Science 9

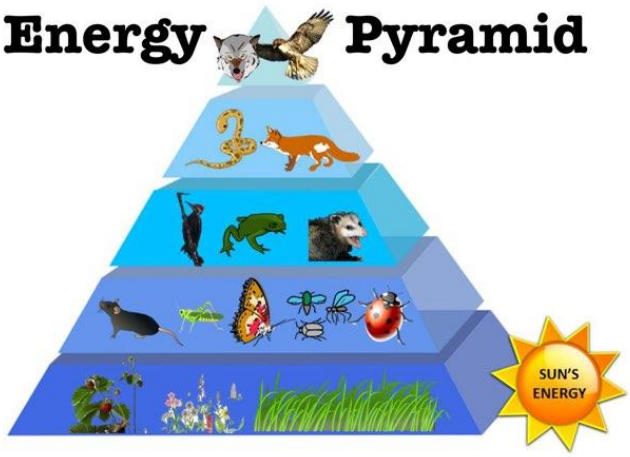
Design your own Ecosystem

Name:
Date:
Block:

Background: An ecosystem is a *community of organisms* and their *environment*

In this assignment, you will:

- design an ecosystem
- discuss which organisms live in the ecosystem
- imagine a disturbance in the ecosystem
- identify the impact on the ecosystem
- describe how the ecosystem will get back to normal



TASKS

1. Create **4 organisms** to be in a food chain or web – could be monsters, plants, aliens, animals, micro-organisms, etc. – and **one decomposer**.
    - Each organism must be different from the rest, and you must write a few **notes** for each:
        i. Where does the organism gets its energy from (who/what does it eat?)
        ii. Which **trophic level** is the organism at in the food chain
        iii. Is the organism a **primary/secondary/etc. producer** or **consumer** or **decomposer**
        iv. Give as many **details** about the organism as possible (colour, size, number of eyes, etc.)
    - **Draw** your organism and decomposer
2. Design an **ecosystem** for these organisms to live in (forest, lake, truck-stop bathroom). Be sure to draw and describe the ecosystem these organism are living in.
3. Draw an **energy pyramid** showing who eats who and how many of each of the organisms are needed to sustain the next trophic level. (HINT: **Recall that 10% of the energy moves up the chain.**)
4. Describe a **disturbance** – natural disaster, supernatural phenomenon – that reduces the number of your producers in HALF. In addition:
    - Describe what the effect will be on the food chain. How many individuals will remain in each trophic level?
    - Describe what will have to happen to make each trophic level be restored to where it was before.

Due Date: _____

Planning Sheet:

	Organism Name	Where does the organism get energy from?	Which trophic level is it in?	Which type of organism is it (primary consumer, decomposer, producer, etc.)?	Details about the organism
1					
2					
3					
4					
5					

How many of each of the organisms are needed to sustain the next trophic level (Hint: think about the 10% rule):

Details about the ecosystem:

Description of the disturbance:

Effect of the disturbance on the organisms:

How many organisms will remain in each trophic level?

How does the ecosystem get restored to where it was before?

Rubric:

Category	Emerging	Developing	Proficient	Extending
Description of 5 Organisms	Some descriptions are included; descriptions are brief Descriptions are messy and/or written in pencil	Most descriptions are included; descriptions are brief Descriptions are typed or written in pen/fine lined	All descriptions are included, but are lacking detail Descriptions are typed or written in pen/fine lined	All descriptions are included with descriptive detail and creativity Descriptions are typed or written in pen/fine lined
Drawing of 5 Organisms	Some drawings are complete and/or do not match the description Drawings are printed and/or drawn in pencil Lack of effort is shown	Most drawings are complete and match the descriptions Drawings are fine-lined and coloured Minimal effort is shown	All drawings are complete and match the descriptions, but are lacking detail Drawings are fine-lined and coloured Demonstrates a good effort	All drawings are complete with details that match the descriptions Drawings are fine-lined and coloured Demonstrates a considerable effort
Ecosystem Description and Drawing	Some descriptions and drawings are included; descriptions are brief Descriptions and drawings are messy and/or written in pencil Lack of effort is shown	Most descriptions and drawings are included; descriptions are brief Descriptions and drawings are typed or written in pen/fine lined Minimal effort is shown	All descriptions and drawings are included, but are lacking detail Descriptions and drawings are typed or written in pen/fine lined Demonstrates a good effort	All descriptions and drawings are included with descriptive detail and creativity Descriptions and drawings are typed or written in pen/fine lined Demonstrates a considerable effort
Energy Pyramid	Energy pyramid is inaccurate; does not demonstrate the 10% rule Messy and incomplete	Energy pyramid is somewhat accurate and demonstrates the 10% rule Somewhat neat and clear	Energy pyramid is accurate and demonstrates the 10% rule Neat and clear	Energy pyramid is accurate and demonstrates the 10% rule Detailed, clear, and neat
Disturbance and Restoration Descriptions	Some descriptions are included; descriptions are brief Descriptions are messy and/or written in pencil	Most descriptions are included; descriptions are brief Descriptions are typed or written in pen/fine lined	All descriptions are included, but are lacking detail Descriptions are typed or written in pen/fine lined	All descriptions are included with descriptive detail and creativity Descriptions are typed or written in pen/fine lined