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Section:

Decoding the Weather Machine Questionnaire

1. 7 of the 10 hottest years on record have occurred within the last decade.
2. Climate change is increasing the risk, or probability, of certain types of extreme weather events. TRUE OR FALSE?
3. Fossils of Palm trees have now been found in places that are famous for ice and snow, like Alaska.
4. Evidence points to the burning of fossil fuels as one possible cause of climate change.
5. The four major components of the planet are:
 - a. Land
 - b. Sea
 - c. Air
 - d. Ice
6. Tyndall's experiment revealed that Carbon dioxide was one of the main gases that trapped heat, while nitrogen and oxygen did not.
7. This gas, and other gases in the atmosphere that trap heat are referred to as green house gases.
8. Coal and oil are made mostly of Carbon.
9. The zigzags of the measurements are not a fault in the equipment, but rather a reflection of the changes in carbon dioxide in the air during the changing Seasons.
10. The measurements from NOAA site in Hawaii has been compiled to form the Keeling curve.
11. Gas bubbles trapped inside of ice in Antarctica can be sampled and analyzed to tell us what the carbon dioxide conditions were like in the atmosphere hundreds and thousands of years ago.
12. The colder the seawater, the more Oxygen 18 that is encoded into the clam shell.
13. ice cores allow us to measure the earth's climate going back tens of millions of years.
14. temperature and Carbon dioxide reflect a similar relationship and change roughly about the same time.
15. Molecules with the same number of protons, but different numbers of neutrons are called what? (not in the video): isotopes.
16. Greg's plane is able to measure the chemical makeup of foliage using laser sensors as they fly over the forest.
17. trees are able to hold onto and store approximately 25% of the excess carbon we've released into the atmosphere, which explains why things are not worse in our atmosphere today.
18. The Oceans are also helping by storing carbon and absorbing heat from the atmosphere.
19. Argo floats are used to take all kinds of measurements

within the deep ocean, including the chemistry and temperature of the ocean.

20. If the ocean has warmed about half a °F. that translates to about a 20 degree change in the atmosphere.
21. The Jakobshavn ice stream is the fastest glacier in the world and is draining vast amounts of ice from the greenland ice sheet.
22. For glaciers in contact with the ocean, warmer water coming underneath a glacier destabilizes it and causes it to melt and fracture.
23. There is approximately 23 feet of sea level rise locked up in the Greenland ice sheet.
24. There is approximately 200 feet of possible sea level rise locked up in the Antarctic Ice Sheet.
25. Fossils of ancient Coral are found in rock cores in Australia, which explains that that entire landscape was once underwater.
26. The fossil record demonstrates that sea levels could rise up to 20ft 30 feet higher than they are today.
27. The Marshall Islands are experiencing effects of sea level rise, eventually it will get to the point where they can no longer live there, causing them to have to leave their homes and become climate refugees.
28. A king tide is one of the year's highest tides.
29. According to retired admiral Ann Phillips, climate change is a National Security issue. It is a threat magnifier.
30. Scientists are using a virtual earth to create climate models to predict the future.
31. We are making a lot of progress at making better predictions, but there is an enormous amount about the climate system that we don't fully understand.
32. If we want to minimize suffering we need to we need to maximize mitigation and adaptation.
33. Coral reefs support about 25 % of all marine life in the sea.
34. If the coral is to survive, it must adapt.
35. Whirlpool started to investigate harvesting wind power in order to decrease their energy uses at their factory.
36. wind technician is one of the fastest growing professions in America.
37. Fossil fuels still account for 80 % of the world's total power.
38. In order to help the problem, we can't just go zero emissions, but negative emissions.
39. A very simple way to remove carbon dioxide from the air is Photosynthesis
40. Not ill the soil in a field on a farm helps the soil remain healthier and helps it absorb more carbon.