

SCIENCE

STANDARD SEVEN

TERM I

Volume 2

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சின்னஞ்சிறு குருவி போலே நீ
திரிந்து பறந்துவா பாப்பா
வண்ணப் பறவைகளைக் கண்டு நீ
மனதில் மகிழ்ச்சி கொள்ளு பாப்பா

கொத்தித் திரியும் அந்தக் கோழி – அதைக்
சூட்டி விளையாடு பாப்பா
எத்தித் திருடும் அந்தக் காக்காய் – அதற்கு
இரக்கப்பட வேணுமடி பாப்பா

வண்டி இழுக்கும் நல்ல குதிரை – நெல்லு
வயலில் உழுது வரும் மாடு
அண்டிப் பிழைக்கும் நும்மை ஆடு – இதை
ஆதரிக்க வேணுமடி பாப்பா

வாலைக் குழைத்து வரும் நாய்தான் – அது
மனிதர்க்குத் தோழனடி பாப்பா

—மகாகவி பாரதியார்





Chandra, while preparing for a competition, came across the above Bharathiar's poetry. She was astonished and admired that how Bharathiar loved animals and presented its characters and uses in sweet and short evergreen lines. She ran to her mother to show her the poem.

Amazed by her daughter's interest, Chandra's mother told her that since time immemorial man coexisted with birds and animals. Everyday from dawn to dusk man's life was influenced by animals. He woke up listening to the call of birds. He had to depend on animals for food, clothing, transport, fuel etc... The buzzing of bees was his first music and the dance of the peacock was his first entertainment. Dogs and cats were his first playmates.



ACTIVITY - 1.1

Children, do you have a pet animal?. Shall we write down what we do when our pet is.....

- a) hungry.....
- b) feeling hot or cold
- c) teased by someone
- d) hurt

Fig 1.1 Pet animals

The life on this planet Earth is sustained by plants and animals. With the development of knowledge and technology, his dependence on animals for economic purpose increased. The balance in nature will be upset if the relationship between human and animals deteriorates.

ACTIVITY - 1.2

Children, shall we fill in the blank spaces?

Name of the Animal	Why do we keep them?
1. Dog
2.	gives milk
3.	pulls cart
4. Ox
5. Hen
6. Fish
7.	we love it
8. Honey bee



Fig 1.2 (a) Jersey



Fig 1.2 (b) Kangeyam

1.1. USES OF ANIMALS

Animals and their products are of great use to man. Based on the utility of animals, they are classified into

1. Food yielding animals

Animals are reared for milk, eggs and meat. Breeds of cows are mainly raised for milk eg. Jersey . Certain breeds of goat are reared for milk and meat. Honey bees give us honey. Fishes are a good source of protein.

2. Fibre yielding animals



Fig 1.3 Llama

Animals such as sheep, Llama and goat provide us fur. The fur is processed into wool. Silk moth gives us silk fibre.

3.Draught animals

Animals which are used for ploughing and transporting are called draught animals. Bullock(kangeyam),Ox, horse, elephant, donkey, etc are employed in farm activities and transport.

MORE TO KNOW

Some cows produce around 16 litres of milk a day or 6000 litres a year.

**ACTIVITY - 1.3**

Observe the care taken by milkman on the cow in the shed and the care taken by your family on your pet animal. List down your observations.

Dog	Cow
1.	
2.	
3.	
4.	



Fig 1.4 Honey Comb



Fig 1.5 Milk

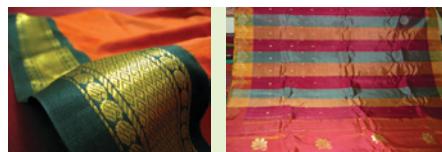


Fig 1.6 Silk

1.2. ANIMAL PRODUCTS

Animals provide us a variety of products like wool, silk, milk, honey, meat, leather, pearl, egg, lac and so on. Let us learn about some.

- Wool:** Wool is obtained from body hairs of animals such as sheep, llama and goat. It is used to make sweaters, shawls, blankets, socks, hand gloves etc.
- Meat:** Animals such as goat, sheep, pig, poultry birds, prawn, crab etc. yield flesh as food.
- Silk:** Silk is obtained from silk worm and it is used for making silk clothes.
- Leather:** The skin of animals such as goat, sheep, and cattle is used for manufacturing leather goods(bags, shoes, purses, suitcases, belts).
- Pearl :** Pearl is a valuable gem obtained from pearl oysters and is used in making ornaments.
- Lac :** Some insects secrete a resin like substance called lac. It is used for making paints, varnish, printing inks and cosmetics.
- Milk:** Animals like cows, buffaloes and goats give milk as food.
- Honey:** Honey is obtained from honey bees. It is consumed along with food and used in the preparation of certain medicines.
- Egg:** Poultry birds such as hen, duck, goose and turkey give us eggs as food.

MORE TO KNOW

In 2004 December, some tribes that live in the forests of Andaman islands noticed the animals behaving in a different manner. They guessed some danger. So they moved to a safer part of the island. Soon after the islands were hit by Tsunami, but the people were saved.

1.3. ANIMAL FIBRES

One day Selvan saw his grandmother wearing a shawl and his mother asked him



Fig 1.7 Sheep

to wear a sweater. He was curious to know why they should wear these clothes? His mother said that woollen clothes trap air and act as bad conductor of heat or cold . Hence they keep us warm during winter.

Wool

Wool is a thick coat of hairy fibres(fleece) obtained from sheep, goat, yak and other animals. It is a protein. Several breeds of sheep are reared in our country that yield different kinds of wool. The skin of sheep has two types of hair.

- a) Coarse beard hair and b) Fine soft under hair.

MORE TO KNOW

Australian scientists have invented a way of removing wool from Sheep without shearing. The new wool harvest technology is called Bioclip.

ACTIVITY - 1.4

Let us collect pictures of animals that produce wool and paste them in the scrap book.

Normally fine hairs provide the fibres for making wool. **Yak wool** is common in Tibet and Ladakh.

Angora wool is obtained from Angora goats which are found in Jammu and Kashmir. The underhair of Kashmiri goat (Pashmina) is woven into fine shawl. It is very soft and expensive.

Processing of wool

There are many steps involved in processing the fur into wool. The process of cutting off the woollen fleece of sheep with a thin layer of skin is called **shearing**.

The wool is used to manufacture sweaters, shawls, blankets, hand gloves etc.

Silk

Silk is also a natural animal fibre. Silk worm secretes the silk fibre. The best known type of silk is obtained from the cocoon of larvae of mulberry silk worm. Silk fabric was first developed in ancient China.

Uses of Silk

Silk is used for making silk clothes, parachutes, insulation coils for telephone and wireless receivers.

MORE TO KNOW

Pure silk is one of the finest natural fibres and is said to be the “**queen of fibres**”



1.4. SERICULTURE

Selvan and Valli attended a marriage function. They notice that some of the women are wearing colourful sarees. Selvan asked his mother, why those sarees are shining?. His mother told him that those sarees are made of silk.

The rearing of silk worms for obtaining silk is called **Sericulture**. It is a very old occupation in India. The silk fibre is obtained from the cocoon of the silk moth. There are varieties of silk moths and the silk they yield is different in texture.

The types of silk are

1. Mulberry silk
2. Tassar silk
3. Eri silk
4. Muga silk

The most common silk is mulberry silk. Mulberry silk is superior in quality because it is soft, lustrous and creamy white in colour. It is secreted by the silk producing glands of silk worm.

1. A female silk moth lays hundreds of eggs at a time.
2. The eggs are kept under hygienic conditions and under suitable temperature.
3. When the eggs hatch into larvae, they are fed on mulberry leaves.
4. After 25 to 30 days of feeding, they spin a protective case around them called cocoons.
5. The cocoons are dipped in hot water and the silk fibres

6. The process of taking out threads from the cocoon is called **Reeling**.

7. The thread is woven into silk cloth.

MORE TO KNOW

It is believed that silk was first discovered in China by the Empress Si Ling Chi

India is the world's second largest producer of Silk.

Kancheepuram, Siruvanthadu, Thirubhuvanam and Arani are famous for silk in Tamil Nadu.

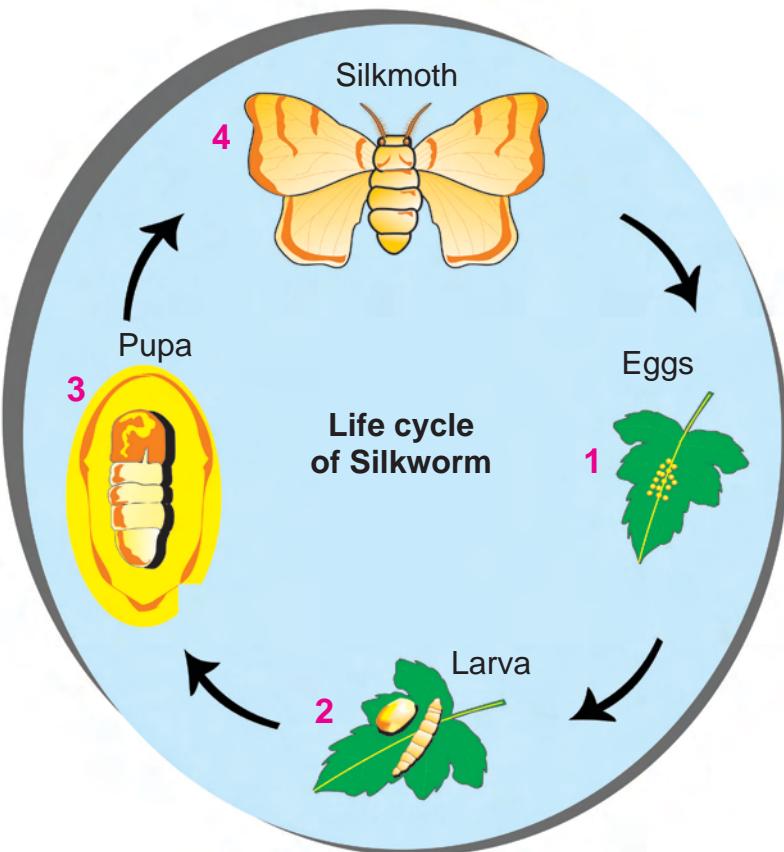


Fig 1.8 Life cycle of Silkworm

ACTIVITY - 1.5

Let us mark the places in the map of Tamil Nadu where silk is produced and woven into fibres and clothes.



Fig 1.9 Queen bee



Fig 1.10 Drone bee



Fig 1.11 Worker bee

1.5. APICULTURE

I am used in cakes.

I am found in sweets.

I am used in medicines.

I am made by bees.

Can you guess who am I?

Yes, I am **HONEY**.

Where do bees live?

Honey bees live in bee hives. A bee hive consists of numerous small compartments called honey combs. Bees live in colonies. There are three kinds of bees in a bee hive. They are

- 1. The queen bee (fertile female bee).
- 2. The drones (fertile male bees)
- 3. The workers (sterile female bees)

There is only one queen bee in a bee hive. The work of the queen bee is to lay eggs. There are a few hundreds of male bees which help in reproduction. The worker bees are thousands in number. They perform various functions.

Honey is used as food. It is used in the preparation of certain medicines in Siddha, Ayurveda and Unani. Bees also produce wax, which is used for

making candles. Some Indian varieties of bees are

1. Rock bee (*Apis dorsata*)
2. Little bee (*Apis florea*)
3. Indian bee (*Apis indica*)

MORE TO KNOW

Composition of Honey.

Sugar - 75%

Water - 17%

Minerals - 8%

Nowadays, bee keeping is practised to produce more honey. The rearing of honey bees to produce honey in large scale is known as **apiculture**. A well known Italian breed called *Apis mellifera* is the best for bee keeping because it has high honey collecting capacity and it does not sting much.

ACTIVITY - 1.6

Shall we check if the honey is pure or not?

1. Let us take a glass of water.
2. Add a drop of honey to it.
3. If the drop of honey reaches the bottom without dissolving, then the honey is pure.
4. If the drop of honey dissolves before reaching the bottom then the honey is impure.



Fig 1.12 Poultry farm

1.6. POULTRY

Selvan and Valli eagerly wait for lunch everyday. They get an egg with their mid-day meal in school. Selvan wants to know from where they get huge amount of eggs.

Valli said that they get the eggs from poultry.

The rearing of hens and other fowls to produce eggs and flesh is called **Poultry farming**. Several kinds of birds like hen, duck, turkey, goose etc.. are reared for the production of eggs and flesh. The place where the fowls are reared is called **Poultry farm**.



Fig 1.13 Broiler Egg - Country Egg

Namakkal district in Tamil nadu is famous for poultry industry.

In our country, hen is the most favourite domestic bird. Poultry keeping has developed into a very big industry. Some varieties of hens are reared for the production of eggs only. Such hens are called **layers**. There are some varieties of hens grown for flesh. They are called **broilers**.

The poultry house should be well lighted and well ventilated. The common poultry feed is grains and lots of fresh water. Hens that hatch eggs are called **Broody hens**. They sit on eggs and keep them warm. This is known as **incubation**. The eggs hatch after 21 days.

Expand TAPCO - Tamil Nadu Poultry Development Corporation.

Silver Revolution

The massive step taken in India to increase egg production by adopting enlightened practices of poultry is called **Silver Revolution**.

ACTIVITY-1.7

1. Take a broiler egg and a country egg. Differentiate these two eggs.
2. Try making penguins out of egg shells and eye drop lids.

ACTIVITY-1.8

We can distinguish a fresh egg from a rotten one by putting them in a bowl of water.

The fresh egg will sink. But the rotten one will float.

1.7. ANIMAL PROTECTION AND MAINTENANCE

Ever since human beings appeared on the earth, they have been living with animals. Plants and animals are dependent on each other. We have to protect them to maintain the balance in nature because our own survival depends on this.

Domestic animals can be cared by

1. Providing animals with good feed and clean drinking water to keep them fit and healthy.
2. Providing shelters that are clean, airy and well lighted .
3. Protecting them from diseases

MORE TO KNOW

Some of the famous wildlife sanctuaries in Tamil Nadu are Vedanthangal, Mudumalai, Mundanthurai, Kalakadu and Kodiakarai.

Care of WildLife

As people use more and more land to cultivate crops, graze cattle, build houses and factories, animals and plants are being forced out of existence. Poaching, pollution and use of excess pesticides, have killed so many plants and animals. Some have been completely wiped out from the earth. If an animal no longer exists, it is said to be extinct. If they are in danger of becoming extinct, they are said to be **endangered**. Wildlife protection and maintenance is called **wildlife conservation**. Some of the conservation measures are :

1. setting up of National Parks and WildLife Sanctuaries.

2. stringent action against poaching.

3. discouraging deforestation.

Wildlife and forest are the wealth and pride of a country. So it is our moral duty to protect the plants and animals. We can protect our animals by

1. Not harming any animal or plant.
2. Growing trees that provide home to birds and insects.
3. Not buying animal products that are banned. eg. Tusk

MORE TO KNOW

Blue Cross is a registered animal welfare society. It helps to find homes for uncared animals, and promote animal protection.



ACTIVITY-1.9

Collect different types of animal eggs.
Display in the classroom.

Hen, duck, lizard, crow, turkey.



Varaiadu - The state animal of Tamil Nadu

**EVALUATION****1. PICK OUT THE CORRECT ANSWER :-**

1. Fibres obtained from an insect _____
(Wool / Silk)
2. _____ is reared in a poultry farm.
(Buffalo / Hen)
3. There is only one _____ bee in a bee hive.
(queen / drone)
4. After incubation, the hen's egg hatch in _____ days.
(21 / 31)
5. A sheep has a coat of wool for _____
(man / itself)

2. The following jumbled words denote the stages in the life cycle of a silkworm. Could you write the correct sequence.

THOM, GEGS, VARAL, APPU

MOTH -> _____ -> _____ -> _____

3. On the way home you notice a goat with a broken leg. You feel sad and want to help it. Write down the things you would do.

- a) _____
- b) _____
- c) _____

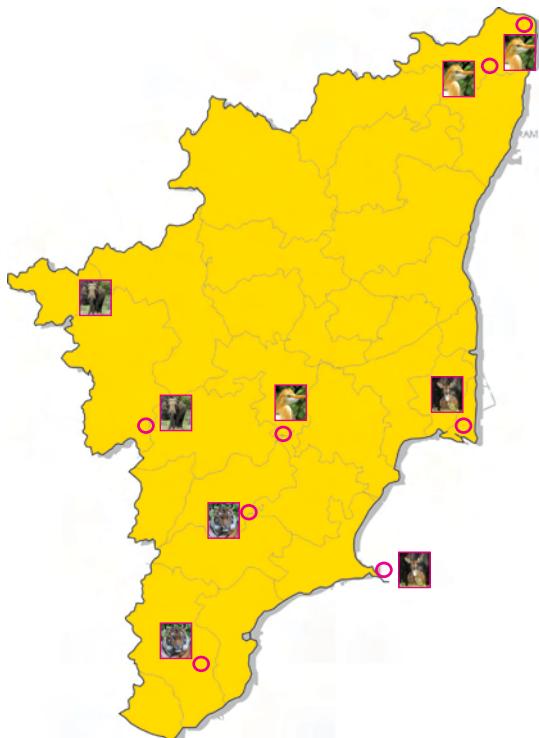
4. Complete the chart given below by observing the following animals in your surrounding.

crow, cow, lizard, goat, housefly, monkey, butterfly, mosquito, dog, cat.

Sl.No.	Animal	Sound it makes	Food it eats	Where it lives	Relationship with man
1.	dog	wow, wow	rice, meat	kennel	friend, guard
2.					
3.					
4.					
5.					

5. In the given map of Tamilnadu some famous wildlife sanctuaries are marked.

- Name the places.
- Find out the animals / birds which are found there.
- Mark your place of residence and find the name of the sanctuary near your home.



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