**Name: Global Warming Webquest Whitaker**

**Complete this webquest in your notebook on the lined-paper.**

**Go to** [**http://climate.nasa.gov/evidence/**](http://climate.nasa.gov/evidence/) **and answer the following questions.**

1. Why is this current global warming trend of particular concern?
2. What equipment has been used to gather data to support the idea that the Earth is warming up?
3. What evidence exists to support the idea that the Earth is warming?

**Click “+More” on the Sea Level Rise section and answer the following questions.**

1. Look at the graph, “Earth’s vital signs: Sea Level”. What was sea level rise in January 1993? What was sea level rise in January 2016?
2. What is the average rate of change in sea level per year?

**Click the back button and hit the “+More” button on the Global Temperature Rise section. Click Earth’s Vital Signs and answer the following questions by reading the graph.**

1. During which year have we seen the greatest increase in temperature?
2. How much did temperature change that year?

**Look at the globe on the bottom. Click and drag the bar to see differences in cooling and warming.**

1. Where are the hottest places on the globe during 1884?
2. How does the world map compare to where the Earth heated up in 1945?
3. How does the world map compare to where the Earth heated up in 2000?
4. What is the biggest difference in temperature heating/cooling from the world map in 2000 and the world map today (2015)?

**Hit the back button and click “+More” under the Global Climate Change tab. Click on causes and answer the questions below.**

1. What is the greenhouse effect?
2. What gases contribute to the greenhouse effect, and thus are termed “greenhouse gases”?
3. What are some sources of carbon dioxide into the atmosphere?
4. If methane is a stronger greenhouse gas than carbon dioxide, then why are we not as concerned about it?
5. Where does nitrous oxide come from?
6. What are CFCs?
7. What has use of CFCs led to the destruction of?
8. How have humans contributed to the increased amounts of carbon dioxide located in our atmosphere?
9. Provide four potential effects of global warming.
10. Provide three reasons for why the current global warming trends cannot be explained by changes in energy from the sun.

**Hit the back button and click “+More” under the Warming Oceans tab. Click on Climate Kids What is happening in the ocean? Answer the questions below.**

1. What two roles do the oceans play in global warming?
2. Watch the video clip. What percentage of the sun’s energy is absorbed by the oceans?
3. How much more heat energy can the oceans absorb than the atmosphere?
4. What property of water allows it to absorb so much more heat than the air?
5. Continue reading. What makes up the base of the food chain in the oceans?
6. Why is krill important to the ocean, and why are numbers dropping so quickly?
7. What affect does global warming have on coral?
8. What is a direct consequence of the oceans absorbing up to 1/4th of the carbon dioxide emissions released by human activity?
9. Provide two examples of specific organisms that are negatively affected by ocean acidification, and explain how.
10. What effect would melting sea ice (glaciers) have on the Global Conveyor Belt? Why?

**Click the back button and select “+More” under Glacial Retreat. Click on the Interactive Glacial Ice Viewer and answer the questions.**

1. Click on each of the red circles for glaciers. Look at each of the pictures. What do all of the photos have in common?
2. Approximately how much glacier loss have we seen since 1994?
3. Click on Arctic Sea Ice. Approximately what percentage of ice has been lost per decade in the Arctic?
4. Click on the Arctic Sea Ice trend and watch the video clip. What has happened to the amount of Arctic Sea ice since 1979?
5. Click on Antarctica. Approximately how much ice has been lost from Antarctica each year?
6. How many major ice shelves does Antarctica have?

**Click the back button and click on “+More” under Ocean Acidification. Click “How does climate change affect coral reefs?” and answer the questions.**

1. Explain how coral bleaching occurs.
2. What important compound can corals no longer absorb that is crucial to maintaining their skeletal strength?
3. How much more acidic are the oceans today than they were in 1751?
4. What other organisms are affected by ocean acidification?
5. What does ocean acidification do these organisms?