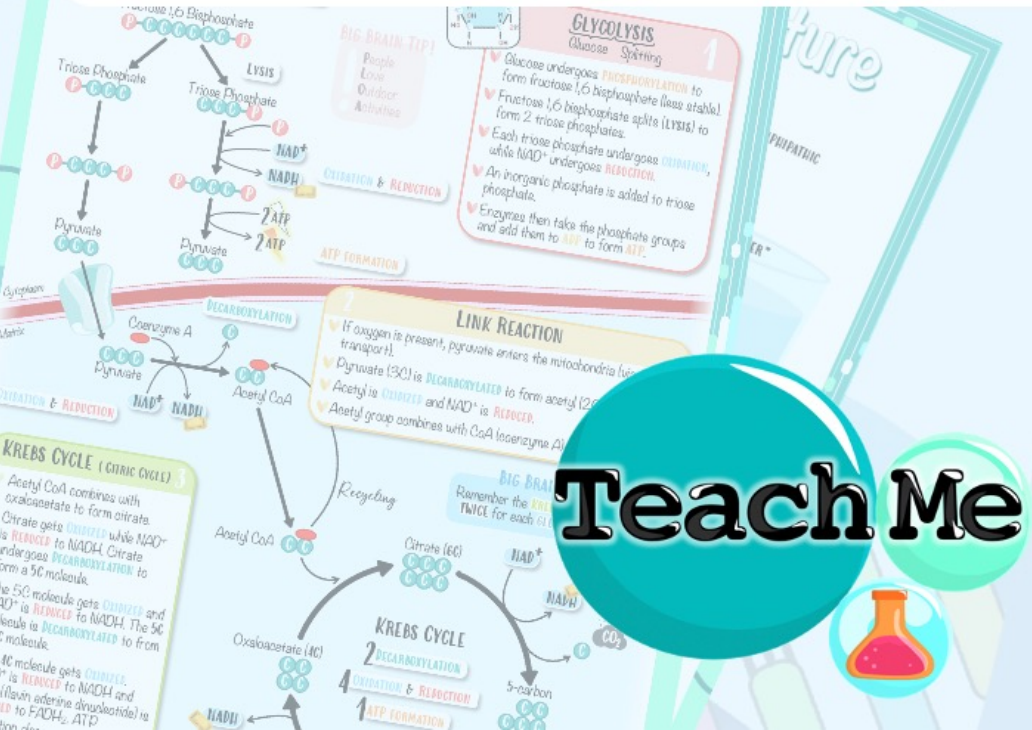
TeachMe

STUDY NOTES

B4.1 Adaptations to Environments



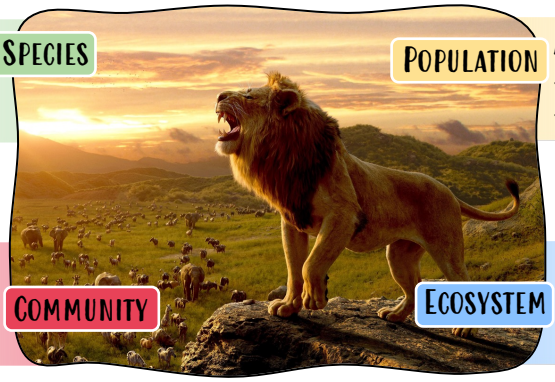
B4.1

Adaptations to environments

ECOLOGY – The study of the relationships between living organisms and their physical environment.

SPECIES – A group of organisms that can interbreed and produce fertile offspring.

POPULATION – A group of organisms of the same species who live in at the same area at the same time.



COMMUNITY – A group of populations living and interacting with each other in an area.

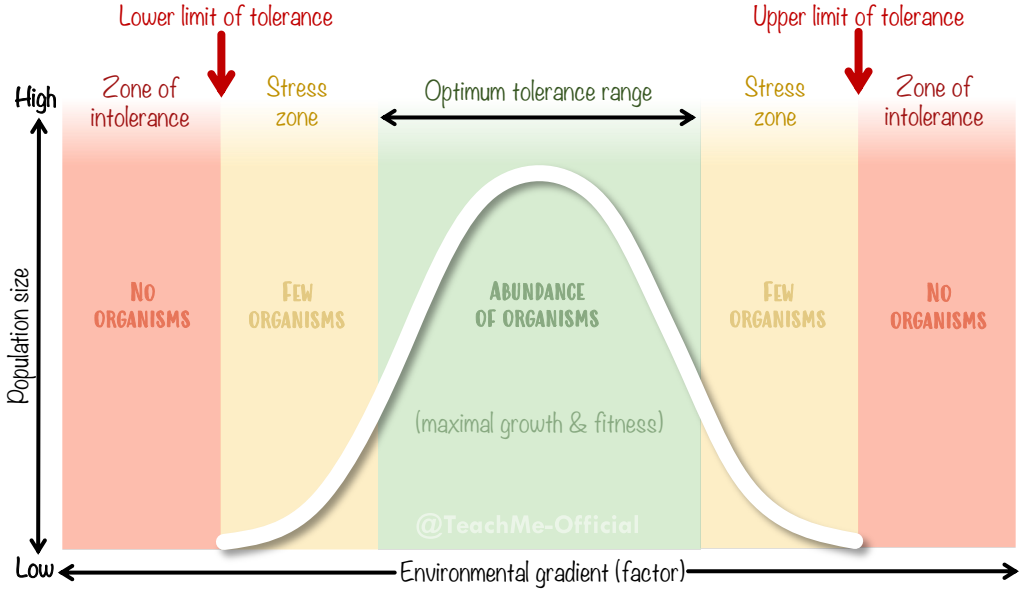
ECOSYSTEM – A community and its **ABIOTIC** environment.

ABIOTIC FACTORS (anything non-living)

- Amount of sunlight
- Water availability
- Type of soil
- Temperature
- pH range
- Etc...

HABITAT - The environment where an organism lives. Including **BIOTIC** and **ABIOTIC** factors.

Need to be adapted to these factors to survive



The factor is suitable to most organisms without the need to adapt.

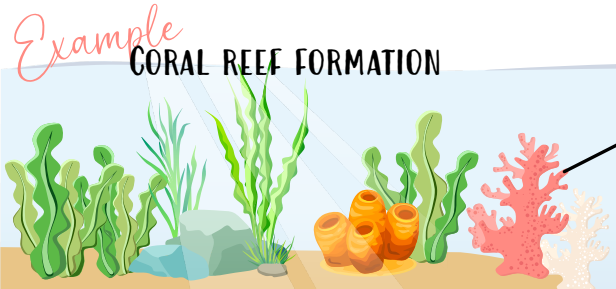
The factor becomes harsher leading to special adaptations for the extremes - means less competition

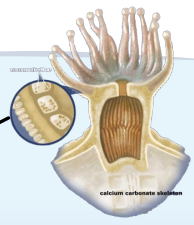
No organism can adapt to tolerate the conditions, leading no organisms being able to survive.

Limiting factor: A factor that **LIMITS** the survival of an organism.
(Once a factor extends beyond the tolerance zone of an organism it becomes a limiting factor.)

Example

CORAL REEF FORMATION

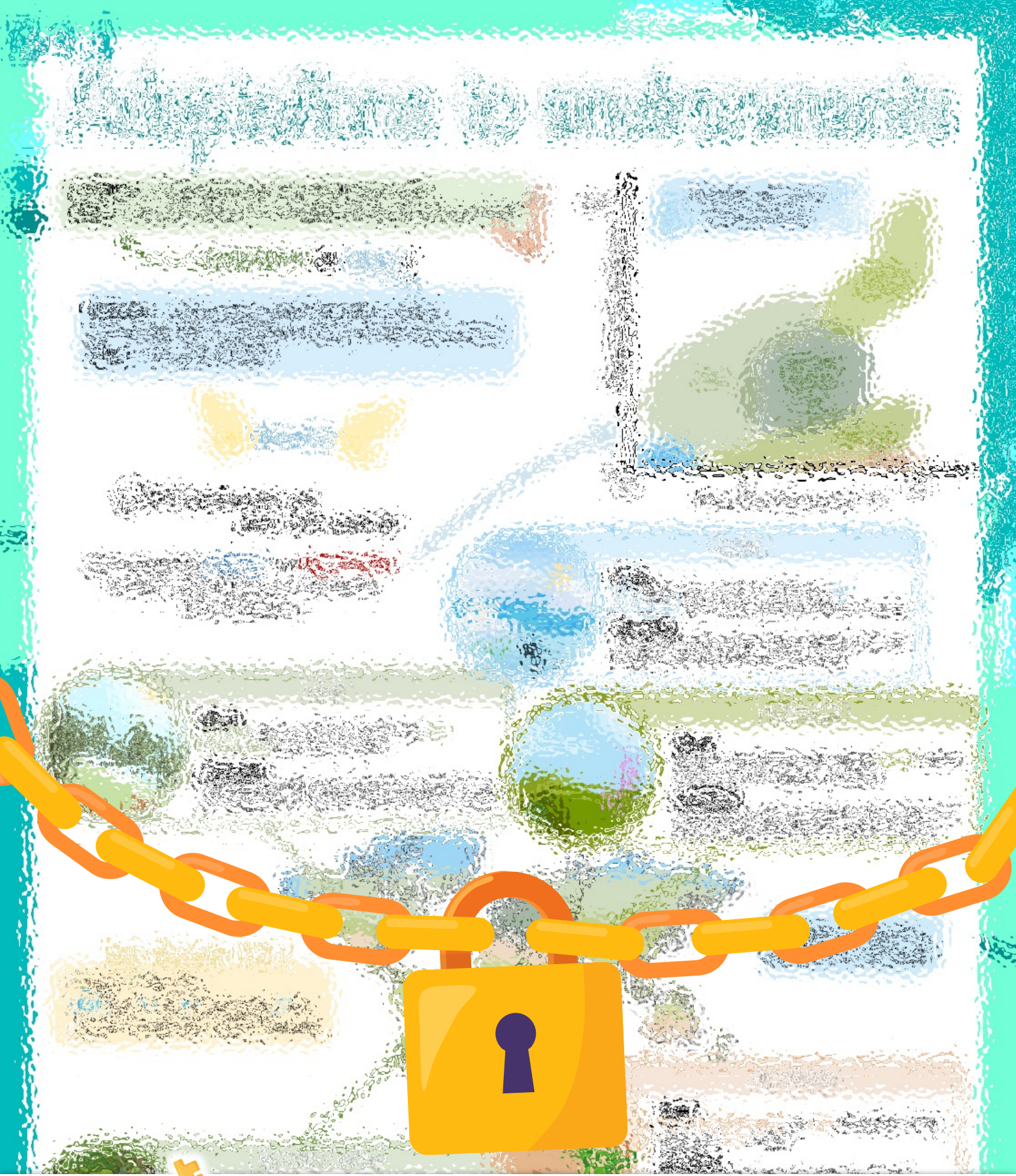


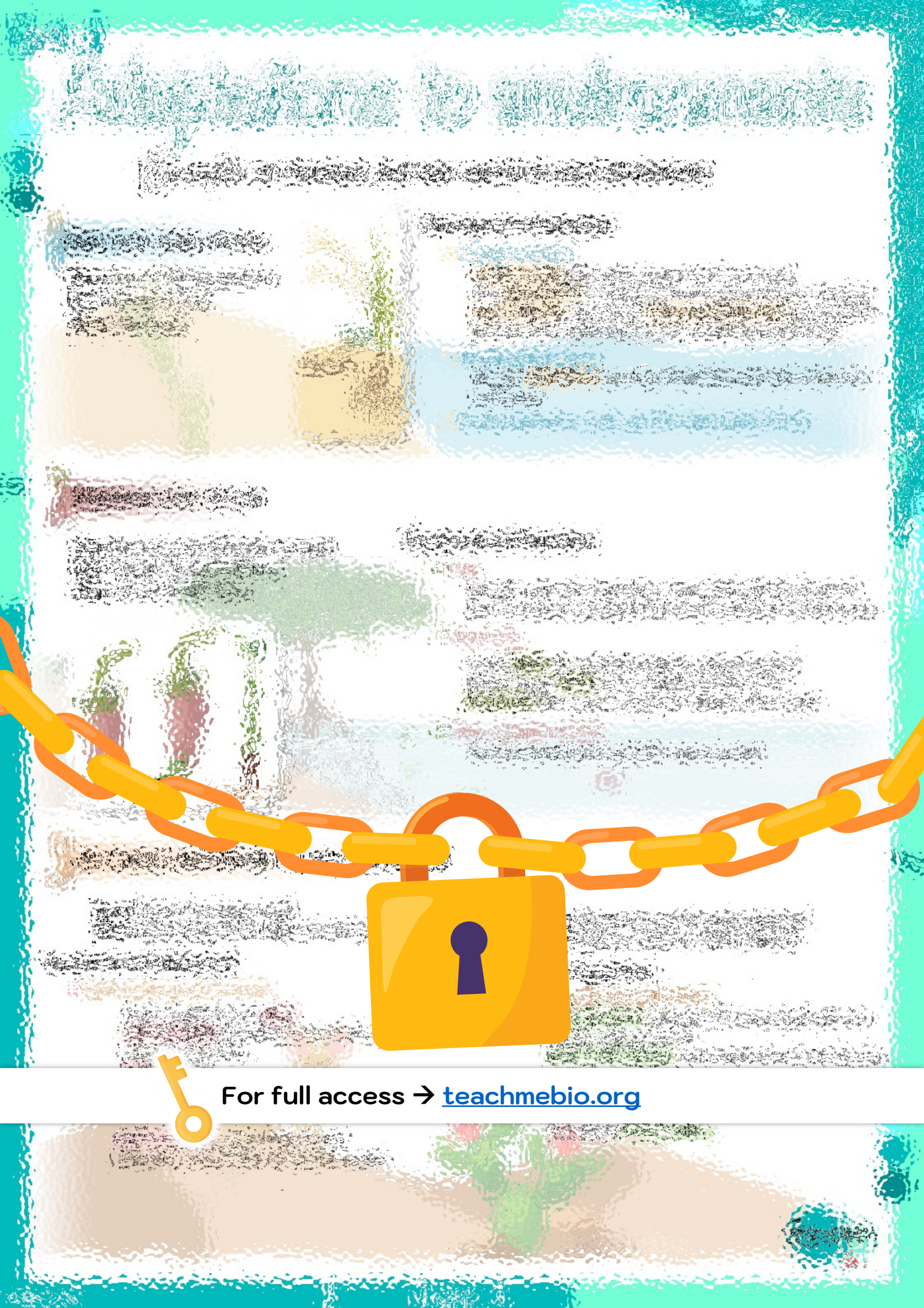


Symbiotic relationship between **coral polyps** and microscopic algae called **zooxanthellae**.

Potential limiting factors [Big ocean, small occupation by coral reef]

1. **Water depth** – light penetrate only shallow depth. Too deep, no light, no coral reef.
2. **Water clarity** – coral need clear water. too much pollution or sediment leads to not enough light.
3. **Water temperature** – corals survive in narrow range (20°C-28°C). Too hot leads to stressed corals: bleached coral.
4. **Salinity** – coral need correct salt level. freshwater may not be correct salinity.
5. **Water pH** – Increased acidity (lower pH – acidification) results in less calcium carbonate compounds being available in the water for corals to use when building reefs.





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