

AEC STANDARD OPERATING PROCEDURES

SOP No:	05	
SOP	Mice	
Scientific Name:	<i>Mus musculus</i>	
Category:	2 only	
Approved activities	Activity	Category
	a. The appropriate care of mice in the classroom	2
	b. Breeding of mice in classrooms	2
	c. Capture, restraint and handling of mice	2
Approval Level:	<p>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.</p> <p>Government Schools – Department for Education and Childhood Development Animal Ethics Committee</p> <p>Independent and Catholic Schools – Non-Government Schools Animal Ethics Committee (NGSAEC)</p>	
Authority:		
Authority Approval Date:	1 August 2010	
Last Update:	21 April 2020	
Disclaimer:	<p><i>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</i></p>	
Licensing Requirement:	Not applicable	
Compliance Requirement:	<p>The keeping of this species requires approval from the School Principal. It is recommended that this Standard Operating Procedure be followed as a minimum in the provision of appropriate care and housing for this species.</p>	

General Information:

There are over 300 species of mice in the world. The house mouse of European origin, is the only mouse that should be kept as a pet. Mice are easy to keep, and the smell associated with mice should not be a deterrent as they are quite clean animals.

Mice come in a variety of colours, most commonly grey, (grey hair with a yellow tip), called agouti as well as solid black, brown and white. Mice also vary in ear and tail length and hair type; (e.g. longhaired vs. curly).

Physical Attributes:

- **Size (adult):** At 12 weeks, nose to tail approx. 14cm
- **Weight (adult):** Males 20-40g, females 18-35g
- **Life span:** Average 2 years
- **Sexual maturity:** Mice can breed from approx. 5 weeks but it is recommended to wait until about 12 weeks.
- **Sexing mice:** Sex can be determined by measuring the ano-genital distance (distance between the anus and genitalia). It is **always longer in the male** compared to the female.



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(Picture sourced from Pharmacology (PHL313) presentation, Dr Ansari <https://slideplayer.com/slide/10422572/>)

Behaviour:

Normal: As social animals, mice prefer to live in a group of 2 or more. Single sex groups are advised to prevent unwanted breeding. Normal healthy mice have shiny coats, bright eyes and responsive ears and are alert, active and inquisitive. They are agile and acrobatic in their enclosures, running, jumping, climbing and leaping around the cage.

Socialisation: If only one mouse is kept it will need lots of attention. It is best to have two or more together. Females are fine to put together but in order to keep a group of all males together they will need to have been together from weaning and have plenty of room or they will fight. New mice from an outside source should not be added to an established cage, as these will be attacked. If it is necessary to add mice, thoroughly clean everything and add fresh clean wood shavings etc. and sprinkle mice with flea powder. This will remove the group smell and allow new animals an opportunity to enter the group. Mice cannot be housed with other species.

Housing should be adequate hold to the number of mice you intend to have including additional mice from breeding. Over-crowded cages place undue stress on the mice and may lead to fighting, injury and disease.

Activity levels (hibernation etc.): Mice are nocturnal, so will be most active at night, early morning and late afternoon, resting during the day.

Environment:

Housing/Space: Mice should not be housed alone, with recommendations of minimum cage space allowances for housing a pair between 300 - 500 sq. cms. It is recommended to go for the larger size to allow more enrichment items to be offered and to prevent fighting. In general for pet mice most resources recommend cages approximately 60 x 30 x 25 cms for housing one pair. Cage heights should allow mice to turn freely without twisting their heads and bodies, walk at least a few steps, stand on their hind limbs and stretch up. The cage should be made from glass or another material that mice cannot easily chew through. It should have a part solid and part wire lid for security and ventilation. The wire mesh should be woven or flat mesh with very small squares. Sawdust/wood shavings should be used for the cage base that are absorbent and free from dust and splinters, are non-toxic and non-edible. Shredded paper, paper towel, small cardboard boxes and tissues can be used for sleeping areas, nesting and to play in. Mice will also need a water sipper with metal tubing and a wire basket suspended from the side of the cage, for pellets.

Movement: Mice like to be very active and enjoy exercise. Boxes, ladders, ropes, hollow logs, tubes, ramps and exercise wheels can assist with movement. As mice like to run along solid surfaces rather than open spaces it is important to ensure that there are items and dividers they can run along and through.

Water: Fresh water must be provided daily through sipper bottles or water bowls.

Temperature: Optimum temperatures are between 18 - 25° Celsius. They should have good bedding and shelter to protect them.

Lighting: While a natural source of light is essential, mice should not be placed in direct sun or near windows and glass doors. An artificial light can be used but must be on for no more than 12 hours during the day. Maximum light intensity recommended for albino animals is 110 lux for 16 hours continuously.

Covering: There must be a cover over the cage to protect mice from external harms and to prevent them from escaping. A mesh top or part solid/ part mesh are adequate and help with ventilation. Adequate ventilation helps to keep mice healthy and to reduce odours.

Shelter: The cage must provide areas to shelter, retreats and hiding places. Cardboard boxes, wooden boxes, large pipes are items that can be used. To provide enrichment for play use pine cones, roots, large rocks, cardboard tubes, hollow logs, twigs and toys and straw, newspaper or peat moss for bedding and chewing. Mice are sensitive to loud noise so should be kept in a quiet area. They should be protected from draughts, fumes and direct sunlight

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and kept away from direct cooling and heating appliances. Children should not bang on the cage.

Cleaning: As the output of urine and faeces is high, cages must be cleaned regularly. The cage floor must be covered with absorbent material. This should be cleaned weekly to reduce odours. The smell of mice is mainly caused because males are territorial and mark their territories. For this reason, in small cages, only one male should be kept. If more males are to be kept, then a larger cage must be supplied. Mice are very sensitive to smell so avoid exposure to chemicals, perfumes and deodorisers. They can also smell other predators such as rats and should not be co-located, as they will become stressed.

Feeding:

Diet: High quality mouse cubes, seed and fresh vegetables will provide a satisfactory diet. Provide only enough seed for one day with food preferably kept off the floor to prevent fouling. Mice drink a lot of water and this should be available at all times. DO NOT feed cheese.

Daily requirements: A small handful of fresh pellets each day and a handful of selected green feed – carrot, apple or celery cubed. The amount fed should vary according to life stage of the mice (e.g. lactating females need four times the amount of food and water compared to normal adults)

Supplementary feeding: Not necessary if a balanced diet is provided.

Equipment: Sipper bottles and feeding bowls.

Breeding:

- **Gestation period:** 21 days
- **Number of offspring:** 4-12 per brood, up to 6-8 broods per year.
- **Weaning age:** 21 days

Mating: If not wanting to breed keep single sex groupings (e.g. only females together).

Pregnancy: Mice are able to breed from 6 weeks of age and are pregnant (gestation period) for 3 weeks. Their colour is visible at approximately three days; their eyes open around 10 days and their ears enlarge at approximately 18 days of age.

Handling:

Human: Mice are usually easy to handle if exposed to regular handling from a very young age. Children should only handle mice under staff supervision with petting preferable to holding. They are easy to pick up by the base of their tail or the scruff of their neck. Even very young mice can be moved for cage cleaning, as long as they are replaced as soon as possible and the parents are tame. Once the rear legs lift off the ground the other hand can be placed under the mouse's body for support. Well-handled mice can be lifted directly by scooping. Mice do bite so care must be taken not to provoke them.

Equipment: Make sure they are handled in an enclosed area to avoid escaping.

Transport: Use their cage or small well-ventilated carry cages. Remember they can eat their way out of cardboard boxes and other thin materials very quickly. Do not leave for long periods in hot or cold conditions. Do not transport on days that are over 32°C.

Hygiene:

Thoroughly wash hands with soap and running water for at least 15 seconds after working with or handling mice. Dry hands with clean paper, cloth towel or air dryer. Turn off the tap with the paper towel if possible. Follow first aid procedures should a bite occur.

Signs of illness:

Indicators:

- Stretched out rather than foetal curling to rest.
- Lameness or difficulty moving around enclosure
- Hunched posture
- Discharge from orifices (nose, anus etc.)
- Coughing or sneezing.
- Excessive scratching.
- Lack of balance.

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- Weight loss
- Poor appetite or water intake
- Raised fur,
- Lumps or swellings,
- Wounds and
- Infections.

Avoid handling mice unless necessary to avoid stress.

Treatments:	Schools are encouraged to develop relationships with a Veterinarian and Animal Industry representatives (e.g. pet shop staff) familiar with mice. These contacts can assist with disease diagnoses, treatment options and dietary, husbandry and welfare advice. Veterinarians can also assist with emergencies, particularly when euthanasia is needed. Treatments must be documented in the appropriate records.
Euthanasia:	When an illness or injury is such that recovery is unlikely then the mouse must be euthanised by a Veterinarian. Schools should contact their local Veterinarian to discuss emergency treatment options prior to an event occurring when keeping mice onsite. Any adverse events including death must be reported to the AEC using the ADVERSE EVENTS form . Forms must be returned to the AEC within 7 days of the event occurring.
Disposal/fate planning:	When no longer required, mice must be rehomed. They must NEVER be released into the environment. Bodies must be disposed of correctly in accordance with local council regulations. It is not acceptable to kill mice as a form of disposal if too many have been bred. It is not acceptable to feed mice to reptiles as a form of food. Please remember it is against the Animal Welfare Act 1985 for live mice and rats to be fed to reptiles 
Holiday and weekend care:	Mice can be sent home for weekend and holiday care with students providing consent is received from the school Principal and the parents. Staff should provide carers with animal care and record keeping instructions, emergency contacts and provide appropriate equipment and food. Animals must be checked daily, records kept and any problems reported to the school immediately whether kept on site 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	<u>a. APPROPRIATE CARE FOR CLASSROOM PET MICE</u>
Category	Category 2
Objective:	To instruct students on providing appropriate care for classroom pet mice. Handling should be kept to a minimum where possible.
Activity:	<u>b. BREEDING OF MICE IN CLASSROOMS</u>
Category:	Category 2
Objective:	To instruct students on providing breeding of mice in the classroom Handling should be kept to a minimum where possible.
Activity:	<u>c. CAPTURE, RESTRAINT AND HANDLING OF MICE</u>
Category:	Category 2

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Objective:

To instruct students on appropriate methods of capture, restraint and handling of mice in the classroom

Staff must be competent in capture, restraint and handling methods and mouse behaviour prior to undertaking this activity. Improper handling methods can cause injuries to the mice compromising their welfare.

Resources:

Guidelines for the housing of mice in scientific institutions – Dr Anne Fawcett - 2012

www.animaethics.org.au/___data/assets/pdf_file/0004/249898/Guideline-22-mouse-housing.pdf

Code of Practice for the Housing and Care of Laboratory mice, rats, guinea pigs and rabbits – Dept. of Primary Industries Victoria 2004

www.deakin.edu.au/___data/assets/pdf_file/0003/536628/620-codeofpractice-housing-and-care.pdf

Euthanasia of animals used for scientific purposes – ANZCCART 2001

www.deakin.edu.au/___data/assets/pdf_file/0003/536628/620-codeofpractice-housing-and-care.pdf

How to care for your pet mouse – RSPCA NSW

www.rspcansw.org.au/blog/animal-care-information/how-to-care-for-your-pet-mouse/

Pet care – Mice – Sydney Exotics and Rabbit Vets

www.exoticsvet.com.au/pet-care

Pocket Pets – RSPCA SA

www.rspcasa.org.au/adopt/pocket-pets/

Mice sexing – Pharmacology presentation (PHL313) Dr MN Ansari

<https://slideplayer.com/slide/10422572/>

Mouse handling video – NC3RS University of Liverpool

www.nc3rs.org.uk/how-to-pick-up-a-mouse

Mouse handling webinar – Dr Jane Hurst, University of Liverpool

www.nc3rs.org.uk/mouse-handling-webinar