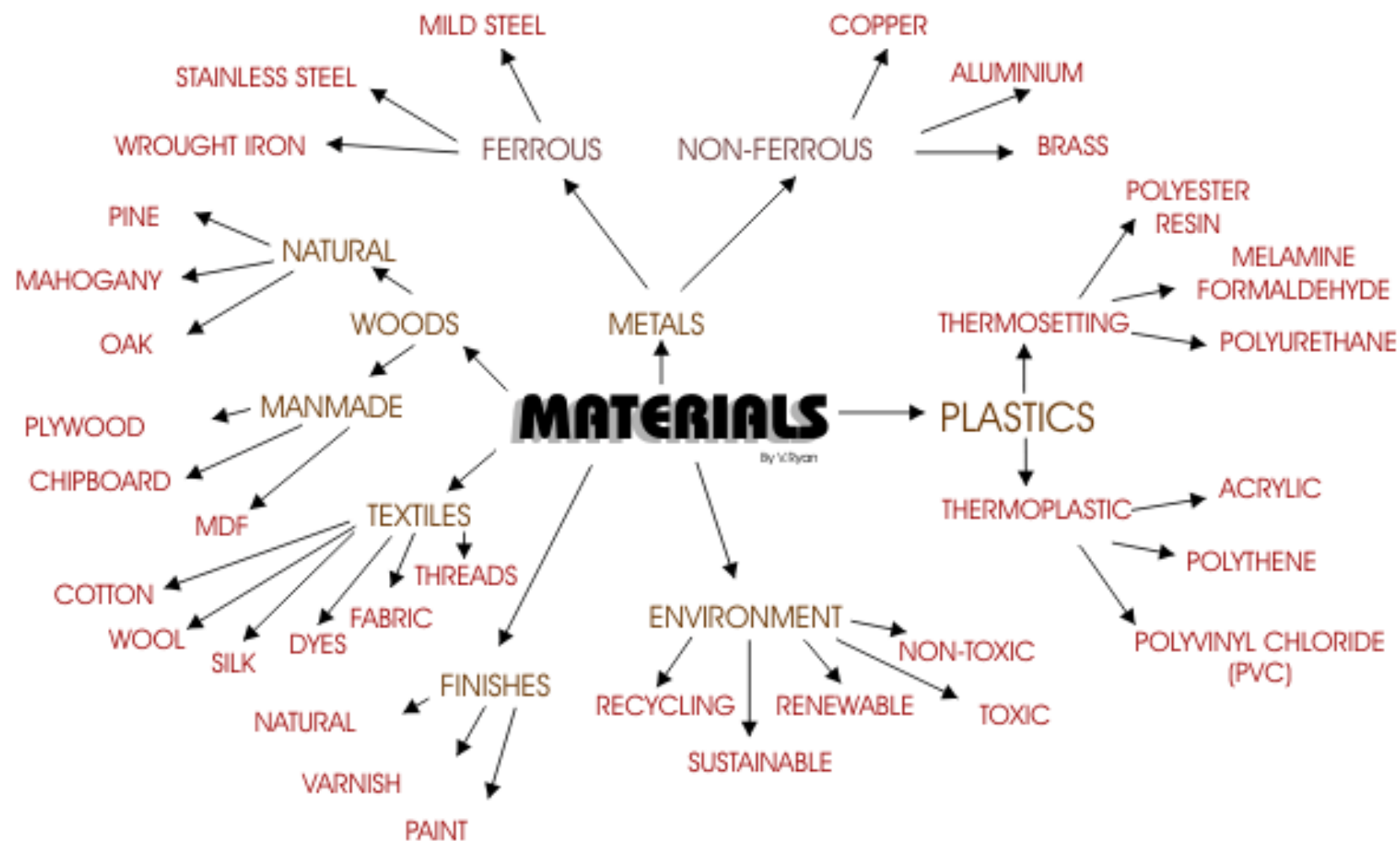


Materials Theory

Production methods

KEY ASPECTS OF MATERIALS RESEARCH



Production methods

The way products are manufactured depends on the quantity required. For example, cars are continually manufactured in hundreds of thousands, a prototype is a 'one off' (just one made) and DIY furniture is made in batches of thousands.

One Off Production

CHARACTERISTICS

1. A highly specialised company.
2. Small highly skilled workforce, possibly one or two workers, sometimes more.
3. Constant communication with the client, constant discussion regarding the design.
4. Company specialises in particular areas such as engineering or musical instruments etc...
5. Specialist materials are often required eg. specialist woods or modelling materials
6. The final product is expensive due to the level of skill needed to manufacture the product and the cost of specialist materials and equipment.
7. A high standard of quality control
8. Products are manufactured for a specialist market / clientele eg. musicians, medical profession, aerospace

SAMPLE PRODUCTS

PROTOTYPES
SPECIALIST
MODELS
HANDMADE ITEMS
SPECIALIST
ENGINEERING
ONE OFFS



Batch production

CHARACTERISTICS

1. A production line is set up.
2. Each worker completes one task and passing down the production line to the next worker.
3. The workers are semi skilled or unskilled.
4. The workers must be able to switch from one part of the production line to another. They are called a flexible workforce
5. The production line can be changed quickly, so that different products can be made.
6. Often individual parts of the product are bought from other companies and assembled on the production line.
7. The production lines runs for a certain amount of time and then the product is changed.

SAMPLE PRODUCTS

FURNITURE
ELECTRICAL GOODS
CLOTHING
NEWSPAPERS
BOOKS
SAMPLE PRODUCTS



Continuous production

CHARACTERISTICS

1. An semi-automated production line is normally set up.
Relying on computer control as well as human labour.
2. Workforce comprised of skilled and unskilled workers.
Workers less flexible than those working in batch production
as the product rarely changes.
3. Production line runs 24 hours a day,
365 days a year.
4. A high level of investment in machinery,
equipment.
5. Limited training of staff as the product and
equipment changes slowly. Training only needed when
up-dated equipment is introduced or new staff start.
6. Quality control at every stage of production.
Sampling
takes place at different stages of production.

SAMPLE PRODUCTS

CARS
PETROL / OIL PRODUCTS
BRICKS
MANY FOOD PRODUCTS
WASHING POWDER
WASHING-UP LIQUID
CARS
CHEMICALS
ELECTRONIC
COMPONENTS
PAPER / PULP PRODUCTS

