



AP[®] Environmental Science 1999 Sample Student Responses

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A) A resource is renewable if the use of the resource doesn't deplete the supply of it. Wind power is a renewable resource because harnessing the force of the wind doesn't stop wind from blowing. Coal is a non-renewable resource because there are finite supplies of it & they are being depleted.

B) Total resource use is higher in developed countries than undeveloped ones. ~~Manufacture~~ Manufacture of consumer goods uses up massive amounts of resources in the production, transportation & disposal of these products. Energy is consumed & resources are needed. Fuel is used for shipping, plastics manufactured for packaging & land degraded by landfills for disposal. In developing countries hunting & farming are the main ways of life, not consumption of manufactured goods. Heating with wood stoves does deplete forests but doesn't use resources to the degree of huge fossil fuel burning plants. Also, most things are not disposed of and disposal isn't a major issue.

C) A sustainable resource is one that can be used at a certain rate indefinitely because it continues to regenerate and is not depleted. Sustainable agriculture means using that land

& farming with methods like terracing, row cropping & limited irrigation so the land is not overly degraded or eroded. Enough food is produced for survival but not too much so the land would be rendered useless in a short time.

D) Lobbying by oil & coal companies stops the development & research into renewable power. Oil companies pay huge amounts of money to influence the government & stop renewable resource development.

Recently the monopoly on power companies has been broken and competition is available. Some companies offer energy ~~to~~ from only renewable resources. Such competition in the power industry allows the consumer to choose & support ~~new~~ renewable energy.

(a) a renewable resource is one that can be replenished. For example, sunlight, air, forests. a nonrenewable resource is one that is exhaustible. For example, coal and heavy metals (mercury + lead)

(b) Total resource use per capita is much greater in ~~developing~~ developed countries than in developing countries. This is due to technology. Developed countries use electricity to run households, business, + factories, water for consumption, agriculture, + recreational things such as swimming pools. Developing countries, on the other hand, have not yet acquired ~~to~~ a great ~~as~~ need for resource use per capita. The countries are poor and cannot afford some of the luxuries of a country that has already been developed. There are few factories in developing countries and water is used sparingly for agriculture + personal consumption.

Developing countries also value their resources more and know their greatness. While developed countries are wasteful.

(c) Sustainable resource use is ^{one that is used} ~~when only~~ ^{without} ~~what is needed~~ is taken as long as it doesn't surpass the sustainable yield (the ~~an~~ amount of a resource that can be taken without

depleting it. An example is ~~wheat~~^{coal}. If only enough ~~wheat~~ were produced to ~~feed our livestock~~ and make our ~~food~~, we ~~shouldn't~~ need ~~any more~~. If ~~we~~ only small amounts of coal were extracted at a time, it could be sustained and never depleted.

(d) The Clean Air Act of 1990 forces excess amounts of nitrogen oxides and sulfur oxides to be kept out of the atmosphere so as to not further pollute and thus harm the environment and its habitats. However, this act also allows for trading amongst businesses for their pollution rights. So if one factory is not producing its maximum pollutant yield, it may sell their extra to another company so that they can pollute more.

a) Resources may either be nonrenewable or renewable, meaning that sources + supplies may be replenished over time (renewable), or there is only a specific amount of a resource on this planet, and once it is used up, there are no other sources of it. A specific example of a renewable resource is fuelwood. Trees can continue to grow + regrow as long as humans do not exploit them past their level of sustainable yield. A nonrenewable resource is oil, because as we continue to mine it, the amount of oil is decreasing rapidly and there is no way to increase the supplies (except to wait millions of years.)

b) Developed countries alarmingly use only small amounts of renewable resources as opposed to nonrenewable ones. The United States uses the largest amount of oil in the world. Ironically, this oil is present in the middle east, where countries are still developing. These countries use larger amounts of renewable ~~resources~~ resources, such as biomass.

Sustainable resource use is using a resource at, or below, its sustainable yield. This means that it must be ~~not~~ consumed at rates at or lower than the rate is being replenished. For nonrenewable resources it is used at minute amounts.

For example, if trees were cut at their sustainable yield, for every tree cut, one or more trees would be planted, to balance out our impact. That is sustainable resource use of trees.

d) a practice facilitating the progress of sustainable resource use is recycling paper. By recycling paper, less trees must be harvested, + therefore a more sustainable amount remains + less trees must be ~~cut down~~ ^{cut down}.

One practice impeding the progress of sustainable resource use is the operation of cars dependant upon gas. This increases the amount of oil mined + refined, and one day soon supplies will no longer exist.