# Climate and Weather

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| Name: |  |
| Class: |  |
| Period: |  |
| Date: |  |

Carefully read each question and then circle the letter of the correct answer.

1. Identify the best definition of climate from the list below:
   1. A description of the atmosphere in terms or wind, precipitation and temperature.
   2. An average of the weather conditions over a lonfg period of time.
   3. A description of the lithosphere in terms of acidity, water content and nitrogen content.
   4. A description of the hydrosphere in terms of tide, acidity and temperature.
2. Identify the best definition of weather from the list below.
   1. A description of the lithosphere in terms of acidity, water content and nitrogen content.
   2. An average of the weather conditions over a long period of time.
   3. A description of the hydrosphere in terms of tide, acidity and temperature.
   4. A description of the atmosphere in terms of wind, cloud, precipitiation and temperature over a short period of time.
3. Recall the effect of the round shape of the Earth.
   1. Different heat emission rates of land and water.
   2. Different heat absorption rates of land and water.
   3. Shadows are always round.
   4. Uneven heating of the Earth
4. State what happens to the temperature of the layer of the atmosphere that humans live in, as height increases.
   1. It increases and decreases
   2. It increases
   3. It doesn’t change
   4. It decreases
5. Recall how the tilt of the Earth’s axis affect Earth’s climate.
   1. It causes the poles to go 6 months with litlle to no sun.
   2. It changes the temperature of the atmosphere as height increases.
   3. It causes everywhere but the pole to go 6 months with little to no sun.
   4. It alters heat absorption rates on land, air and water.
6. Recall why more heat is absorbed in areas that have more plants.
   1. The colour green absorbs the most heat.
   2. It can not escape the canopy of trees.
   3. There are more animals living there.
   4. Plants absorb it for photosynthesis.
7. Define the greenhouse effect.
   1. The greenhouse effect is the trapping of oxygen in the atmosphere by certain gases.
   2. The greenhouse effect is the trapping of water in the atmosphere by certain gases.
   3. The greenhouse effect is the trapping of heat in the atmosphere by large glass panels above the Earth.
   4. The greenhouse effect is the trapping of heat in the atmosphere by certain gases.
8. Define climate change.
   1. A change in ocean temperature over a long period of time.
   2. A change in the average rainfall within an area per year.
   3. A change in average weather patterns over a short period of time.
   4. A change in average weather patterns over a long period of time.
9. List some types of evidence that scientists use to study past climate change events. Select ALL correct options.
   1. Pollen fossils
   2. Stratigraohic columns
   3. Personal statements
   4. Atmospheric samples
   5. Sea level changes
   6. Rain catchments
   7. Glacier movement
   8. Ice cores
10. Recall how scientists use glaciers to determine if and when climate change events have occurred in the past.
    1. They study the erosion as glaciers advance and retreat.
    2. They study the animals trapped inside the glaciers.
    3. They study the scorring left on rocks as glaciers advance and retreat.
    4. They paint pictures of glaciers and see how the pictures change over time.
11. Recall how scientists use ice cores to determine if and when climate change events occurred in the past.
    1. They study the erosion as ice sheets advance and retreat.
    2. They study the pollen fossil composition in the ice.
    3. They study the depth of the ice.
    4. They study the chemical composition of the different layers in the core.
12. Recall how scientists use fossilsof pollen to determine if and when climate change events have occurred in the past.
    1. They study a special kind ofpollen that’s always fossilised.
    2. They study how many dinosaurs were fossilised while eating pollen in Antarctica.
    3. They study changes in the number and types of pollen fossilised over time.
    4. They study changes in the types of pollen fossilised in the last 200 years.
13. Recall how scientists use changes in sea levels to determine if and when climate change events have occurred in the past.
    1. They study the distribution of shells on the beach.
    2. They study the distribution of sedimentary rock only in central Australia.
    3. They study how quickly the water is rising each tide.
    4. They study the distribution of sedimentary rock and marine fossils.

Short Answer

1. Your friend spends her summer holidays hiking around Mt Buller, while you decide to spend time on Bondi beach.

Contrast the features of each location and how these features affect climate.

*Hint: Think about the altitude of each region and the heat absorption and emission of land versus water.*

1. The Earth has been through many periods of warming and cooling in the past.

Identify what these periods are known as. Propose what you would expect the climate on Earth to be like during a warming event and a cooling event.

1. Ice shelves are floating sheets of ice that are still attached to land. In Antarctica, ice shelves stabilise glaciers and ice streams, stopping them from rapidly flowing into the ocean.

In late 2016, a rift already present in the Antarctic Larsen C ice shelf rapidly expanded. If this part of the ice shelf breaks away, it will form one of the biggest icebergs ever seen and leave the remaining ice shelf open to disintegration.

Explain why scientists believe that the rift in the Larsen C ice shelf has rapidly expanded and describe the worldwide consquences that a break away would have. Use the article on the next page to help you.



