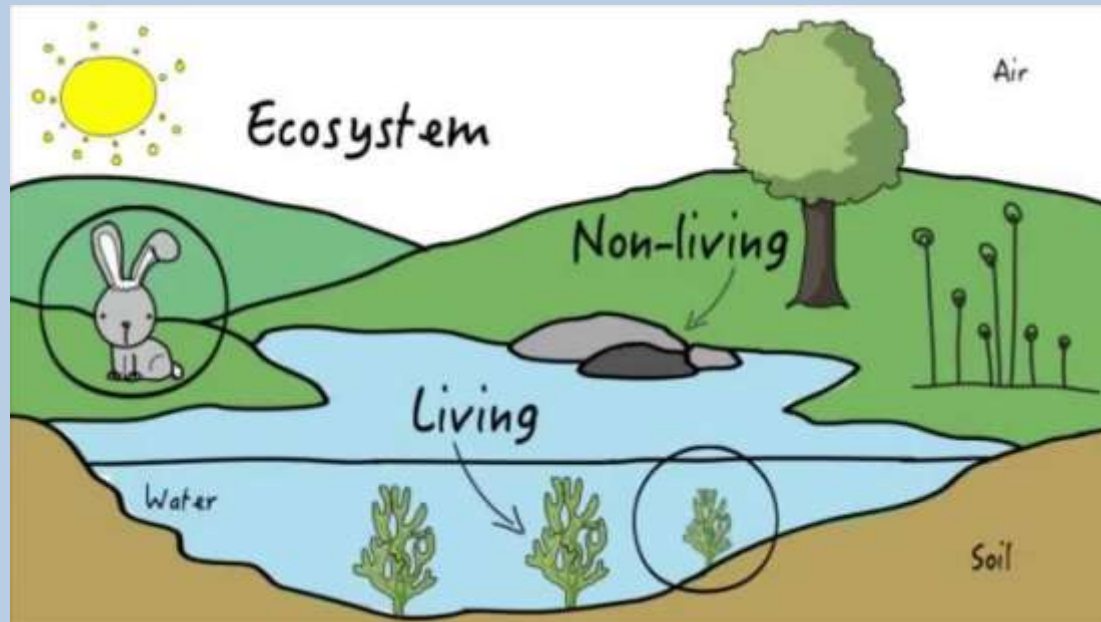


- 1. Why is it important to study ecology?**
- 2. What kind of questions could an ecologist ask about the pond ecosystem?**
- 3. Is Earth an open or closed system (for the most part)?**



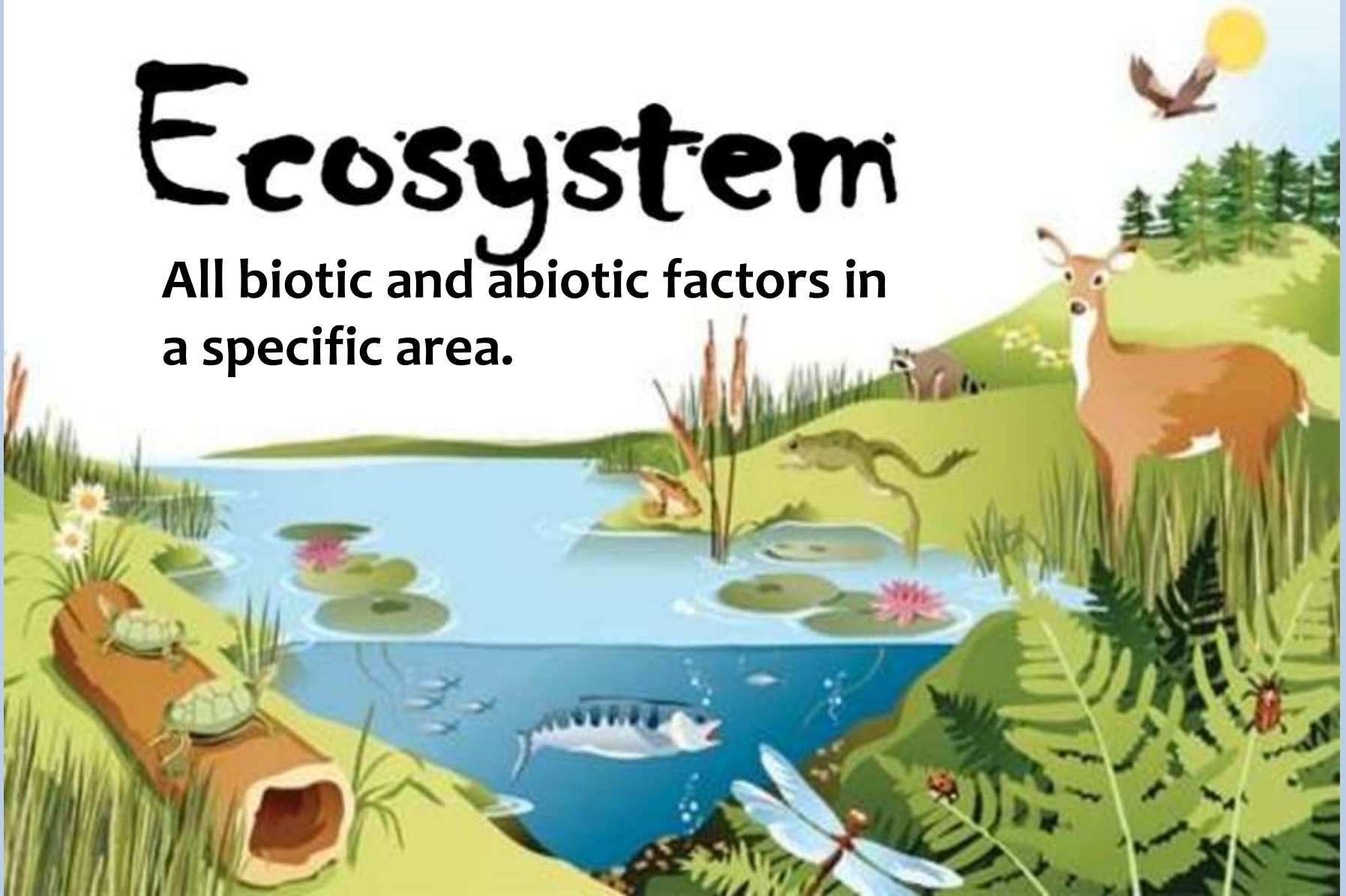
Earth as a System

- **Ecology: the study of interactions between living things and their surroundings.**



Ecosystem

All biotic and abiotic factors in a specific area.



Earth as a System

- **System: A set of interconnected parts that make up a whole.**



CHECK-IN

- **Things you need to know:**
 - **Biotic and abiotic factors directly influence each other**
 - **If you change one part of a system it influences the production of the entire system**

Ecology

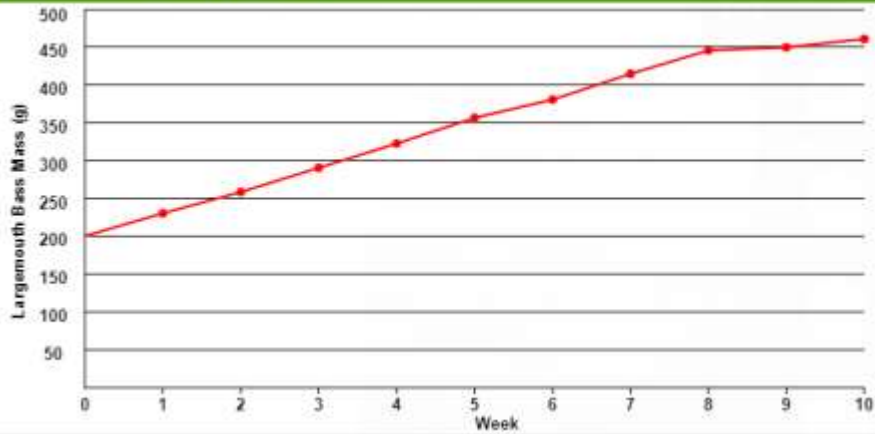
- **Get out your Factors Affecting Growth worksheet.**



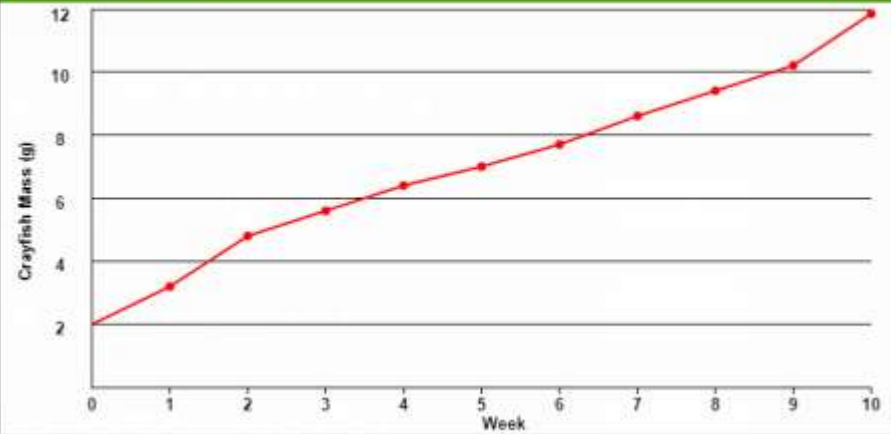
Ecology

- Temperature

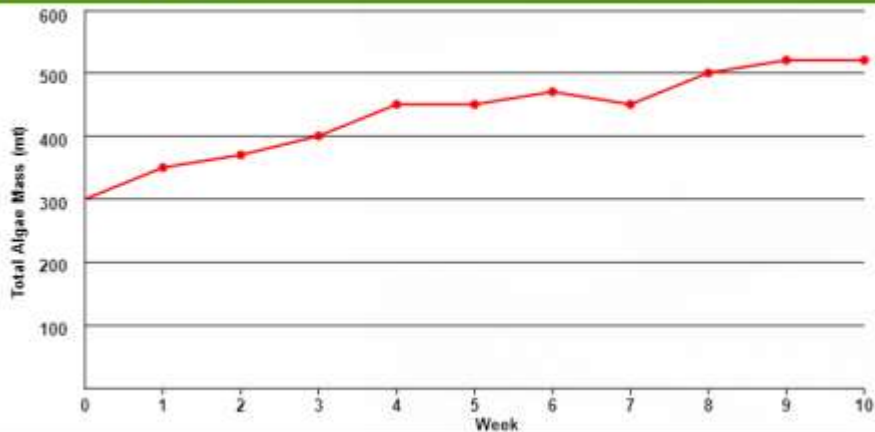
Largemouth Bass Mass (g) (30°C)



Crayfish Mass (g) (30°C)



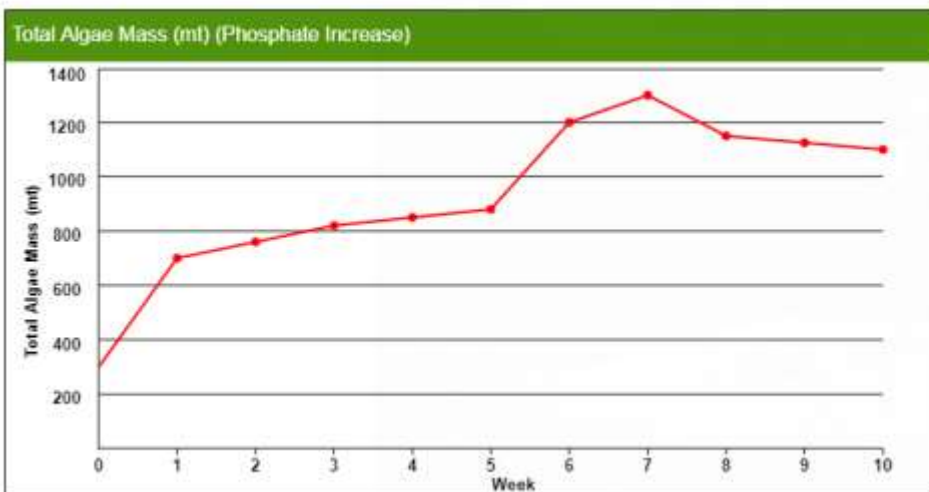
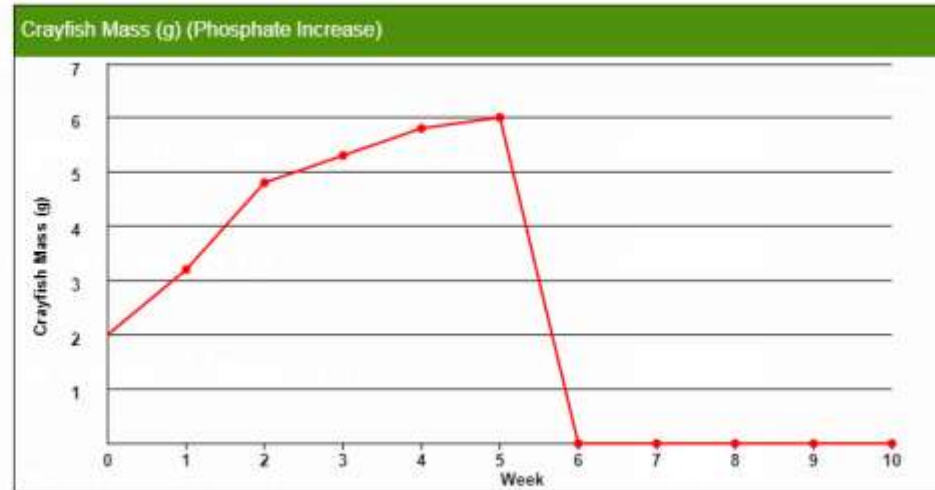
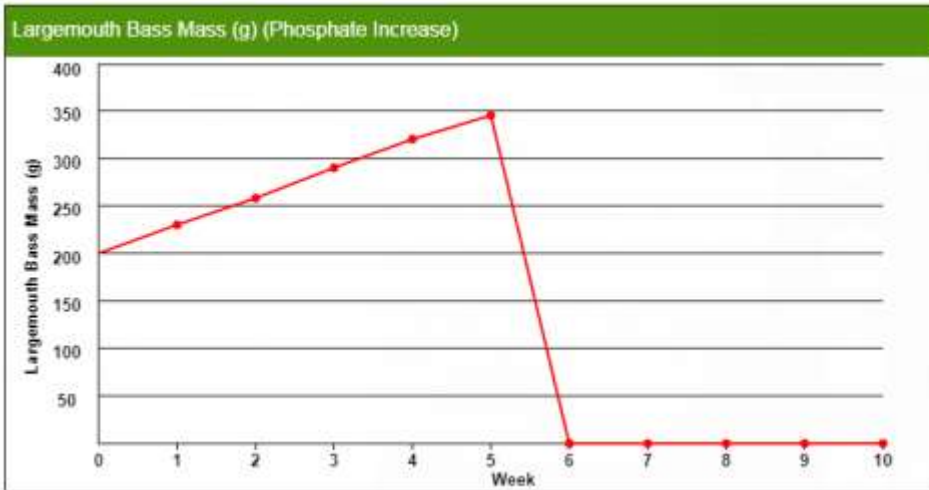
Total Algae Mass (mg) (30°C)



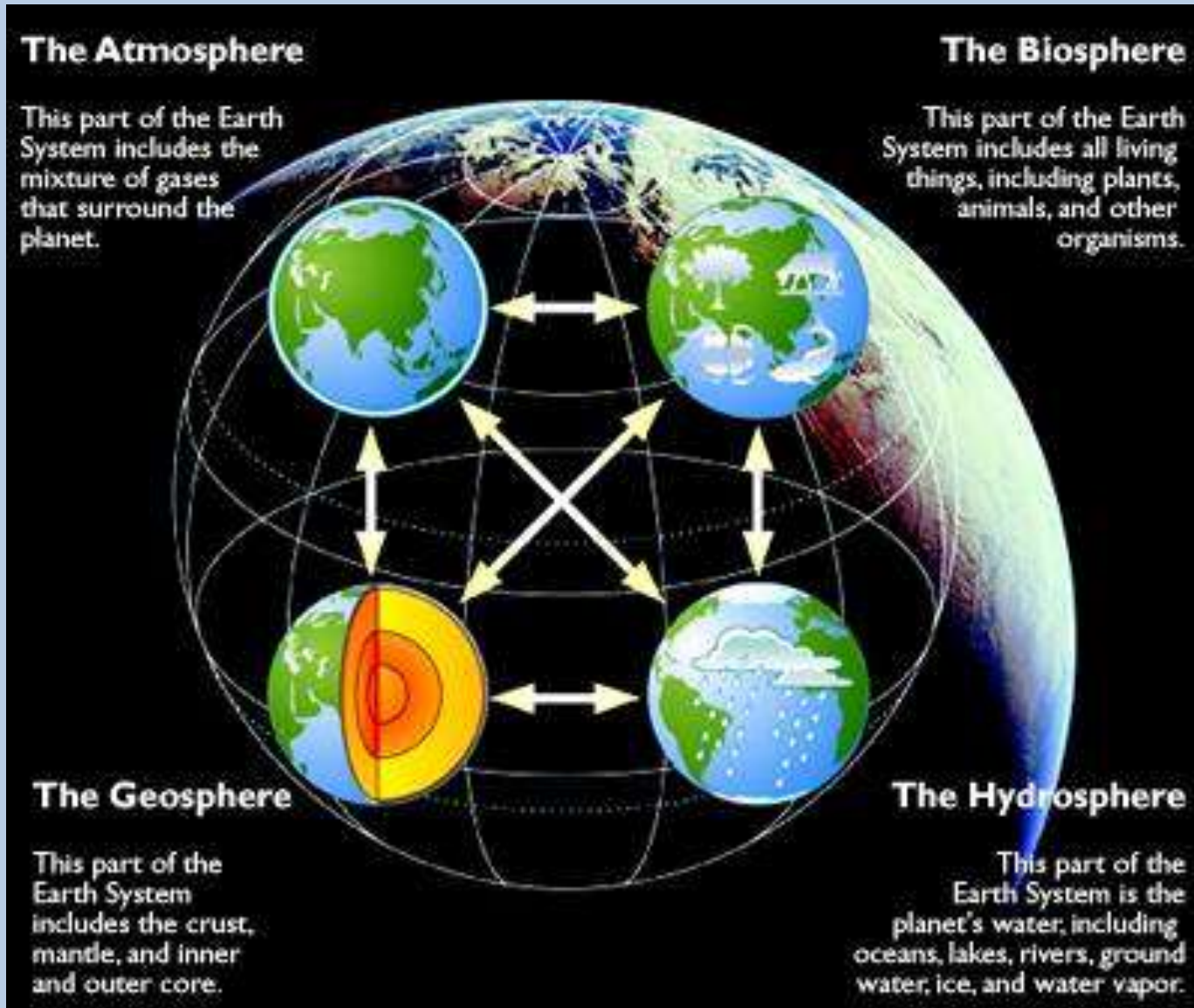
Add graph here

Ecology

- Phosphorous



The Earth as a System



The Earth as a *system*

- **Climate change: changes in temperature, clouds, winds, precipitation, and the frequency and severity of extreme weather events**

Climate vs Weather

- **Climate** change: changes in temperature, clouds, winds, precipitation, and the frequency and severity of extreme **weather** events

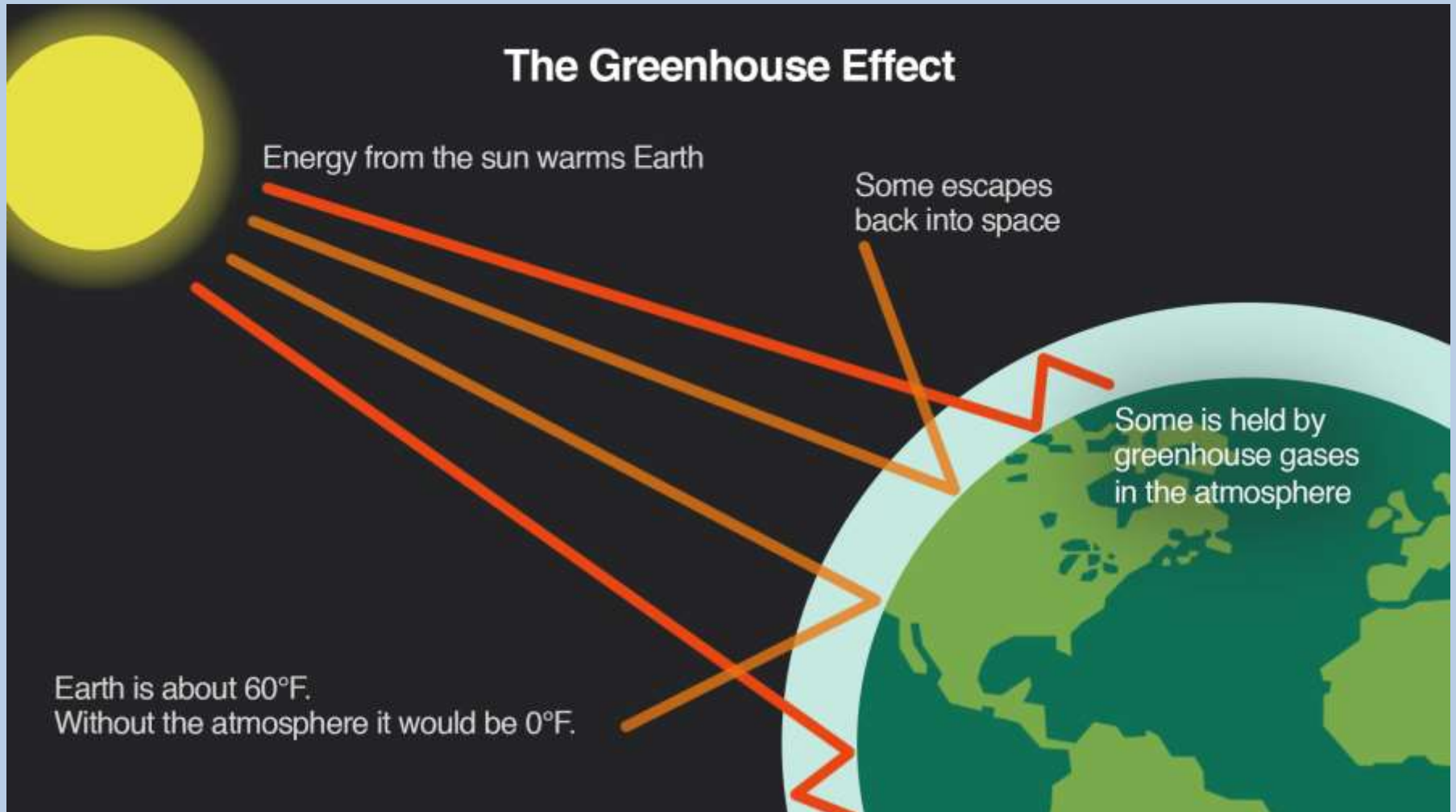
Climate vs Weather

- **Climate:** patterns and averages of temperature, precipitation, clouds, and wind over **MANY YEARS**
- **Weather:** short-term changes in temperature, precipitation, clouds and wind from day-to-day, minute-to-minute

Climate vs Weather

- **What is one climate change that is greatly affecting the Earth and society right now?**

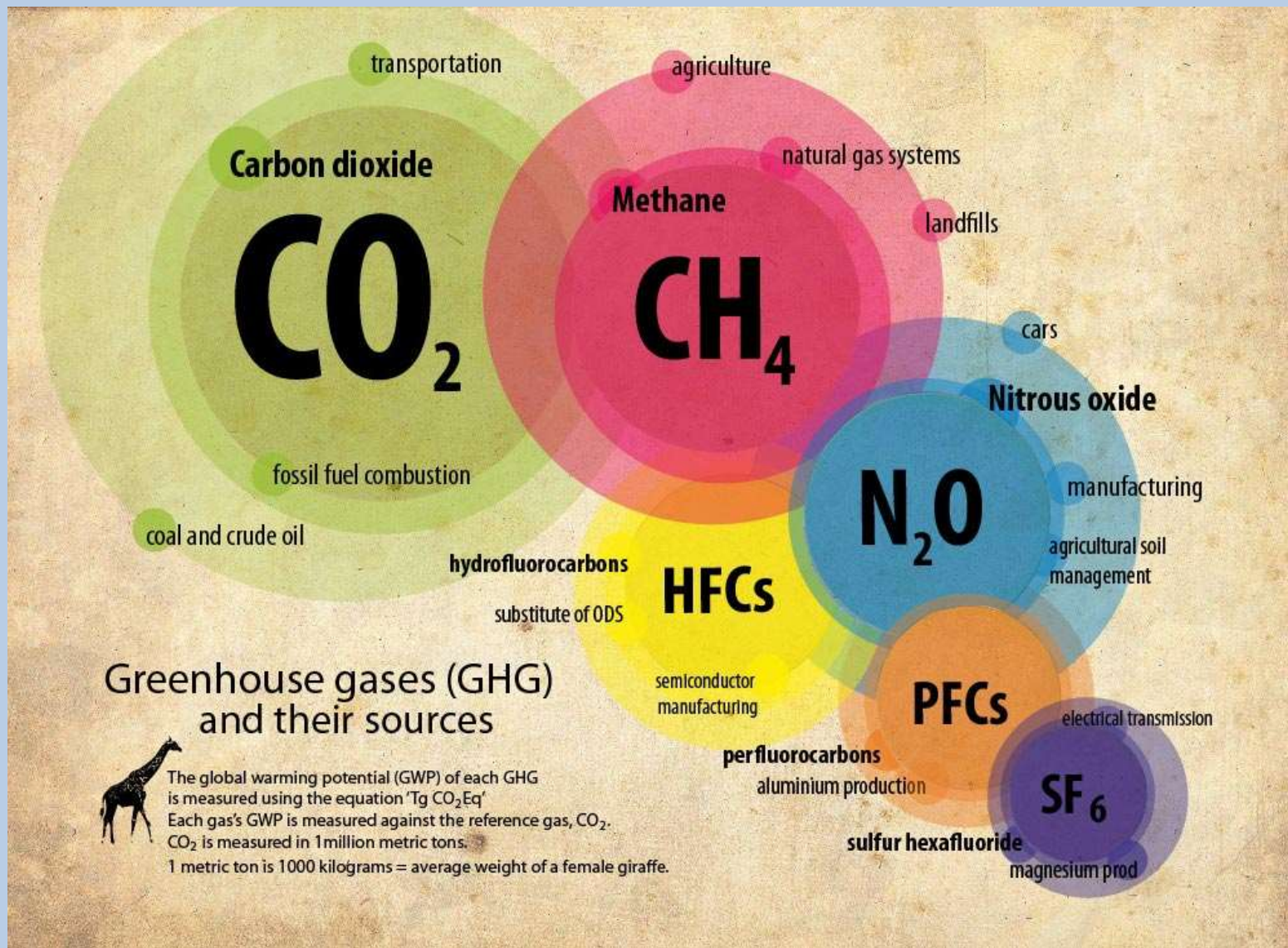
Greenhouse Effect



Greenhouse Effect

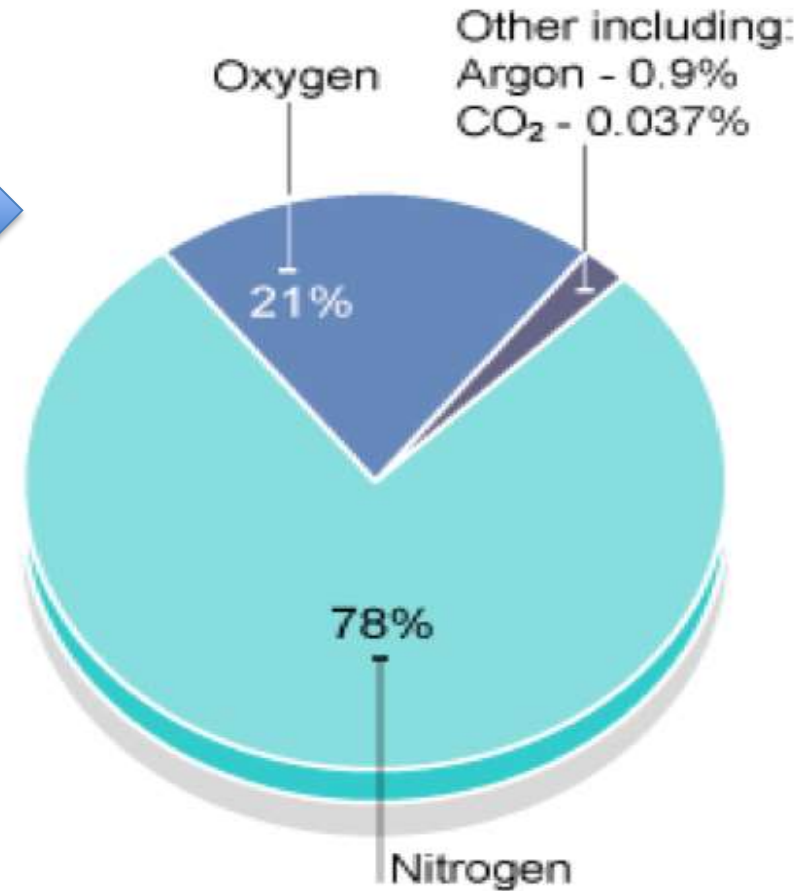
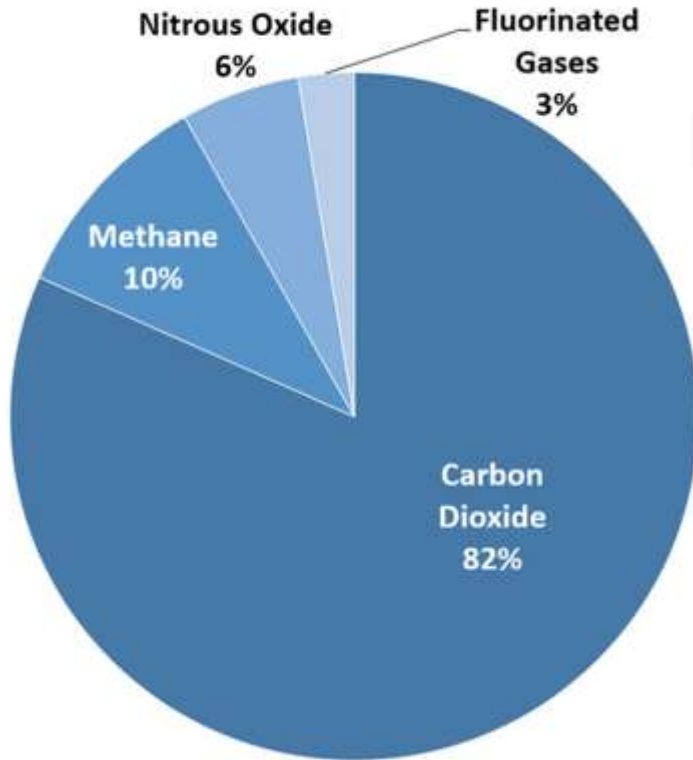
- **Greenhouse gases: gases that traps heat in the atmosphere.**

Greenhouse Effect

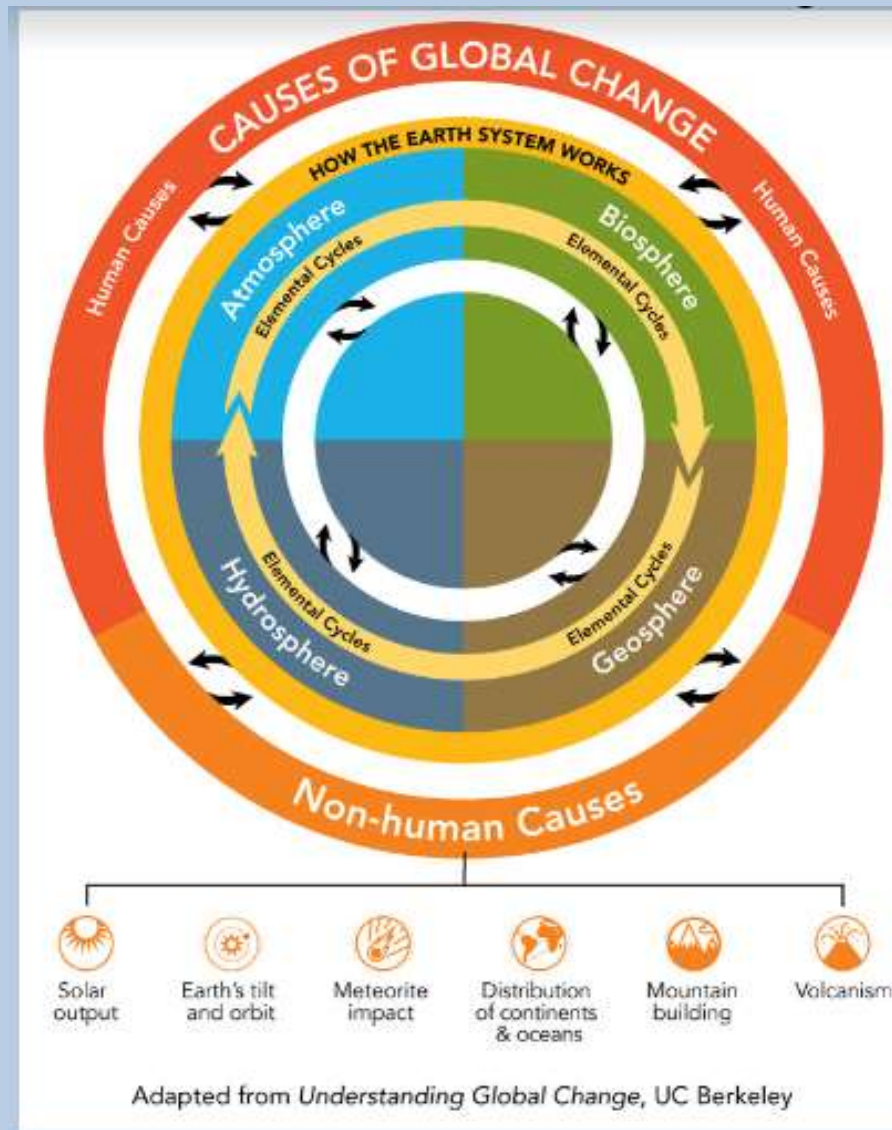


Greenhouse Effect

Overview of Greenhouse Gas Emissions in 2017



Climate vs Weather



Climate vs Weather

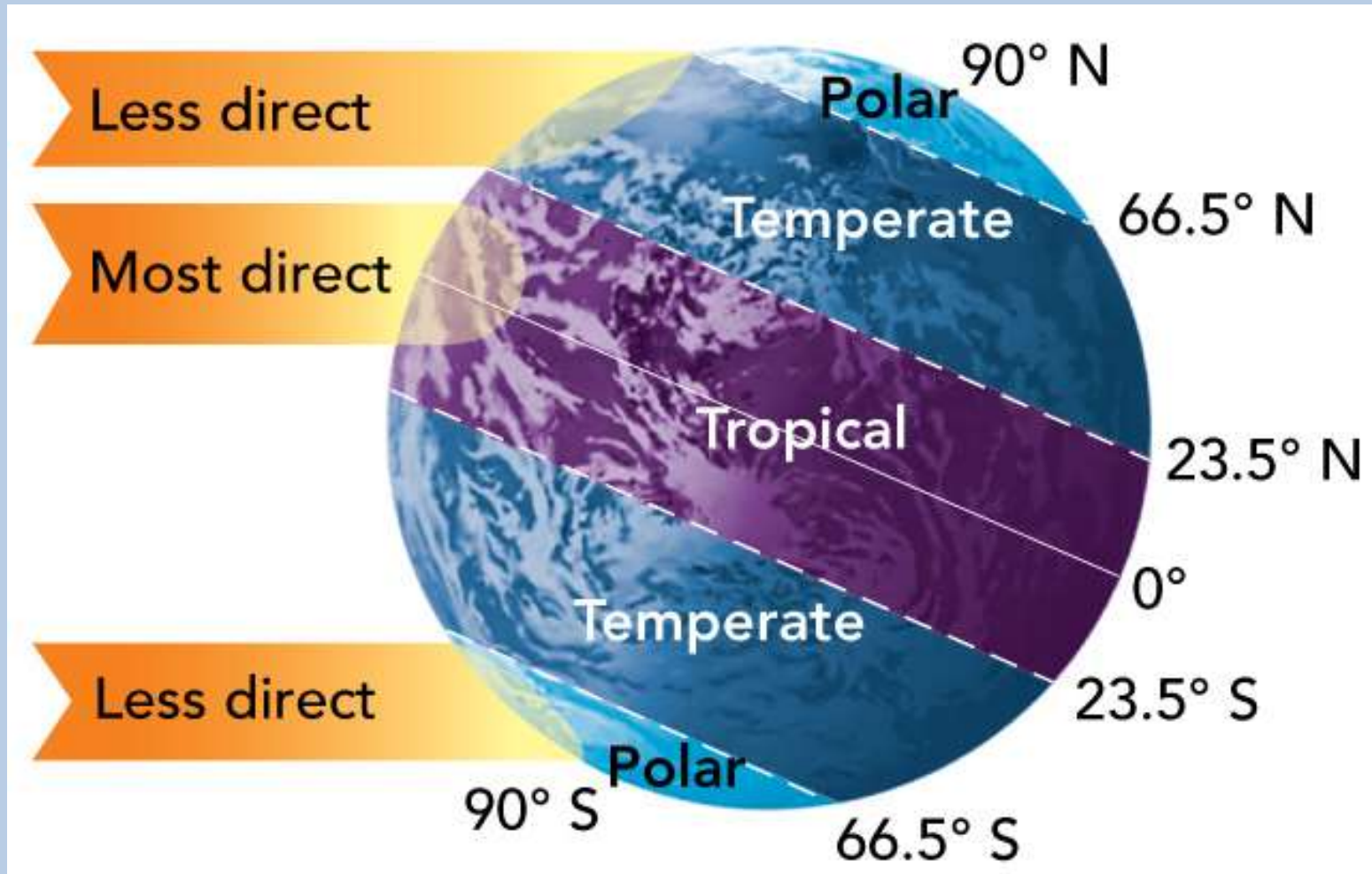
- Humans use fossil fuels (coal, gas) → break down into CO₂ → traps solar energy in the atmosphere → global warming

Climate vs Weather

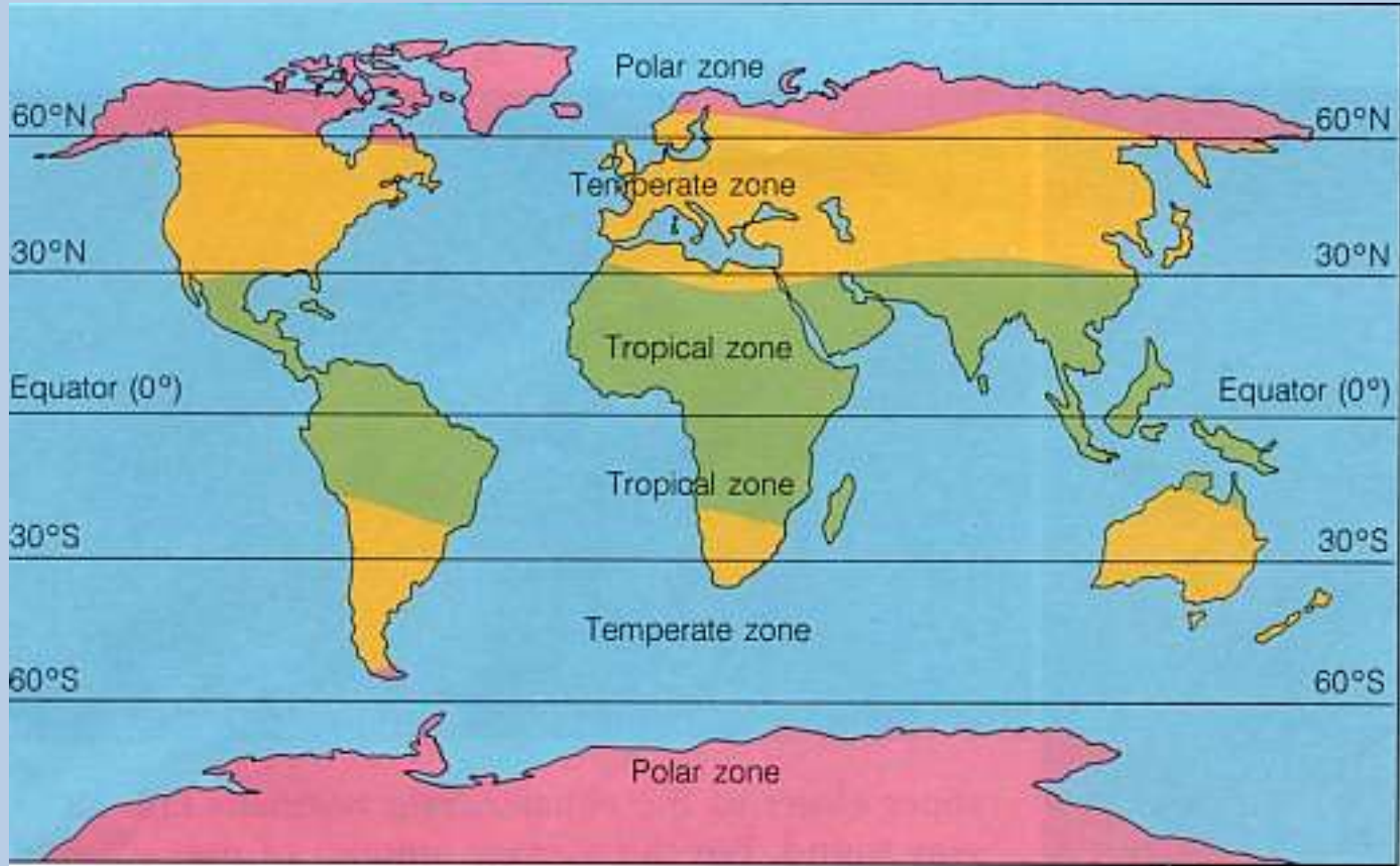
- **What naturally contributes to climate?**

Climate vs Weather

- **Climate Zones:**



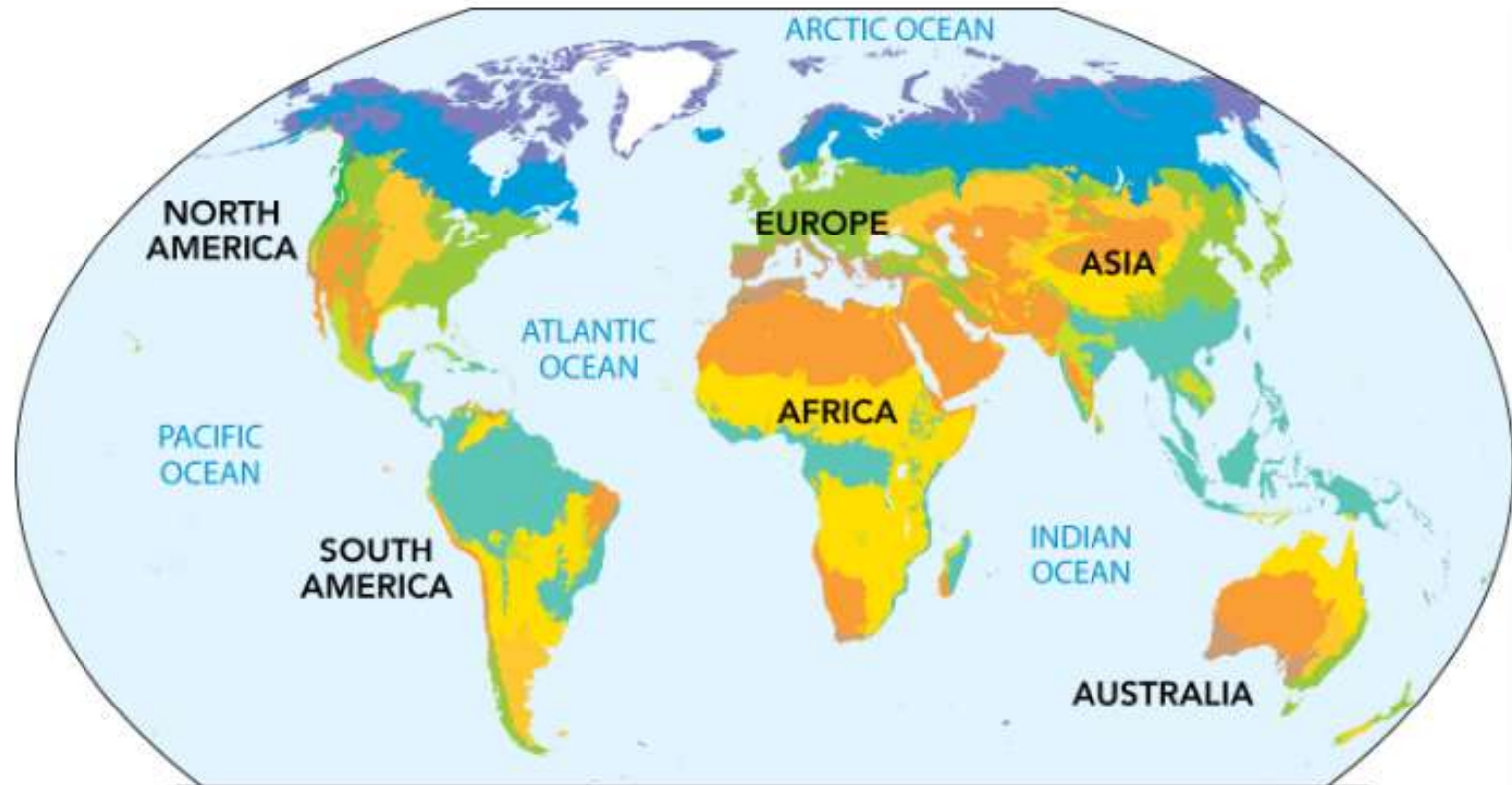
Climate vs Weather













Climate vs Weather

- **On top of climate zones, the surfaces of Earth have an affect on temperature as well**

Biomes



KEY

 Tropical rain forest	 Temperate grassland	 Northwestern coniferous forest
 Tropical dry forest	 Temperate woodland and shrubland	 Boreal forest
 Tropical grassland	 Temperate forest	 Tundra
 Desert		

Biomes

- Biomes are different types of environments which are highly influenced by **CLIMATE**

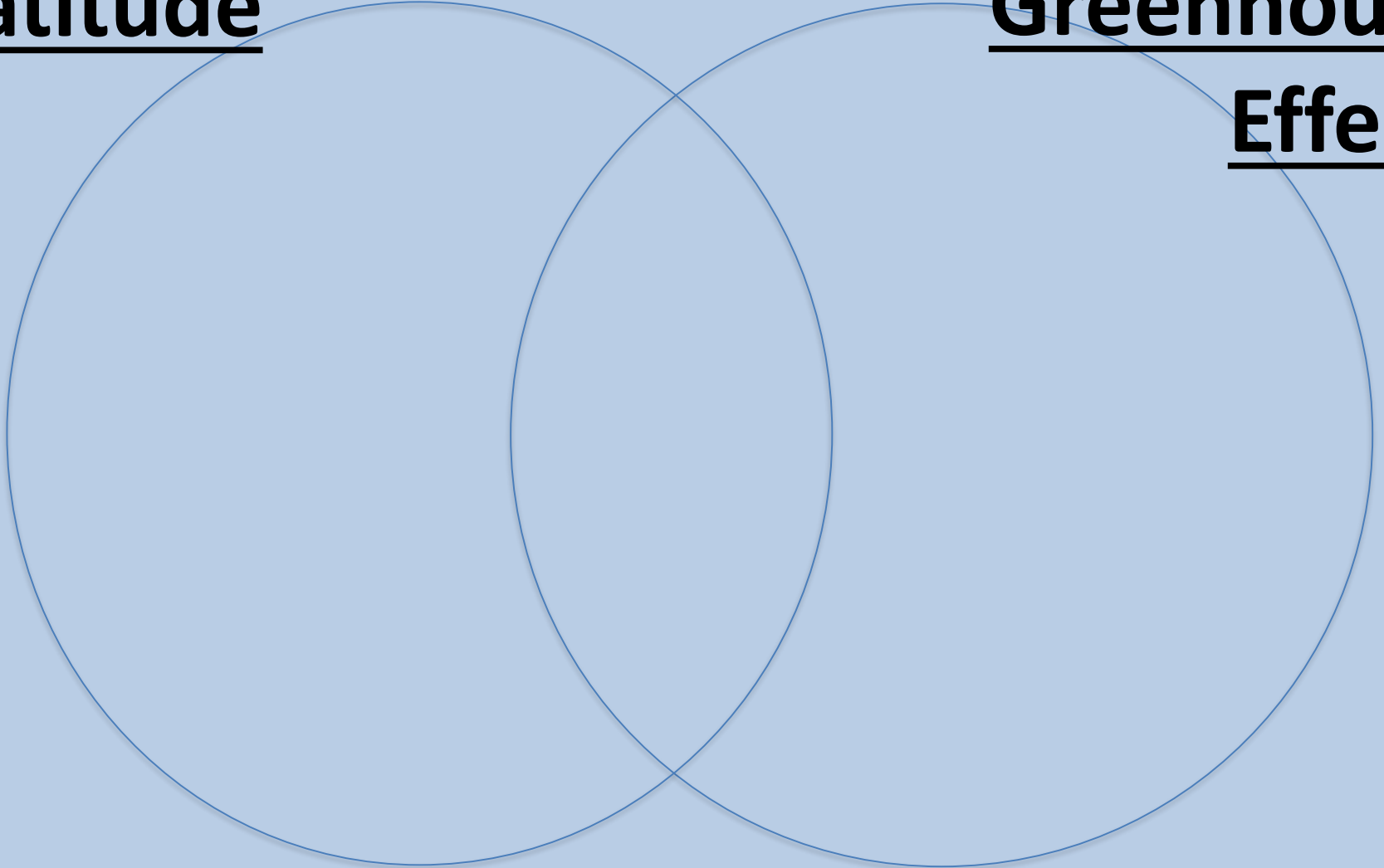
CHECK-IN

- **Compare and contrast how greenhouse effect and latitude influence temperatures on Earth.**

Climate vs Weather

Latitude

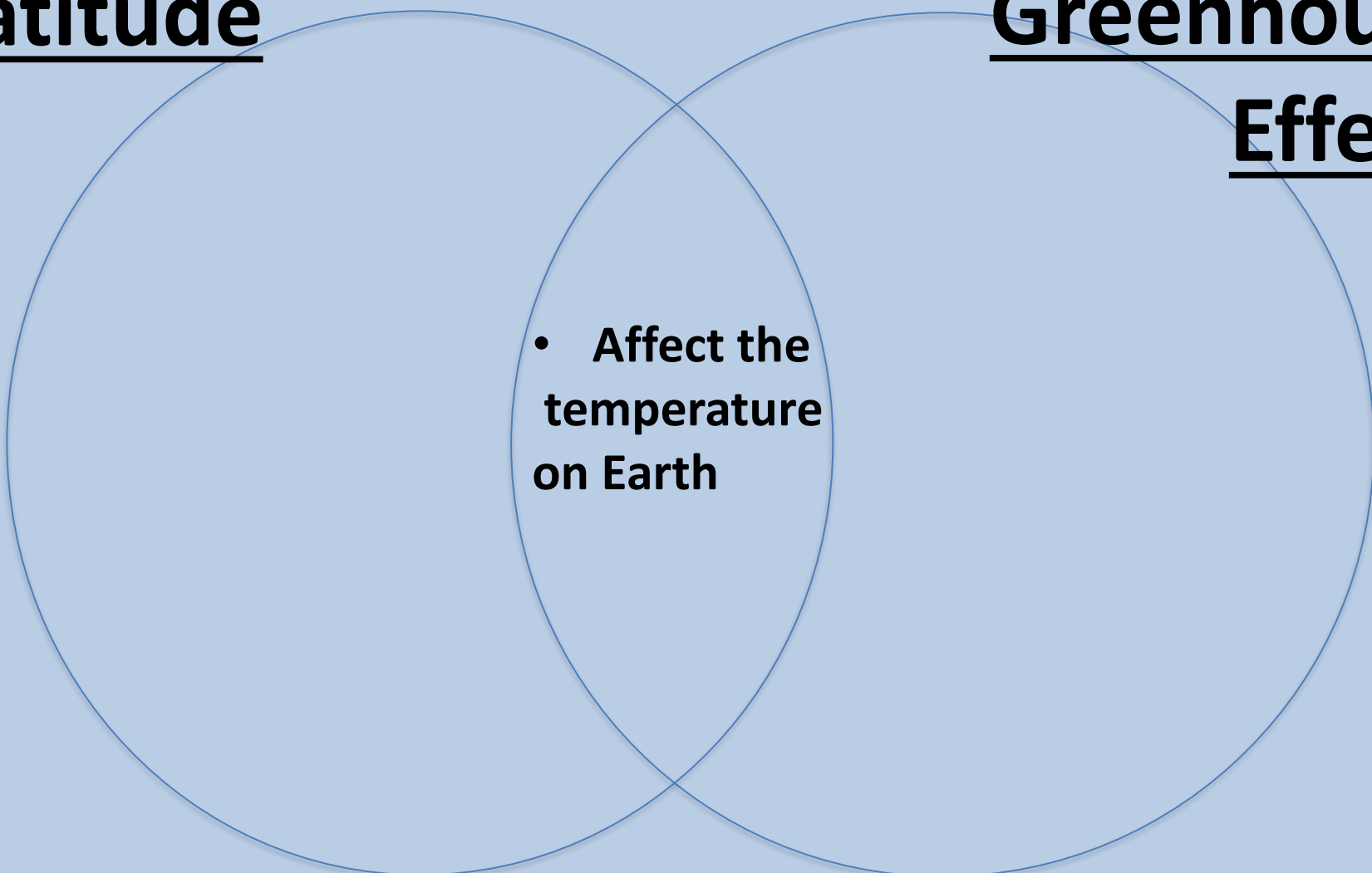
Greenhouse
Effect



Climate vs Weather

Latitude

Greenhouse
Effect

- 
- Affect the temperature on Earth

Climate vs Weather

Latitude

- Effects temperature locally
- Changes Seasonally
- Cannot be affected by humans

• Affect the temperature on Earth

Greenhouse

Effect

- Effects the temperature of the entire Earth
- Changes Gradually
- Can be affected by human activities

Biomes

- When dismissed:
- Read the biome information sheet with your group and fill out the corresponding row on your handout.
- Use your phone to research the current **weather** somewhere in the world that correlates with your biome.

Biomes

- **Make sure you have every row filled out on your worksheet**
- **Ask questions!**

CHECK-IN

- What you need to know:
 - The process of the greenhouse effect
 - Difference between **climate** and **weather**
 - Biomes are different surface environments that make up the biosphere

Ecology

- **Table of Contents:**

12	Macromolecules Lab	13	Enzymes Lab
14	Unit Wrap-up Rubric	15	Unit 2 Cover Sheet
16	Factors Affecting Growth	17	Biomes Handout

The Earth as a System

- **Scientists tried to recreate this system in biosphere 2:**
<https://www.youtube.com/watch?v=1nk-Ok4QL4s>