Weather Beyond Forecasting

Larissa Feijó
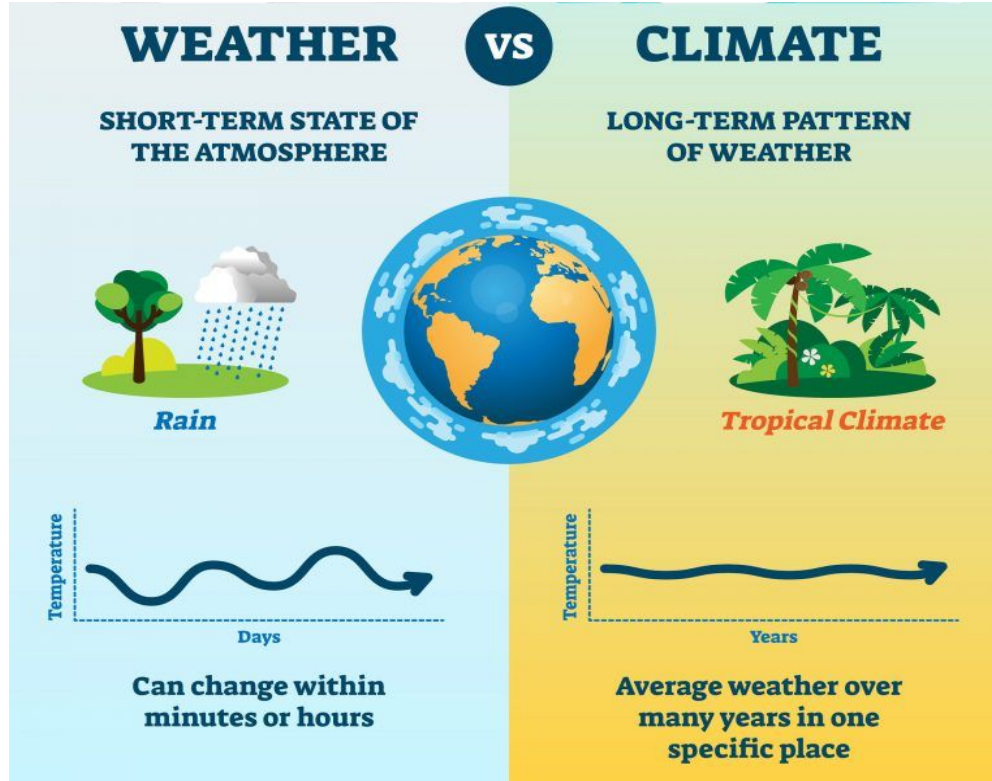
Can we identify characteristics of the region in this music?

Watch video: Asa Branca

Do they refer to region's climate or weather?

Difference between weather and climate

WEATHER **VS** CLIMATE

SHORT-TERM STATE OF THE ATMOSPHERE

LONG-TERM PATTERN OF WEATHER

Rain

Tropical Climate

Temperature

Days

Temperature

Years

Can change within minutes or hours

Average weather over many years in one specific place

Weather or climate?

- Deserts are hot and dry, with very little rainfall throughout the year.

- Today is sunny and warm, perfect for a day at the beach.

- The temperature dropped suddenly, and we saw snowflakes falling from the sky.

- Northern regions, like Alaska, are colder than in southern areas such as Florida.

- Yesterday, the weather was so windy that it knocked over a few trees in the park.

What factors influence the weather forecast?

Weather Today in Rio de Janeiro, Rio de Janeiro, Brazil

Feels Like
29°

↑ 5:00 am ↓ 6:16 pm

🌡 High / Low	27°/21°	
💧 Humidity	76%	
⇅ Pressure	↓ 1014.2 mb	

💨 Wind	↗ 21 km/h	
💧 Dew Point	22°	
✺ UV Index	8 of 11	

👁 Visibility	9.66 km
○ Moon Phase	Waning Gibbous

Factors that influence weather
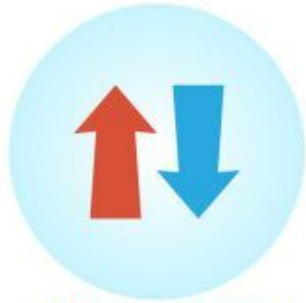
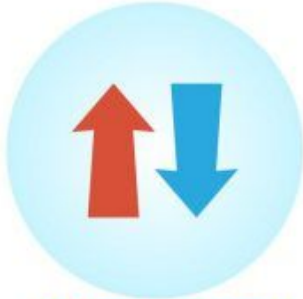**AIR PRESSURE**

WIND

HUMIDITY

TEMPERATURE

How do they influence weather, in your opinion?

Group research - KWL chart

How temperature, humidity, wind and air pressure influence weather?

I'm researching about _____.		
K	**W**	**L**
What do you already know about this topic?	*What do you wonder about this topic?*	*After you complete your research, write what you learned*

Factors that influence weather

AIR PRESSURE

Low pressure often means stormy, cloudy weather; high pressure typically result in clear, calm conditions.

WIND

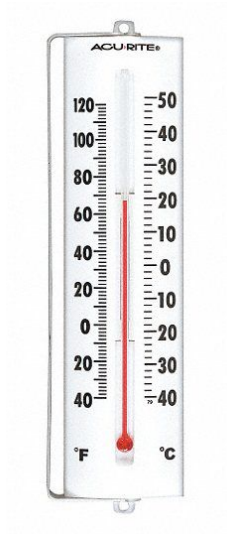Wind moves air from high-pressure areas to low-pressure areas

HUMIDITY

Low humidity generally leads to dry, clear weather; high humidity increase the chances of cloud formation and rain

TEMPERATURE

Temperature controls the weather by affecting things like air pressure, wind, humidity

How can we measure temperature, humidity, air pressure and wind?

Thermometer   **Hygrometer**   **Barometer**   **Anemometer**

Can we build measuring instruments?

Importance of weather forecasting

How do these images relate to weather forecast?

Importance of weather forecasting

How do these images relate to weather forecast?

Local weather issues

- **What do these 2 photos have in common? How are they related to weather? Do they have any relation with the reality of our community?**

Brainstorming activity

- **What are the main weather-related challenges in my community?**

- **How do these challenges affect daily life?**

- **How can we improve the way we deal with these problems?**

- **Can the devices we built help in any way?**

Global challenges

GLOBAL AVERAGE SURFACE TEMPERATURE
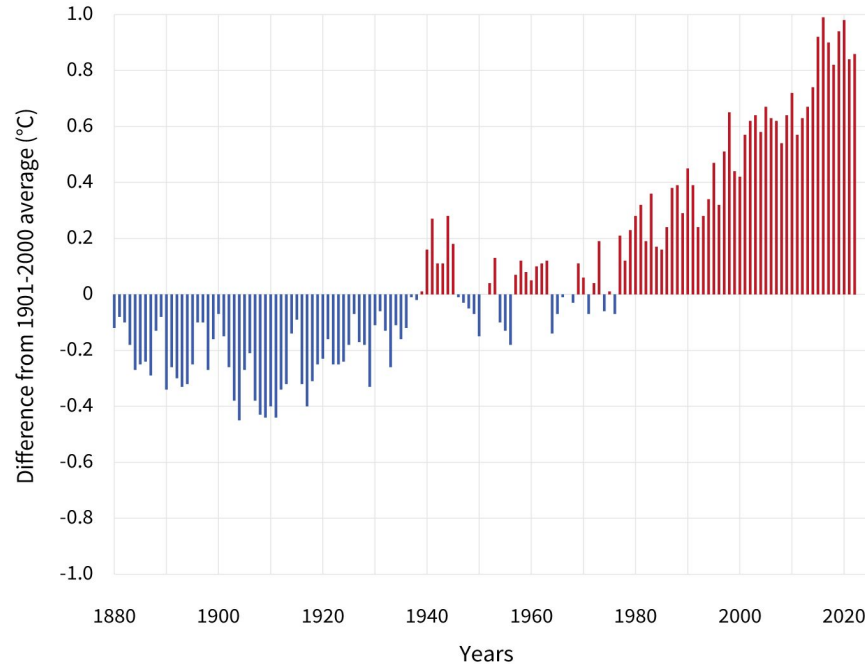
- **How is climate change is affecting temperatures around the world?**

- **If temperature is affected, what do you think happens to other factors that influence weather (humidity, air pressure, wind)?**

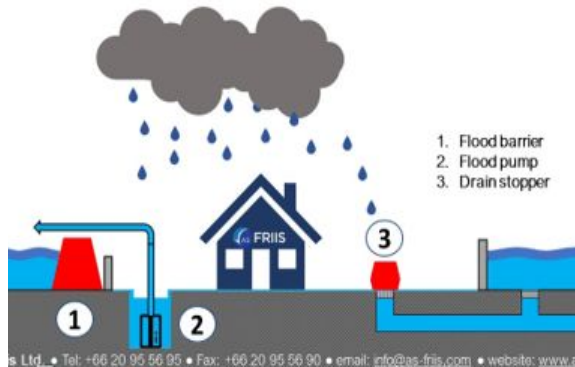# Global challenges

Is there any relation between these images?
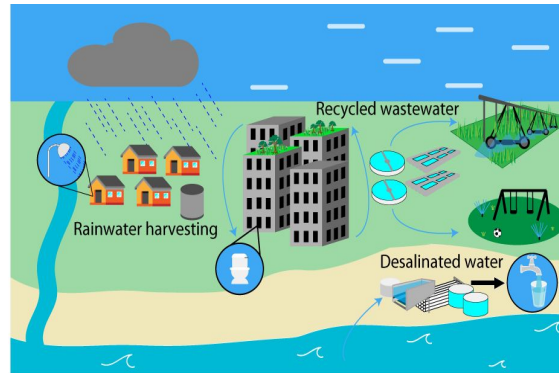
GLOBAL AVERAGE SURFACE TEMPERATURE
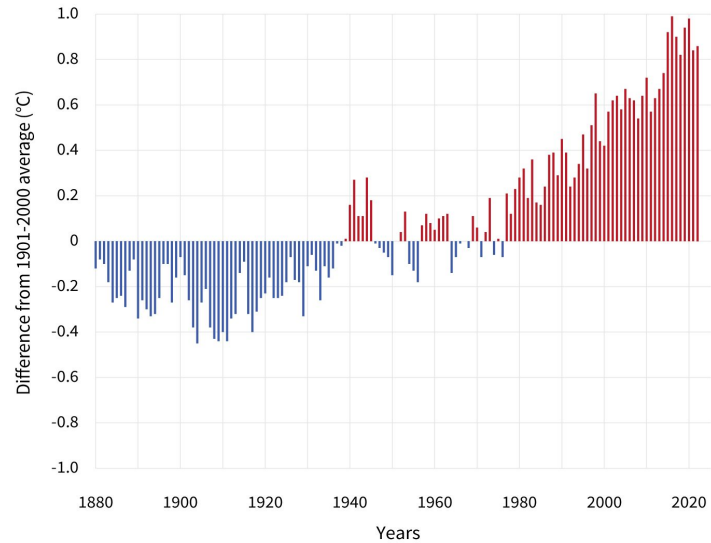
Technology provides solutions

Which of these solutions do you think would work best in your community, and why?

Flood prevention

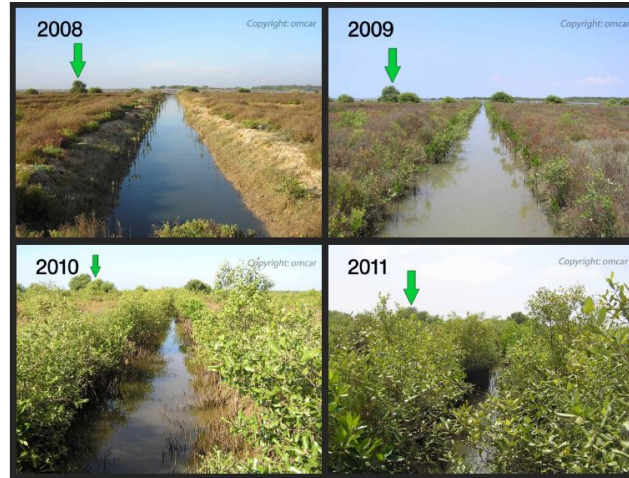*Water scarcity solutions*

Disaster alert systems

Technology provides solutions

Which of these solutions do you think would work best in your community, and why?

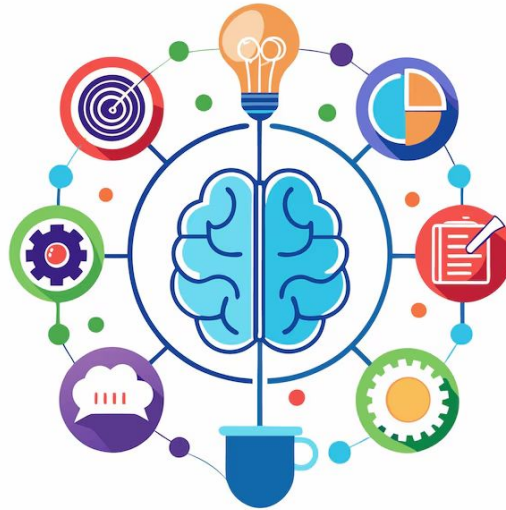*Sustainable urban planning*

Ecosystem restoration

Renewable energy sources

Students as global leaders

What can help other countries deal effectively with weather disasters?

Group conversation - Key takeaways

- **What did I learn today? Share with the rest of the classroom about:**

- What was the most surprising thing you learned today?

- How can you apply what you learned about weather and climate at home or school?

Thank You!