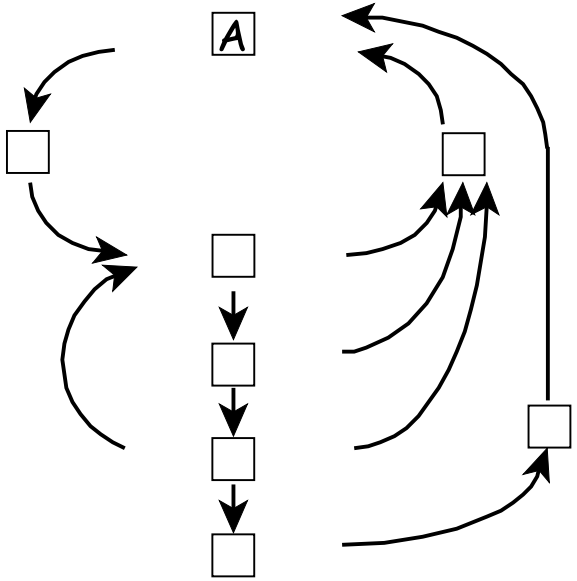
Unlike energy, the amount of matter on Earth is fixed (i.e., the Law of Conservation of Mass states that matter cannot be created or destroyed). This means that all the living processes on Earth use and reuse the same supply of matter (and nutrients) over and over again.

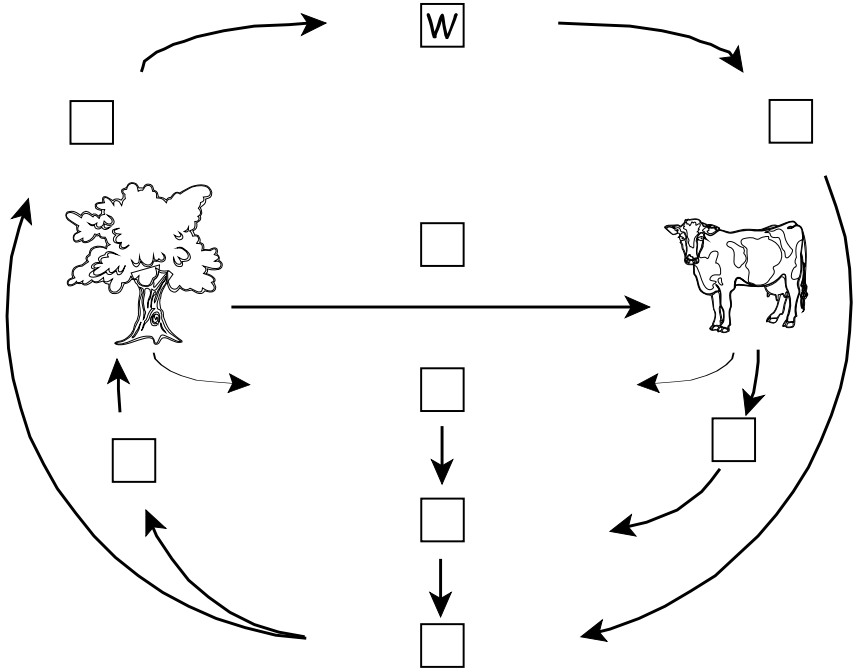
Instructions

Refer to the nutrient-cycling diagrams on P.26 & 27 of your textbook to help you place the letters of the following word(s) in the diagrams that follow. However, the diagrams below are NOT exact copies of those in the text - you will need to do some thinking! Some are already done for you to help get you started.

CARBON CYCLE

~~A) carbon (mostly CO_2) in atmosphere~~
B) cellular respiration
C) combustion
D) consumers
E) decomposers
F) compaction over time (fossil fuels)
G) photosynthesis
H) producers (plants & phytoplankton)



NITROGEN CYCLE

P) ammonia in the soil (NH_3) converted by bacteria into nitrites and then nitrates (nitrification)
Q) animals eat plants & make animal protein
R) converted by ① lightning, ② bacteria in root nodules & ③ soil bacteria into nitrates (nitrogen fixation)
S) decomposition of plant & animal matter by bacteria
T) denitrifying soil bacteria decompose nitrates & release nitrogen gas back into atmosphere (denitrification)
U) excretions
V) nitrates in the soil
~~W) nitrogen gas in the atmosphere~~
X) used as nutrients by plants