A little practice for secondary school students toward a sustainable future

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Abstract

High and growing global population, multiplied by high consumption by the affluent, cause many problems. These include many aspects of poverty and the suffering of poor children. Immigration pressures and tragedies. Conflicts over scarce resources. Diminished quality of life in crowded cities. Youth unemployment. Pollutions ranging from plastics to poisons. Rising atmospheric CO_2 and climate change. Habitat loss and overexploitation of wildlife on land and sea. And so, to develop ability to make good choices in the future and to reduce these problems, two educational activities are offered here. They have been tested and refined in New York City by nearly 2000 students hailing from over a dozen nations. Without fail, the students learned the causes and effects described here (Tables 1 and 2).

Table 1. The Many Problems Challenge. Prior to this challenge students should gain concrete understanding of the various facts through readings, videos, or immediate experience.

The Many Problems Challenge English version

You are asked to help a Nation solve its problems. Can you arrange the 20 facts into the chart?

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poverty, strife, war	loss of habitat	high consumption	overexploitation of species
lack of contraception	health problems	lack of education	shortage of resources
loss of biodiversity	increasing wealth	climate change	vanity & materialism
pollution	irritation, stress	high population	wasteful technologies
loss of ecosystem services	crowding & noise	sexual activity	extreme weather

Table 2. The Human Population Challenge. This activity especially develops a sense of empowerment ("Can you guide your Nation?").

The Human Population Challenge

English version / Please share with others

Can you guide your Nation to have enough Resources for humans and all living things -- forever?

Begin by setting an Initial Population. 40 is good, because we use simple numbers here, and 40 can represent millions. Then proceed down the Generation 1 column, following each instruction...

Generation	1	2	3	4	5	6	7
Initial Population = Final Population from previous Generation							
Women = one-half of Initial Population							
average Birth Rate per Woman choose 4, 3, 2.5, 2, or 1.5							
Children Born = Women times Birth Rate							
Child Mortality Rate choose 0.0, 0.05, 0.1 or 0.2							
Child Deaths = Children Born times Child Mortality Rate							
Final Population = Children Born minus Child Deaths							
Per Capita Consumption choose 0.5, 1, 2, 3, or 4							
Total Consumption = Per Capita Consumption times Final Population							
Resources Remaining for all creatures = 100 minus Total Consumption							
Aerial View fill in "C" for each 10 units of Total Consumption							