Research on Student Learning

Lower elementary-school students can understand simple food links involving two organisms. Yet they often think of organisms as independent of each other but dependent on people to supply them with food and shelter. Upper elementary-school students may not believe food is a scarce resource in ecosystems, thinking that organisms can change their food at will according to the availability of particular sources. [1] Students of all ages think that some populations of organisms are numerous in order to fulfill a demand for food by another population. [2]

Middle-school and high-school students may believe that organisms are ablel to effect changes in bodily structure to exploit particular habitats or that they respond to a changed environment by seeking a more favorable environment. [3] It has been suggested that the language about adaptation used by teachers or textbooks to make biology more accessible to students may cause or reinforce these beliefs. [4]

Some middle-school students think dead organisms simply rot away. They do not realize that the matter from the dead organism is converted into other materials in the environment. Some middle-school students see decay as a gradual, inevitable consequence of time without need of decomposing agents. [5] Some high-school students believe that matter is conserved during decay, but do not know where it goes. [6]

References

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[6] Leach, J., Driver, R., Scott, P., Wood-Robinson, C. (1992). *Progression in understanding of ecological concepts by pupils aged 5 to 16*.