

PROJECT

COLLECT DATA ABOUT THE ROLE SYNTHETIC FIBERS IN OUR DAILY LIFE

Title of the Project : Role of synthetic fibers in our daily life.

Purpose of the Project: To know about the role of synthetic fibers in our daily life.

Hypothesis : Clothes can be made from natural fibres such as cotton, silk and wool.

We wear a wide variety fabrics in our daily life. Some fibres are not obtained from plant or animal source they are made by the raw materials obtained from petrolium. These fibers are called “Synthetic fibers”. They are very useful in our daily life.

Materials: Physical Science book, Internet, tooth brush, nylon string, stockings, woollen tredads, some pictures in magazines and papers etc.,

Proccedure: we collect some material in our houses. We collect the data about the material which we collect in internet. We collect data from various science books. we collect some pictures in internet and some magazines. We prepare a project report with the help of the material. We tabulated the items which we collect and separate them which they belong to the synthetic fiber.

Intruduction: We wear many types of cloths in our daily life. Some of them are natural fibers. They are cotton, wool and silk. These natural fibers are not sufficient to fulfil the needs of the polulation. So the need of synthetic fibers is essential. These fibers prepared by some chemicals. We use Nylon, Polyester, Acrylic and rayon fibers in our daily life. Synthetic fibres absorb less water and dry at a faster rate. Some are even water proof. Most of them possess several unique characteristics. They are durable, less expensive, readily available, affordable and are easy for maintenance. So they are essential for us.



Natural fibers – Cotton, Silk and wool Prepared by
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Nylon



Rayon



Acrylic



Polyester

Synthetic fibers:

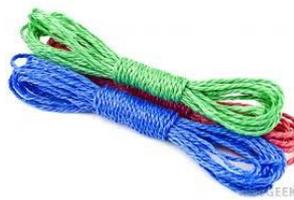
Synthetic fibres are made of polymers. Unlike natural fibers, synthetic fibres are made from petroleum based chemicals or petro chemicals. Petrochemicals are subjected to various chemical processes to obtain synthetic fibres. Due to this, they are called Synthetic fibres or artificial. We can easily identify the fibers whether it is natural or synthetic by fibre burning test. Unravel several warp and weft yarns. Using tweezers hold the yarn to the edge of a flame. Observe, the changes. If it smells like burning hair, the yarn is wool or silk. If it smells like burning paper, the yarn may be cotton, or rayon. If the yarn melts in the flame, it is a synthetic fibre such as nylon and acrylic.

Nylon:

Nylon is a synthetic fibre. It is prepared from coal, water and air. It was the first fully processed synthetic fibre. Nylon is a polymer made of chemical units called polyamides. Polyamides are made with monomers hexamethylene diamine and adipic acid. Solid chips of these polyamides are melted and forced through a heated spinneret which has very, very tiny holes. The fibre solidifies as it cools and can be spun or woven. Nylon fibre is strong, elastic and light weight. Cloth made of Nylon are lustrous and easy to wash. So it has become very popular. Nylon does not absorb water - this fact explains many of its uses.



TOOTH BURSH



NYLON STRINGS



STOCKINGS



SEAT BELTS



PARACHUTES



TENTS

Rayon:

Rayon is known as artificial silk. The source material for rayon is wood pulp. It is the only synthetic fibre obtained from plant's cellulose and so it is called cellulose fibre. The cellulose that was collected from wood or bamboo pulp, is treated with several chemicals. First sodium hydroxide is added and then carbon disulphide to the cellulose. The cellulose dissolves in chemicals added to it and gives a syrup called viscose. Viscose is forced through a Spinneret into a solution of dilute sulfuric acid. This gives us silk like threads. The threads are cleaned with soap and dried. This new fibre is called rayon which is an artificial.



CARPETS WITH WOOL AND RAYON



DIAPERS



LINTS

Acrylic:

It looks like natural wool. It can be considered as artificial wool. It is generally called 'fake fur'. It is made from the combination of coal, air, water, oil and limestone. It is spun by either dry spinning or wet spinning. In dry spinning the dissolved polymers are extruded into warm air. The fibres solidify by evaporation. In wet spinning the polymers are dissolved and extruded into a bath and then dried. The wool obtained from natural sources is quite expensive, whereas clothes made from acrylic are relatively cheap.



WOOLLEN TREADS FOR KNITTING



SWEATERS



CARPETS

Polyesters:

Polyester is the most commonly used synthetic fibre. Polyester fibres revolutionized the fabric industry and changed the costume culture. Fabric made from polyester fibre doesn't get wrinkled easily. It remains crisp and are easily washable. So it is quite suitable for making dress material. Terylene is a popular polyester.

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Polyester is made by reacting dicarboxylic acid with dihydric alcohol. Polyester can be melted and spun. This property allows the fibre to convert into different shapes, sizes. PET is a very familiar form of polyester. It is used for making bottles, utensils, films, wires and many other useful things.



TERRICOTT SHIRTS



POLYESTER CLOTHS



PET BOTTLES

Recognise the type of Synthetic fiber of the material which we used in daily life:

We collect some material in our homes and recognise them as various types of synthetic fibers and tabulated the data in the given tale.

Sl.No	Collected material	Synthetic fiber
1	Tooth Brush	Nylon
2	Nylon strings	Nylon
3	Stockings of women	Nylon
4	Diapers	Rayon
5	Bandage cloth	Rayon
6	Treads for knitting	Rayon
7	Sweaters	Acralyc
8	Cloth of umbrella	Acralyc
9	P.E.T bottles	Polyester
10	Come carpets	Polyester

Interpretation of the student: we understand the various types of synthetic fibers which we used in our daily life. We collect the material and classified the material as various synthetic fibers.

Precautions:

- we should not wear nylon clothes while cooking, welding, working near a fire or using heavy machineries.
- the synthetic fabric catch fire, it can be disastrous. The fabric melts and sticks to the body of the person who wears it. So we shouldn't wear the synthetic clothes while working in the kitchen or in a laboratory.
- Washing and ironing also different for synthetic clothes.

Conclusion: At the end of the project we conclude that synthetic fibers are very essential in our daily life. There are many types of synthetic fibers used in our daily life situations. We know the other uses of synthetic fibers from internet.

References: Internet articles, Physical science text book, some science magazines.

PROJECT REPORT

Title of the Project : Life Role of synthetic fibers in our daily life.
Class : 8 th
Subject : Physics
School : Z,P.High School, Lolugu, Ponduru Mandal, Srikakulam district
Time frame : 5 days

Material/Sources used tools: Internet, News paper clippings, Science books, etc.,

Details of procedure followed:

we collect some material in our houses. We collect the data about the material which we collect in internet. We collect data from various science books. we collect some pictures in internet and some magazines. We prepare a project report with the help of the material. We tabulated the items which we collect and separate them which they belong to the synthetic fiber.

Finding Observations: we understand the various types of synthetic fibers which we used in our daily life. We collect the material and classified the material as various synthetic fibers. need of synthetic fibers is essential. These fibers prepared by some chemicals. We use Nylon, Polyester, Acrylic and rayon fibers in our daily life. Synthetic fibres absorb less water and dry at a faster rate. Some are even water proof. Most of them possess several unique characteristics. They are durable, less expensive, readily available, affordable and are easy for maintenance. So they are essential for us.

Experiences faced: when we collect information about synthetic fibers in our daily life from internet. we know the process to search the results from internet. By the experiments done by us to identifying the various types of fibers we able to separate the types of fibers. We understand the role of synthetic fibers in our daily life.

Project outcome :: At the end of the project we conclude that synthetic fibers are very essential in our daily life. There are many types of synthetic fibers used in our daily life situations. We know the other uses of synthetic fibers from internet.

Name of the group members and work allotment:

Sl.No	Name of the team member	Work allotment
1		
2		
3		
4		
5		
6		

Date of Submission :

Signatures

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