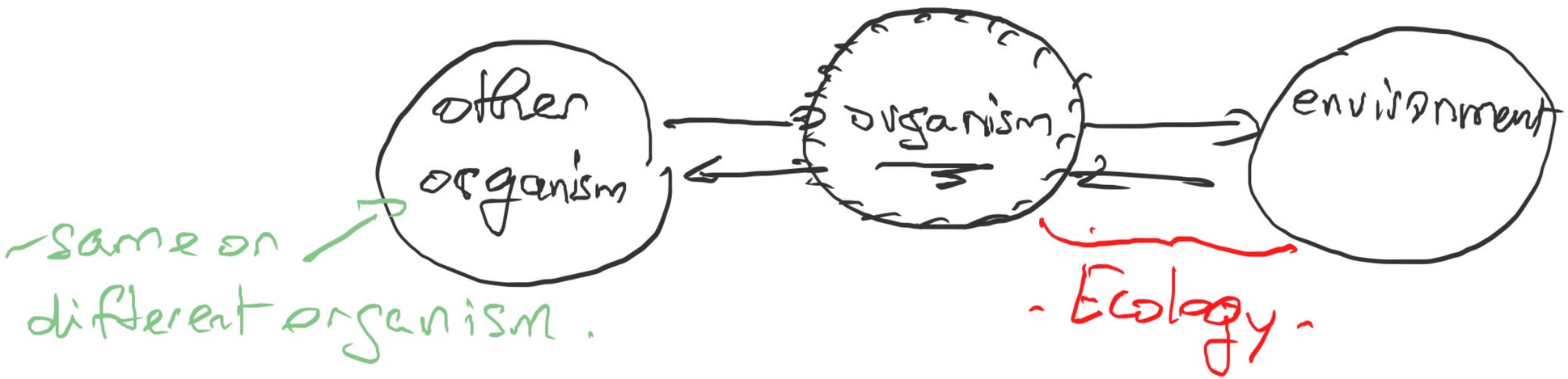
⇒ Natural selection:

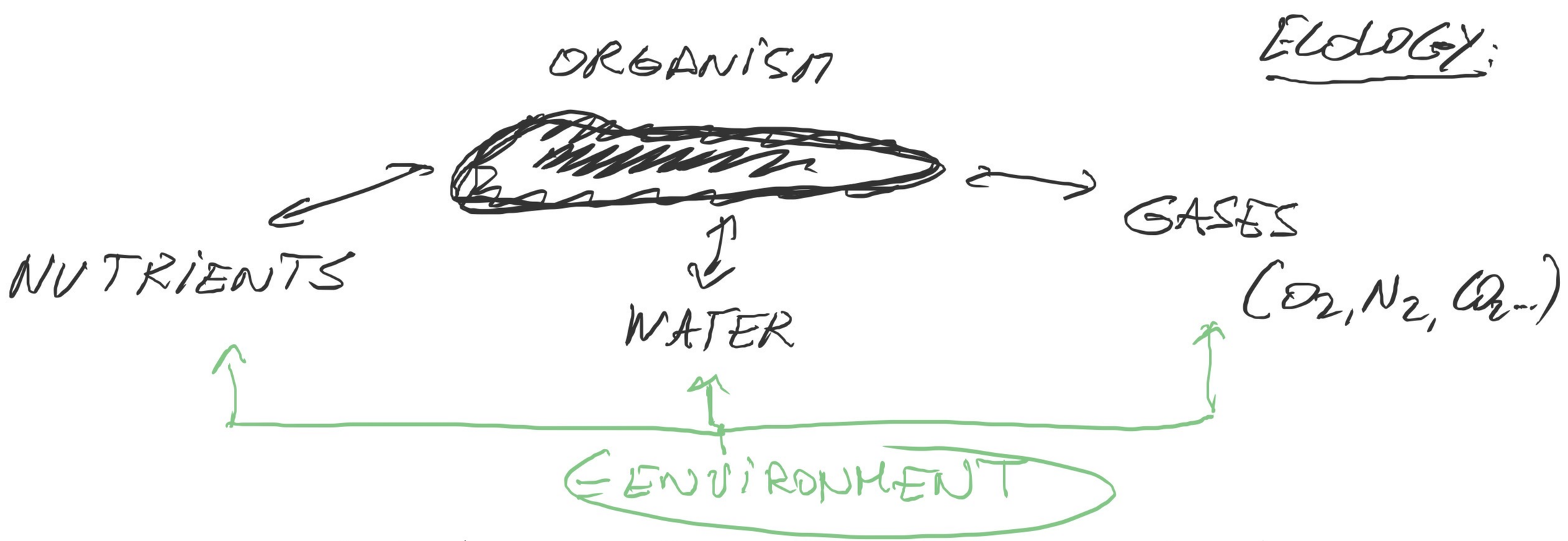
= Survival of the fittest.

- Interdependence of organism:



Ex: Example: - COEVOLUTION -

ECOLOGY:



⇒ The stability of the environment is ESSENTIAL on the healthy functioning of the organism.

⇒ NEED: ENERGY from the SUN: DIRECTLY OR INDIRECTLY.

PHOTOSYNTHESIS: Photo- use the sun.

synthesis- reactor or/and transformar

⚠ SOME organisms are going to use it.

1st step: capture the "photons" (energy package from the sun)

2nd step: transform photon → chemical energy → form that can be utilized by the organism.

$$\underbrace{6\,CO_2}_{\text{GAS}} + \underbrace{6\,H_2O}_{\text{Soil}} \xrightarrow{\text{LIGHT}} C_6H_{12}O_6 \text{ (or } C_n(H_2O)_n,\ i.e.\ n=6) + \underbrace{6\,O_2}_{\text{oxygen}}$$

Products

"Plant" → Autotrophs : (Auto - himself
troph - food)

= organisms able to make their own food.

→ Phototrophs:

= use solar energy (photosynt.) to get energy.

→ Chemotrophs:

= use of ≠ chemical processes to get energy -

→ Heterotrophs:

= must take in food to meet their energy needs.

Ex: herbivores, carnivores or both omnivores.

= must have an organization → Complex chemicals broken down and reassembled into chemicals.

"Scientific method"

STEP #1: Observations: five senses to perceive objects or event.

→ Asking a question: 1 or more questions are generated.

STEP #2: HYPOTHESIS: A statement is testable if evidences can be collected.

↓

- Refined it
  or
- revised it
  or
- discared it

} hypothesis after testing it.

STEP #3: EXPERIMENTING: Test the hypothesis.
= COLLECT DATA from CONTROLLED CONDITIONS.

= Base on a comparison of a control group with an experimental group.

CONTROL GROUP.	vs	EXPERIMENTAL GROUP
variable: X, Y, Z (SAME)		variable: X, Y, Z' (SAME)

$Z \neq Z'$

testing Z vs Z'.

Both groups are identical except for one factor (= independent variable).

Ex: testing U.V light on frogs: U.V. light exposure time is ≠ for all group: I.V.

– Factors –	Groups # 1 control green frog	# 2 Exp. green frog	Exp #3 Exp. green frog	
a) • type of frog.				⇐ SAME
b) # of eggs	100.	100	100	⇐ SAME
c) Temperature	25°C	25°C	25°C	⇐ SAME
d) U.V. light exposure	0 day	15 days	24 days	⇐ independant variable

☒ MEASURING: quantitative data: Numbers

qualitative data: Test ⊕ or ⊖

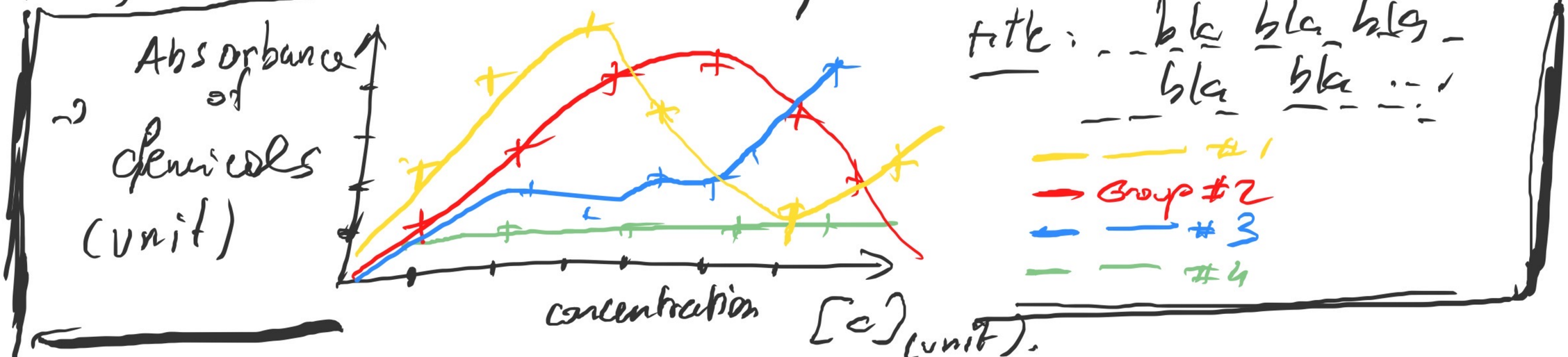
YES or NO ...

Sampling: = technique to use a small part of population to represent the entire population.

STEP #4 : Organizing DATA: involves placing observations and measurement (data) in order.

Ex: Graphs, charts, tables, or maps.

talk by itself



Analyzing of data:

DATA → reliable yes or no?

→ support hypothesis yes or no?

STEP#5: CONCLUSION ⟹ BASED ON FACTS

⟹ MADE BASED ON YOUR DATA.

① should support your hypothesis-

② should be re-testable.

STEP#6: COMMUNICATION = share my results.

* publish my data in journal (peer-reviewed)
* present in scientific meeting.
* = UNBIASED. → PUBLISH = 100% SOLID.