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Art 103

Reading 1

Q1. -- What is a good working definition of what a System is and perhaps what it is not?
A system is made up of groups that interact with each other to form a whole. Desired outcomes determine whether or not a system is efficient or not.

Q2. -- For the 4 system definitions you were to look up please give in your own words what they mean and give an example of them for each case.

1. Modularity - allows parts of a system to work independently or can be combined to work together.
    a. Ex. A car. Parts of a car can be removed or altered and it would not heavily affect the whole car.
2. Decomposability - Components of a system that is broken down to its basic form or to the point of where it is gone.
    a. Ex. Dead plants and animals are broken down by bacteria or fungi to become part of the soil.
3. Emergence - happens when parts of a systems develop new behaviors through interaction
    a. Ex. Birds flocking in order to stay safe from predators and search for food easier.
4. Chaos Theory - where behaviors in a system appear spontaneously and can create lasting effects or maintain balance
    a. Ex. Standing in line, waiting for the new iPhone

Q3 -- Give us your definition of what Tessellation means and give an example you encountered, not mentioned in the reading.
Tessellations are created when repeating shapes fit perfectly on a flat surface without leaving any gaps or overlaps.
Ex. Optical illusions

Q4 -- What is The difference between ideas of Modularity and Tessellation? What are the properties that are in opposition with each other?
Modular systems describes individual parts that can work separately on its own and collaborate when put together. Tessellations, however, need shapes to be congruent and fit together to be considered as one. To summarize, modular systems can work both independently and together, while tessellations have to work as a whole.

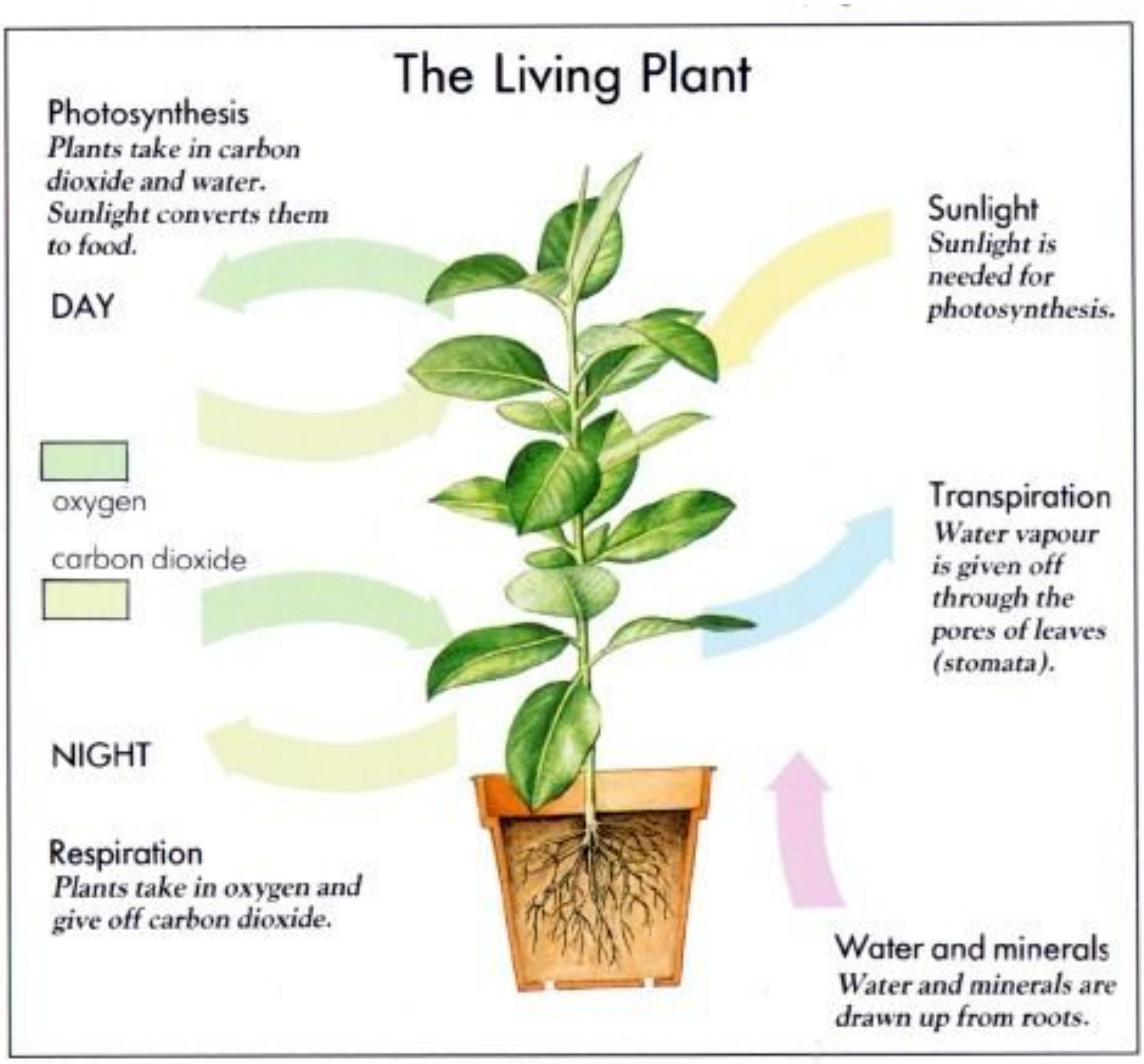
Q5 -- What is the difference between designing something that has Complexity (aperiodic) vs being Uniform (periodic)
Designing something that has complexity versus being uniform rely on legibility. A complex design can have implicit meanings and has various elements interacting with each other. A uniform design is easier to read, but repeated throughout to create coherency.

Q6 Group Activity. Bring in a series of 4 diagrams that show evidence of Modularity, Decomposability, Emergence and Chaos Theory.

1. One diagram must have more than 100 elements [Chaos Theory]

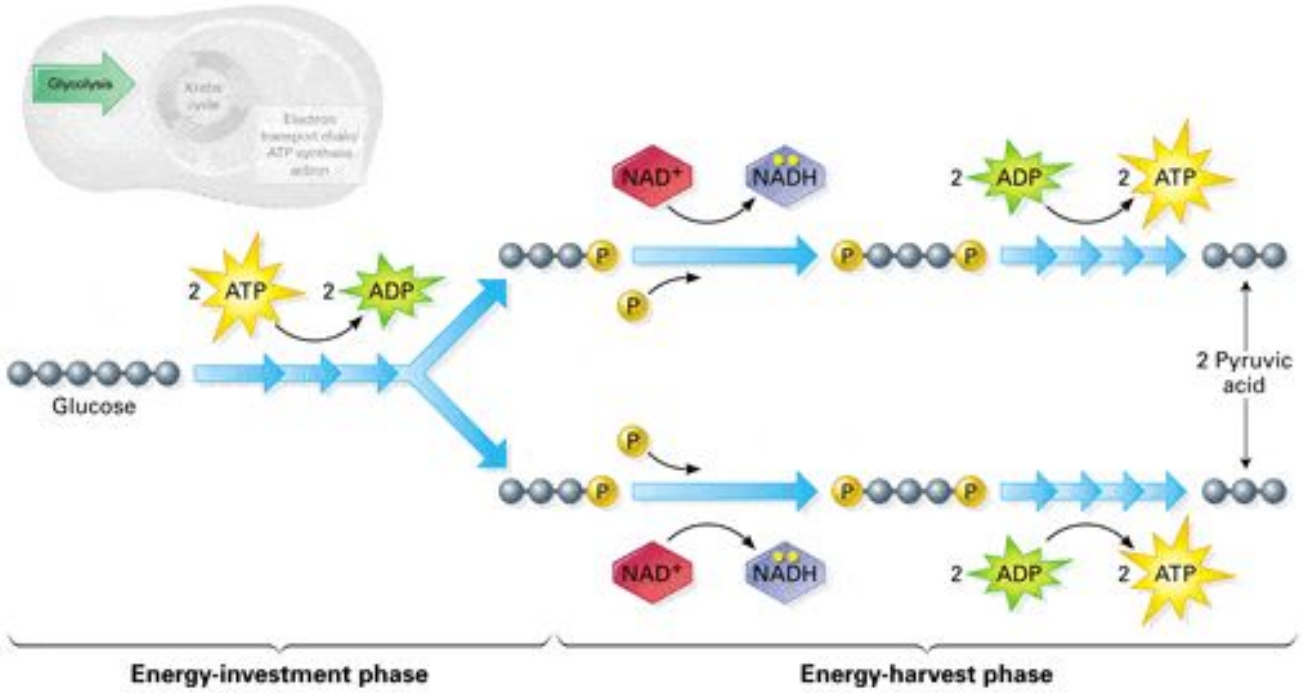
This diagram demonstrates how different actions can lead a bird species to become threatened or extinct.

2. One diagram must be something considered living [Emergence]



This is an example of emergence because seeds cannot grow into plants without the help of water, oxygen, and sunlight.

3. One diagram must be represent something that is not visible or physical [Decomposability]



This diagram shows how glucose (sugars) are broken down into energy.

4. One diagram must be a system based on modularity

An exploding diagram shows how individual parts of a coffee cup that can work well together.