

Outline for Educating for Sustainable Living

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1. Define Sustainability and who we are (SUI)

(Begin by introducing yourselves.) This is an “Introduction to Sustainable Living” and we are from the Sustainable Universities Initiative (SUI). The Sustainable Universities Initiative is affiliated with the School of the Environment here at the University of South Carolina (USC). The Sustainable Universities Initiative is designed to “green” our campuses and promote environmental awareness and foster sustainability through education, research and improved campus operations.

What do you think "sustainability" means? Is this a term that you have heard before? *(get people to offer definitions)*

What does this mean to us, how does this affect what we do everyday, we think of sustainability as opportunities vs. needs: Living each day so that our interaction with environmental resources does not prevent people of the future from enjoying the same kinds of opportunities that we have today.

2. Demonstrations

To start we want to show you how much land we have available for human use....

Apple Demo

(For this demonstration you need 2 apples and a knife, the first apple is cut up proportionately to represent the area of the earth that is available for food production (following the directions below) and the second apple is used as comparison at the end of the demonstration.)

(Hold up Apple) This represents the earth. How much of it is soil in which we could grow our food?

(cut the apple into 4 parts) 3 parts represent the earth's oceans, 1 part represents the land.
(put aside 3 ocean parts)

(cut the land portion in half) 1 part is deserts, swamps, Antarctica/the arctic, and mountains. The other part is where people live and grow food.

(slice into 4 parts the piece that represents land where food may be grown) 3 are too rocky, wet, hot, developed, or poor soil quality for growing food.

(peel the last piece) this small piece of peel represents the earth's soil on which people depend for food production. This isn't going to change, if anything it is just going to get smaller. *(hold up little piece and whole apple for comparison)*

Keeping this in mind we want to show you how world population is growing...

Population Growth Exercise¹

(For this exercise we have a large laminated map of the world and a container of dried kidney beans. Using volunteers, beans are added to areas of the world to represent population growth estimates from 2000-2075).

Human populations are growing at an alarming rate worldwide, this is a map of the world and we need some volunteers. *(Assign 5 people to represent each one of the areas of the world discussed below).* This is to show how the population is growing around the world.

Each of these beans represents 100 million people. We are going to add more beans until we get to the year 2075. These numbers come right from the UN forecasts².

To start place:

Africa	8 beans
Central and South America	5 beans
Asia	37 beans
North America	3 beans
Europe	7 beans

This represents the populations of these places as it was in 2000.

Now it is 2025, add:

Africa	5 beans
Central and South America	2 beans
Asia	10 beans
North America	1 beans
Europe	0 beans

Now it is 2050, add:

Africa	5 beans
Central and South America	1 beans
Asia	6 beans
North America	0 beans
Europe	-1 bean

¹ Adapted from Carpenter, John R. and Phillip M. Astwood. 1999. *Environmental Issues: Laboratory Activities and Experiences*. Dubuque: Kendall/Hunt Publishing Company.

² United Nations, Department of Economic and Social Affairs, Population Division, 1998 Revision.
<http://www.popin.org/longrange/tab2.htm>

Now it is 2075, add:

Africa	3 beans
Central and South America	1 beans
Asia	1 beans
North America	0 beans
Europe	0 beans

<u>Totals:</u>	
Africa	2.1 billion
Central & S. Amer.	900 million
Asia	5.4 billion
N. America	400 million
Europe	600 million

So what do you guys think? (*allow for some answers*) Now it may look like we don't have any problems here in North America, with only 4 beans or 400 million people, but the average North American has an environmental impact 40 times greater an average Asian due to high pollution and rapid consumption of natural resources. So if you thought that there were a lot of people in Asia, these North Americans have the impact of 16 billion Asians (*add 160 beans to North America*)

North Americans set the example for what people around the world want to be/live like. If other countries actually achieve this, and consume and pollute as much as Americans, then we are going to have a real problem. The earth just doesn't have enough resources to support this (*hold up piece of apple*)... Do you think this is going to be a problem?

So what can we do? We need to change the way we live to use fewer resources and have a smaller impact on the environment. By setting an example for the rest of the world by actually "cutting back" our resource use.

3. Footprint

(The footprint used in this exercise is attached, it is one that we developed using the "Living More Lightly Profile" developed by The Institute for Earth Education and first published in Earth Education...A New Beginning by Steve Van Matre. This footprint is designed to ask questions that are most relevant to college freshman who live in residence halls. The actual score does not equate to anything specific, unlike those that calculate impact in acres, but can be used as comparison and the purpose of the footprint is to spark conversation.)

Here is an ecological footprint so you can see what your individual impact on resource use is. It will ask you questions about habits in your daily lives that have an impact on the earth. Keep in mind that this isn't a test, it asks a variety of questions, these questions aren't the only things important in assessing your impact but they should raise some interesting issues.

(let them fill it out, it takes approximately 10 minutes....wait until everybody is done to continue)

The lower the score the more environmentally conscious you are in your attitudes and actions. Remember, the idea isn't to be graded, it is to get you to think about some of these things. How many people scored below 50? (*show hands*) That's really good. How about below 100? That's good too. The maximum is 275 (FYI: most people score around 150ish).

Does anybody have any questions about the footprint? Any questions stick out in your mind?

****The rest of the presentation is meant for discussion. If they bring up topics that is great, if not, you can lead the discussion by asking some of the questions below or asking them how they answered specific questions on the footprint. You don't have to get through all (or any) of the topics below, just so that there is a good exchange of ideas.****

4. Questions

Did you answer that you took showers longer than five minutes or that you turned the water off when you brushed your teeth? (Questions 19 & 20)

How many gallons of water do you think you use to shower and get ready in the morning?
100 gallons, so every minute you have the faucet off saves that much more water³

Diving your car, (Questions 25-27), did anyone answer that they bike or walk instead or car pool: Automobiles contribute to air pollution, carbon dioxide emissions and depletion of non-renewable natural resources (the gas and oil).

And where do you think those cars are from?

60% are from Europe and North America (which make up only 10% of population)⁴

Did you answer that you use paper towels and napkins (Question 1)? Paper is made from trees... and tropical rainforests are a valuable asset to the earth to preserve biodiversity and cutting of trees is thought to increase Global Warming

How many acres of tropical rainforest are lost everyday?

214,000 acres (area larger than New York City)⁵, USC campus is approx. 240 acres.

NOTES:

(These notes are intended you help you answer possible questions, or to lead discussion)

U.S. Stat

The US makes up only 5% of the world's population⁶ but:

consumes approximately 33% of the world's paper⁷

consumes almost 25% of the world's total energy⁸

produces 24% of green house gas emissions (cause of Global Warming)⁹

³ Biodiversity and Your Water Supply. A guide to Living with Biodiveristy produced by the Center for Biodiveristy and Conservation, American Museum of Natural History, 1998.

⁴ Environmental Database for Use in Schools Project

<http://www.soton.ac.uk/~engenvir/environment/transport/effects8.htm>

⁵ The Rainforest Action Network

http://www.ran.org/info_center/factsheets/04b.html

⁶ Energy Information Administration

<http://www.eis.doe.gov/emeu/tablee1.html>

⁷ International Institute for Environment and Development

<http://www.oneworld.org/iicd/scati/pub/rethink3.htm>

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<http://www.eis.doe.gov/emeu/tablee1.html>

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consumes 47 million barrels of oil a day (worldwide production is approximately 51 million barrels a day)¹⁰

Water

Treating water for our use requires energy and energy is money. Energy for heating/pumping/purification, actually sewers cost more than water.

Paper:

Suggest things like cutting back on paper towel use, using towels etc. at home instead of paper

Imprinted, scented paper products- the issue is that it takes more energy and chemicals to produce it and to treat it as waste.

¹⁰ Consumer FAQ: Oil and Gasoline
<http://www.dnet.com/zdy2k/1998/09/4723.html>