



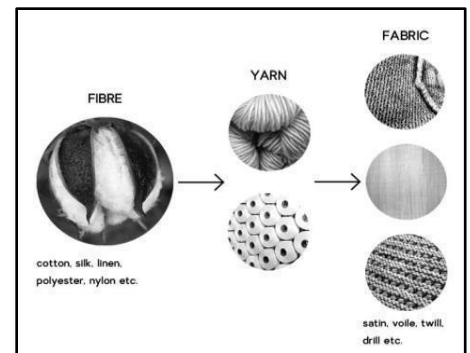
# INDIAN SCHOOL AL WADI AL KABIR



<b>Class: VII</b>	<b>Department: SCIENCE 2022 - 23</b>	<b>Date of submission: 23/08/22</b>
<b>HANDOUTS</b>	<b>Topic: FIBRE TO FABRIC (Chapter:3)</b>	<b>Note: A4 FILE FORMAT</b>

**FIBRES:** Fibres are long, strong and flexible thread like structures that are used to make fabrics.

Fibres cannot be made into fabric directly. They are first converted into long continuous lengths of interlocked fibres called **yarns**. These yarns are used to produce a fabric by suitable methods such as **knitting** and **weaving**.



## FIBRE ✓          YARN ✓          FABRIC

Fibres are broadly classified into two types:

**Synthetic fibres (man-made fibres)**- are obtained from chemical substances.

**Natural fibres** are obtained from either plant or animal sources.

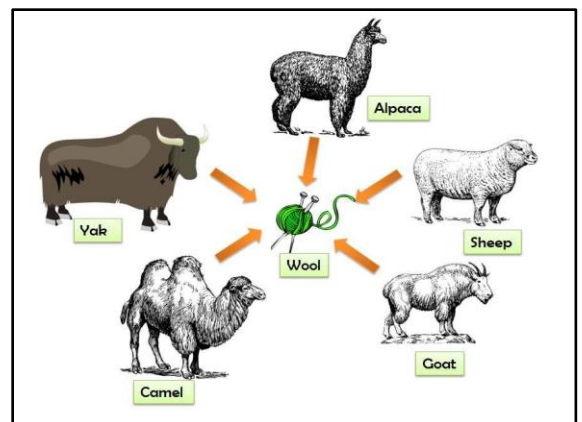
Natural fibres are of two types -

- **Plant fibres** are thread-like filaments and structural material (cellulose) of plants. They are obtained from various parts of the plant. Eg. Cotton, Jute, Flax.
- **Animal fibres are made of proteins.** Eg. wool and silk

**WOOL:** Wool is a fibre obtained from the fleece or hair of some animals like sheep, goat and yak. These wool-yielding animals bear hair on their body. Hair traps a lot of air. Since air is a poor conductor of heat, it does not allow body heat to escape to the surroundings and thus keeps them warm.

The hairy skin of the sheep has two types of fibres that form its fleece:

- The coarse beard hair
- The fine soft under-hair close to the skin. This provides the fibres for making wool.



Some breeds of sheep possess only fine under-hair. Their parents are specially chosen to give birth to sheep which have only soft under hair. The process of selecting parents for obtaining special characters in their offspring, such as soft under-hair in sheep, is termed '**selective breeding**'.

**Animals yielding wool:** Though wool comes mainly from sheep, some other animals also give us wool. They are yak, Angora goat, Kashmiri goat and camel.

**Rearing and breeding of sheep-** Sheeps are herbivores which feed generally on grass and leaves. Rearers also feed them corn, jowar, mixture of pulses, and oil cakes. Oil cakes are materials left after taking out oil from oil seeds. In winter, sheeps are kept indoors and fed on leaves, grain and dry fodder. Once the reared sheeps have developed a thick growth of hair, the hair is shaved off for getting wool.

**Processing fibres into wool-** The steps involved in wool production are:

**Shearing:** The process of removal of fleece along with a thin layer of skin from the body of an animal is called shearing. It is usually done during hot season, as sheeps do not survive without their protective coat of hair during winter. Shearing does not hurt the sheep as the uppermost layer of skin is dead and its hair grows again.

**Scouring:** The sheared skin with hair is thoroughly

washed in tanks to remove grease and dust. This is called scouring. It is done by machines nowadays.

**Sorting:** In sorting, the hairy skin is sent to a factory where hair of different textures are separated or sorted.

-The small fluffy fibres, called burrs, are picked up from the hair. These fibres are scoured again and dried. Now, the wool is ready to be drawn into fibres.

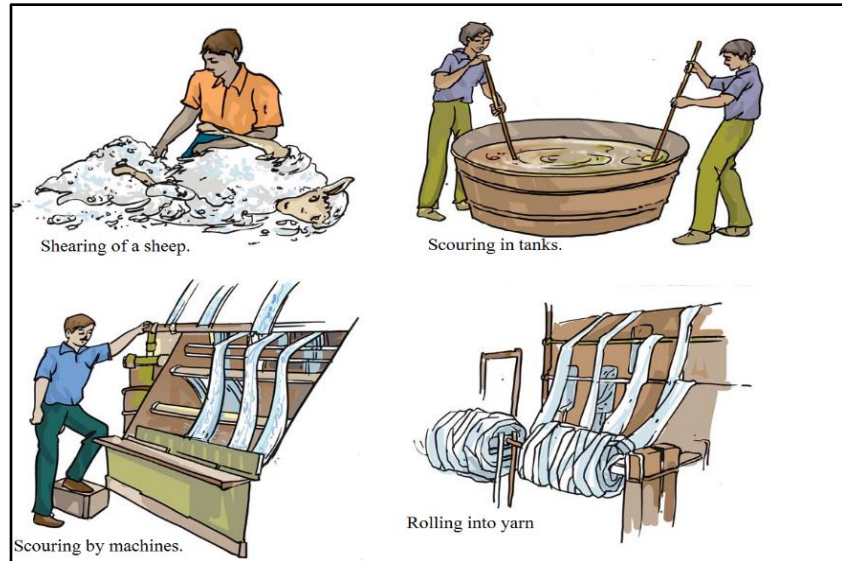
-Then, the fibres are dyed into different colours.

-The fibres are straightened, combed and rolled into yarn. The longer fibres are made into wool for sweaters and the shorter fibres are spun and woven into woollen cloth.

**SILK-** is an animal fibre which we get from the cocoons of silkworms. A large number of these cocoons are unwound carefully to make long threads. These threads are spun together to make them thicker and then woven to make silk. The production of raw silk by raising silkworms is known as **sericulture**.

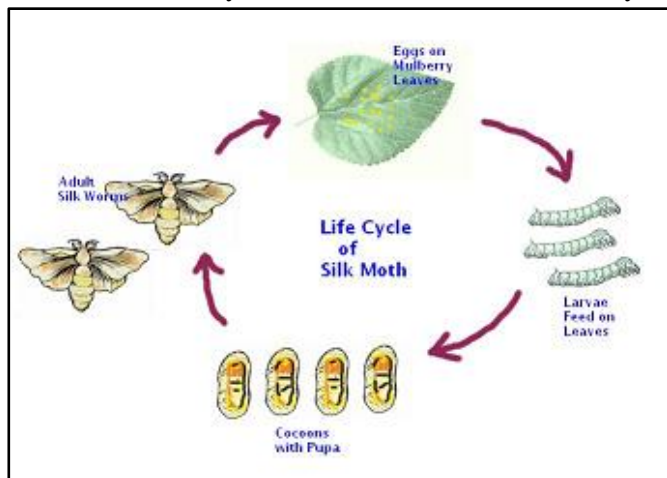
**Life History of a Silk Moth-**

- The female silk moth lays eggs, from which hatch larvae which are called **caterpillars or silkworms**.



- They grow in size. When the caterpillar is ready to enter the next stage of its life history called **pupa**, it first weaves the net to hold itself. Then, it swings its head from side to side in the form of figure eight (8).
- During these movements of head, the caterpillar secretes fibre made of a protein which hardens on exposure to air and becomes silk fibre.
- The caterpillar completely covers itself by silk fibres and turns into pupa. This covering is known as **cocoon**.

There are a variety of silk moths and hence the silk yarn they yield is different in texture. Thus, *tassar silk*, *mooga silk*, *kosa silk*, etc. are obtained from cocoons spun by different types of moths. The most common silk moth is the **mulberry silk moth**. The silk fibre from the cocoon of this moth is soft, lustrous, elastic and can be dyed in beautiful colours. Silk is the strongest natural fibre and it absorbs moisture easily.



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**From Cocoon to Silk-** For obtaining silk, moths are reared and their cocoons are collected to get silk threads.

**Rearing silkworms:**

- A female silk moth lays hundreds of eggs at a time which are stored carefully on strips of cloth or paper and sold to silkworm farmers.
- The eggs are warmed to a suitable temperature for the larvae to hatch from eggs which is done when mulberry trees bear a fresh crop of leaves. The larvae are kept in clean bamboo trays along with freshly chopped mulberry leaves.
- After 25 to 30 days, the caterpillars stop eating and move to a tiny chamber of bamboo in the tray to spin cocoons. Small racks or twigs may be provided in the trays to which cocoons get attached. Inside the cocoons, silk moth is developed.

**Processing silk:**

A pile of cocoons is kept under the sun or boiled or exposed to steam and the silk fibres are separated out. The process of taking out threads from the cocoon for use as silk is called **reeling the silk**. Reeling is done in special machines, which unwind the threads or fibres of silk from the cocoon and the silk fibres are then spun into silk threads, which are woven into silk cloth by weavers.

<https://www.youtube.com/watch?v=x5ncOl4wKGI>

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