Climate Change WebQuest

Name_____

Directions: This activity sheet will instruct you to navigate to several different pages within two websites. Read the information on each page you visit. As you read, think about how this information relates to the focus question for each section. Then, answer the questions.

Section One Focus Question: How are fossil fuels used by humans?

Answer the questions below by finding them at the website: https://climatekids.nasa.gov/
Click on the "Energy" button. Scroll down to the section "The Story of Fossil Fuels, Part 1: Coal".

1. When and why did coal become popular?

2. What made big factories possible? (Look in the "Industrial Revolution" column.)

Click the "Next" button on the bottom of the page to be taken to "The Story of Fossil Fuels, Part 2: Oil".

3. What invention made the use of petroleum more popular?

4. What is petroleum?

5. What type of petroleum is used in cars?

Click the "Next" button on the bottom of the page to be taken to "The Story of Fossil Fuels, Part 3: Gas".

6. What is natural gas used for today?

7. What is hydraulic fracturing?

8. Go back and look at the focus question (above) for this section. Answer it using evidence from the website.

Section Two Focus Question: How have greenhouse gases been affected by human activity?

Answer these questions using this website: https://archive.epa.gov/climatechange/kids/basics/today/index.html
Read the "Today's Climate Change" section.

9. What did people start doing over 100 years ago that has led to climate change?

10. What gas does the burning fossil fuels release into the atmosphere?

11. What are greenhouse gases? Do they exist naturally?

Click on the "The Greenhouse Effect" link at the bottom. Read the text. (Do not click on the video.)

12. What is the greenhouse effect?

Click on the link "Learn where the term "greenhouse effect" comes from" towards the bottom of the page.
13. Why is a greenhouse a good analogy for what's happening in the atmosphere?

Click on the oval "Greenhouse Gases" link towards the top right. Read the text.
Click on each part of the "Major Greenhouses Gases from People's Activities" chart.
14. Where does carbon dioxide come from? How long does it stay around? (Click the section to see.)

15. Where does methane come from? How long does it stay in the atmosphere? (Click the section to see.)

Examine the "Source of U.S. Greenhouse Gas Emissions" pie chart.
16. What are the top 3 sources of greenhouse gases? List the percent each contributes.

Click the oval "All About Carbon Dioxide" link towards the top right. Read the text. (Do not click the video.)
17. Where is carbon found on Earth? What cycle moves carbon from one part of the Earth to another?

18. How is burning fossil fuels affecting the carbon cycle?

Click the "Think Like a Scientist" tab at the top. Then, click the link at the bottom of that page that says "Learn about greenhouse gases in the atmosphere".
19. How do scientists measure the amount of greenhouse gases in the atmosphere?

20. Examine the "Carbon Dioxide in the Atmosphere" graph. Describe recent carbon dioxide levels.

21. Go back and look at the focus question (above) for this section. Answer it using evidence from the website.

Section Three Focus Question: How do we know the climate is changing?

Answer the questions below by going back to the website: https://climatekids.nasa.gov/
Click on the "Big Questions" tab. Then, click on the box that says "What is global climate change?".
22. What is happening to the temperature of planet Earth?

Click on the "Big Questions" tab again. Click on the box that says "How do we know the climate is changing?".
23. How do scientists use ice cores to study carbon dioxide levels?

24. Watch the Arctic Ice animation on this page. What has been different about Arctic ice since 1979?

25. How does the sea level tell us that the climate is getting warmer?

Navigate back to the website from earlier: https://archive.epa.gov/climatechange/kids/basics/today/index.html
Click the "Think Like a Scientist" tab at the top. Then, click the link at the bottom of that page that says "Examine the clues of climate change".

26. Use the magnifying glass to find 11 signs of climate change. Write each one in the space below.

Click the "Think Like a Scientist" tab again. Then, click the link at the bottom of that page that says "Find out how we know that today's climate change is caused by people putting greenhouse gases in the atmosphere".

27. Click on each factor that could affect the Earth's climate. Complete the grid below.

Factor	Is this a cause of climate change? Provide a quick explanation for your answer.
The Sun	
Earth's Orbit	
Volcanoes	

28. Go back and look at the focus question for this section. Answer it using evidence from the websites.

Section Four Focus Question: What are the effects of climate change?

Click the "See the Impacts" tab at the top. Then, click the link at the bottom of that page that says "Find out how these changes will affect people and the environment". Click on the different parts of the picture.

29. Complete the grid with information from each potential effect of climate change.

	What's at stake?	What can people do about it?
Health		
Agriculture		
Energy		
Water Supplies		

Plants, Animals & Ecosystems		
Forests		
Coastal Areas		
Recreation		

Return to the website: https://climatekids.nasa.gov/
Click on the "Water" tab. Click on the "How Do We Measure Sea Level" box.
30. Name two reasons increasing temperatures causes sea levels to rise.

Click on the "Water" tab at the top again. Click on the "10 Interesting Things About Water" box.
Click "Next" at the bottom of each section until you are done.
31. What percent of the world's total land area do glaciers cover?

Click on the "Plants & Animals" tab at the top. Click on the "What is Ocean Acidification?" box.
32. What is ocean acidification and what causes it?

33. Explain how ocean acidification affects living things in the ocean.

Click on the "Plants & Animals" tab at the top. Click on the "Why does NASA care about food?" box.
34. What can NASA satellites track that can help farmers?

Click on the "Plants & Animals" tab at the top. Click on the "Coral Bleaching" box.
Read the information towards the bottom and answer the questions BEFORE you play the game!
35. What is coral bleaching?

36. What stress to the coral is thought to be causing coral bleaching?

37. Go back and look at the focus question for this section. Answer it using evidence from the websites.

When you are finished answering all the questions, you may navigate to other sections of the websites you are interested in or you may scroll to the bottom of the page (on the website https://climatekids.nasa.gov/) and click the "Games" tab to play some games.