for the measurement of body proportions using low stress handling techniques. One handler is required to restrain the bird while the other handler takes measurements. It is important to ensure that all the equipment required is ready prior to restraining the chicken. Towels can also be used to aid with restraint to prevent chickens injuring themselves or handlers. Chickens should not

be excessively distorted to make measurements of body parts. Growth measurements can also be shown by photographing or drawing a bird against an appropriate background scale. Use enough birds to determine individual difference.

A chicken's bodyweight can be recorded by weighing the chicken regularly. This measurement should be done with low stress handling techniques returning the chicken to its enclosure promptly. Only birds accustomed to being handled should be used. It is important to ensure that all the equipment (e.g. scales) required is ready prior to catching chickens. Cages or boxes can be used to hold chickens when weighing. Rubber matting or towels can be used to avoid the surface being slippery. Scales should be cleaned regularly. Recording regular measurements of weight can give an accurate measure of weight over time.

**Activity** **g. MEASUREMENT OF BODY TEMPERATURE OF CHICKENS (INVASIVE)**

**Category:** Category 3

**Objective:** To instruct students in the invasive measurement of body temperature of chickens

Temperature is measured in the cloaca or vent using a clinical thermometer. Ensure that the chicken is carefully restrained using a towel and use a plastic digital thermometer dipped in lubricant, to prevent injury from a broken glass thermometer. Restrain a bird by the hand and arm method. Slide the thermometer in carefully and wash after each bird. Normal cloacal temperature is 41-42°C. **Ensure students wear gloves and follow appropriate hygiene procedures.**

**Activity:** **h. MEASUREMENT OF RESPIRATION AND HEART RATE OF CHICKENS**

**Category:** Category 2

**Objective:** To instruct students in the measurement of respiration and pulse rate of chickens

Respiration can easily be measured by visually observe a chicken's chest movements as it breathes. Alternatively, chickens can be observed in warmer weather conditions as indications of respiration become more obvious. Observe and record a bird with its beak naturally open and tongue moving, recording the number of tongue movements.

A stethoscope is required to measure a pulse rate in chickens. This is due to their extremely high pulse rate, which makes it difficult to measure otherwise. With a little practice, students should be able to hear a pulse rate using a stethoscope. One handler should restrain the chicken while a second handler measures the pulse. It is best if students practice using a stethoscope on each other prior to performing this procedure.

**Activity:** **i. MEASUREMENT OF MILD DIETARY EFFECTS INCLUDING PALATABILITY PREFERENCES OF CHICKENS**

**Category:** Category 3

**Objective:** To demonstrate to students measuring mild dietary effects in chickens.

A variation in diet can be achieved by using commercially prepared foods, which use a different formula than the usual one provided. Any variation in the diet should be an enhancement to, rather than a deprivation of the diet. The minimum level of protein, energy or fat selected for the trial must be the minimum acceptable for the life stage of the bird type. The trial period should not be longer than is necessary to achieve a clearly observable result. For young birds, 10-14 days is sufficient, after which time the birds should be returned to their normal diet. Where comparative food trials are being undertaken, no less than the minimum protein levels should be fed to birds. The maximum amount of protein permitted is 20% above the minimum levels. For adult birds, use a variety of commercially prepared layer pellets and mash, ensuring a plentiful supply of clean fresh water. Observe two adult birds in separate pens and record the food selection of the birds.

**Activity:** **j. LOADING AND UNLOADING CHICKENS FOR TRANSPORT**

**Category:** Category 3

**Objective:** To instruct students on correct methods of loading and unloading of chickens for transport

Good handling skills and patience are essential when caging, loading, and unloading chickens for transport. Correctly sized cages are necessary to facilitate loading and unloading with minimum distress and risk of bruising and/or other injuries. Chickens must be examined prior to transport to ensure they are fit and healthy for transportation. (**See additional handout – Compliance checklist – Poultry transport and the Australian Animal Welfare Standards and Guidelines – Land Transport of Livestock document listed in the Resources section of this document).**

**Activity:** **k. TRANSPORTING CHICKENS**

**Category:** Category 3

**Objective:** To demonstrate to students the appropriate procedures for transporting chickens

Chickens must be transported using appropriate cages and in vehicles that are covered. Appropriate cages must have enough space to allow birds to lie down, stand up and change position during transport. Food and water must not be withheld from birds for a period longer than 24 hours. When being transported, cages must be handled with care, positioned upright in a vehicle so as not to tilt, securely restrained, and not thrown or dropped. Only cages must be used, not bags and chickens must not be transported in the boot of a car. Chickens are susceptible to weather extremes and should not be transported in the heat of the day. (**See additional handout: AEC Compliance checklist – Poultry transport and the Australian Animal Welfare Standards and Guidelines – Land Transport of Livestock document listed in the Resources section of this document).**

**Activity:** **l. COLLECTION OF A BLOOD SAMPLE FROM CHICKENS (INVASIVE)**

**Category:** Category 5

**Objective:** To demonstrate to students the method of collecting a blood sample from a chicken

Only experienced operators should undertake this activity. Inadequate restraint and sample collection technique can severely compromise the chicken's welfare causing pain and stress. Operators must be familiar with chicken anatomy and hygiene practices for collecting blood samples from chickens. Gloves and other protective clothing should be worn when collecting samples. Equipment should be ready prior to capturing the chickens being sampled. Schools should discuss any invasive sampling techniques with local Animal industry representatives or Veterinarians to ensure they are aware of the latest techniques prior to commencing these activities.

**Resources:**

**Primary Industries and Regions South Australia**

- Poultry movements

www.pir.sa.gov.au/biosecurity/animal_health/poultry/poultry_movement

**Land Transport of Livestock Standards and Guidelines 2012 – Australian Animal Welfare Standards and Guidelines**
www.animalwelfarestandards.net.au/land-transport/

**Chicken breeds**
www.backyardchickencoops.com.au/blogs/learning-centre/ultimate-list-backyard-chicken-breeds

**Chickens – Poultry Hub**
www.poultryhub.org/education/

**Keeping Backyard Chickens – Department of Primary Industries and Regional Development - Western Australian Government**
www.agric.wa.gov.au/livestock-biosecurity/keeping-backyard-chickens

**Western Australian Schools Use of poultry site:**
det.wa.edu.au/curriculumsupport/animalethics/detcms/school-support-programs/animal-ethics/species-specific-information/domestic-fowls.en?cat-id=4220801

**Australian Veterinary Association Poultry-related Policies**

- Beak trimming of commercial poultry
- Commercial egg production systems

www.ava.com.au/policy-advocacy/policies/

**Chickenscope**
chickscope.beckman.uiuc.edu/

**Chicken hatching videos available on YouTube:**

www.youtube.com/watch?v=DHLH91zzsXQ
www.teachertube.com/video/chicken-egg-hatching-97047
www.msichicago.org/online-science/videos/video-detail/activities/the-hatchery/
www.primarygames.com/holidays/easter/videos/chick-hatching-from-egg/

**Chicken life cycle exploration set of eggs kit**
www.teaching.com.au/servlet/au.mta.ns.is.ItemDetailServlet?KEY_ITEM=LER2733&KEY_ALIAS=LER2733
www.learningresources.com/product/teachers/shop+by+subject/science/product+category/life/animals+-+plants/chick+life+cycle+exploration+set.do
www.amazon.com/Learning-Resources-Chick-Cycle-Exploration/dp/B001SCA71G

**Australian eggs Virtual Farm Tour**
www.australianeggs.org.au/farming/tour/

**iPad application called iHatch-Chickens *(©2012 iHatch-Apps)***
**(shows the development of a chick inside an egg & to the point of hatching).**
**apps.apple.com/au/app/ihatch-chickens/id568038907**

**Australian Poultry Cooperative Research Centre Education kit (about the keeping of poultry and details of the lifecycle of a chicken and the needs of chicks and chickens.**
www.poultryhub.org/education/primary-secondary-schools/

**Beaks, Wings and Feet Lesson plan – RSPCA World of Animal Welfare**
www.woaw.org.au/teachers/beak-wings-feet-rspca-lesson/

**Poultry and biosecurity - Farm Biosecurity**
www.farmbiosecurity.com.au/industry/chickens/

**Biosecurity for Backyard Chooks - Australian Eggs**
www.australianeggs.org.au/news/biosecurity-for-backyard-chooks/

**Conscious consumerism – egg production lesson plan – RSPCA World of Animal Welfare**
www.woaw.org.au/teachers/conscious-consumerism-lesson-plan/

**Hatching Good Lessons school lesson plan - United Poultry Concerns**
www.upc-online.org/hatching/alternatives.html

**Living Eggs Program**
www.livingeggs.com.au/hatch-a-chick