

PRELIMINARY ACTIVITY #2A

TEACHING NOTE

Textile Fibres

Types of Textiles

A textile is a flexible material comprised of a network of natural or artificial fibres often referred to as thread or yarn. Yarn is produced by spinning raw wool fibres, linen, cotton, or other material on a spinning wheel to produce long strands known as yarn. Textiles are formed by weaving, knitting, crocheting, knotting, or pressing fibres together.

Sources and types

Textiles can be made from many materials. These materials come from four main sources:

1. Animal textiles are commonly made from hair or fur.

Wool refers to the hair of the domestic goat or sheep, which is distinguished from other types of animal hair in that the individual strands are coated with scales and tightly crimped, and the wool as a whole is coated with an oil known as lanolin, which is waterproof and dirt proof. Woollen refers to a bulkier yarn produced from carded, non-parallel fibre, while worsted refers to a finer yarn which is spun from longer fibres which have been combed to be parallel. Wool is commonly used for

Warm clothing. Cashmere, the hair of the Indian Cashmere goat, and mohair, the hair of the North African Angora goat, are types of wool known for their softness.

Other animal textiles which are made from hair or fur are alpaca wool, vicuña wool, llama wool, and camel hair, generally used in the production of coats, jackets, ponchos, blankets, and other warm coverings. Angora refers to the long, thick, soft hair of the Angora rabbit.

Silk is an animal textile made from the fibres of the cocoon of the Chinese silkworm. This is spun into a smooth, shiny fabric prized for its sleek texture.

2. Plant textiles

Grass, rush, hemp, and sisal are all used in making rope. In the first two, the entire plant is used for this purpose, while in the last two; only fibres from the plant are utilized. Coir (coconut fibres) is used in making twine, and also in floor mats, doormats, brushes, mattresses, floor tiles, and sacking.

Straw and bamboo are both used to make hats. Straw, a dried form of grass, is also used for stuffing, as is kapok.

Fibres from pulpwood trees, cotton, rice, hemp, and nettle are used in making paper.

Cotton, flax, jute, hemp and modal are all used in clothing. Piña (pineapple fibres) and ramie are also fibres used in clothing, generally with a blend of other fabrics such as cotton.

Acetate is used to increase the shininess of certain fabrics such as silks, velvets, and taffetas.

Seaweed is used in the production of textiles. A water-soluble fibre known as alginate is produced and is used as a holding fibre; when the cloth is finished, the alginate is dissolved, leaving an open area

3. Synthetic textiles

- All synthetic textiles are used primarily in the production of clothing.
- Polyester fibre is used in all types of clothing, either alone or blended with fibres such as cotton.
- Acrylic is a fibre used to imitate wools, including cashmere, and is often used in replacement of them.
- Nylon is a fibre used to imitate silk; it is used in the production of pantyhose. Thicker nylon fibres are used in rope and outdoor clothing.
- Spandex (trade name Lycra) is a polyurethane fibre that stretches easily and can be made tight-fitting without impeding movement. It is used to make active wear, bras, and swimsuits.
- Olefin fibre is a fibre used in active wear, linings, and warm clothing. Olefins are hydrophobic, allowing them to dry quickly. A sintered felt of olefin fibres is sold under the trade name Tyvek.
- Ingeo is a polylactide fibre blended with other fibres such as cotton and used in clothing. It is more hydrophilic than most other synthetics, allowing it to wick away perspiration.
- Lurex is a metallic fibre used in clothing embellishment.

In the past, all textiles were made from natural fibres, including plant, animal, and mineral sources. In the 20th century, these were supplemented by artificial fibres made from petroleum.

Textiles are made in various strengths and degrees of durability, from the finest gossamer to the sturdiest canvas. The relative thickness of fibres in cloth is measured in deniers. Microfibre refers to fibres made of strands thinner than one denier.

4. Mineral

- Asbestos and basalt fibre are used for vinyl tiles, sheeting, and adhesives, "transite" panels and siding, acoustical ceilings, stage curtains, and fire blankets.
- Glass Fibre is used in the production of spacesuits, ironing board and mattress covers, ropes and cables, reinforcement fibre for composite materials, insect netting, flame-retardant and protective fabric, soundproof, fireproof, and insulating fibres.
- Metal fibre, metal foil, and metal wire have a variety of uses, including the production of cloth-of-gold and jewelry. Hardware cloth is a coarse weave of steel wire, used in construction.



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Production methods

Weaving is a textile production method which involves interlacing a set of vertical threads (called the warp) with a set of horizontal threads (called the weft). This is done on a machine known as a loom, of which there are a number of types. Some weaving is still done by hand, but the vast majority is mechanised.

Knitting and crocheting involve interlacing loops of yarn, which are formed either on a knitting needle or on a crochet hook, together in a line. The two processes are different in that knitting has several active loops at one time, on the knitting needle waiting to interlock with another loop, while crocheting never has more than one active loop on the needle.

Braiding or plaiting involves twisting threads together into cloth. Knotting involves tying threads together and is used in making macrame.

Lace is made by interlocking threads together independently, using a backing and any of the methods described above, to create a fine fabric with open holes in the work. Lace can be made by either hand or machine.

Carpets, rugs, velvet, velour, and velveteen, are made by interlacing a secondary yarn through woven cloth, creating a tufted layer known as a nap or pile.

Felting involves pressing a mat of fibres together, and working them together until they become tangled. A liquid, such as soapy water, is usually added to lubricate the fibres, and to open up the microscopic scales on strands of wool.

Treatments

Textiles are often dyed, with fabrics available in almost every colour. Coloured designs in textiles can be created by weaving together fibres of different colours, adding coloured stitches to finished fabric (embroidery), creating patterns by resist dyeing methods, tying off areas of cloth and dyeing the rest (tie-dye), or drawing wax designs on cloth and dyeing in between them (batik), or using various printing processes on finished fabric. Woodblock printing, still used in India and elsewhere today, is the oldest of these dating back to at least 220CE in China.

Textiles are also sometimes bleached. In this process, the original colour of the textile is removed by chemicals or exposure to sunlight, turning the textile pale or white.

Textiles are sometimes finished by starching, which makes the fabric stiff and less prone to wrinkles, or by waterproofing, which makes the fabric slick and impervious to water or other liquids. Since the 1990s, finishing agents have been used to strengthen fabrics and make them wrinkle free

http://en.wikipedia.org/wiki/Textile#Sources_and_types