What’s Up With The Weather?
NOVA/Frontline Special Report

1. Burning _______________ fuels puts greenhouse gases into the atmosphere.
2. We get _____ % of our energy from burning these fuels.
3. A major goal of politicians is that no new climate treaty can cause _______________ damage to the United States.
4. Systematic weather measurements have only been made over the past _______ years.
5. These measurements show that there has been a 1° F increase in temperature (1/2° C) over the past ________ years.
6. In the middle ages, _________________ was warmer than it is today.
7. Only by knowing _________________ temperature 1000 years ago can we tell if climate changes naturally.
8. The period from 1988-__________ has absolutely no equivalent in historical records.
9. The technique of determining past temperatures from historical documents is limited, because few area are like _______________ and have records that have survived.
10. To get a handle on the global _______________, scientists have been forced to go beyond human accounts of the weather.
11. What needs to be done is to try to reconstruct the longer-term history of ________________.
12. This is done by using natural archives of climate – things that retain in their structure a record of how _________________ varied in the past.
13. Lake _________________ can be a natural archive, like tree rings.
14. Thick layers of sediment show there was a _________________ spring that year.
15. This expedition to the Canadian arctic yields data going back hundreds of years, but in only ________ location.
16. To estimate past global temperature variations, such measurements must be made all over _________________ surface.
17. Because _________________ grow all over the world, they are one of the most powerful natural resources.
18. Tree rings give clues to both past temperature and _________________ patterns.
19. Widely spaced tree rings indicate years in which there was ___________ precipitation than normal.

20. Since ¾ of the Earth’s surface is covered by ____________, a different indicator of past climates is needed in those areas.

21. Like trees, ______________ can live for hundreds of years,

22. The growth rate of corals depends on the sea surface ____________________.

23. Earth’s past temperature is also preserved in the chemistry of __________ layers extracted from glaciers all over the world.

24. Using all of these indicators, scientists have been able to build a past temperature record of the northern hemisphere for the past ___________ years.

25. At __________ feet of elevation, Mauna Loa, in Hawaii, is an excellent site for monitoring the levels of CO₂ in our atmosphere.

26. Monitoring of atmospheric CO₂ began in the year __________.

27. Researchers knew their sensitive instruments were working when they observed the seasonal rise and fall in CO₂ levels related to the growing seasons of ______________ in the northern hemisphere.

28. In the ___________ years since the monitoring program began, CO₂ levels have risen from 315 ppm to 370 ppm.

29. If the Earth had no greenhouse gases, the average global temperature would be ______.

30. Since we do have CO₂, methane, water vapor, and clouds, average global temperature is a balmy __________.

31. Since the industrial revolution, there has been a new and growing source of CO₂ – ______________ fuels like coal, oil, and natural gas.

32. At the end of WWII, 1 billion metric tons of CO₂ were put in the atmosphere every year. By 1957 this had risen to 2 ½ billion metric tons. Now it is almost ________.

33. Unlike water vapor, which stays in the atmosphere a few ___________, CO₂ stays in the atmosphere for 100 years.

34. Ice cores from Antarctica show CO₂ levels from the past in trapped air _____________.

35. CO₂’s rapid rise began at the beginning of the industrial revolution. Current CO₂ levels are the highest they’ve been in the past 450 ______________ years.

36. In ________ years CO₂ concentration will be double the current levels.

37. In a huge experiment, CO₂ concentrations in an actual forest were doubled. Two years into the experiment researchers observed a ________ percent growth rate increase.