

Common misconceptions held by non-scientists

Concept / Idea	Misconception	Scientific Response
Decomposition	It disappears	Large molecules of different substances are broken down into much smaller molecules and can involve chemical change.
Diffusion Osmosis	Anything can be diffused Any nutrients can move through cell membranes	Only small molecules (water, carbon dioxide and oxygen) can move freely in and out of cells, energy is required for other substances and the process is active transport
Landfill	Waste in landfills is safe	Landfills can produce leachate and toxic vapors that can be harmful.
Nutrients	Plants get their food from the soil	Plants actually use inorganic molecules (Carbon dioxide and water) to make organic molecules (6-carbon sugars) as food
Oceans	They are an infinite supply of water and resources	The continued vast resources of the oceans are affected by the elements in the environment and how they can change the composition of the oceans and interfere with those organisms that live or rely on the ocean for survival
Pollution	Anything natural is not a pollutant	Anything can be a pollutant that does harm to a living organism. This includes natural events, such as volcanoes and forest fires.
Producers	Only land plants are producers	Plants in all environments (aquatic or terrestrial) can be producers and some animals can be producers as well
Respiration	Only animals need oxygen Only animal cells use the process of cellular respiration	Plants need oxygen as well and use the process of cellular respiration to gain energy