

Six Degrees Could Change the World

Integrated Science

Name: _____

Date: _____

Pd. _____

As you watch the National Geographic video “Six Degrees Could Change the World”, answer the questions below. After watching the video, complete the design outline.

Before You Watch:

Define:

Carbon Sink

Carbon Source

Ocean Acidification

Greenhouse Gases

Fossil Fuels

Carbon Footprint

As You Watch:

1. In _____ decades all the glaciers on the _____, the source of water for millions, could be gone.
2. By the end of this century the Amazon rainforest, home to half the world’s _____, could whither to a dry savannah.
3. A temperature rise between 1 and _____ degrees F is possible over the next century.
4. In the winter of 2001, more than _____ fires encircled Sydney.
5. Bushfires are already bad. Climate scientists predict that in the next _____ decades they’ll get worse.
6. A small percentage is the greenhouse gases, a cocktail of water vapor, carbon dioxide, _____ and nitrous oxide.
7. Today, _____ carbon dioxide out of every million molecules is found in the atmosphere.
8. With one degree F of warming, the Arctic will be _____ half of each year.
9. Six thousand years ago, much of the American southwest was a vast _____.
10. In the last _____ years it has never been more than 1 degree C warmer than it is now.
11. Nearly _____ percent of the world’s energy starts as a fossil fuel.
12. The carbon _____ means all the energy that was consumed each step of the way from each of the cheeseburger’s component parts.
13. Two hundred million metric tons of _____ are released each year for all the cheeseburgers eaten in the United States.

14. If there is a _____ degree F warming, we will lose the vast majority of the world's tropical coral reefs.
15. The oceans are the world's largest carbon _____ - nature's primary mechanism for absorbing carbon dioxide out of the atmosphere.
16. Too much carbon dioxide in the ocean can turn it _____.
17. Acidification of ocean water dissolves the _____ and skeletons of forams and coccoliths.
18. It took nature _____ years to make the Greenland ice sheet.
19. The Greenland ice sheet contains enough water to raise global sea level by as much as _____ meters. This is enough to flood _____ City,
20. In the summer of _____ there were severe heat waves in Europe.
21. Between 2500 and _____ people died in Paris the night of August 10th.
22. The death toll across Europe topped _____.
23. Twenty percent of the world's oxygen is produced by the _____.
24. Trees help generate _____ percent of the water for rainfall in the Amazon.
25. One hundred year _____ will become common if global temperatures warm 3 degrees F.
26. Hurricane Katrina's winds reached _____ mph.
27. If global temperatures rise 4 degrees F, the _____ River in India will dry up and become a dirty creek.
28. There will be no more glaciers in the Himalayas by the year _____.
29. With a _____ degree F temperature rise there will be vast social upheaval and fighting for resources.
30. With a _____ degree F temperature rise the oceans will die, deserts spread and cities will be flooded and abandoned.
31. We currently have experienced a _____ degree F temperature rise.
32. We could avoid a large increase in temperature if greenhouse emissions peaked by the year _____.
33. The solution starts with increased _____.
34. Cars produce almost _____ percent of greenhouse emissions.
35. To keep warming below the critical 2 degree F threshold, we need to cut 7 _____ tons of greenhouse emissions each year.
36. Doubling the average fuel efficiency of all cars from _____ mpg to _____ mpg would save 1 billion tons.
37. One wind turbine can power about _____ home.
38. It would take more than 2 _____ wind turbines to replace coal power plants worldwide.

39. What two things do all climate scientists agree on?

After You Watch:

Write a paragraph describing the impact of carbon on our global temperatures. Include the terms “Carbon Sink”, “Carbon Source”, “Ocean Acidification”, “Greenhouse Gases”, and “Fossil Fuels”. Do not just define these terms, but make them work together in an explanation.

Further Study

As you watch this video that describes what could happen to the Earth if we continue to put carbon into the atmosphere, formulate a question about how changing ONE THING about your life might impact climate change. Assume you have 5 years and sufficient funding to do an in depth scientific experiment. Use the worksheet below to develop your question. Your study must relate in some way to **your** impact on climate change.

Design Outline Worksheet

Title/Purpose:

Hypothesis:

Independent Variable (I.V.):

Levels of I.V. (2 or more plus the control - which must be identified)					
Number of trials you will conduct for each I.V. level					

Dependent Variable:

Constants:

Data Table – Construct two blank data tables to support your experiment