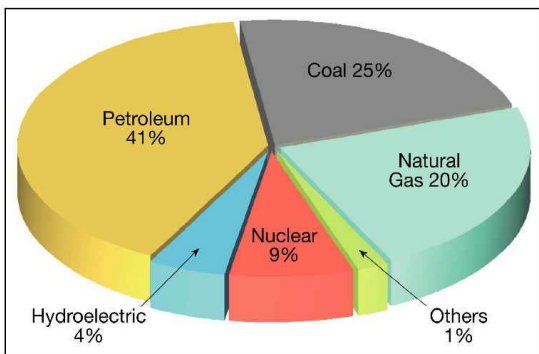


Name: _____ Date: _____ Pd: _____

Unit 9 Formative Assessment – Sustainability & Natural Resources

- For each of the following types of energy, indicate if they are **renewable or non renewable**:
 - Solar
 - Wind
 - Hydrothermal
 - Coal
 - Petroleum
 - Tidal
 - Fission
 - Fusion
 - Geothermal
 - Oil
- TRUE OR FALSE:** Nonrenewable resources can be replenished over months, years or decades.
- Using the pie chart below, determine what percent of the US energy comes from *petroleum, natural gas, nuclear and coal* **COMBINED**.



- TRUE OR FALSE:** In any energy generation process, the usefulness of the energy at the end of the process will be greater than the quality at the beginning. (*What does quality mean in this context?*)
- TRUE OR FALSE:** Extracting, processing, and using mined resources causes land disturbance and erosion.
- TRUE OR FALSE:** The world's dirtiest and most abundant fossil fuel is biomass.
- Most oil in the United States is used for what activity?
- Fill in the table to indicate the primary use of each of the following fuels:

Fuel	Primary Use	Benefit of fuel (<i>if any</i>)
Coal		
Natural Gas		Air pollution is cleaner than for other fossil fuels
Petroleum		
Propane		

- If solar energy is so great, why don't we use more of it?

10. Fill in the table on renewable energy (*Word Hints: solar, fission, hydroelectric, wind, hydrothermal, tidal, plants and living matter, heat from the Earth, flowing rivers, uranium, green, clean, efficient, renewable, practical*):

Type of Energy	Source	Benefit and Issue
		Noise pollution
		Not available at night
Nuclear Energy		Can't be controlled (it's counterpart, fission can)
	Flowing water—rivers	
	Big differences in the high tide and the low tide, location where the water from the tidal shift can be contained	
Geothermal		
Biomass		

11. **CIRCLE** the items that would be included in **BIOMASS**: oil from petroleum, methane from animal waste, corn ethanol, methane from food waste, gas made from coal.

12. Classify these statements as **sustainable** or **non-sustainable** mentality:

- mode of human development in which resource use aims to meet human needs while preserving the environment
- the earth has an unlimited supply of resources available for use by people-- If resources run out in one area, more can be found elsewhere or alternatively human ingenuity will find substitutes
- The earth has a limited supply of resources.
- Humans do not need to conserve resources.
- Humans share the earth's resources with other living things.
- Unlimited growth is sustainable.
- Humans are above nature.

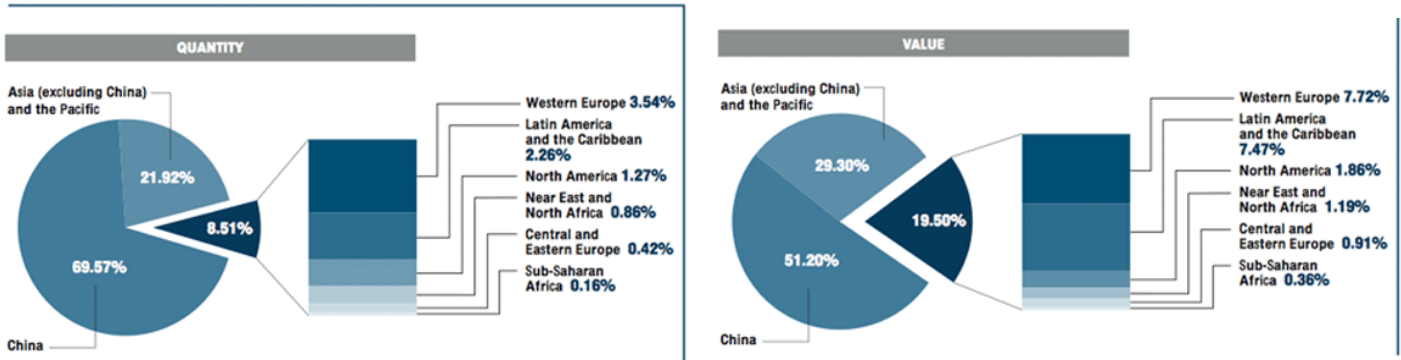
13. Which of the following statements is true?

- Hydrogen fuel cells will become more expensive as development continues
- Hydrogen gas can be disturbed at the local gas station
- The use of hydrogen fuel cells releases little or no carbon dioxide
- Hydrogen gas is easy to store at home

14. What are some consequences of deforestation?

15. **TRUE OR FALSE:** People living in urban areas have a smaller carbon footprint due to public transportation and walking options.
16. **TRUE OR FALSE:** Urban areas have high rates of disease due to population density.
17. **TRUE OR FALSE:** Air pollution in urban areas is higher due to concentrated industrial and transportation density.
18. **TRUE OR FALSE:** Humans living in urban areas are more likely to travel by automobile.
19. Using the chart below, determine which country has the **highest** quantity of aquaculture.

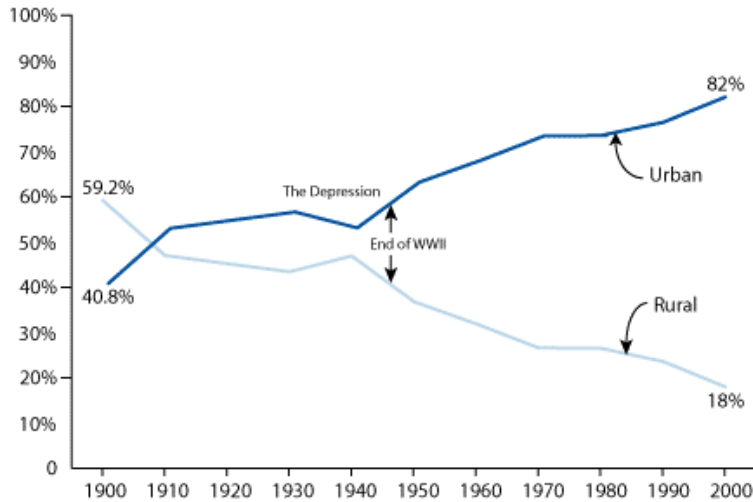
Aquaculture production by regional grouping in 2004



20. Will this happen with deforestation: **Yes or No?**
- An increase in soil erosion _____
 - Loss of CO₂ absorbing plants _____
 - Increased stream clarity due to reduced erosion _____
 - More habitat for monkeys _____
21. Will this happen with aquaculture: **Yes or No?**
- A boom and bust operation that will make quick profits _____
 - Lots of contaminated water _____
 - Degraded genetic fish stock _____
 - Wild species in danger from escaping domesticated species _____
 - More food on the table at lower overall cost _____
22. Sustainable agriculture relies heavily on _____.
- Inorganic (what does this mean?) fertilizer to replenish soil nutrients
 - Natural controls for pests and replenishing soil nutrients
 - Synthetic (man-made or natural) pesticide use for controlling pests
 - Inorganic fertilizer to replenish soil nutrients
23. The following are some of the types of energy available in North Carolina: **coal, natural gas, gasoline, oil, jet fuel, petroleum, nuclear electric, hydroelectric, biomass, etc.**
- Pick one and describe its source (*where it comes from*).
 - Describe how it can be used (*ex: electricity generation or transportation*).
 - List two benefits and two issues with this energy.

24. Describe the trends in urban and rural population growth using the chart below:

- a. What is happening?
- b. Why is it happening?
- c. What are some of the impacts on the environment due to the trend?



25. Use the terms **restoration**, **mitigation**, **conservation** and **preservation** to complete the following:

- a. Ecosystem _____ is the return of a damaged ecological system to a stable, healthy, and sustainable state.
- b. _____ is the protection, preservation, management, or restoration of wildlife and of natural resources such as forests, soil, and water.
- c. Environmental _____ is complicated business. Essentially, it means that a developer that degrades or destroys a natural resource must restore ecological balance by doing something nice for the environment, preferably kind of nearby.
- d. Environmental _____ is the strict setting aside of natural resources to prevent the use or contact by humans or by human intervention.

26. Provide a **SPECIFIC** example of each of the following sustainable processes:

- a. **Conservation**
- b. **Preservation**
- c. **Restoration**
- d. **Mitigation**