**LEARNING ACTIVITY SHEET IN SCIENCE 9**

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| Name of Learner; | Sean Uriel B. Largo | Score: |  |
| Grade and Section: | 9 – ALL | Week & Date: |  |

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| **Title of the Topic:** | **Climate** | | |
| **Most Essential Learning Competency:** | | **Code:** | **S9ES-IIIf-31** |
| * Describe certain climatic phenomena that occur on a global | | | |
| **I. Concept Notes: (30 points)** *(Contents needed for the learners to understand the topic. Brief discussion of the lesson, if possible cite examples)* | | | |
| Contains the following topics:   * Volcanoes: Types, parts * Active and inactive volcanoes in the Philippines * Types of volcanic eruptions * Precautionary measures for volcanic eruption * Generate energy through volcano   **Factors affecting climate**  (Latitude) As latitude increases, the sun shines more obliquely and provides less warming energy. The equator always faces the sun directly, so the climate is warm year-round.  (Ocean currents) Currents affect climate by moving cold and warm water around the globe. Currents carry warm water from the tropics toward the poles and bring cold water back toward the equator.  (Wind and air masses) When winds move air masses, they carry their weather conditions (heat or cold, dry or moist) from the source region to a new region. When the air mass reaches a new region, it might clash with another air mass that has a different temperature and humidity. This can create a severe storm.  (Elevation) As the elevation increases, there is less air above you thus the pressure decreases. As the pressure decreases, air molecules spread out further and the temperature decreases. If the humidity is at 100 percent, the temperature decreases more slowly with height.  (Relief) Relief can influence the amount of precipitation an area receives. When air is forced to rise over a mountain range, it cools and the moisture within it condenses. clouds form and produce rain. This type of rainfall is called orographic rainfall or relief rainfall.  **Global Warming**  Global warming is the long-term heating of Earth’s climate system observed since the pre-industrial period (between 1850 and 1900) due to human activities, primarily fossil fuel burning, which increases heat-trapping greenhouse gas levels in Earth’s atmosphere. The term is frequently used interchangeably with the term climate change, though the latter refers to both human- and naturally produced warming and the effects it has on our planet. It is most commonly measured as the average increase in Earth’s global surface temperature.  **Cause and effect of climate change**  Climate change occurs due to human activities like burning fossil fuels, car emission, cutting down trees, farming livestock and many more. And because of this, pollution will occur, enormous amounts of greenhouse gases will reach the atmosphere increasing the effect and global warming.  **El Nino and La Nina**  The terms El Niño and La Niña refer to periodic changes in Pacific Ocean sea surface temperatures that have impacts on weather all over the globe. In the Pacific Ocean near the equator, temperatures in the surface ocean are normally very warm in the western Pacific and cool in the eastern Pacific. This helps to generate heavy rains over southeastern Asia and northern Australia and keeps parts of Pacific coastal South America relatively dry. This “normal” pattern of Pacific sea surface temperatures is disrupted periodically by El Niño and La Niña, naturally occurring climate phenomena that occur roughly every 3-7 years. El Niño (the warm phase) and La Niña (the cold phase), typically last for 9-12 months each, but in rare cases can last over multiple years. During El Niño, surface water in the central and eastern equatorial Pacific Ocean is unusually warm. Trade winds blowing from east to west weaken, and the warm surface waters that typically stay in the western Pacific are able to move east along the equator. Rainstorms follow the warm water to the central and eastern Pacific, dry conditions affect northern Australia and southeast Asia, and wetter conditions impact Pacific coastal South America. El Niño can impact U.S. weather by bringing milder conditions to northern areas and wetter conditions to the south, though not every El Niño event affects the U.S. in the same way. | | | |
| **II. Learning Activities:** | | | |
| 1. **Learning Activity 1:**   **1A: Long Term or Short Term (35 points)**  Direction: EXAMINE the pictures below. Write **X** under the column of **Climate if it shows** climate, (a long – term atmospheric condition of a certain area. And write  **⁄** under the column **Weather if it describes weather**( a short term of atmospheric condition of a certain area  ( typically within a week or less). Write your reason/s why in the column **Reason/s**.  Table 1   |  |  |  |  | | --- | --- | --- | --- | | Picture | **CLIMATE** | **WEATHER** | **Reason/s** | | **Source:** [Free Images : landscape, air, wind, jungle, weather, dust, terrain, savanna, climate, windy, sandstorm, ecosystem, cyprus, wadi, screenshot, natural environment, arecales 4525x2545 - - 496973 - Free stock photos – PxHere pxhere.com](https://www.google.com/url?sa=i&url=https%3A%2F%2Fpxhere.com%2Fen%2Fphoto%2F496973&psig=AOvVaw3RgEZkiQxpuLVUro7O3wiS&ust=1597905048830000&source=images&cd=vfe&ved=2ahUKEwjwzOqn0qbrAhXCIaYKHYWyDtwQr4kDegQIARBy" \o "Free Images : landscape, air, wind, jungle, weather, dust, terrain,  savanna, climate, windy, sandstorm, ecosystem, cyprus, wadi, screenshot,  natural environment, arecales 4525x2545 - - 496973 - Free stock photos -  PxHere" \t "_blank)  1. A windy weekend |  | **/** | **Because short term means within a week or less. Weather is the condition of the atmosphere over a short period of time. Also windy is a weather.** | | Source:[Free photo Sky Sun Blue Dark Clouds Rays Weather - Max Pixelmaxpixel.net](https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.maxpixel.net%2FSky-Sun-Blue-Dark-Clouds-Rays-Weather-1365325&psig=AOvVaw0vqksr7of-3Q8z3pEJXh5f&ust=1597905446192000&source=images&cd=vfe&ved=2ahUKEwjO06fl06brAhWKG6YKHVkrD1oQr4kDegUIARCIAQ" \o "Free photo Sky Sun Blue Dark Clouds Rays Weather - Max Pixel" \t "_blank)  2. Dark cloudy sky yesterday. |  | **/** | **Because short term means within a week or less. Weather is the condition of the atmosphere over a short period of time. Also cloudy is a weather.** | | **Source:** [Free Images : atmosphere, weather, storm, lightning, thunder, thunderstorm, radius, relampago 4928x3264 - - 756102 - Free stock photos – PxHere pxhere.com](https://www.google.com/url?sa=i&url=https%3A%2F%2Fpxhere.com%2Fen%2Fphoto%2F756102&psig=AOvVaw0myCv1uiSjxW-mFoHm2Jxf&ust=1597905894723000&source=images&cd=vfe&ved=0CFoQr4kDahcKEwigppbQ1abrAhUAAAAAHQAAAAAQBQ" \o "Free Images : atmosphere, weather, storm, lightning, thunder, thunderstorm,  radius, relampago 4928x3264 - - 756102 - Free stock photos - PxHere" \t "_blank)  3. Thunderstorms during afternoon |  | **/** | **Because short term means within a week or less. Weather is the condition of the atmosphere over a short period of time. Thunderstorm is a weather.** | | **Source:** [woman and girl standing while holding umbrella during rainy day free image | Peakpx peakpx.com](https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.peakpx.com%2F623061%2Fwoman-and-girl-standing-while-holding-umbrella-during-rainy-day&psig=AOvVaw1Y8iw3KBfks3MgBE4gBXAx&ust=1597908236584000&source=images&cd=vfe&ved=0CAYQr4kDahcKEwjQqtqq3qbrAhUAAAAAHQAAAAAQAg" \o "woman and girl standing while holding umbrella during rainy day free image  | Peakpx" \t "_blank)  4. Rainy days during the month of May to July    **Source:** [El nino soil | Pikrepo pikrepo.com](https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.pikrepo.com%2Ffpxnk%2Fel-nino-soil&psig=AOvVaw0ntJTBkNSXXZeOso_FvbZw&ust=1597908612795000&source=images&cd=vfe&ved=2ahUKEwjZ3aHL36brAhVB6pQKHQ5QAbEQr4kDegUIARCzAQ" \o "El nino soil | Pikrepo" \t "_blank)  5. El Niňo | **X**  **X** |  | It is long term because it lasts for 1 month.  El Nino typically last for 9-12 months. | | **Source:** [File:Typhoon Haiyan 2013 making landfall.gif - Wikimedia Commons commons.wikimedia.org](https://www.google.com/url?sa=i&url=https%3A%2F%2Fcommons.wikimedia.org%2Fwiki%2FFile%3ATyphoon_Haiyan_2013_making_landfall.gif&psig=AOvVaw0SicBaid9qw3n9G1cHrsBo&ust=1597908935612000&source=images&cd=vfe&ved=2ahUKEwiY-Jjl4KbrAhURg5QKHRSUDKoQr4kDegUIARC4AQ" \o "File:Typhoon Haiyan 2013 making landfall.gif - Wikimedia Commons" \t "_blank)  6. Typhoon Haiyan (Yolanda) |  | **/** | **Yolanda lasted for at least less than a week.** | | **Source:** <https://www.flickr.com/photos/eu_echo/7842289456>  7. La Niňa | **X** |  | La Nina typically last for 9-12 months. | | **Source:** [Nature Rain Forest Doi Inthanon Free Stock Photo - Public Domain Pictures publicdomainpictures.net](https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.publicdomainpictures.net%2Fen%2Fview-image.php%3Fimage%3D344854%26picture%3Dnature-rain-forest-doi-inthanon&psig=AOvVaw3eF7_0pVBumHso1K5U6dJJ&ust=1597910029843000&source=images&cd=vfe&ved=0CLoBEK-JA2oXChMIkM_aiuWm6wIVAAAAAB0AAAAAEAQ" \o "Nature Rain Forest Doi Inthanon Free Stock Photo - Public Domain Pictures" \t "_blank)  8. Rain Forest | **X** |  | **Rain Forest is a climate because of its location.** | | Source: [Free photo: algeria, sahara, desert, dunes, 4x4 | Hippopx](https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.hippopx.com%2Fen%2Falgeria-sahara-desert-dunes-4x4-240557&psig=AOvVaw3bK8V1cr0k4MwIdIRS_01n&ust=1597910394561000&source=images&cd=vfe&ved=2ahUKEwjdjPCc5qbrAhU8zIsBHUoRAa0Qr4kDegUIARDXAQ" \o "Free photo: algeria, sahara, desert, dunes, 4x4 | Hippopx" \t "_blank)  [hippopx.com](https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.hippopx.com%2Fen%2Falgeria-sahara-desert-dunes-4x4-240557&psig=AOvVaw3bK8V1cr0k4MwIdIRS_01n&ust=1597910394561000&source=images&cd=vfe&ved=2ahUKEwjdjPCc5qbrAhU8zIsBHUoRAa0Qr4kDegUIARDXAQ" \o "Free photo: algeria, sahara, desert, dunes, 4x4 | Hippopx" \t "_blank)  9. Sahara Desert (Northern Africa) | **X** |  | **Sahara Desert is a climate because of its location.** |   Guide Questions:  1. What is Climate? **Climate is the weather patterns of a place over a long period of time.**  2. What is Weather? **Weather is the condition of the atmosphere over a short period of time.**  3. The difference between climate and weather is that, Climate is the weather patterns of a place over a **long** period of time while weather is the condition of the atmosphere over a **short** period of time  1B: Poem! **(25 points)**  Direction: Make a poem about weather. Follow the suggested steps below.  Title: “My Weather Poem”  Sunny, Cloudy, Windy and Rainy.  In the summer time we are playing, planting, and running.  We describe weather and climate as hot and cold.  What’s the difference between climate and weather?  We need to study climate because it is a global crisis we need to solve.  We also need to study weather because it is a part of our life.  First line: Give at least four types of weather.  Second line: Three “ing” words you do during summer time.  Third line: Two adjectives that describe weather and climate.  Fourth line: Ask one question about weather and climate.  Last line: Two importance why you need to study weather and climate. | | | |
| 1. Learning Activity 2:   **2A: Short Answer (40 points)**  **Objective:** Explain climate and weather pattern; Share how climate change affects once lifestyle;  **Direction:** Answer the following questions:   1. What are the factors affecting climate? (5 points)   **Earth's temperature is a balancing act.**  **The greenhouse effect causes the atmosphere to retain heat.**  **Changes in the sun's energy affect how much energy reaches Earth's system.**  **Changes in reflectivity affect how much energy enters Earth's system.**  **Earth’s tilt**   1. Why do we experience weather changes? (3 points)   **We experience weather changes because of winds and storms. Seasonal changes are due to the Earth revolving around the sun.**   1. How do we contribute to global warming? (3 points)   **We people can continue on planting trees constantly because as trees grow, they help stop climate change by removing carbon dioxide from the air, storing carbon in the trees and soil, and releasing oxygen into the atmosphere.**   1. How does climate change affect our lives and the Earth’s land scape? (3 points)   **Climate change greatly decreases the rate of species extinctions, especially in sensitive regions. Increased heat, drought and insect outbreaks, all linked to climate change, have increased wildfires. Declining water supplies, reduced agricultural yields, health impacts in cities due to heat, and flooding and erosion in coastal areas are additional concerns.**   1. Alleviating the negative effects of climate change involves energy efficient practices. List three things you do that are not energy-efficient. Beside each practices, write down a commitment to reverse this practices. (6 points).  |  |  | | --- | --- | | Washing plates without using a basin. | I commit to conserve water and use a basin next time. | | Not turning off appliances when not being used. | I commit to turn off appliances when not being used and unplug it completely. | | Making use of transportation when I can actually just walk instead. | I commit to make use of my feet on top of being able to exercise, I am not giving mother earth smoke emissions from vehicles. |   Draw a flowchart showing the various effects of climate change, including its personal impact on you. (10 points)    **Excessive wildfires in the forest**  **Higher demand in bills and expenses**  **Water quality could suffer**  **More allergies and other health risks**  **Has negative effects on people**  **Disruptions in travel**  **Climate Change**   1. Give three examples of the impact of global warming on biodiversity. (3points)   **Climate change greatly decreases the rate of species extinctions, especially in sensitive regions.**  **Climate change will impact agriculture and food production around the world.**  **Some effects of climate change are rising sea levels due to thermal expansion and melting of glaciers and ice sheets, and warming of the ocean surface, leading to increased temperature stratification.**   1. Differentiate global warming from climate change. (4 points)   **Global warming is the term used to describe the current increase in the Earth's average temperature. Climate change refers not only to global changes in temperature but also to changes in wind, precipitation, the length of seasons as well as the strength and frequency of extreme weather events like droughts.**   1. Reflect this message and explain it through the context of climate change: “If we live as if it matters, and it doesn’t matter, then it doesn’t matter. If we live as if it doesn’t matter, and it mattes, then it matters.” (5 points)   **If you care so much about climate change and you’re not doing anything about it, it just like you don’t care. On the other hand, if you don’t care about climate change but you did something about it, then you really care. It’s always a dilemma that we don’t think too much about.** | | | |
| 1. Learning Activity 3:   **3A: Ad Campaign(Group task) (50 points)**  Instruction: Create a 3-minutes minimum ad campaign about climate change in how it affects the livelihood, culture, environment, religion and socio-economic status of the people in Earth. In your ad campaign cite at least 5 activities that reduces the risks and lessens the effects of climate change. Submit the video in the video link below:  <https://drive.google.com/drive/folders/1cxWxdEqODlNIruQTZqQ3vtcrC7wz4yGB?usp=sharing>  Deadline: April 30, 2021 at 5:00 pm  Evaluation | | | |
| **III. Reflection: (10 points)** | | | |
| Global warming is the long-term heating of Earth’s climate system observed due to human activities, primarily fossil fuel burning, which increases heat-trapping greenhouse gas levels in Earth’s atmosphere. The term is frequently used interchangeably with the term climate change, though the latter refers to both human- and naturally produced warming and the effects it has on our planet. It is most commonly measured as the average increase in Earth’s global surface temperature. That’s why it is important to learn about them. | | | |

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Note: Submission of LAS2 (deadline regardless of the video project) will be on April 21, 2021.

Additional activity on lesson 2: climate and summative test will be posted in Edmodo.