**Leather, footwear and fur**

**Leather**

* A material from the skin (hide) of animals. It is usually processed from animals which were bred for meat production
* The most common domestic animal sources:
  + Cow
  + Pig
  + Sheep
  + Goats
* The most common wild animal source:
  + Kangaroos
  + Stingrays
  + Crocodiles
  + Snakes
* Properties of leather:
  + Flame resistant
  + Long lasting
  + Extremely durable and flexible
  + Some types are water resistant
  + Natural insulator
* Skin (leather) has 3 layers
  + Epidermis, dermis, hypodermis
  + For leather manufacturing – the top layer epidermis is removed
* Types of leather
  + Only three kinds of leather are generally considered good quality
  + Full grain leather
    - The best quality, no imperfections
    - Luxurious accessories are made of it
  + Top grain leather
    - Second highest quality
    - Has a velvety surface
  + Split leather
  + Semi-aniline leather (leather jackets)
  + Pigmented leather (car upholstery)
  + Aniline leather – luxurious accessories, bags, wallets
  + Nubuck leather – jacket, bags, shoes
  + Suede – gloves, jackets, shoes
  + Kidskin – gloves
* Leather processing
  + Preservation (Salts are used for curing the leather)
  + Rewetting (Water makes the skin soft)
  + Dehairing (Hair is removed using lime and other chemicals)
  + Tanning (Vegetable and chrome tanning)
  + Drying for several days
  + Roll pressing (Mechanical process to shape and smooth the leather)
  + Finishing (Chemical treatments to colour, soften and apply a surface finish to the leather)
* Tanning
  + Chemical process that converts animal hides and skins into leather (removing hair, proteins and fats, impregnation and finishing phase)
  + Tanning materials:
    - Vegetable (extracts from the bark and wood of trees) – chrome-free leather
    - Mineral (chrome salt) – chrome tanned
    - Combination of vegetable and chrome – latigo leather
* Leather products
  + Sports articles – balls for football, rugby
  + Watch straps
  + Belts
  + Military equipment – holsters for fire arms
  + Stationary articles – writing pads, book covers, camera cases, spectacles cases, jewel cases, mobile phone holsters
  + Travel goods – suitcases, travel bags, sport bags
  + Pocket or small leather goods – wallets, purses, key pouches, pen cases
  + Handbags

**Footwear**

* Refers to garments worn on feet
* Boot and shoe factories usually locate close to leather-producing areas
* 3 main parts of shoe:
  + Upper – top of the shoe – leather, rubber, synthetic material
  + Lining – inside part – wool, polyamide fabric or sheepskin
  + Sole – rubber or plastic
  + Sometimes laces – horsehair or synthetic fibres
* Shoe size- US: 8.5, UK: 7.5, EU: 42, 26,0 cm
* Classification of footwear:
  + Men’s shoes
  + Women's shoes
  + Unisex shoes
  + Children shoes
  + Sports footwear
  + Working footwear
  + Special footwear (diabetes, orthopedic)
* Leather haberdashery
* Gloves
* Bracelets
* Key chains
* Phone cases
* Pen cases
* Handbags
* Care for leather
  + Keep leather away from direct sunlight
  + Always keep leather away from indoor heating appliances
  + Use soft cotton cloth, avoid using chemicals
* Synthetic/vegan leather
  + Polyurethane PU leather
    - Is blend of artificial chemicals and it resembles natural leather
  + Polyvinylchloride PVC leather
    - It does not contain natural leather at all
* Evaluation of leather
  + Different countries have different norms, standards
  + Evaluation between real and fake leather
    - Subjective
      * Senses
        + Eyesight
        + Touch
        + Smell
    - Objective
      * Laboratory
        + Moisture test – real leather absorbs moisture
        + Fire test – it smells of burnt hair

**Fur**

* Fur clothing is made of furry animal hides
* Pelts are obtained from fur farmers of hunters
* People use fur to make hats, jackets, coats, rugs or carpets
* Characteristics of fur:
  + Durable, long lasting
  + Soft, fragile
  + Excellent insulating properties
* Types of fur
  + Beaver – very durable – hats
  + Fox – needs regular cleaning – coats
  + Mink – the majority of pelts, very durable
  + Chinchilla – the softest and most luxurious fur
  + Muskrat – used for making fur hats
  + Rabbit – affordable, average durability
  + Stroat – used for royal fur coats
  + Seal – very warm and nearly waterproof, used for coats
  + Wild animals – coyotes, wolves, bobcats, lynxes
* Fur processing
  + Means obtaining fur from animals
  + Making of furs into garments is called furriery
  + Much of the process is done by hand
  + It contains of 2 steps:
    - 1. Preservation
      * Air drying, salt and brine curing
    - 2. Fur dressing
      * Includes washing, tanning, drying, cleaning, finishing)
* Fur products
  + Coats, Parkas, Vests
  + Ski mittens, Gloves
  + Stoles, Scarves
  + Purses, Wallets
  + Boots, Slippers
  + Bags, Hats
  + Accessories
  + Rugs
* Evaluation of fur
  + Technical norms provide us with requirements on quality of fur used for clothing
  + When evaluating we have to consider
    - Overall appearance
    - Quality of pelts
    - Length and density of hairs
    - Flexibility, colouring etc.
  + Real fur
    - Pointed ends
    - Animal skin base
  + Faux fur
    - Blunt ends
    - Woven fabric base
* Environmental impact
  + Various chemicals are used in leather and fur industries
  + Huge carbon footprint of cattle rearing
  + Synthetic chemicals pollute water, soil
  + Odours and gas emissions pollute air
  + Possible solutions
    - Use of environmental friendly chemicals
    - Recycling and reuse of waste water
    - Conversion of solid waste into useful products