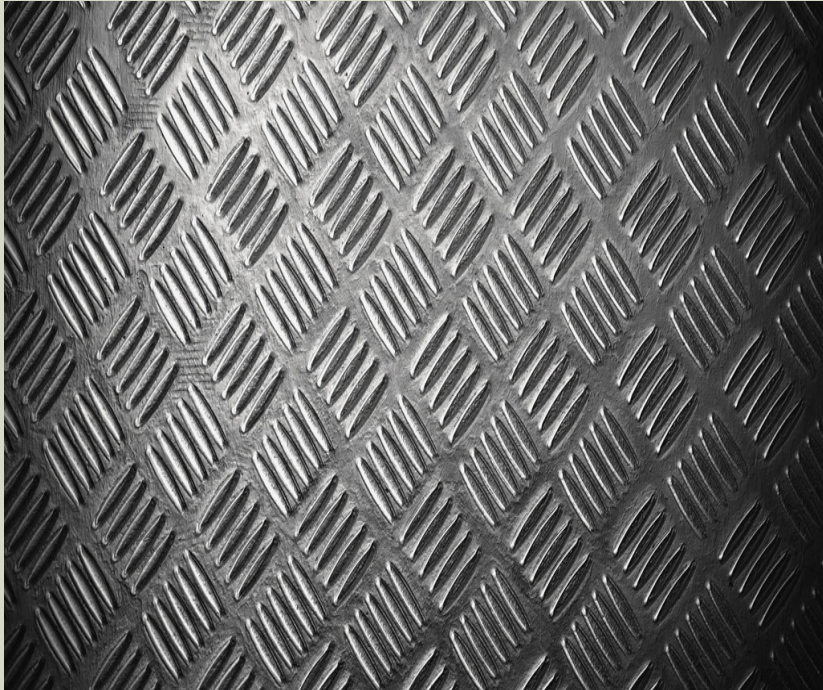


# SURFACES

YANTING YAO

# METALLIC SHEET (ELEVATOR)



**-CHARACTER?**

Thin, flat, thickness

**-THE USED OF THEM?**

Sheet metal is used for car bodies, airplane wings, medical tables, roofs for buildings (architecture) and many other applications.

**-WHERE DID THE MATERIAL COME FROM?**

Iron, Aluminum, Alloy, etc.

**-HOW LONG IT LAST?**

Quite long,

**-WHAT ELSE IS SPECIAL ABOUT THIS MATERIAL?**

High magnetic permeability.

**-CAN IT WORK WITH OTHER MATERIALS?**

They can work with plastic and fiberglass materials

# GLASS



## -CHARACTER?

Transparency.

## -HOW IT WAS PRODUCED?

**Glass** is an amorphous(non-crystalline) solid material, historically the oldest, types of glass are based on the chemical compound silica(silicon dioxide), the primary constituent of sand.

## -SPECIALTY

Glass is both reflective and refractive of light.

## -THE USED OF GLASS?

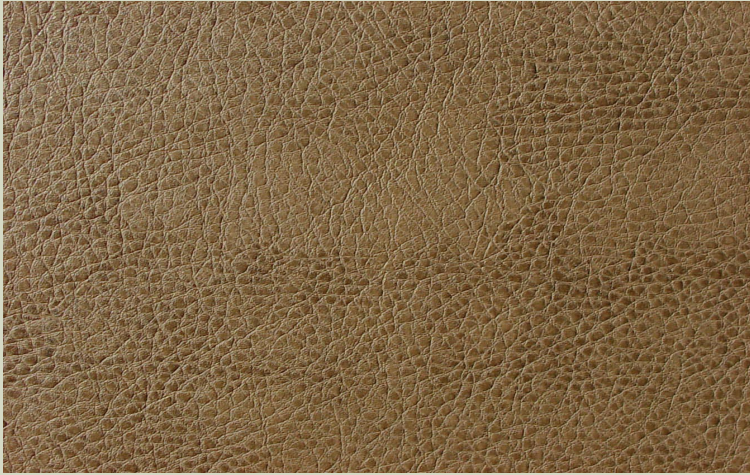
Things like window panes, tableware, and optoelectronics.

## -DISADVANTAGE?

Fragile.



# LEATHER



## **-CHARACTER?**

**Leather is a durable and flexible material.**

## **-WHERE DOES IT FROM?**

**It is usually created by the tanning of animal rawhide and skin, often cattle hide.**

## **-HOW WAS IT PRODUCED?**

**It can be produced through manufacturing processes ranging from cottage industry to heavy industry.**

## **-THE USE OF LEATHER?**

**Used for various purposes including clothing (e.g. shoes, hats, jackets, skirts, trousers and belts), bookbinding, leather wallpaper, and as a furniture covering.**

## **-PRODUCTION PROCESS?**

**The manufacturing process is divided into three fundamental sub-processes: preparatory stages, tanning, and crusting.**

# FUR



## WHERE DOES IT COME FROM?

Fur is used in reference to the hair of animals, usually mammals, particularly those with extensive body hair coverage.

## THE USE OF FUR?

The use of fur as clothing and decorations.

## THE USUAL SOURCES?

Usual animal sources for fur clothing and fur trimmed accessories include fox, rabbit, mink, beavers, otters, sable, seals, etc.

## -THE DIFFERENCE BETWEEN FUR AND LEATHER?

Fur makes use of the animals' hair whereas leather makes use of the skin. Procuring the skin of the animal for leather making almost always kills the animal whereas obtaining fur can still preserve the life of the animal when only the hair is removed

## -FASHION PEOPLE'S CHOICE?

In clothing, fur is usually leather with the hair retained for its aesthetic and insulating properties.

# PROTECT!

-Leather making has been criticized due to its environmental impact. The tanning process alone makes use of tanning chemicals that are considered to be pollutants. The dehairing and deliming processes can also contribute to air pollution as well.

-Most animal rights activists are opposed to the trapping and killing of wildlife, and the confinement and killing of animals on fur farms. According to Humane Society International, over 8 million animals are trapped yearly for fur, while more than 30 million were raised in fur farms.

# CASHMERE WOOL



## **-WHERE DOES IT COME FROM?**

In fact it is a hair of goats, and this is what gives it its unique characteristics as compared to sheep's wool.

## **-CHARACTER?**

Fine in texture, warm, strong, light, and soft.

## **-THE USE OF CASHMERE WOOL?**

Textile yarn, fabrics and garments.

## **-GATHERING?**

Cashmere is collected during the spring moulting season when the goats naturally shed their winter coat.

## **-PRODUCTION?**

Pure cashmere can be dyed and spun into yarns and knitted into jumpers (sweaters), hats, gloves, socks. Or woven into fabrics then cut and assembled into garments such as outer coats, jackets, trousers (pants),



# VACUUM BOTTLE



## **CHARACTER?**

Life Produce

## **VACUUM INSULATION?**

Vacuum means the air between the outer and inner layers of the stainless steel has been removed to create a vacuum insulation.

## **WHAT IS THE USE OF THIS?**

Keep water in the hot or cold temperature.

## **TECHNIC?**

Blocks heat from transferring through air which greatly minimizes the temperature change of your drink.

## **MATERIAL?**

Steel



# MACBOOK PRO



**CHARACTER?**

**THIN LIGHT POWERFUL**

**DESIGN PURPOSE?**

**APPLE DESIGNERS AND ENGINEERS RECONSIDERED EACH DETAIL OF EVERY INTERNAL COMPONENT TO MAXIMIZE PERFORMANCE AND MINIMIZE SIZE.**

**MATERIAL?**

**Aluminum enclosure**

**WHY WOULD A DESIGNER CHOOSE TO USE IT?**

**The new model includes Intel's third generation Core i7 processors along with USB 3.0 integrated, and a high-resolution 15.4" IPS 2880x1800-pixel Retina display. Other new or changed features include a second Thunderbolt port, an HDMI port, and a new thinner MagSafe port, dubbed the 'MagSafe 2'.**

**HOW MUCH ENERGY WAS CONSUMED TO MAKE IT? A LOT. INCLUDES DESIGNERS AND ENGINEERS.**

# CERAMIC (TILE)



## **CHARACTER?**

Hardness , toughness , electrical conductivity , etc.

## **HISTORY?**

The earliest ceramics made by humans were pottery objects, including 27,000 year old figurines , made from clay, later ceramics were glazed and fired to create smooth.

## **THE USED OF CARAMIC?**

Structural, including bricks, pipes, floor and roof tiles; White wares, including tableware , cookware, wall tiles, pottery products and sanitary ware.

## **SPECIAL USE OF CERAMIC?**

In the 20th century, new ceramic materials were developed for use in advanced ceramic engineering.

## **PRODUCTION?**

Ceramics tend to be crystalline.

# MAGLEV TRAIN (SHANGHAI)



## **WHAT IS MAGLEV TRAIN?**

**Is a transport method that uses magnetic levitation to move vehicles without touching the ground. CHARACTER?**

**Fast, move more smoothly and more quietly  
SPEED?**

**The fastest commercial train currently in operation and has a top speed of 430km/h.  
DOES IT AFFECTED BY WEATHER?**

**They are relatively unaffected by weather.  
DOES WASTE MANY POWER TO RUN WITH THIS HIGH SPEED?**

**The power needed for levitation is typically not a large percentage of its overall energy consumption; most goes to overcome air resistance ( drag ), as with other high-speed transport.**

# LIGHT EMITTING DIODE



## ANY DISADVANTAGES?

High initial price, Temperature dependence, voltage sensitivity, Blue pollution, etc.

## WHAT IS LED?

A light-emitting diode ( LED ) is a two-lead semiconductor light source .

## THE USES OF LED?

Early LEDs were often used as indicator lamps for electronic devices, replacing small incandescent bulbs. Recent developments in LEDs permit them to be used in environmental and task lighting.

## LED VS INCANDESCENT LIGHT?

lower energy consumption, longer lifetime, improved physical robustness, smaller size, and faster switching, etc.

## HOW LONG DOES IT LAST?

Typical lifetimes quoted are 25,000 to 100,000 hours, but heat and current settings can extend or shorten this time significantly