

Fields	Content	Comments
Topic	Water and Climate	
Sub-topic	N/A	
Skills/ knowledge accessed/developed		
Prior learning required	Students should have attended the session on Water Cycle	
Learning objectives	• Students will get an understanding of what the climate is and how it is different from the weather. • Students will learn about the connection between water and climate	
Specific learning outcomes	1. Students can tell the major difference between weather and climate 2. Students will be able to identify how climate controls how fast water moves and disappears 3. Students will be able to determine what kind of weather and climate change affect water and how.	
Use of teaching time	2-3 mins Facilitator can ask the students to define climate or what they understand about 'climate' 5 mins Picture 1	



Picture 2



The facilitator will ask students which picture seems to resemble the climate of Burkina Faso?

Most students are expected to say Picture 1.

The facilitator will pose the question - has anyone seen all parts of Burkina Faso in all seasons?

Most students are expected to say 'no'.

The facilitator will say - Then how do you know that Picture 2 can't be from Burkina Faso.

This generally poses some confusion for students.

The facilitator will ask - Will it be correct to say that you "expect" the weather in Burkina Faso to be like Picture 1 and not like Picture 2?

Most students are expected to say 'yes'

The facilitator will explain that this expectation is closely linked to Burkina Faso's climate – its rainfall, temperature, vegetation patterns.

10 mins

The Facilitator can ask the students the difference between weather and climate.

Facilitator will then explain the difference between Climate and Weather -

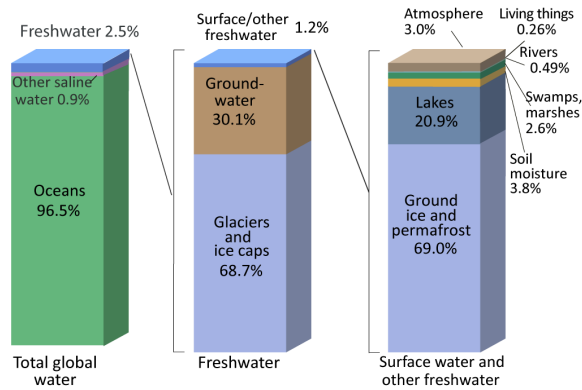
"Climate is what you expect. Weather is what you get."

	https://oceanservice.noaa.gov/facts/weather_climate.html (Also refer to the section <i>Background content</i>) 15 mins The facilitator conducts Activity 1 (see section <i>Methods and materials</i>). Each student attempts this activity individually. The facilitator will discuss how changes in climate affects water, quality, quantity and access. 30 mins Draw a drop of water and trace its journey in the following way ○ Falls as rain ○ Runs off / soaks into ground ○ Stored in dam / well ○ Used by people ○ Evaporates back to the air Facilitator will ask students - ● What happens to the drop in a hotter climate? ● What changes if rains come all at once instead of slowly? The facilitator helps students build the link that - Climate controls how fast water moves and disappears. Total time - About 45 mins	
Methods and materials	Activity 1 This can be used as cards or by matching the two lists. Facilitator can give cards such as: ● Hotter temperatures ● Shorter rainy season	

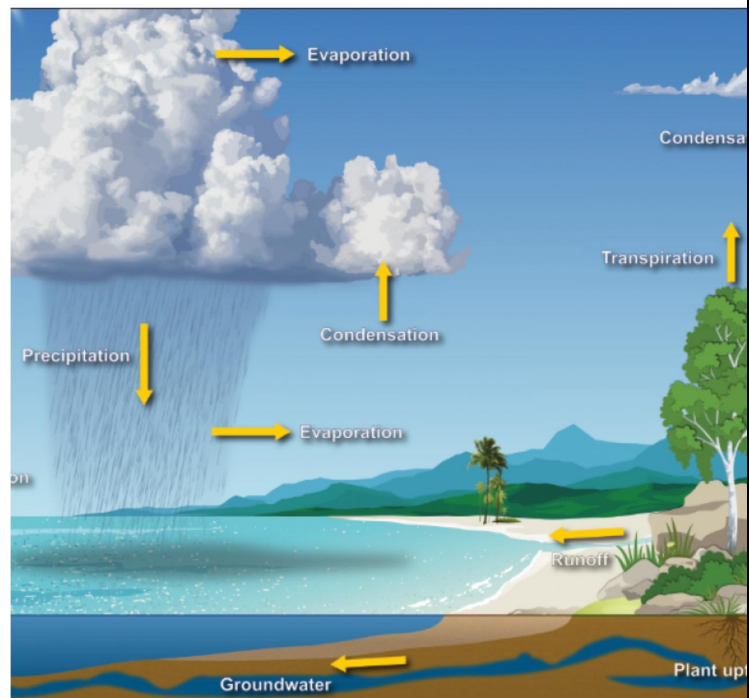
	• Heavy rainfall in few days • Longer dry season Students link them to: • Lower well levels • Flooded homes • More time fetching water • Dirty water after floods Task Draw arrows/ Match the two sets and explain: “This climate condition causes this water change.”	
Background content	<u>Weather vs Climate</u> Weather refers to the short-term conditions of the lower atmosphere, such as precipitation, temperature, humidity, wind direction, wind speed, and atmospheric pressure. It could be sunny, cloudy, rainy, foggy, cold, hot, windy, stormy, snowing ... the list goes on. The sun drives different types of weather by heating air in the lower atmosphere at varying rates. Warm air rises and cold air rushes in to fill its place, causing wind. These winds, along with water vapor in the air, influence the formation and movement of clouds, precipitation, and storms. The atmospheric conditions that influence weather are always fluctuating, which is why the weather is always changing. Meteorologists analyze data from satellites, weather stations, and buoys to predict weather conditions over the upcoming days or weeks. While weather refers to short-term changes in the atmosphere, climate refers to atmospheric changes over	

	longer periods of time, usually defined as 30 years or more. This is why it is possible to have an especially cold spell even though, on average, global temperatures are rising. The former is a weather event that takes place over the course of days, while the latter indicates an overall change in climate, which occurs over decades. In other words, the cold winter is a relatively small atmospheric perturbation within a much larger, long-term trend of warming. Climate change is defined as change in climatic parameters (eg. temperature, rainfall) over decades and therefore, weather changes may not always be indicative of climate change. Despite their differences, weather and climate are interlinked. As with weather, climate takes into account precipitation, wind speed and direction, humidity, and temperature. In fact, climate can be thought of as an average of weather conditions over time. More importantly, a change in climate can lead to changes in weather patterns. <u>Water Cycle</u> Earth is unique to have water in all three phases - Liquid, solid and gas. The main reservoirs of liquid water are oceans, lakes and groundwater. Solid water is mainly stocked in sea ice, glaciers and large ice sheets like the ones in Antarctica and Greenland. Gaseous water or water vapour is stocked in the atmosphere. A relatively small but important reservoir of water is in living beings.	
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Where is Earth's Water?



Source: Igor Shiklomanov's chapter "World fresh water resources" in Peter H. Gleick (editor), 1993, *Water in Crisis: A Guide to the World's Fresh Water Resources*. (Numbers are rounded).



Water is continuously being moved from one reservoir to another. The movement of water from one reservoir to another is called a flow. Rivers, springs, icebergs, evaporation and rainfall are all examples of flows of water. If water has to move from a reservoir in one phase to a reservoir in another phase, it also involves a phase change. This continuous movement is called the Water cycle.

[illegible]