**E4 Resources are largely recycled in undisturbed communities**

E4.1 Understand that the level of available resources will determine the productivity of the community.

*This section looks at the* ***productivity*** *of a number of ecosystem types. It looks at how effective a community is in converting the light energy (from the sun) to chemical energy (available for the community to use… and to pass on to consumers).*

***What is biomass? What factors affect the biomass of a community in an ecosystem? Which ecosystem typically has a larger amount of biomass? Why?***

***Explain why not all of the energy trapped by producers is converted into biomass.***

***Explain why a rainforest ecosystem would have a higher level of productivity than arid grassland.***

E4.2 Explain why decomposers are essential in returning resources to the community

**The Carbon Cycle**

<http://www.windows2universe.org/earth/Water/co2_cycle.html>

First read this information about the carbon cycle (link above). You may also want to refer to your text book (p194-195) to help you during the game.

<https://www.windows2universe.org/earth/climate/carbon_cycle.swf>

In the game you will follow the journey of a carbon molecule. Complete the game and go to all the stations and answer all of the questions.

Think about:

* + How many stops *can* you make on your trip?
  + Will your journey ever end?
  + Was everyone’s journey the same? Why not?
  + What would happen if we burned more fossil fuels?

**The Nitrogen Cycle**

<http://www.windows2universe.org/earth/Life/nitrogen_cycle.html>

First read this information about the carbon cycle (link above). You may also want to refer to your text book (p194-195) to help you understand the nitrogen cycle.

<https://www.classzone.com/books/ml_science_share/vis_sim/em05_pg20_nitrogen/em05_pg20_nitrogen.swf>

<http://www.marietta.edu/~spilatrs/biol202/animations/nitrogen_cycle.swf>

*In the animations what were the three things responsible for fixing the N2 gas? What was the* ***usable*** *form of Nitrogen for plants?*

**The Phosphorus Cycle**

<http://www.sumanasinc.com/webcontent/animations/content/phosphorouscycle.swf>

Why is phosphorus required in heterotrophic organisms (eg humans)?

Questions

1. *Explain the meaning of the statement that decomposers are the recyclers of the community.*
2. *Give examples of the element carbon in (a) an inorganic molecule and (b) an organic molecule*
3. *Explain how decomposers convert organic molecules into inorganic ones and thus provide the link in recycling elements back to the producers.*