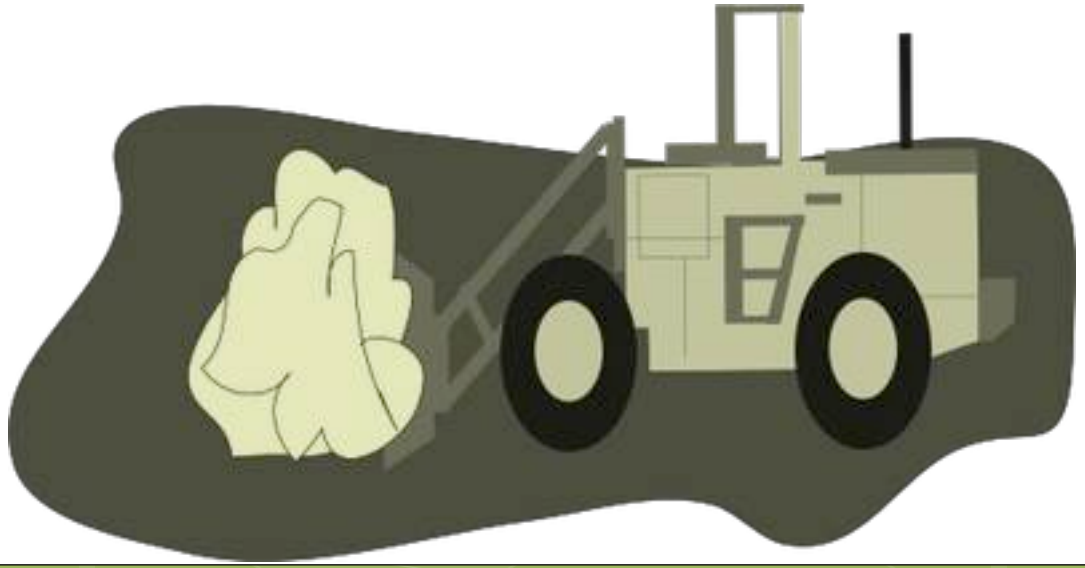
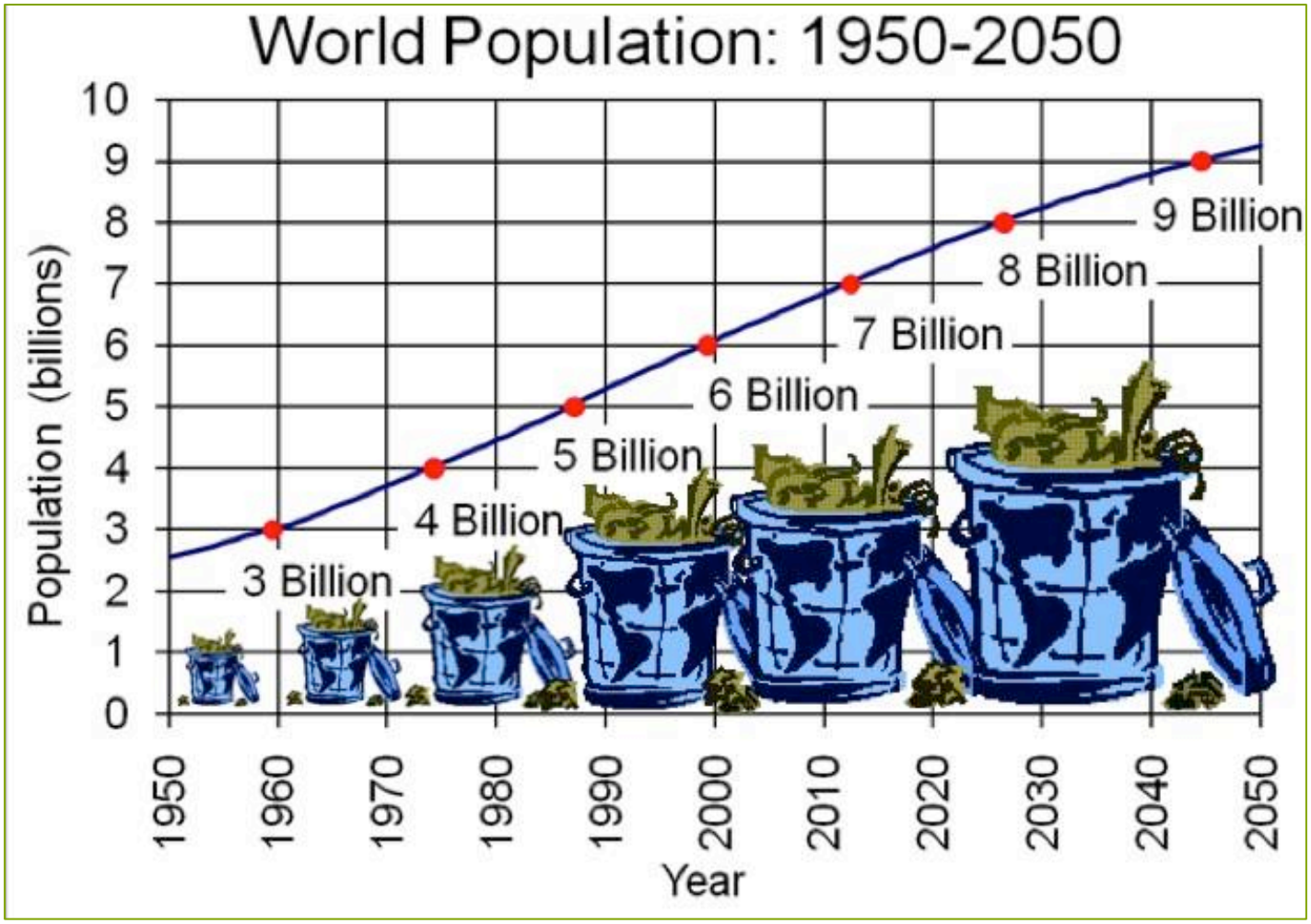
WASTE MANAGEMENT

- **Waste management**
  Collection
  Transport
  Processing or disposal
  Managing and monitoring of waste materials.



WHY IT CONCERNS US?

Waste production is increasing ↑



Per person waste-0.25-2.5 kg

>100000 Kilograms

1 month

3 months

100 years

500 years

Never


Methane

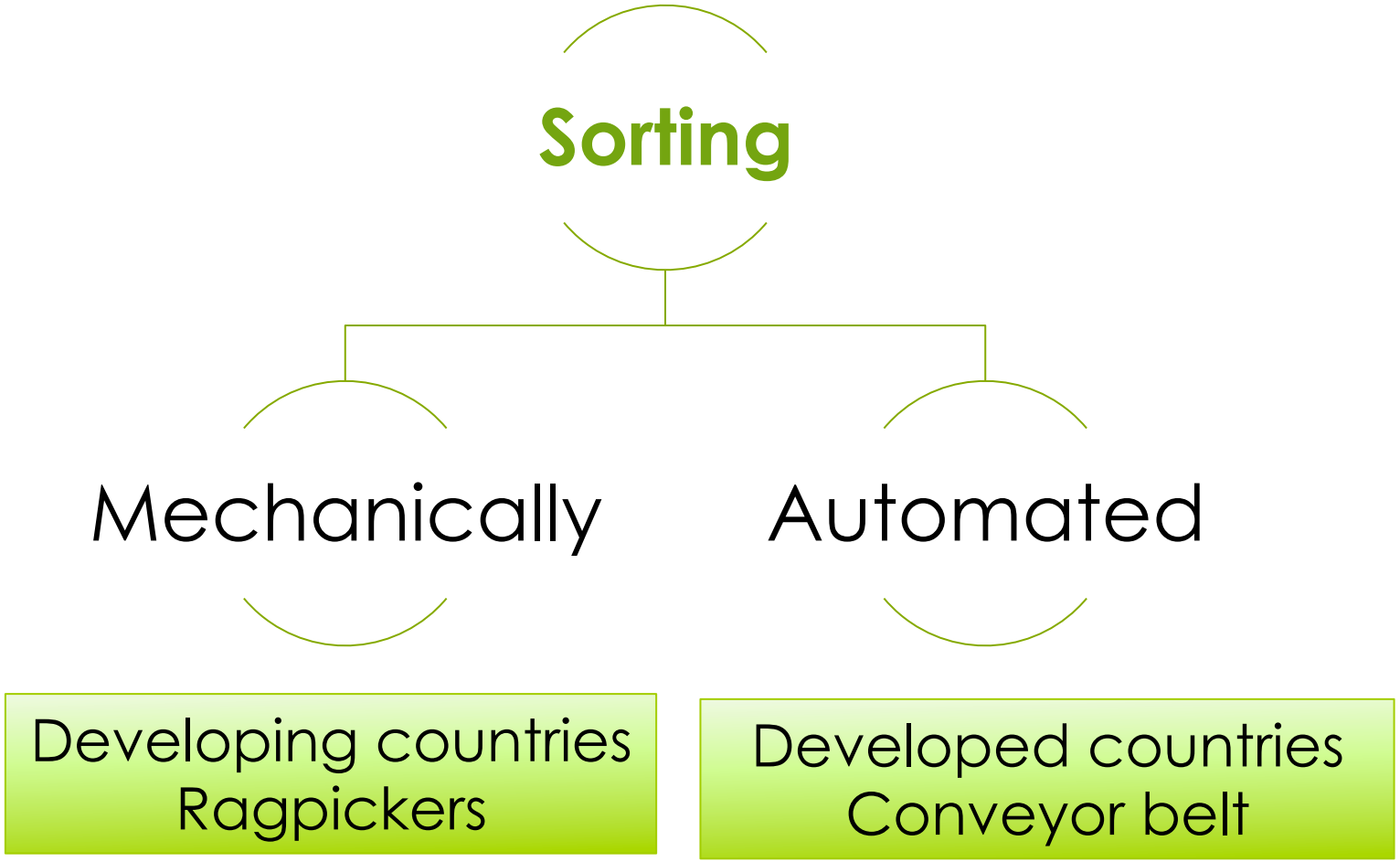
WHAT DOES WASTE MANAGEMENT INVOLVE?

Waste Management

- waste generation
  waste handling
  sorting
  storage and
  processing at source
  collection
  transformation
  disposal

Sorting

- separation and storage of individual constituents of the waste materials
- Helps in removing recyclable and hazardous waste
- Minimizes waste


Sorting
Mechanically
Automated
Developing countries
Ragpickers
Developed countries
Conveyor belt

Door-to-door collection of waste
Transportation to landfill site in hygienic manner
Recyclable waste and electronic waste can be collected less frequently


REUSE
REDUCE
RECYCLE


Dumping
Landfill
Composting
Manure pit
Burial

Dumping

- Dumped in the low-lying areas or open tracts of lands
- Land may be reclaimed
- Attracts rodents, insects and birds
- Emits foul odours and is an aesthetic nuisance
- Burning these wastes causes air pollution.
- The drainage from these dumps contributes to the pollution of surface and ground and the soil around.

Landfill (Controlled tipping)

- Trenches where waste matter is thrown and compacted with earth
- Each layer is 2 m deep. At the end of the day, the refuse is layered with earth - 30 cms thick
- Physical, chemical and biological degradation, heat is generated and anaerobic decomposition
- Destroys germs

Landfill (Controlled tipping)

- The waste is converted into an innocuous mass by the end of six months of burial.
- Methane gas is generated during the decomposition of solid waste.
- Vents could be created in the topsoil cover to release this gas.
- Reclaimed land could be utilised for growth of vegetation or parks after a period of time.

Composting

- Combined disposal of solid waste is carried out along with stable litter, night soil and sludge.
- Compost is humus like material, which is generated due to the breakdown of organic matter under bacterial action, and is rich manure.
- Composting uses aerobic method of digestion

Bangalore method

- The organic mass is decomposed and pathogenic microorganisms are destroyed in the process, which is completed in 4 to 6 months.
- Gases such as ammonia, methane, carbon dioxide and nitrogen produced in the process are released
- The resultant manure is well-decomposed, odourless, innocuous material of high manurial value.

Vermicomposting

- It is an eco-friendly method of disposal of garbage, which serves the dual purpose of disposing off the garbage as well as proving eco-friendly.
- The waste matter is broken down by the worms and compost, which could be used as bio-fertiliser, is produced in 2 to 3 months.
- The process does not generate any explosive gases or leachate
- Can be used in agriculture and organic farming.
- It enriches the soil due to the deep burrowing worms and bacteria in the organic matter.

Manure pits

- Practised by the individual households in the rural areas
- Wastes such as kitchen wastes, cattle dung, fodder or animal feeds, leaves could be thrown into them. The wastes should be covered by earth at the end of each day and reused the next day.
- In 5 to 6 months time, the wastes are decomposed and converted into manure, which could be returned to the fields.

Burial method

- It is suitable for disposal of refuse of the village or small settlements. This could be undertaken in an area if sufficient land is available.
- The method is similar to sanitary landfill
- The waste matter is decomposed in 4 to 6 months time when it can be taken out and used as manure in the fields

Question Time

Question 1

- **The first incinerator was built in Nottingham in 1847 by Manlove, Alliott & Co. Ltd. Who was the designer?**
- Albert Fryer
- Robert Incinerator
- Thomas Boiler

Question 2

- **Metro Taifun has built world's largest Automatic Waste Collection System which is completely underground for 20 Km. It is in which City?**
- Vatican City
- Jerusalem
- Mecca

Question 3

- **In which of these ancient civilizations would people of the village gather together and burn their rubbish in large dumps?**
- Yuan of Mongolia
- Maya of Central America
- Ashanti of Africa


KEEP
CALM
AND
RECYCLE