

MATTER AND ENERGY IN ECOSYSTEMS

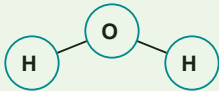


Grade 6 Science | Free One Page Study Guide

Read | Annotate | Find evidence | Analyze | Eliminate and justify

1 Model molecules and structures

6-MS-PS1-1



Water: 2 H + 1 O

Cl	Na	Cl	Na
Na	Cl	Na	Cl

Salt: repeating pattern (slice)

What we did. We grouped atom tiles and extended a salt pattern.

Why it works. A molecule has a particular atom composition. Salt has an extended structure; models simplify reality.

Apply. How many H and O are in two water molecules?

2 Analyze resources and interactions

6-MS-LS2-1/2

Plant dry-mass gains

Adequate light: 8 g
Dim light: 2 g

Pond: limited algae
Meadow: limited leaves
Both can show competition.

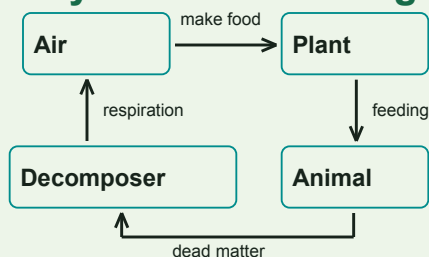
What we did. We compared plant growth and interactions in two ecosystems.

Why it works. Light supplies energy, not atoms. Shared limited food can constrain organisms in either setting.

Apply. Does increased individual mass prove more organisms were born?

3 Cycle matter through decomposers

6-MS-LS2-3



Selected carbon path
Nitrogen also cycles via soil/water.

What we did. We tracked carbon, then nitrogen, and drew a water path.

Why it works. Atoms move among living and nonliving parts. Decomposers and microbes help recycle nutrient matter.

Apply. How can nitrogen from dead matter return to a plant?

4 Account for energy flow

6-MS-LS2-3

20 model energy units

	5 stored
	3 dead/waste
	12 heat

$$5 + 3 + 12 = 20$$

What we did. We allocated all 20 energy counters to three destinations.

Why it works. Energy transfers and changes form; it is not destroyed. Light enters and heat spreads out.

Apply. Why is this different from matter cycling?
