

Exercise walk-through

8.10

Waste Reduction Methods

AP Environmental Science

Waste and sewage

Landfills bury waste; a sanitary landfill lines the base and captures leachate & methane.

Best order: reduce, reuse, recycle;
compost food scraps.



Landfill: line, capture leachate, manage methane

Where solid waste actually goes

sanitary land-fills

buried in lined cells to limit **leachate** ; takes land and can still leak

incinerators

burning cuts the *volume* sharply but emits air pollutants and leaves toxic ash

composting

organic waste returned to soil – the cheapest diversion there is

e-waste

phones, computers, televisions – small in volume, but loaded with **toxic metals**

garbage patches

ocean-dumped plastic gathered by currents into vast floating fields far out at sea

The hierarchy is **reduce, reuse, recycle** – and reducing is best because waste you never make needs no disposal at all.

Exercises 2.1-2.3

2.1 State the three Rs in order (best first). [1]

2.2 What does composting turn waste into? [1]

2.3 Which R is the most effective? [1]

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2.1 State the three Rs in order (best first). [1]

2.1

- Reduce, reuse, recycle
-

2.2 What does composting turn waste into? [1]

2.2

- Compost (fertilizer / soil enrichment)
-

2.3 Which R is the most effective? [1]

2.3

- Reduce

Exercise 3.1

3.1 In the waste hierarchy, the best option is to

[1]

☐

A dispose

B recycle

C reduce

D incinerate

Exercise 3.1

3.1 In the waste hierarchy, the best option is to

[1]

☐

A dispose

B recycle

C reduce

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3.1 C

- reduce

Exercise 3.2 (a)

3.2 A household wants to cut its waste.

(a) Give one example each of reducing, reusing, and recycling.

[3]

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(a) Give one example each of reducing, reusing, and recycling. [3]

(a)

- Reduce: buy less/less packaging; reuse: refillable bottle; recycle: paper/glass/metal

Exercise 3.2 (b)

3.2 A household wants to cut its waste.

(b) Explain one environmental benefit of composting food scraps.

[1]

Exercise 3.2 (b)

3.2 A household wants to cut its waste.

(b) Explain one environmental benefit of composting food scraps.

[1]

(b)

- It keeps organics out of landfills (avoiding methane) and enriches soil

Exercise 3.3

3.3 Explain why “reduce” is more effective than “recycle”.

[2]

Exercise 3.3

3.3 Explain why “reduce” is more effective than “recycle”.

[2]

3.3

- Reducing prevents the waste (and the energy/materials to make and process it) entirely, while recycling still uses energy to collect and reprocess the material