







# AG Biology Notes - Friday & Monday

## Ecology & Energy Transfer

- Earth's main source of energy: **The Sun** 
- How do we (humans) get energy from the sun?
  - 1- Eating **Plants**  (They change the sun's energy into sugar)
  - 2- Eating other **Animals**  that eat plants.
- So, the energy from the **sun** goes to the **grass** then gets eaten by the **cow** then gets eaten by the **humans** 

- We use pictures, words & arrows to show how this happens:
  - Food Chain (Arrows go from the organism being **EATEN** to the organism doing the eating. Example:  → 

\*Pay attention to the direction of the arrows!






Real Ecosystems are more complex than a food chain. We use a **FOOD WEB** to show more details:



- At each **Trophic Level** (spot in the food chain) energy is **LOST**. Each time we move up a Trophic Level we lose 90% of the energy. We show this using an **Energy Pyramid**. **Joules (J)** is a measurement of energy



Terms to Know:

- **Autotroph**: Makes sugar using energy from the sun (Plants) 
- **Heterotroph**: Gets energy by **EATING** other organisms (Cows , humans )
- **Biotic**: Living or was once alive (Plants, Animals)
- **Abiotic**: Non-living (rocks, soil, Air, water)
- **Equilibrium**: When the number of organisms in an ecosystem is balanced.



## Nature of Science

Science: Knowing, thinking and reasoning.

Scientific Law: Fact we know for sure (Law of Gravity)

Scientific Theory:

- Tested over & over
- We're almost 100% sure it's right
- New data is unlikely to discredit it. (Theory of Evolution, Cell Theory)

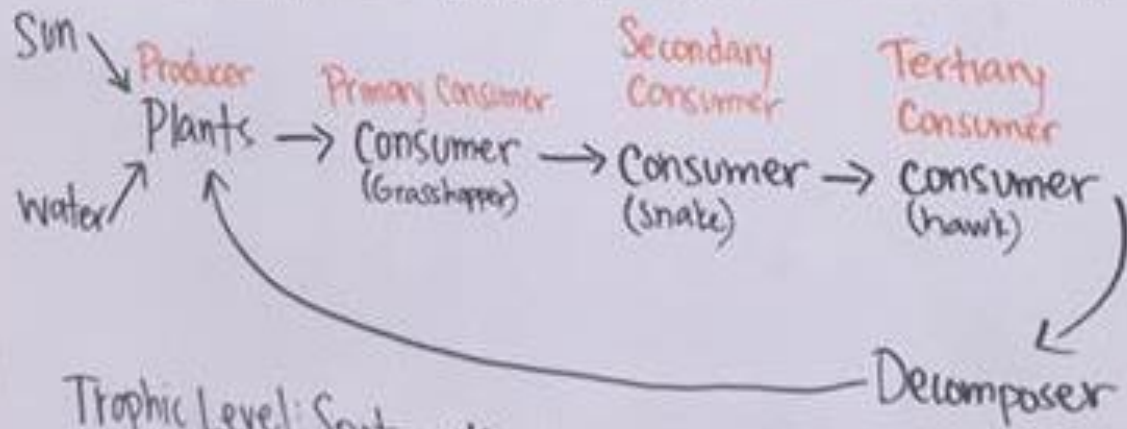
Hypothesis: Educated guess that we can TEST

## Ecology

Ecology: The study of ecosystems (All living & non-living stuff in a given area)

3 Types of Living Things:

- Producers - Plants - Get energy from the Sun (Photosynthesis) - Autotroph <sup>- self - Nutrition</sup>
- Consumers - Eat plants & animals - Heterotroph. Carnivore - meat, Herbivore - Plants, Omnivore - Plants & Meat
- Decomposers - Break down (eat) dead stuff turning it back into soil.



Trophic Level: Spot in the food chain. (Producer, Primary, Secondary & Tertiary Consumers)