**The Carbon Cycle - Data Record Sheet** Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Roll the die to determine movement or non-movement of “self” – the Carbon Molecule. Follow written instructions for each die roll. Only change station when required to move to a new station.*

1. Record the places you travel to as a carbon molecule. Each station is a carbon reservoir, a place where carbon is stored.
2. Describe what happens to allow you to stay or move between carbon reservoirs.

List the key process that allow movement between reservoirs as appropriate.

1. List destination - Where do you end up after each die roll. Move to new station for next roll if required.

**Carbon Reservoirs:** 1) Atmosphere 2) Plants 3) Soil 4) Animals  
 5) Ocean Surface 6) Deep Ocean 7) Fossil Fuels

**Key Processes: Cellular Respiration** – release of CO2 gas when carbohydrates changed to energy   
**Photosynthesis** – creation of carbohydrates like glucose using sunlight, C02 and water  
**Combustion** - process of burning **Death and Decomposition** - breakdown and decay  
**Dissolving of CO2** into water to form Carbonic acid **Coming out of Solution** to become CO2 gas in the air

|  |  |  |  |
| --- | --- | --- | --- |
| Die Roll # | Carbon Reservoir (Station stop) | What Happens (Process or description) | Destination |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 |  |  |  |
| 5 |  |  |  |
| 6 |  |  |  |
| 7 |  |  |  |
| 8 |  |  |  |
| 9 |  |  |  |
| 10 |  |  |  |
| 11 |  |  |  |
| 12 |  |  |  |
| 13 |  |  |  |
| 14 |  |  |  |

**Nutrient Cycle Assignment:**  Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Create a comic strip or storyboard to show your understanding of either the carbon, nitrogen or phosphorus cycle. As a reference refer to notes, internet and pdf file from science 10 textbook on nutrient cycles. Link on my website! If you choose either the Nitrogen or Phosphorus cycles, these cycles were only briefly discussed in class and more detail will be required for assignment.

**Include in storyboard/comic strip** (six to twelve frames): Key processes in cycle that allow the nutrient to move between the important reservoirs/sinks in the cycle, the form(s) of the nutrient used by producers, importance of nutrient to living organisms and human activities and their impact on the nutrient cycle.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Criteria | **1** | **2 3** | **4** | **5** |
| **Indicate the important processes** that allow nutrient to move from one **reservoir** to another/**form(s) of nutrients** used by producers   **/5** | Weak understanding of key processes and movement between reservoirs and/or form(s) of nutrient used | Some understanding of key processes and movement between reservoirs as well as the form(s) of nutrient used | Good understanding of key processes and movement between important reservoirs as well as form(s) of nutrient used | Thorough grasp of key processes and how the nutrient moves between important reservoirs as well as the chemical form(s) of nutrient used |
| **Importance of Nutrient** to Living Organism | * Explain at least two ways the nutrient is used by plants or animals in chemical or biological processes. **/2** | | | |
| **Human Activities** that impact cycle and related problems | * Include at least two human activities and explain/show how activity changes or impacts the cycle **/5** | | | |
| **Snap Shot**  -Clear and Creative  -Shows understanding of important aspects of cycle and human impact  -Effort and care in written text and labelled/coloured illustrations  -Text is fine lined or typed   **/5** | Poor attempt to create a story/comic that illustrates and explains important aspects of nutrient cycle and human impact  -Text in pencil/pen  -Illustrations rushed/unclear | Satisfactory attempt to create a story/comic that illustrates and explains important aspects of nutrient cycle and human impact  -Simple illustrations  -Text fine-lined/typed | Good effort to create a story/comic that illustrates and explains important aspects of nutrient cycle and human impact  -Good coloured illustrations  -Text neatly fine-lined/or typed | Excellent effort and understanding shown in story/comic which clearly illustrates nutrient cycle and human impact.  -Great coloured/ labelled illustrations  -Text neatly fine-lined or typed |
| **Submitted on time with all criteria met   /1** | **Total:** **/18 = %** | | | |

