

22/4/20

SUB - SCIENCE
CLASS - VIII

CHAPTER - 3 (Synthetic fibres & plastics)

Task A - Read the chapters

Task B - Write down Q/A in #1C.

Q1. What are fibres?

Ans. Try yourself.

Q2. Give difference b/w natural and synthetic fibres with eg.

Ans. Try yourself.

Q3. What are petrochemicals? Give eg.

Ans. The chemicals which are obtained from petroleum, are called petrochemicals eg. Synthetic fibres and plastic.

Q4. Write down qualities & uses of rayon fibre.

Ans. Try yourself.

Q5. Write down qualities & uses of nylon fibre.

Ans. Try yourself.

Note: If students are unable to find these Q/A, then this H.W. would be revised on Friday.

Polymers occur in nature also. Cotton, for example, is a polymer called **cellulose**. Cellulose is made up of a large number of glucose units.

3.2 Types of Synthetic Fibres

Rayon

You have read in Class VII that silk fibre obtained from silkworm was discovered in China and was kept as a closely guarded secret for a long time. Fabric obtained from silk fibre was very costly. But its beautiful texture fascinated everybody. Attempts were made to make silk artificially. Towards the end of the nineteenth century, scientists were successful in obtaining a fibre having properties similar to that of silk. Such a fibre was obtained by chemical treatment of wood pulp. This fibre was called **rayon** or **artificial silk**. Although rayon is obtained from a natural source, wood pulp, yet it is a man-made fibre. It is cheaper than silk and can be woven like silk fibres. It can also be dyed in a wide variety of colours. Rayon is mixed with cotton to make bed sheets or mixed with wool to make carpets. (Fig. 3.2.)

Nylon

Nylon is another man-made fibre. In 1931, it was made without using any natural raw material (from plant or animal). It was prepared from coal, water and air. It was the first fully synthetic fibre.

Nylon fibre was strong, elastic and light. It was lustrous and easy to wash. So, it became very popular for making clothes.

We use many articles made from nylon, such as socks, ropes, tents, toothbrushes, car seat belts, sleeping bags, curtains, etc. (Fig. 3.3). Nylon is



Fig. 3.3: Various articles made from nylon



Fig. 3.2: Articles made of rayon

Is nylon fibre really so strong that we can make nylon parachutes and ropes for rock climbing?



The clothes which we wear are made of fabrics. Fabrics are made from fibres obtained from natural or artificial sources. Can you name some natural fibres? Fibres are also used for making a large variety of household articles. Make a list of some common articles made from fibres. Try to separate them into those made from natural fibres and those made from artificial fibres. Make entries in Table 3.1.

Table 3.1 : Natural and Artificial Fibres

S. No.	Name of Article	Type of Fibre (Natural/artificial)

Why did you label some fibres as artificial?

You have read in your previous classes that natural fibres like cotton, wool, silk, etc., are obtained from plants or animals. The synthetic fibres, on the other hand, are made by human beings. That is why these are called **synthetic** or **man-made** fibres.

3.1 What are Synthetic Fibres?

Try to recall the uniform pattern found in a necklace of beads joined with the help of a thread [Fig. 3.1(a)]. Or, try to join a number of paper clips together to make a long chain, as in Fig. 3.1(b). Is there any similarity between the two?

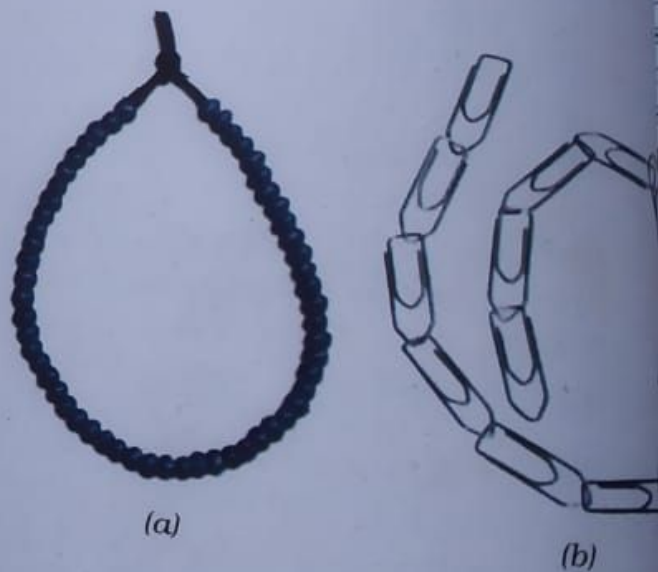


Fig. 3.1 : (a) Beads and (b) Paper clips joined to form long chains

A synthetic fibre is also a chain of small units joined together. Each small unit is actually a chemical substance. Many such small units combine to form a large single unit called a **polymer**. The word 'polymer' comes from two Greek words; *poly* meaning *many* and *mer* meaning *part/unit*. So, a polymer is made of many repeating units.