

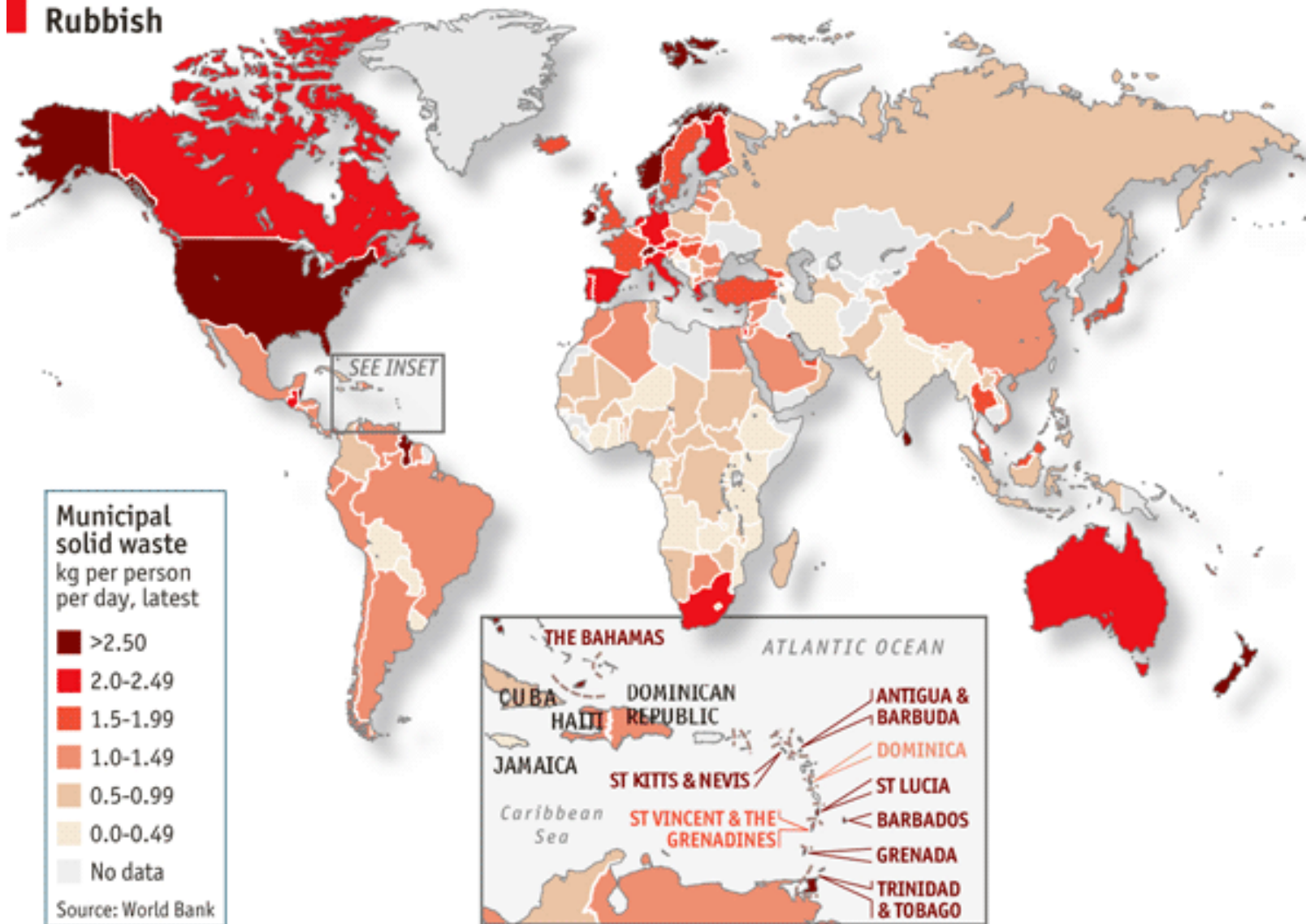
Warm-Up 14MAR2016

- How many pounds of waste do you think you have generated so far?
- What patterns do you notice so far?
- Is there anything that you are wasting a lot?

- Logistics:
- Read Chapter 16 in the text! (3/15)
- Trash Carry Participation (5 points a day)
- Trash Carry Personal Reflection (3/18)
- Read Klein Conclusion and Klein Essay Thesis Proposal (3/21)
- Ozone Check (3/17)

- Humans are the ONLY species on Earth that create waste that is truly no useful to any other organism on Earth.

Rubbish



Warm-up

16MAR2016

- What is planned obsolescence?
- Logistics:
 - Trash Carry (Daily) Essay (Friday)
 - Ozone Check (Thursday)
 - Finish Reading Chapter 16 in the textbook
 - Read Klein Conclusion (Monday 3/21)
 - Klein Essay Thesis Proposal (3/22)



Chapter 16

Waste Generation and Waste Disposal

- Humans make waste that NO other organisms can use.

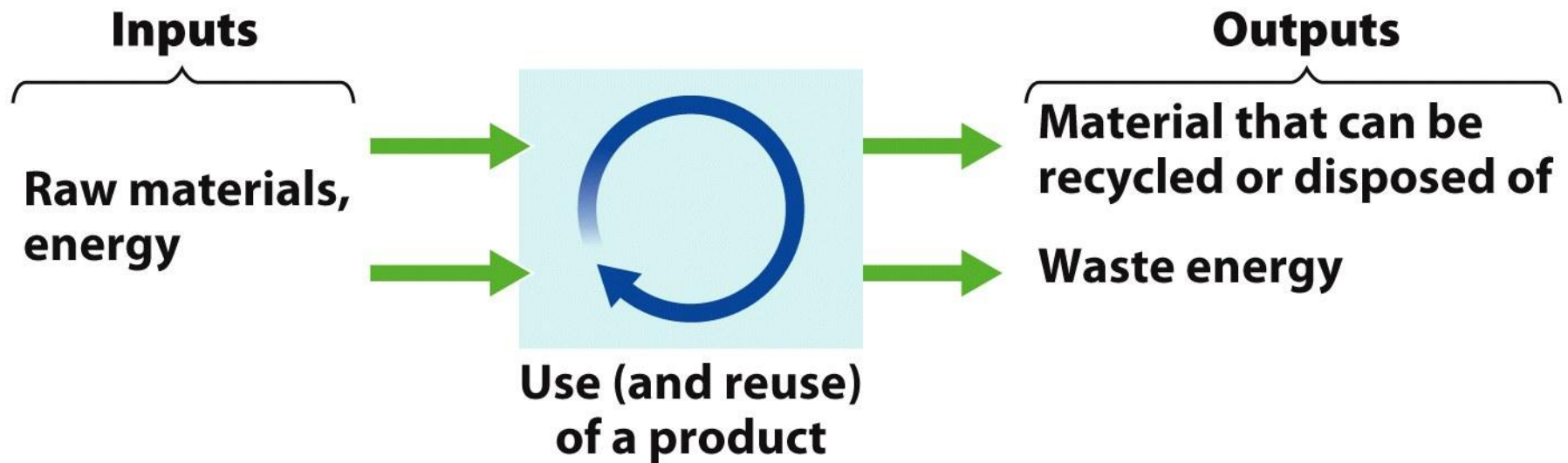


Figure 16.1

Environmental Science

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This is unique on Earth!



Figure 16.2

Environmental Science

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**Polystyrene
cup**



**Paper
cup**

“Throw away society”



**IT'S PRETTY AMAZING THAT
OUR SOCIETY HAS REACHED A POINT
WHERE THE EFFORT NECESSARY TO**

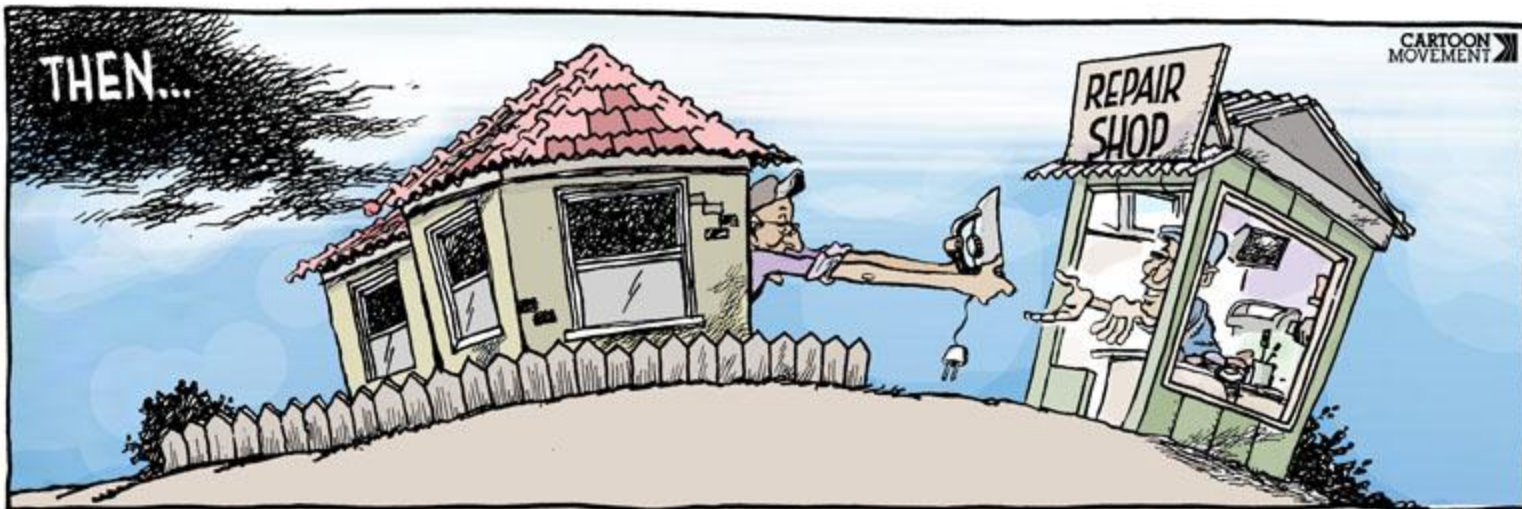
**EXTRACT OIL FROM THE GROUND
SHIP IT TO A REFINERY
TURN IT INTO PLASTIC
SHAPE IT APPROPRIATELY
TRUCK IT TO A STORE
BUY IT AND BRING IT HOME**

**IS CONSIDERED TO BE LESS EFFORT THAN WHAT IT TAKES
TO JUST WASH THE SPOON WHEN YOU'RE DONE WITH IT**

Max Trunko, www.maxtrunko.com



THEN...



NOW...



A photograph of a person wearing a red shirt and dark pants, seen from behind, scavenging through a massive, dark pile of garbage. The scene is dimly lit, with smoke or steam rising from the trash in the background, suggesting a landfill or a large-scale waste disposal site. The overall atmosphere is bleak and somber.

Planned Obsolescence

The absurd practise of designing products with a limited lifespan in order to maximise profits. Based on the notion that infinite economic growth can be balanced by the finite resources of the planet.



Warm-up

16MAR2016

- What are your initial thoughts about the “Plastic Paradise” humans have created?

Logistics:

- Trash Carry (**Daily**) Essay (Friday)
- **Ozone Check (Tomorrow)**
- Read Klein Conclusion (Monday 3/21)
- Klein Essay Thesis Proposal (Tuesday 3/22)

- Refuse collected by municipalities from households, small businesses, and institutions such as schools, prisons, municipal buildings and hospitals.

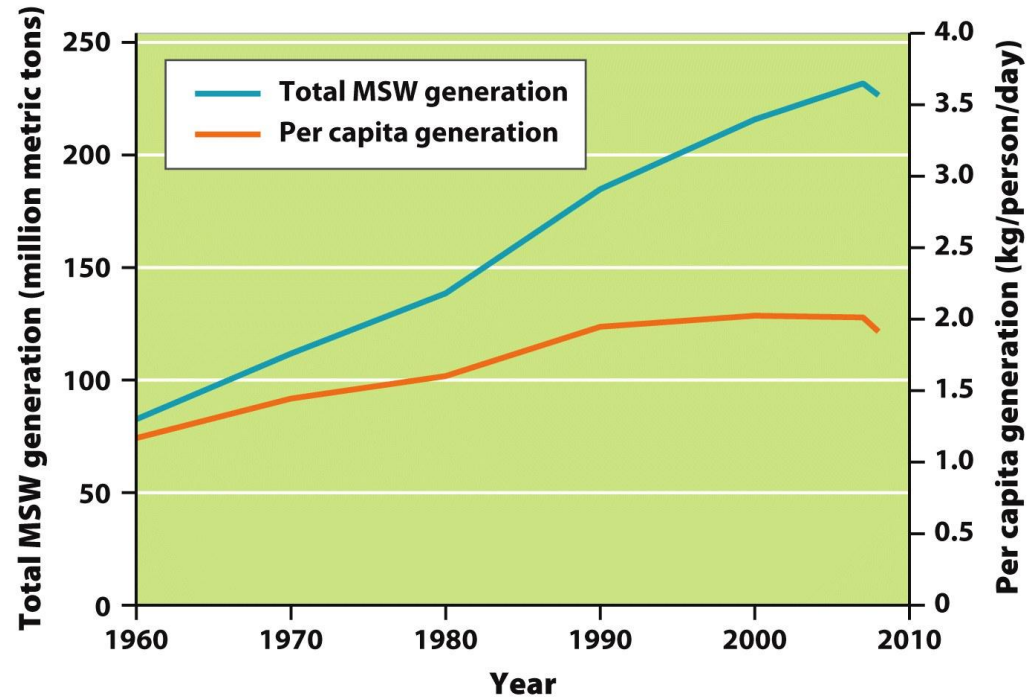
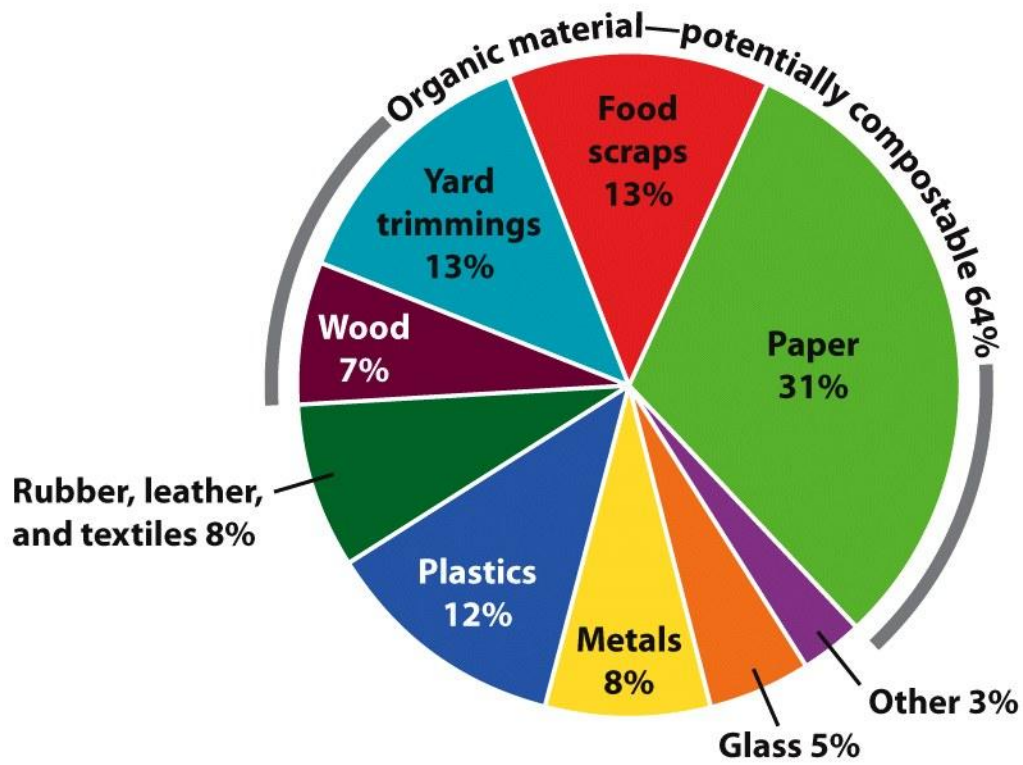
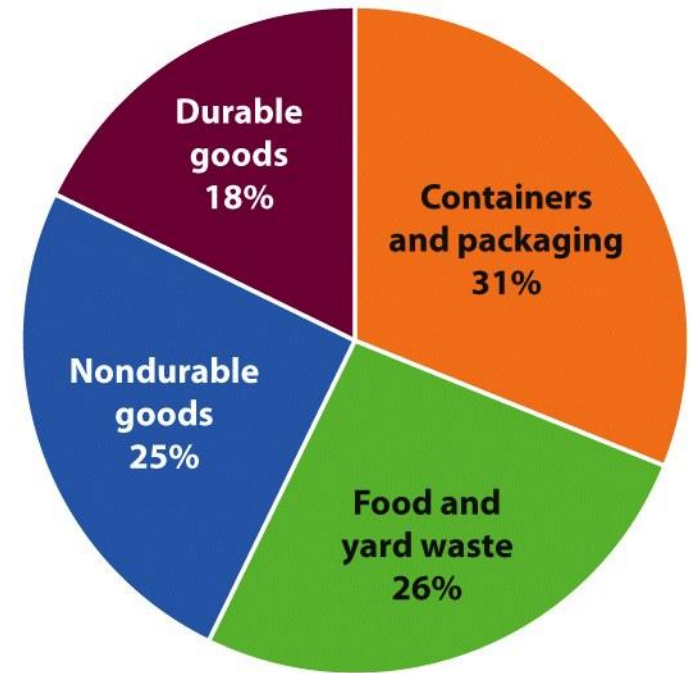


Figure 16.3
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(a) Breakdown of MSW by composition



(b) Breakdown of MSW by source

Figure 16.5

Environmental Science

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Composition of Municipal Solid Waste

- 31% - paper
- 33%- organic materials (yard waste, food scraps, wood)
- 12%- plastic
- 18%- durable goods (appliances, tires)

World Wide Waste

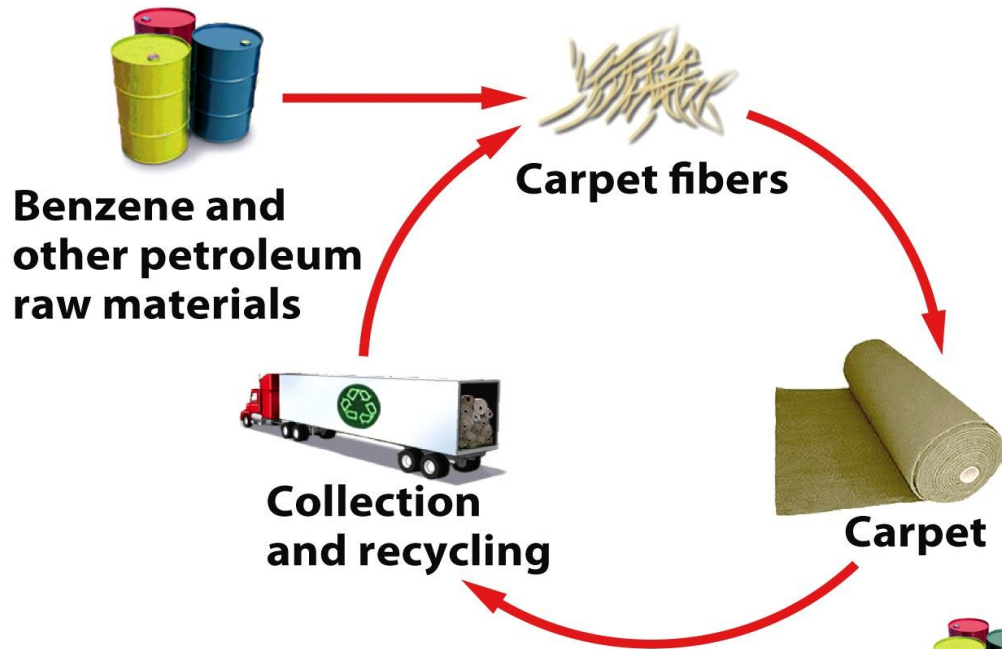
- US: 4.5 pounds per day
- Japan: 2.4 pounds per day

- Developed countries: 1.8 to 4.8 lbs
- Developing: 1.2 lbs
- Indigenous peoples create little to no waste

- What are the main sources of waste?
- What is the relationship between availability of and access to resources and the production of waste?
- How does the solid waste stream differ between a developed and a developing country?

- Reduce- waste minimization or prevention
- Reuse- reusing something like a disposable cup more than once
- Recycle- materials are collected and converted into raw used to produce new





Closed-loop recycling

Figure 16.8a
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Open-loop recycling

Figure 16.8b
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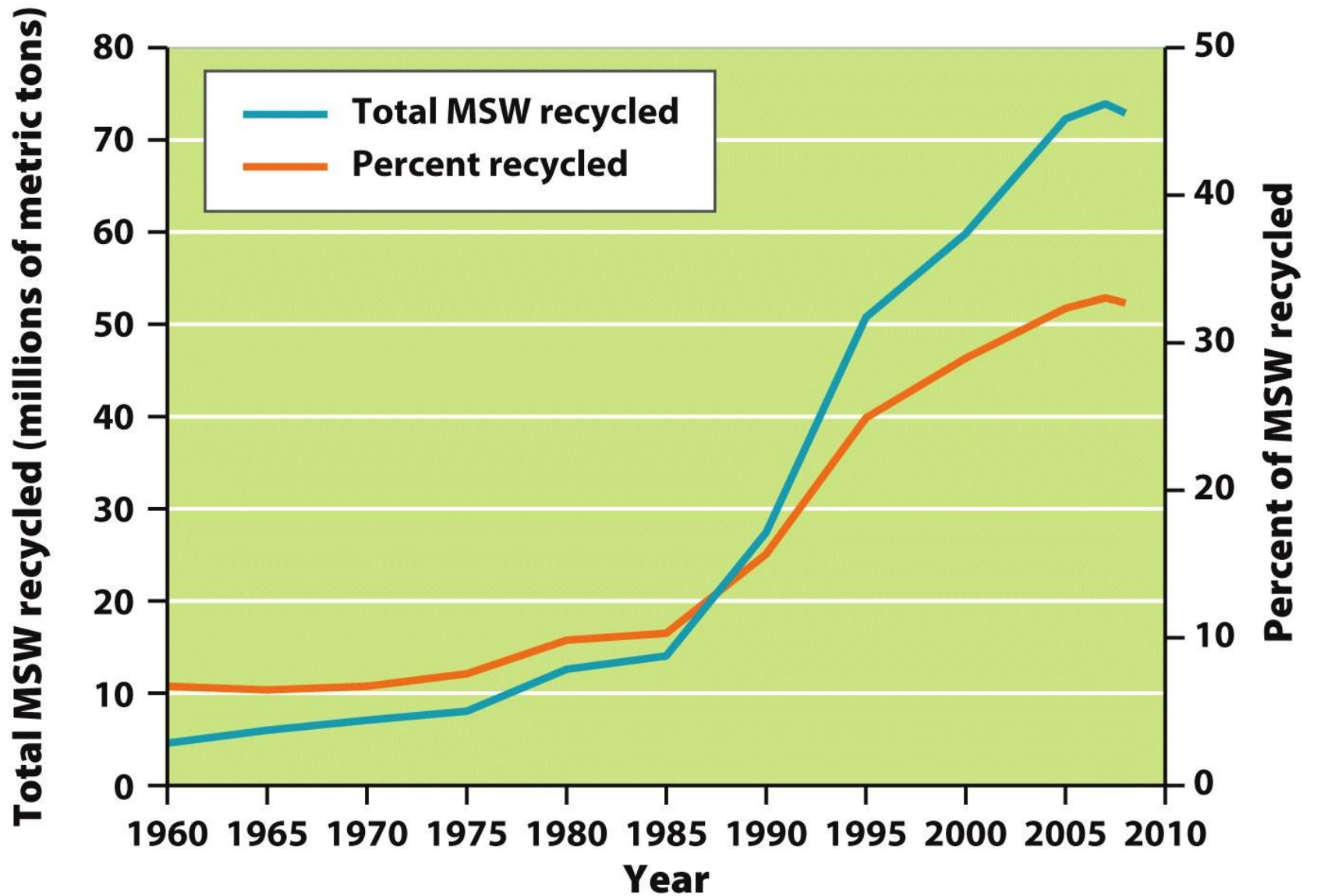


Figure 16.9
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- Compost- organic material that has decomposed under controlled conditions to produce an organic-rich material.



Figure 16.11
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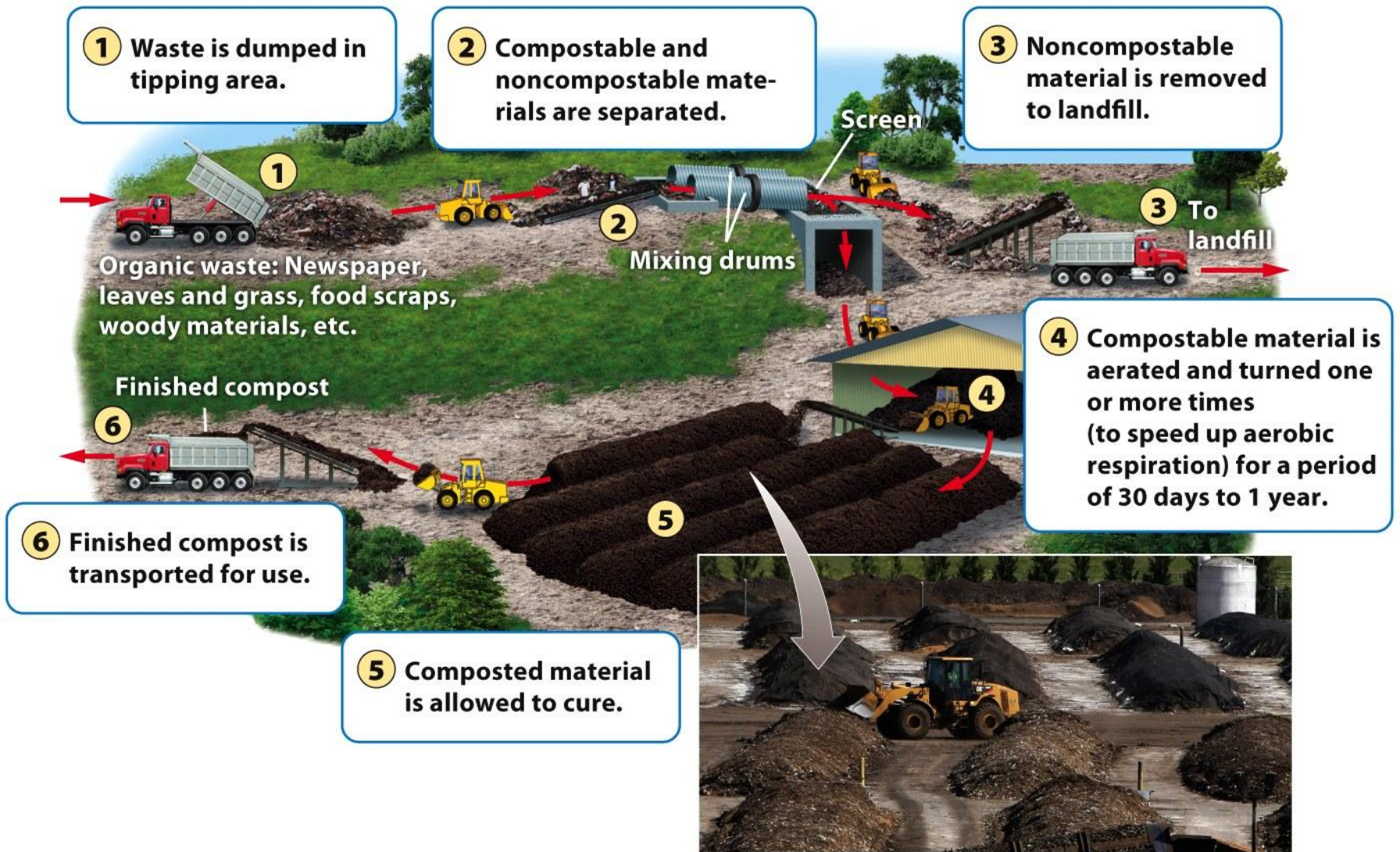


Figure 16.12
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✓ Compostables



Food Leftovers
& Plate Scrapings



Meat, Fish,
Poultry & Bones



Fruit
& Vegetables



Houseplants, Cut
& Dried Flowers



Pasta, Grains,
Bread & Cereal



Soiled Paper
Towels & Tissues



Egg Shells
& Dairy



Uncoated Paper
Cups & Plates



Coffee Grounds,
Filters & Tea Bags

✗ Non-Compostables



Metal



Glass Bottles
& Jars



Plastic
& Styrofoam



Liquids



Coated Paper



Rubber Bands
& Twist Ties



Focused on a
greener future.

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(604) 876-3330

- What are the 3 Rs? What are the benefits and disadvantages to each?
- What is the difference between open and closed loop systems?
- Why is composting an important activity in waste management?

Warm-up

17MAR2016

- What are the 3 Rs? What are the benefits and disadvantages to each?
- What is the difference between open and closed loop systems?

Logistics:

- Trash Carry (**Daily**) Essay (Friday)
- **Ozone Check (Today)**
- Read Klein Conclusion (Monday 3/21)
- Klein Essay Thesis Proposal (Tuesday 3/22)

E-Waste

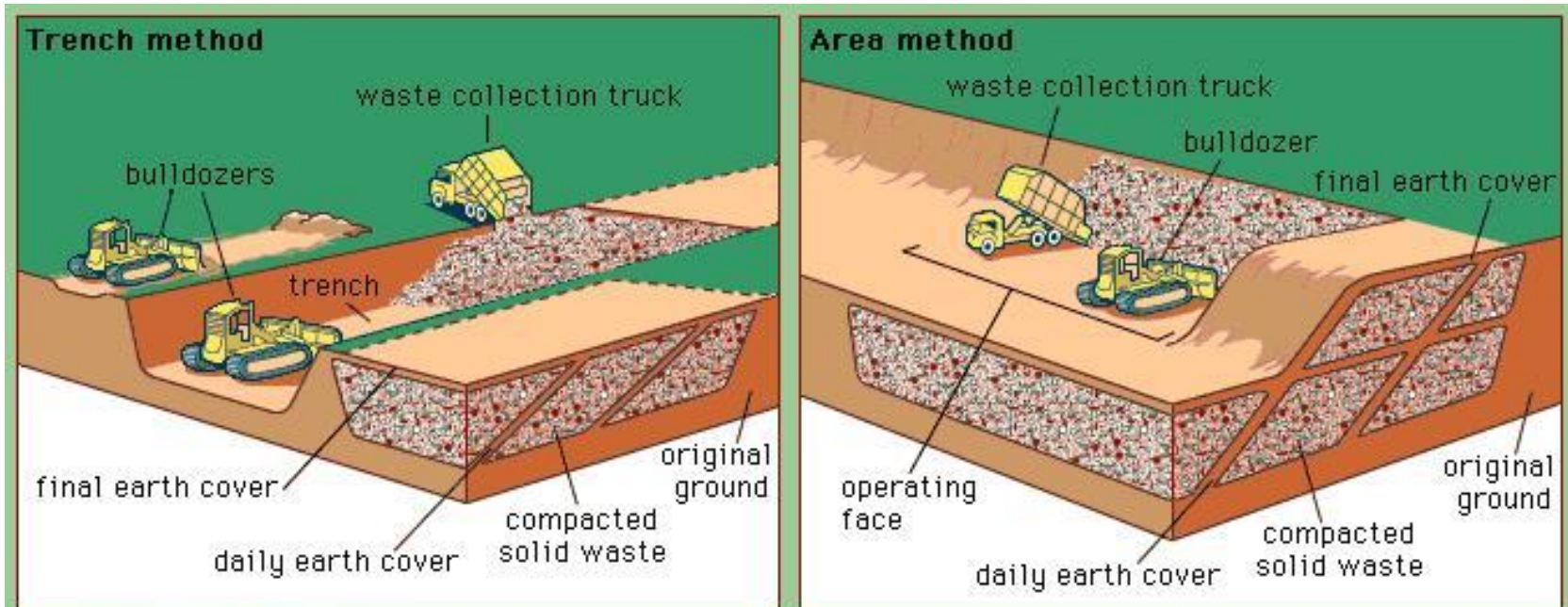
- Electronic waste (E-waste) televisions, computers, cell phones that contain toxic metals.



Figure 16.6
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MSW

- Municipal Solid Waste
 - Trash from homes, businesses, offices, schools, etc.
 - Anywhere the trash is picked up and taken away



Landfills

- Sanitary landfills- engineered ground facilities designed to hold MSW with as little contamination of the surrounding environment as possible.
- Leachate- the water that leaches through the solid waste and removes various chemical compounds with which it comes into contact.

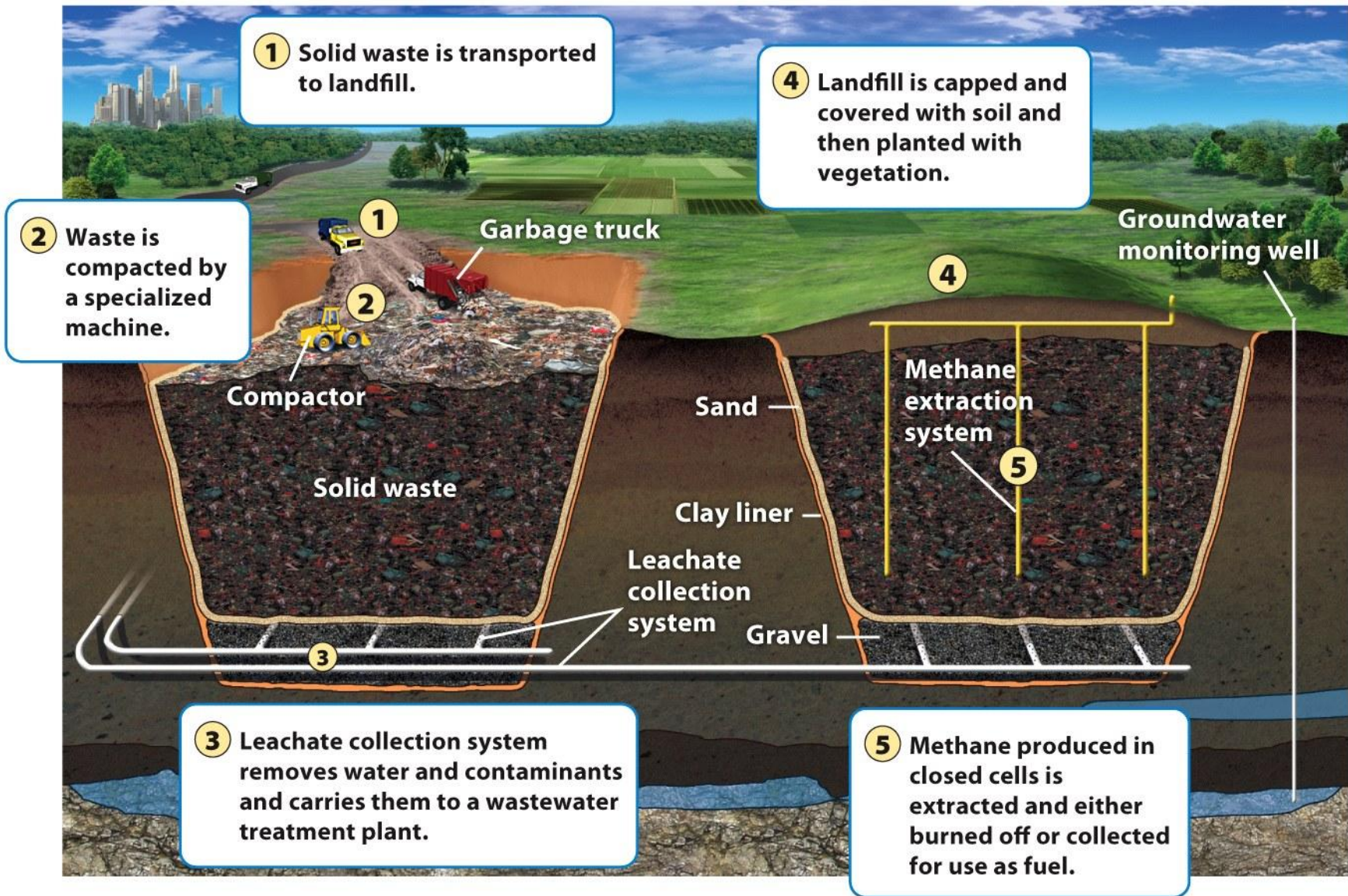


Figure 16.14

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Retired landfills



Incineration

- Incineration- the process of burning waste materials to reduce its volume and mass and sometimes to generate electricity and heat.

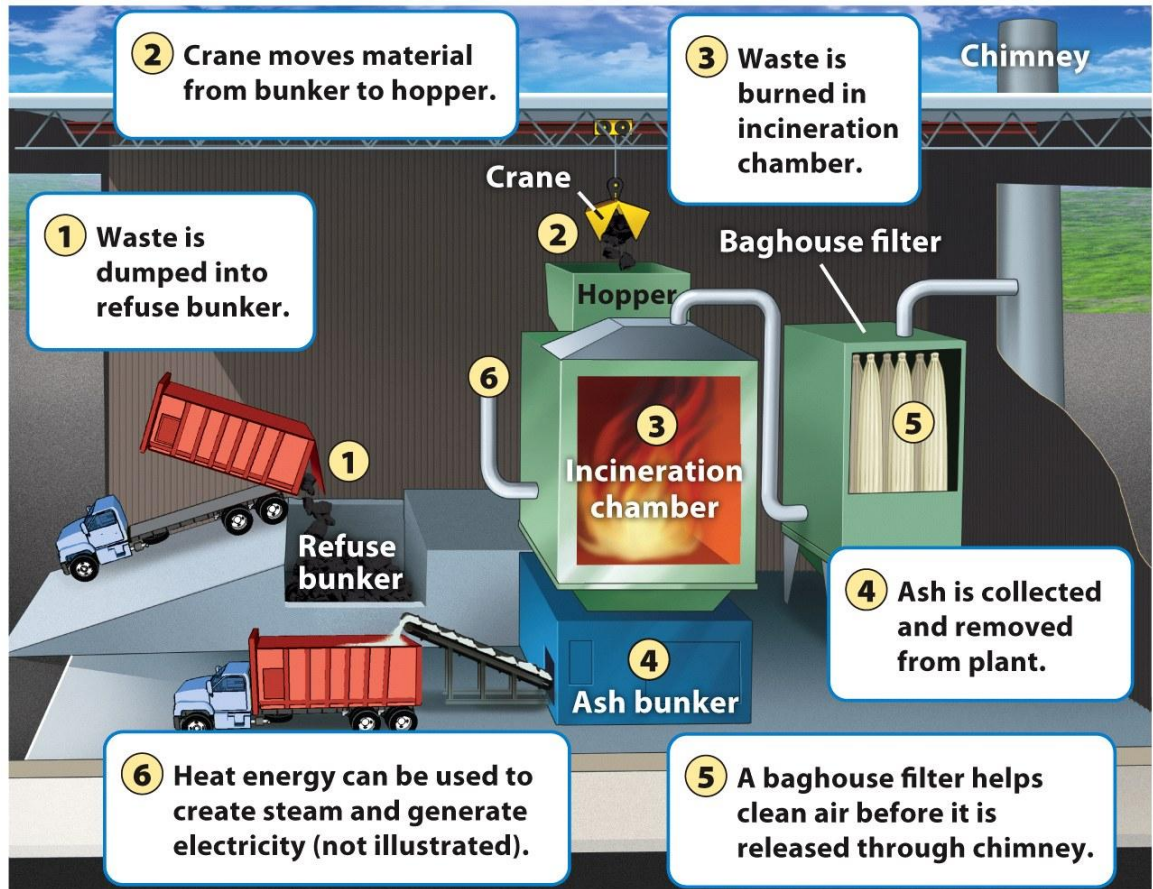


Figure 16.16
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- What are the features of a modern sanitary landfill? How does a modern landfill compare to the older practice of putting MSW waste holes in the ground?
- When or why might incineration be used instead of a landfill?
- What are the advantages of landfills and incineration?

Hazardous Waste

- Hazardous waste- liquid, solid, gaseous, or sludge waste material that is harmful to humans or ecosystems.
- Collection sites for hazardous waste must be staffed with specially trained personnel.
- Hazardous waste must be treated before disposal.

Laws

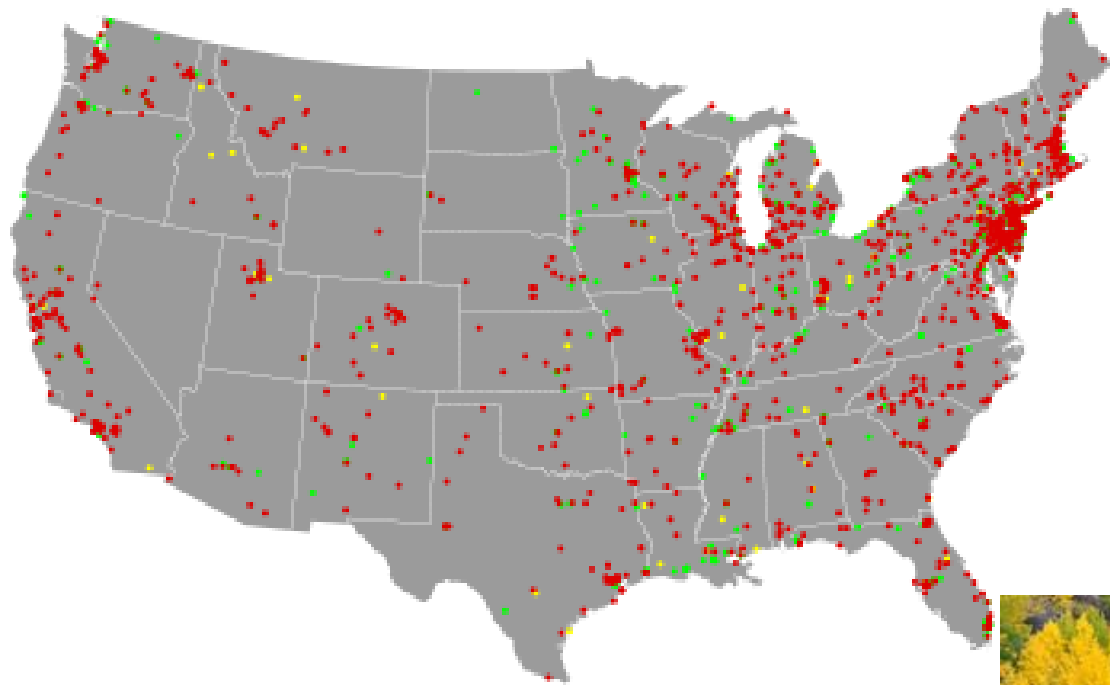
- Resource Conservation and Recovery Act (RCRA)- designed to reduce or eliminate hazardous waste. Also know as “cradle-to-grave” tracking.
- RCRA ensures that hazardous waste is tracked and properly disposed of.

Laws

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)- also know as “Superfund”.

Puts a tax on the chemical and petroleum industries. This revenue is used to cleanup abandoned and nonoperating hazardous waste sites where a responsible party cannot be found.

Requires the federal government to respond directly to the release of substance that may pose a threat to human health or the environment

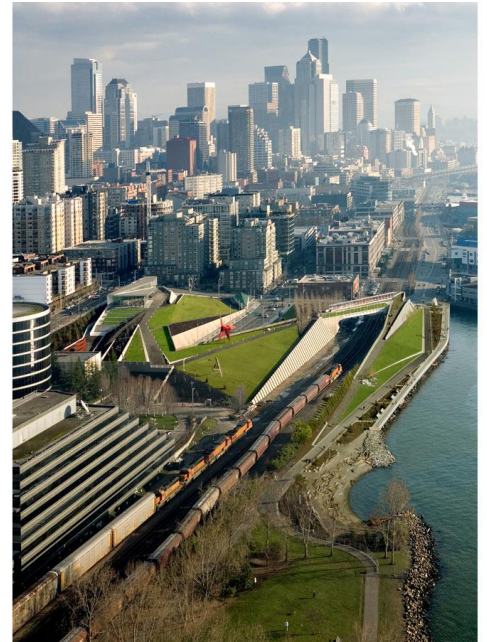


Red Cliff, CO



Brownfields

- Contaminated industrial or commercial sites that may require environmental cleanup before they can be redeveloped or expanded.
- Old factories, industrial areas and waterfronts, dry cleaners, gas stations, landfills, and rail yards are some examples.



- What are the definitions of hazardous waste and what are the main sources?
- Why is disposal of hazardous waste a challenge?
- Which act authorize which agencies to regulate and oversee hazardous waste?

Warm-Up

18MAR2016

1. What are the 2 main options for disposing of waste?
2. How is hazardous waste different from MSW?

Logistics:

- Trash Carry (**Daily**) Essay (Friday)
- Read Klein Conclusion (Monday 3/21)
- Read Chapter 17 in your textbook (Tuesday 3/22)
- Klein Essay Thesis Proposal (Tuesday 3/22)

Examining your trash carry...

- Estimate the proportion of:
 - RE-cylable material
 - RE-usable material
 - RE-duction material
 - Compostable

- What is not working about our approach to Waste Management in the US?

Integrated Waste

- A method that seeks to develop as many options as possible, to reduce environmental harm and cost.
- Reduction, recycling, composting, landfills, and incineration are some ways IWM is utilized.

- Draw frantically on the board...

- Design a “Cup O Noodles” that demonstrates the concepts of “cradle to cradle” or integrated waste management.
- How is it produced? How is it used? And How is it re-used? And How is it disposed of?





- Practice FRQ!
- Work with your table peps to answer one of the FRQs in Chapter 16 in the textbook (460)
- APES Exam is Coming...May 2nd...

Warm-Up 20MAR2015

- What are 2 things you learned about waste that you apply to your own life?
- What things will you do to apply the 3 R's?

