Name: _____

Date: _____

Class: _____

IB Environmental Systems and Societies

8.3 Solid Domestic Waste

Significant ideas:

Solid domestic waste (SDW) is increasing as a result of growing human population and consumption.

Both production and management of solid domestic waste can have significant influence on sustainability.

What is Solid Domestic Waste?

1. List the types of SDW and their proportions in order of decreasing proportion. You can choose which country to present information for but remember to state the nation.

SDW data for United States (2009). Rutherford and William

SDW Category	Proportion (%)
paper	28.2
food waste	14.1
yard waste	13.7
plastic	12.3
metals	8.6
rubber, leather and textiles	8.3
wood	6.5
glass	4.8
other	3.5

see Peterson p 425 for other examples

2. SDW can be formally categorized into a number of groups. For the groups below, list examples of each

Type of SDW	Examples
Biodegradable	Food waste, paper, yard waste
Recyclable	paper, glass, metals, some plastics, clothes, batteries
Waste electrical and electronic equipment (WEEE)	TVs, computers, phones, fridges
Hazardous	Paints, chemicals, light bulbs
Toxic	Pesticides, herbicides
Medical	needles, syringes, drugs
Inert	concrete, construction waste
Mixed	Tetrapaks, plastic toys

What is "Waste"

1. In your own opinion, when does a product become "waste"?

When it no longer has any value to its producer

2. The caption of a Shell (oil company) advert reads:

"Don't throw anything away. There is no away".

a) What's your opinion on this caption?

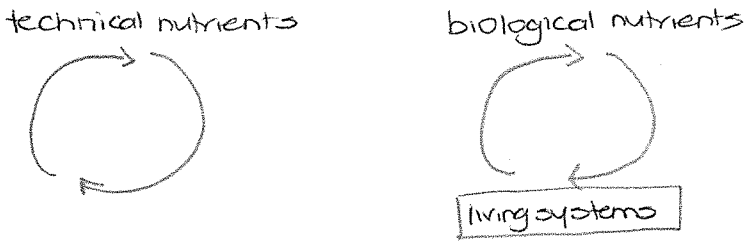
Good, clear - raises awareness.

b) Does this influence your definition of "waste" present in question 1?

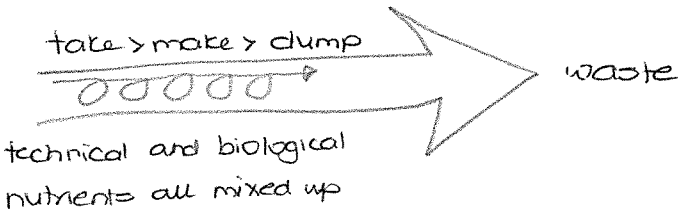
The product would be of benefit to someone else (re-used) or recycled.

3. Draw diagrams to represent the circular and linear economy for waste management.

Circular economy:



Linear Economy:



4. Which of the above models (circular or linear) is more sustainable for waste management? Explain your answer.

The circular economy is a model that is more sustainable, it aims to

- be restorative of the environment
- use renewable energy sources
- eliminate or reduce toxic wastes
- eradicate waste through careful design.

5. It is possible to limit the amount of waste that is generate using the reduce/re-use/recycle approach.

Summarise these concepts using the table below

Concept	Outline	Examples
Reduce	Requires that we use fewer resources Maintain items so they last longer Change shopping habits	• buy things that last • look for items with less packaging • buy products made from recycled materials. • Choose energy efficient
Re-use	Products are used for something other than their original purpose or they are returned to the manufacturer and used repeatedly	• returnable bottles • compost food waste • Hire DVDs • Read E-books
Recycle	Sorting waste into separate containers and processing them for re-use	• recycling bottles, cans, paper, cardboard.

Management of Solid Domestic Waste

1.

a) List the four main methods of SDW disposal

Recycling, Composting, Landfill, Incineration

b) Do you know of or use any other methods of waste disposal?

Re-using

2. Summarise and evaluate pollution management strategies for solid domestic waste using the table below.

Process	Details/examples	Evaluation
Human activity producing the pollutant.	**Altering human activity generating waste** • reducing packaging • recycle goods • reuse clothes, goods, containers • compost organic matter	Reduces the production and associated pollution Individual responsibility needs change of mindset but term term impact
Release of pollutant into the environment.	**Controlling the release of waste** • separate waste into different types • Legislate about waste separation • Educate for waste separation	Requires monitoring Less individual responsibility Long term impact Does not reduce production
Impact of pollutant on ecosystems	**Clean up and restoration of areas affected by waste disposal** Reclaim landfills Incinerate SDW for energy Collects plastics eg from Great Pacific Garbage Patch	Government led Pollutants still released in incineration and production Collected materials still need to be disposed of.