

Planet Protectors- Student Response Sheet

School: _____ V JV1 JV2 JV3

Student Names: _____

(For each answer, fill in the blank or circle the correct response.)

Station 1:

1. _____:
Renewable or Nonrenewable
2. _____:
Renewable or Nonrenewable
3. _____:
Renewable or Nonrenewable
4. _____:
Renewable or Nonrenewable
5. _____:
Renewable or Nonrenewable

Station 5:

18. _____
19. _____
20. _____
21. A B C D

Station 6:

22. (2 pts) _____

23. A B C D
24. A B C D

Station 2:

6. A B C D
 7. A B C D
 8. _____
 9. A B C D
-

Station 7:

25. A B C D
26. A B C D
27. A B C D

Station 8:

28. _____
29. A B C D
30. A B C D

Station 3:

10. A B C D
11. A B C D
12. A B C D

Station 9:

31. Point or Nonpoint
32. Point or Nonpoint
33. Point or Nonpoint
34. Point or Nonpoint
35. Point or Nonpoint
36. Point or Nonpoint

Station 4:

13. A B C D
14. _____
15. A B C D
16. _____
17. _____

Station 10:

- 37. A B C D
- 38. A B C D
- 39. A B C D
- 40. A B C D

Station 11:

- 41. _____
- 42. _____
- 43. _____
- 44. _____
- 45. _____

Station 12:

- 46. _____
- _____
- 47. _____
- 48. (2pts) _____
- 49. A B C D

Station 13:

- 50. _____
- 51. A B C D
- 52. A B C D
- 53. A B C D

Station 14:

- 54. _____
- 55. _____
- 56. _____
- 57. _____
- 58. _____
- 59. _____

Station 15:

- 60. A B C D
- 61. A B C D
- 62. _____
- _____

Station 16:

- 63. _____
- 64. A B C D
- 65. A B C D

Station 17:

- 66. A B C D
- 67. A B C D
- 68. A B C D
- 69. _____

Station 18:

- 70. A B C D
- 71. A B C D
- 72. A B C D
- 73. A B C D

Station 19:

- 74. (2 pts) _____
- _____
- 75. A B C D
- 76. _____

Station 20:

- 77. _____
- _____
- 78. _____
- 79. A B C D

Planet Protectors-

Answer Key – 1 pt each line.

Tiebreakers: Best at Each station, starting with Station 1.

(For each answer, fill in the blank or circle the correct response.)

Station 1:

1. WIND TURBINE ____:
Renewable or Nonrenewable
2. COAL FIRED PLANT ____:
Renewable or Nonrenewable
3. GEOTHERMAL ____:
Renewable or Nonrenewable
4. HYDROELECTRIC DAM ____:
Renewable or Nonrenewable
5. NUCLEAR POWER PLANT ____:
Renewable or Nonrenewable

Station 5:

18. PETROLEUM ____
19. URANIUM ____
20. ELECTRICITY ____
21. A B C D. ACCEPT EITHER ANSWER

Station 6:

22. EROSION, LOSS OF TREES, POLLUTION – NEED 2, ACCEPT OTHERS IF THEY MAKE SENSE_
23. A B C D
24. A B C D

Station 2:

6. A B C D
 7. A B C D
 8. NORTHWEST PACIFIC ____
 9. A B C D
-

Station 7:

25. A B C D
26. A B C D
27. A B C D

Station 3:

10. A B C D
11. A B C D
12. A B C D

Station 8:

28. THE SUN ____
29. A B C D
30. A B C D

Station 4:

13. A B C D
14. PLANTS OR TREES _
15. A B C D
16. RISING _
17. NO ____

Station 9:

31. Point or Nonpoint
32. Point or Nonpoint
33. Point or Nonpoint
34. Point or Nonpoint
35. Point or Nonpoint
36. Point or Nonpoint

Station 10:

- 37. A B C D
- 38. A B C D
- 39. A B C D
- 40. A B C D

Station 11:

- 41. NONE
- 42. BOTH
- 43. CONSERVATION
- 44. POLLUTION PREVENTION
- 45. CONSERVATION

Station 12:

- 46. Aluminum can, diaper,
plastic bottle, fishing line
- 47. WOOL SOCK
- 48. A,D, E, F, G, H, I (must have
only these -
1pt if partial)
- 49. A B C D

Station 13:

- 50. C
- 51. A B C D
- 52. A B C D
- 53. A B C D

Station 14:

- 54. REPURPOSE
- 55. REDUCE
- 56. REDUCE
- 57. REPURPOSE
- 58. REPURPOSE
- 59. RECYCLE

Station 15:

- 60. A B C D
- 61. A B C D
- 62. CAN GIVE US SKIN
 CANCER

Station 16:

- 63. ZERO
- 64. A B C D
- 65. A B C D

Station 17:

- 66. A B C D
- 67. A B C D
- 68. A B C D
- 69. COAL

Station 18:

- 70. A B C D
- 71. A B C D
- 72. A B C D
- 73. A B C D

Station 19:

- 74. A, B, F, H (only these, 1
point for partial right answer.)
- 75. A B C D
- 76. SOIL OR DIRT

Station 20:

- 77. THEY FLOAT OR DON'T
BREAK DOWN
- 78. THEY EAT THEM
- 79. A B C D

Station 1 – page 1

I recently flew across the country looking to see how Americans are getting their energy. Identify each type of energy production below and say whether it is renewable or nonrenewable.



Word Bank

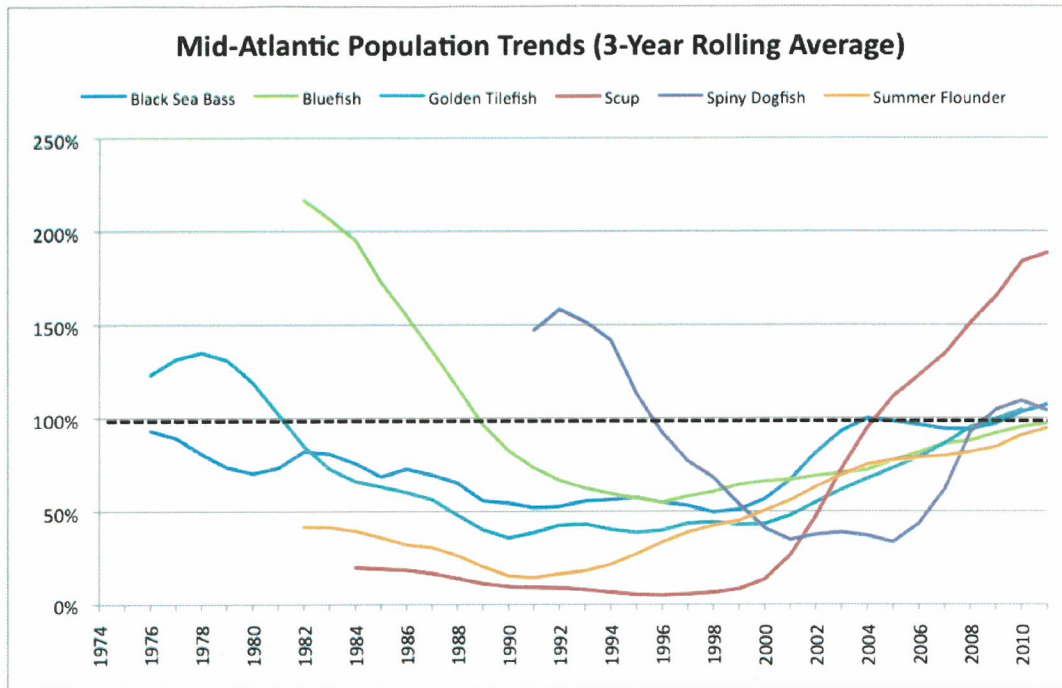
Coal Power
Geothermal Power
Hydroelectric Power
Natural Gas Power
Nuclear Power
Solar Power
Wind Turbine Power



Station 1 – page 2



Station 2



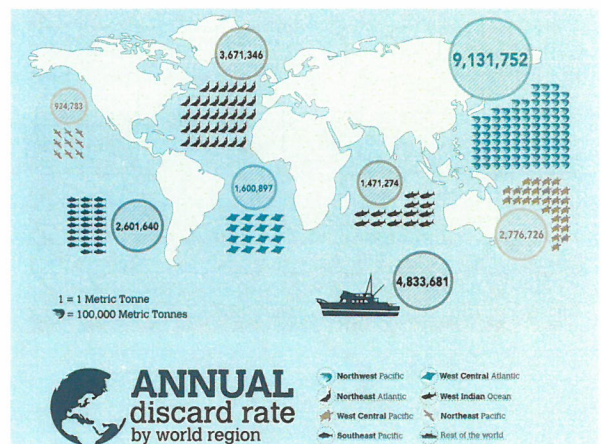
6. Which of the following species is not currently being overfished?
 - A. Blue Marlin
 - B. Spiny Dogfish
 - C. Blue Crab
 - D. Scup

7. What is a sustainable practice that will allow species to recover?
 - A. Aquaculture
 - B. Trawling
 - C. Dredging
 - D. Gillnet Fishing

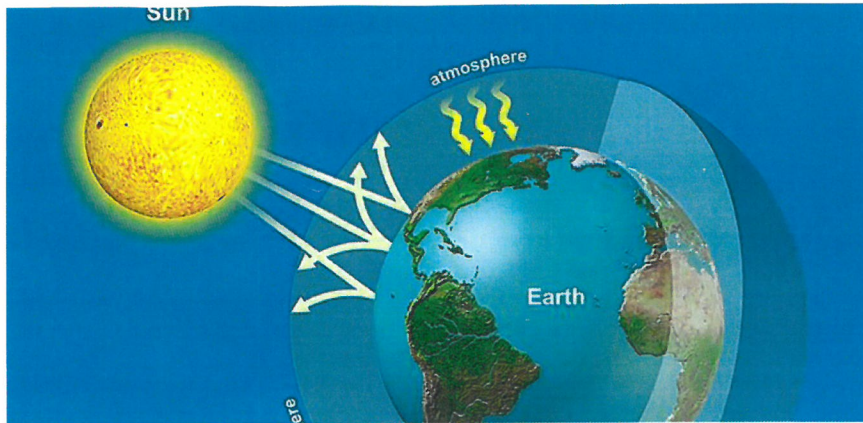
8. According to this infographic, which world region has the worst discard rate?

9. What is another name for this?

- A. Baitfish
- B. Bycatch
- C. Chugger
- D. Overpopulation



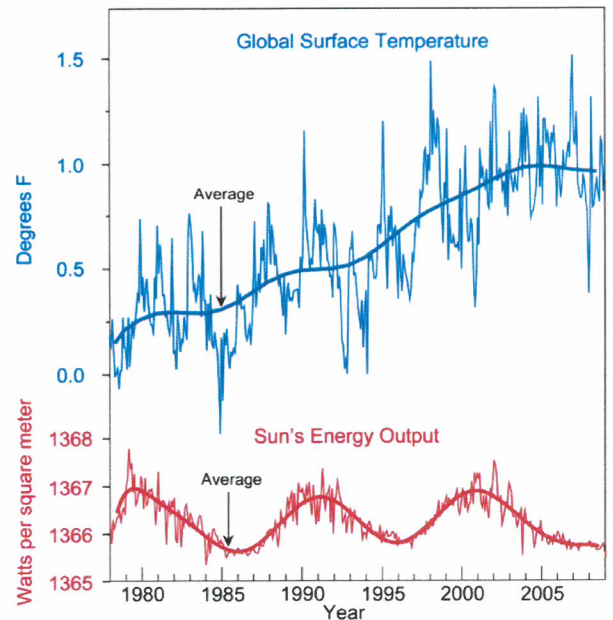
Station 4















13. What process does the picture above show?
- Ozone depletion
 - Coriolis Effect
 - Greenhouse effect
 - Pollution of the Earth's atmosphere
14. Name 1 thing that decreases greenhouse gases.
15. Which of the following is NOT a Greenhouse gas?
- Oxygen, O_2
 - Carbon Dioxide, CO_2
 - Methane, CH_4
 - Nitrous Oxide, N_2O

Use the graph to the right to answer the following questions.

16. Does this graph show that global surface temperatures are generally rising or falling?
17. Does this graph support the statement that the sun's energy changes and that is what causes global temperatures to change?



Station 5

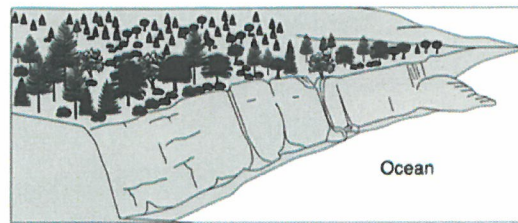
	PETROLEUM 37%  *		BIOMASS 5% <i>Uses: heating, electricity, transportation</i>
	NATURAL GAS 29%  *		HYDROPOWER 2% <i>Uses: electricity</i>
	COAL 16% <i>Uses: electricity, manufacturing</i>		WIND 2% <i>Uses: electricity</i>
	URANIUM 9% <i>Uses: electricity</i>		SOLAR < 1% <i>Uses: heating, electricity</i>
	PROPANE <i>Uses: heating, manufacturing</i> <small>*Propane consumption is included in petroleum and natural gas totals.</small>		GEOHERMAL < 1% <i>Uses: heating, electricity</i>

**Total does not add up to 100% due to independent rounding.

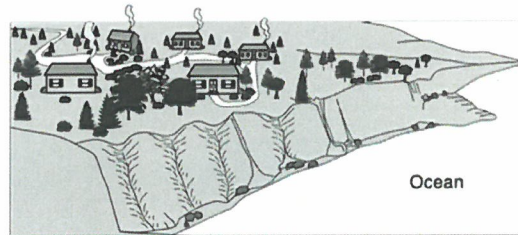
Data: Energy Information Administration

18. This table shows American energy use by type. What Renewable energy do we use the most of?
19. Duke Energy has a nuclear power plant in NC. Which of the categories on the list is for nuclear energy?
20. What activity do we use the majority of these energy sources for?
21. The one thing that is common to all fossil fuels is that they:
 - A. Were originally formed in marine environments
 - B. Contain carbon
 - C. Have undergone the same set of geological processes during their formation
 - D. Represent the remains of one living organism

Station 6



Before Development



After Development

22. The diagram above shows an oceanside environment before and after houses were built in the area. List 2 negative effects that building the houses may have had on the ocean environment.

23. What does the picture to the right show?

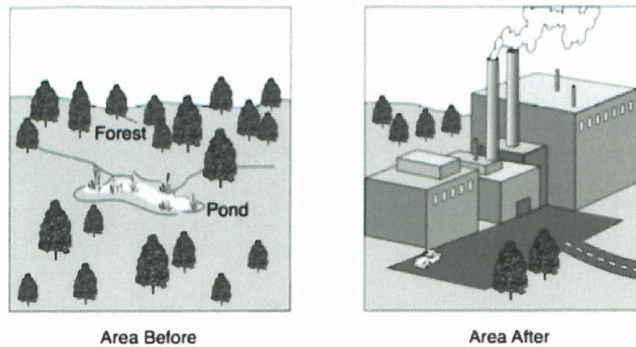
- A. Deforestation
- B. Composting
- C. Bycatch
- D. Strip Mining



24. What resource is being collected?

- A. Coal
- B. Uranium
- C. Petroleum
- D. Lumber

Station 7

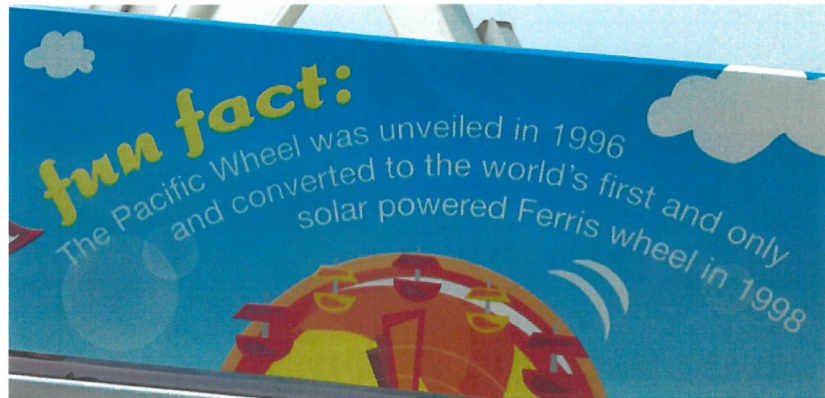


25. The diagram above shows a forest area before and after a factory was built there. Building the factory in this area most likely caused an increase in:
- A. Air pollution
 - B. Natural habitats
 - C. Open space
 - D. Available water
26. Which human activity often has a harmful effect on the environment?
- A. Recycling paper and plastic
 - B. Riding a bicycle to school
 - C. Helping seeds to germinate
 - D. Throwing garbage into a stream
27. Which human activity will help conserve Earth's natural resources?
- A. Leaving the television on all day
 - B. Recycling plastic bottles
 - C. Cutting down trees
 - D. Burning trash in the yard

Station 8



This is the Pacific Wheel, a Ferris wheel at the end of the Santa Monica Pier in California. The sign below is posted in the cars of the ride.



28. What is the source of energy for solar power?
29. Why is the world not using more solar energy?
- A. Because solar energy is too expensive of an energy option for many
 - B. Because the Sun does not shine at night
 - C. Because oil is a much cleaner energy source
 - D. Because there are not enough solar panels
30. Photovoltaic solar energy is the only type of electricity generation that DOESN'T require:
- A. Water
 - B. Moving parts
 - C. Connection to the electricity grid
 - D. Wiring

Station 9

Name whether each of these pictures is a source of Point or Nonpoint pollution.



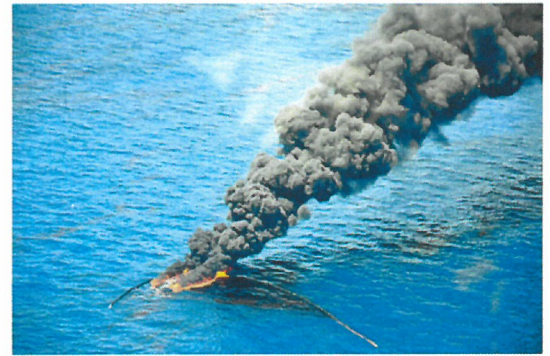
31. Pouring chemicals down the street drain



34. Garbage collecting in a stream or lake

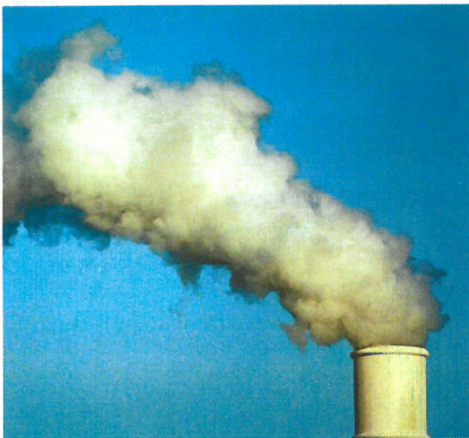


32. Runoff from yards and fields



In July 2010, responders used in situ burns to remove oil in the Gulf of Mexico from the Deepwater Horizon oil spill. (NOAA)

35. An oil spill from an underwater pipe leak



33. Smoke from factory power plants



36. Livestock walking back and forth through a stream in a field

Station 10

37. If you were to burn one of the following; which would cause the least amount of pollution?

- A. Natural Gas
- B. Coal
- C. Diesel
- D. Petrol

38. Americans generate a lot of trash. Which should NOT be used to dispose of trash:

- A. Burn it
- B. Compost it
- C. Recycle it

39. Which of these is biodegradable?

- A. A soup can
- B. A popsicle stick
- C. A water bottle
- D. A trash bag

40. Which is the most environmentally friendly way to enjoy a cup of coffee?

- A. 1 big Styrofoam cup
- B. 2 small Styrofoam cups
- C. Paper coffee cup
- D. Travel mug from home

Station 11

Looking at the following pictures, determine if they show **conservation**, **pollution prevention** or **BOTH**. If they do not show conservation or pollution prevention write **NONE**.



41. Using aerosol hairspray



42. Driving an Electric Car



43. Donating things you don't need to charity



44. Putting used batteries in the correct place.



45. Using a shower timer to remind you to get out after 5 minutes.

Station 12

46. If you live for 80 more years and throw all of these things away today, which of the items will still exist long after you are gone?

TYPE OF DEBRIS	DECOMPOSITION RATE
Paper Towel	2-4 weeks
Newspaper	6 weeks
Apple Core	2 months
Cardboard Box	2 months
Cotton Shirt	2-5 months
Waxed Carton	3 months
Plywood	1-3 years
Wool Sock	1-5 years
Plastic Grocery Bag	10-20 years*
Foam Cup	50 years*
Tin Can	50 years
Aluminum Cans	200 years
Disposable Diaper	450 years*
Plastic Beverage Bottle	450 years*
Fishing Line	600 years*

*Items are made from a type of plastic. Although no one has lived for 450 or 600 years, many scientists believe plastics never entirely go away. These decomposition rates are estimates for the time it takes for these items to become microscopic and no longer be visible. Sources: EPA, Woods Hole Sea Grant

47. Which breaks down faster, a plastic grocery bag or a wool sock?

48. Which of the items at this station can be recycled in normal recycling? List all that apply.

49. What is one big problem with landfills?

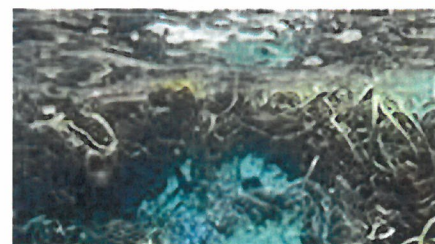
- A. They are bad for the environment
- B. They do not hold enough garbage
- C. They usually catch on fire in the summer
- D. We are running out of space for landfills



Station 13



50. Which letter on the map best shows where the Great Pacific Garbage Patch is located?
51. Most of the debris found in the patch is:
- Paper
 - Plastic
 - Styrofoam
 - Glass
52. Which of these is NOT a reason that it is hard to clean up the Great Pacific Garbage Patch?
- It is so far from every country's coastline that no nation will take responsibility to clean it up.
 - Nets that can be used to scoop garbage would also scoop animals out of the ocean.
 - The garbage is toxic and harmful for people to clean up.
 - Much of the garbage has broken down in to tiny pieces that are hard to scoop.
53. What do scientists suggest is the best way to deal with the problem now?
- Attach garbage scoops to cruise ships and have them scoop up garbage each time they go through the area.
 - Send large garbage trawlers (boats) from all surrounding countries to take loads back to land
 - Burn the garbage where it is in the water
 - There is no good way to deal with cleaning up the problem, we have to work to keep it from getting bigger.



Source: Photograph by Ray Boland, NOAA.
This file is licensed under the Creative Commons Attribution 2.0 Generic license

Station 14

Tell whether each item at this station is an example of Reduce, Reuse, Recycle, or Repurpose.



54. This rocket for 3,2,1, Blast Off! is made from 2L Bottles.



57. This purse is crocheted from plastic grocery bags.



55. Kate likes to take her own shopping bags to the grocery store and help her mom pack up their food.



58. This chandelier is now a funky bird feeder.

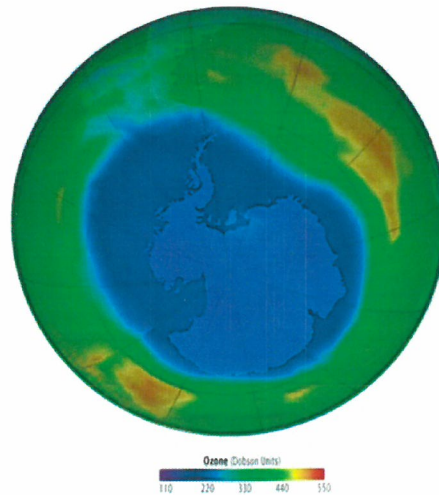


56. We buy large containers of snacks and then divide them out in our lunch.



59. Crayola collects its old markers and turns them in to fuel for their trucks.

Station 15



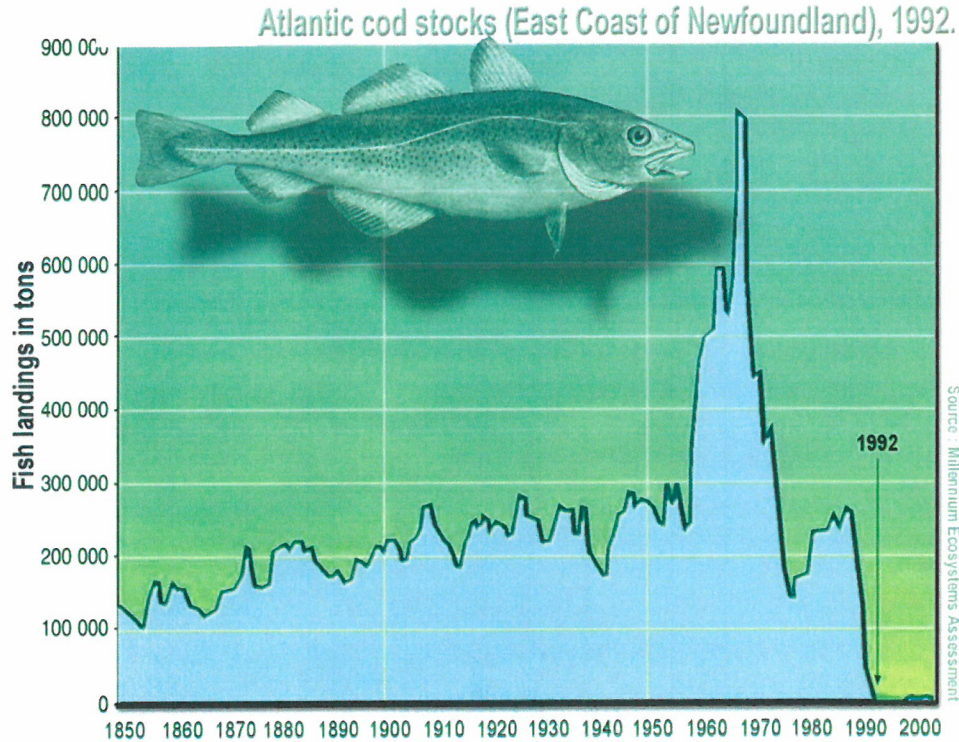
source: <https://www.e-education.psu.edu/egee102/node/1972>

60. In the 1970's scientist noticed a hole in the ozone layer of our atmosphere that was increasing in size due to human activity. What activities or products were speeding up this process?
- A. CFCs
 - B. Aerosol Hairspray bottles
 - C. Refrigerators
 - D. All of the above
61. What does the ozone do?
- A. Absorbs Greenhouse gases
 - B. Absorbs harmful UV rays from the sun
 - C. Blocks gamma radiation from entering the Earth's atmosphere
 - D. Filters electromagnetic particles from the sun
62. At this station, there are beads that will change color when they absorb UV rays from the sun. Our skin can also absorb UV rays. Why is this bad?



Station 16

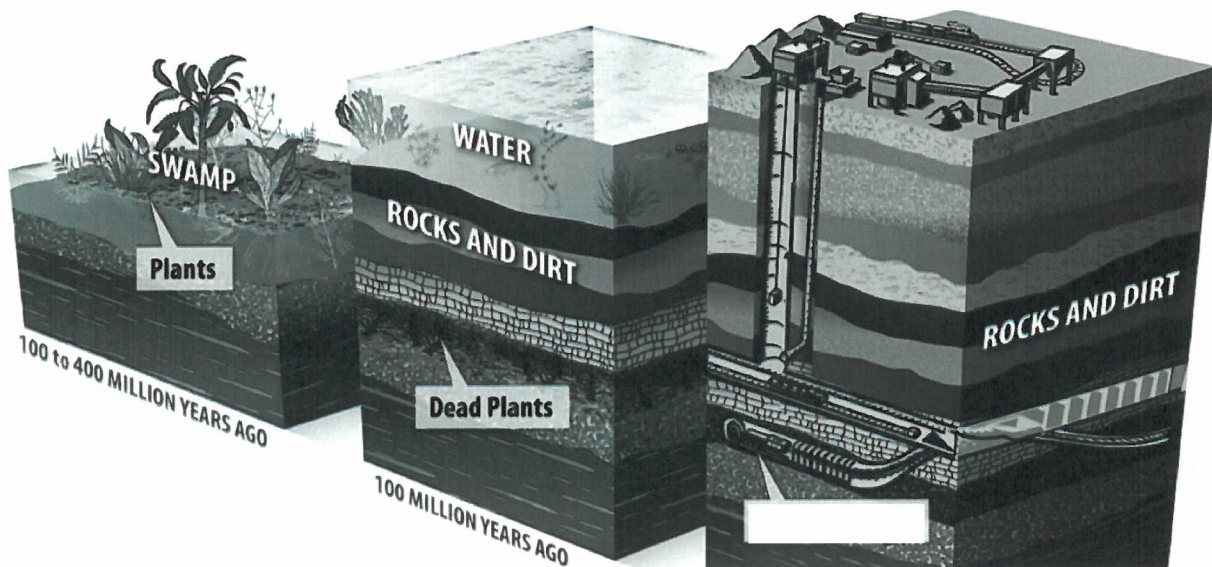
Use the graph below to answer the following questions



63. How many Cod were caught in 1992?
64. Based on the graph, why do you think that was the case?
- Fishermen caught too many fish in the late 1970's and there weren't enough fish left in the ocean to sustain their population
 - A disease killed all the Cod
 - No one wanted to buy Cod anymore, so people stopped fishing for them
 - Sharks ate all of them
65. How can fish populations be restored without harming the environment and keeping the fisherman employed?
- Catch younger fish
 - Send out more boats to catch more fish
 - Setting a catch limit
 - Stop fishing

Station 17

66. Which of the following is NOT a type of surface mine?
A. Shaft
B. Surface coal mine
C. Open Pit
D. Quarry
67. What is one problem that mining may create?
A. Ore
B. Reclamation
C. Water Pollution
D. Mineral Deposits
68. How do we return land used for mining to its original state?
A. By reclamation
B. By recycling
C. By pollution
D. By strip mining
69. What resource is being mined in the picture below?



Station 18

70. Which of the following is an alternative to gasoline and doesn't harm the environment?
- A. Natural Gas, from shale
 - B. Diesel
 - C. Electricity made from geothermal energy
 - D. Oil, from cooking
71. Which of the following is a disadvantage of most of the renewable energy sources?
- A. Highly polluting
 - B. High waste disposal cost
 - C. Widely available
 - D. High running cost
72. Which of the following is not a major source of groundwater contamination?
- A. agricultural products
 - B. sprinkler systems
 - C. landfills
 - D. septic tanks
73. Nuclear power is fueled by:
- A. Uranium
 - B. Sodium
 - C. Electrons
 - D. Nuclearium

Station 19



74. List all the letters of the things at this station that could be put in a compost bin. (let's pretend for a minute that the food and plant are real and not plastic)
75. Which animal can be added to compost bins to help things break down?
- A. Cockroaches
 - B. Worms
 - C. Mice
 - D. Millipedes
76. Why should you compost – what is formed after the items break down over time?

Station 20



This is a beach in Belize months after a small hurricane washed this garbage on shore.

77. This garbage is mostly plastic bottles and shoes. Why do you think that is mostly what washes up after a storm?
78. Many restaurants and even some cities have banned plastic straw use. Why are plastic straws harmful to sea turtles?
79. According to the graph below, where does most plastic waste go each year?
- Recycled
 - Composted
 - Combusted
 - Landfilled

