WORLD'S LARGEST LESSON

"To live, we must live sustainably, but lifestyle choices can be confusing and complex! Which choices have the most impact on our planet? Which have none? There is not one answer, but by exploring the questions we'll get there."

Trayle Venus Kulshan
Teacher, Raffles World Academy, Dubai

Understanding Sustainable Living

Subject
Social Studies, Geography, Science

Learning Outcome
- To explain the concept of sustainability
- To evaluate various lifestyle choices for sustainability using an online ecological footprint calculator to real-life data
- To identify actions students can take to make their lifestyle more sustainable

Preparation
- Prior knowledge: students should be familiar with the concept of measuring, using units, and comparing values using a bar chart.
- Access or download the music video onto a computer or mobile phone. If this isn't possible, print out or display the lyrics from the song.
- Print a copy of the song lyrics for each student.
- Print out or display the ecological footprint graphic.
- Print off enough copies of the four story packs.
- Provide access to a set of laptops or tablets for students to use the ecological footprint calculator. If this isn't possible, print the quiz to determine footprint size.
- Look through the story packs and the footprint calculator to make sure that the story pack matches the version of the footprint calculator you have chosen.
- Prepare a story representing a student in your school in line with the other stories presented here.

Total Time:

60 mins

Age Range:

11 -14 year olds

THE GLOBAL GOALS For Sustainable Development

WORLD'S LARGEST LESSON

World's Largest Lesson is a collaborative education project to support the announcement of the United Nations Global Goals for Sustainable Development. The project is living proof of the importance of Global Goal 17 "Partnerships for the Goals" and would not have been possible without the help of all of our partners working with us and with each other.

Thanks to our Founding Team:

unicef

AVIVA   gettyimages®   PEARSON   Standard Chartered   Unilever

Powered By: Distributed By: Translated By:

tes   UNESCO   Berlitz   ELS Educational Services

And special thanks to those who have worked with us across the world:

actionaid   Camfed   Connected Educator Month   COMIC RELIEF   DESIGN for CHANGE   Discovery Education

edmodo.com   THE education WORLD FORUM   Education International Internationale de l'Éducation Internacional de la Educación   WE FREE THE CHILDREN   GCE GLOBAL CAMPAIGN FOR EDUCATION   GEMS EDUCATION

GLOBAL PARTNERSHIP for EDUCATION   Google for Education   INTERNATIONAL FEDERATION   LEGO education   Oxfam   GIRLEFFECT.ORG

pci media impact tell a story. change the world.   Plan   Raleigh International   RESTLESS DEVELOPMENT THE YOUTH-LED DEVELOPMENT AGENCY   RESULTS the power to end poverty   Save the Children

Think Global The Development Education Association   UP FOR SCHOOL   Virgin   VSO   World Association of Girl Guides and Girl Scouts   World Vision

Lesson plans created in collaboration with Think Global www.think-global.org.uk. Promoting learning for a just and sustainable world.

THE GLOBAL GOALS For Sustainable Development   WORLD'S LARGEST LESSON

Introduction and Music Video

5 mins

Hand out paper version of the lyrics (appendix 1) and ask students to highlight/underline any words to do with the environment or sustainability as they watch or listen to the music of "Electric Car" by They Might Be Giants. Link: https://www.youtube.com/watch?v=4BPU5mKipNo (3:45)

Key Words List: change, green, electric car, machine, diesel, gasoline, ride with me

Ask students, "What is this song about?"

Differentiation and Alternatives

Alternatively, you could ask students to highlight any words or phrases they feel are particularly important for explaining the song's message.

You may need to play the song twice.

Learning Activity

5 mins

Display a list of words and symbols such as green, eco, organic, recycle, or the recycle arrows symbol. Ask students what the symbols have in common and what the characteristics of these words and symbols are.

Recall the intro to the song, and lead students to the word "sustainable" as a synonym and write it on the board.

Display the following definition of sustainability and ask students to discuss in pairs what they think it means before taking some feedback:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The Brundtland Report, 1987.

See appendix 2 : Additional tips for defining sustainability for children,to use as a prompt if necessary.

Group Discussion

10 mins

Open or small group discussion:

• Do you think YOUR life is sustainable? How can you tell if your life is sustainable?

• How can we compare lifestyles? How would you compare your lifestyle to a student in another country? (Use a relevant example such as comparing your lifestyle to a cousin/friend's in another country.)

We want students to measure/compare everything! Lead them to the concept of "Ecological Footprint" as a UNIT to MEASURE and COMPARE different lifestyles. Our ecological footprint allows us to calculate how much pressure our lifestyle is putting on the planet.

See appendix 3 for a visual graphic.

Introduce an analogy of "ecological accounting." We don't compare dirhams to dollars to rupees, we convert everything into a single currency to compare. Ecological footprints convert lifestyle choices – what we do every day – into the land area needed to sustain it.

THE GLOBAL GOALS
For Sustainable Development

WORLD'S LARGEST LESSON

Learning Activity

10 mins

- AIM: To calculate and compare Ecological Footprints.

- GROUPING: Put students into mixed-ability groups of 2-4 people. (Each group needs 1 laptop or tablet with an internet connection.)

- SUMMARY: Distribute one story about a student in a different country to each group (see appendix 4). Each group must read the story and find clues and information to calculate their character's ecological footprint using the online Personal Footprint Calculator (see link below). Some groups may have the same story pack. If you have prepared a story to represent a student in your own school, please include it here.

Give the students some time to look through their story pack (appendix 4).

- Story Pack - James

- Story Pack - Lorena

- Story Pack - Adrienne

- Story Pack - Surya

- Your pre-prepared story representing a student from your school.

Show students the ecological footprint calculator website (www.footprintnetwork.org) first as a demonstration and then making sure each group starts the calculator for the correct country and the correct version that works with their story.

Differentiation and Alternatives

Instead of using the online calculator, have students take the paper Quiz (appendix 5). This can be done in groups with the story packs, or individually.

Learning Activity

10 mins

After students have finished calculating, ask each group to put their character's Ecological Footprint value on a collective bar graph on the board (or into a table) to compare all the characters' lifestyles.

When all students have finished, ask each group to summarize their character's lifestyle (you could limit this to a 30 second explanation or to ten words, for example) and present the Ecological Footprint value to the class.

Differentiation and Alternatives

Older or more able students could work out the footprint for several characters.

Students who finish quickly can analyse which areas of the footprint are the largest, and then change the

story so the character lives more sustainably.

See the output section of the Personal Footprint Calculator.

THE GLOBAL GOALS
For Sustainable Development

WORLD'S LARGEST LESSON

Discussion

10
mins

Discuss differences in the characters' footprints. Which characters have a sustainable lifestyle? (An Ecological Footprint which needs less than one planet.)

What is the most important lifestyle change we can make to be more sustainable? Eat less meat? Use less energy? Drive electric cars? What else?

What is the student's reason for deciding on a particular lifestyle change?

Differentiation and Alternatives

Students could also write a description of what the bar graph shows, remembering to quote the data, talk about general trends and any anomalies.

Alternatively, you could ask students to list all of the lifestyle changes they can think of that would lead to a smaller Ecological Footprint.

Questions for Students

10
mins

Ask students to consider the following question:

What surprised you about these comparisons and the Ecological Footprint calculations?

Differentiation and Alternatives

For more able students, you could ask them what they think the limitations of the Footprint calculator might be.

Take Action for the Global Goals

As an educator you have the power to channel students' positive energies and help them believe that they are not helpless, that change is possible, and that they can drive it.

The Design for Change "I Can" School Challenge invites children to take action, make change for themselves and share it with children across the world.

Visit **www.dfcworld.com** to get started.

To download a Design for Change lesson pack or a simple advice pack for young people to take action themselves **visit www.globalgoals.org/ worldslargestlesson**

DESIGN for CHANGE

RESOURCES

Global Footprint Network is an international think tank working to drive informed, sustainable policy decisions in a world of limited resources. Together with its partners, Global Footprint Network coordinates research, develops methodological standards, and provides decision-makers with a menu of tools to help the human economy operate within Earth's ecological limits. We work with local and national governments, investors, and opinion leaders to ensure all people live well, within the means of one planet.
www.footprintnetwork.org

Background for the teacher about ecological footprints:
http://www.footprintnetwork.org/en/index.php/GFN/page/basics_introduction/
http://www.footprintnetwork.org/en/index.php/GFN/page/footprint_basics_eoverview/

THE GLOBAL GOALS
For Sustainable Development

WORLD'S LARGEST LESSON

Lyrics to Electric Car

By They Might Be Giants

Electric car
On roads so dark
To change the end
Rewrite the start
Electric car
So good, so far

Electric car
On verdant green
Invent a turn
Invent a dream
Electric car
The new machine

Let's take a ride in an electric car
To the West Side in an electric car
How can you deny an electric car?
Won't you take a ride with me?
Come on and take a ride with me

Electric car
Beside the tree
Roll past the dock
Roll past the sea

Electric car
Roll silently Electric car
On roads so dark
To change the end
Rewrite the start
Electric car
So good, so far

Let's take a ride in an electric car
To the West Side in an electric car
How can you deny an electric car?
Won't you take a ride with me?
Come on and take a ride with me

Not diesel, steam, or gasoline
Let's take a ride in an electric car
Happiness resides in an electric car
You can even drive an electric car

Won't you take a ride with me?
Come on and take a ride with me

Let's take a ride in an electric car
To the West Side in an electric car
How can you deny an electric car?
Won't you take a ride with me?
Come on and take a ride with me

Tips for Describing Sustainability to Children

"Sustainability is an economic state where the demands placed upon the environment by people and commerce can be met without reducing the capacity of the environment to provide for future generations. It can also be expressed in the simple terms of an economic golden rule for the restorative economy: leave the world better than you found it, take no more than you need, try not to harm life or not of the environment, make amends if you do."
Paul Hawkin's Ecology of Commerce

Some definitions children have shared when asked to describe what sustainability means to them:

- *Something that lasts for a long time- maybe forever*

- *Like a circle- it goes around and all is re-used*

- *Taking care of the planet and its creatures*

- *Something that is good for everyone*

- *Loving and caring for our planet and others*

- *Sharing what we have with others and not taking more than our share*

- *Thinking about what you need rather than taking what you want*

- *Making the world a better place for the future*

- *Making rules we can all follow*

- *Taking care of the air, water, land and those who live there*

- *One thing leads to another, then another. Let's make the chain good.*

- *Sustainability is not just cleaning up your own room – it's about keeping tidy an even bigger room that belongs to everyone!*
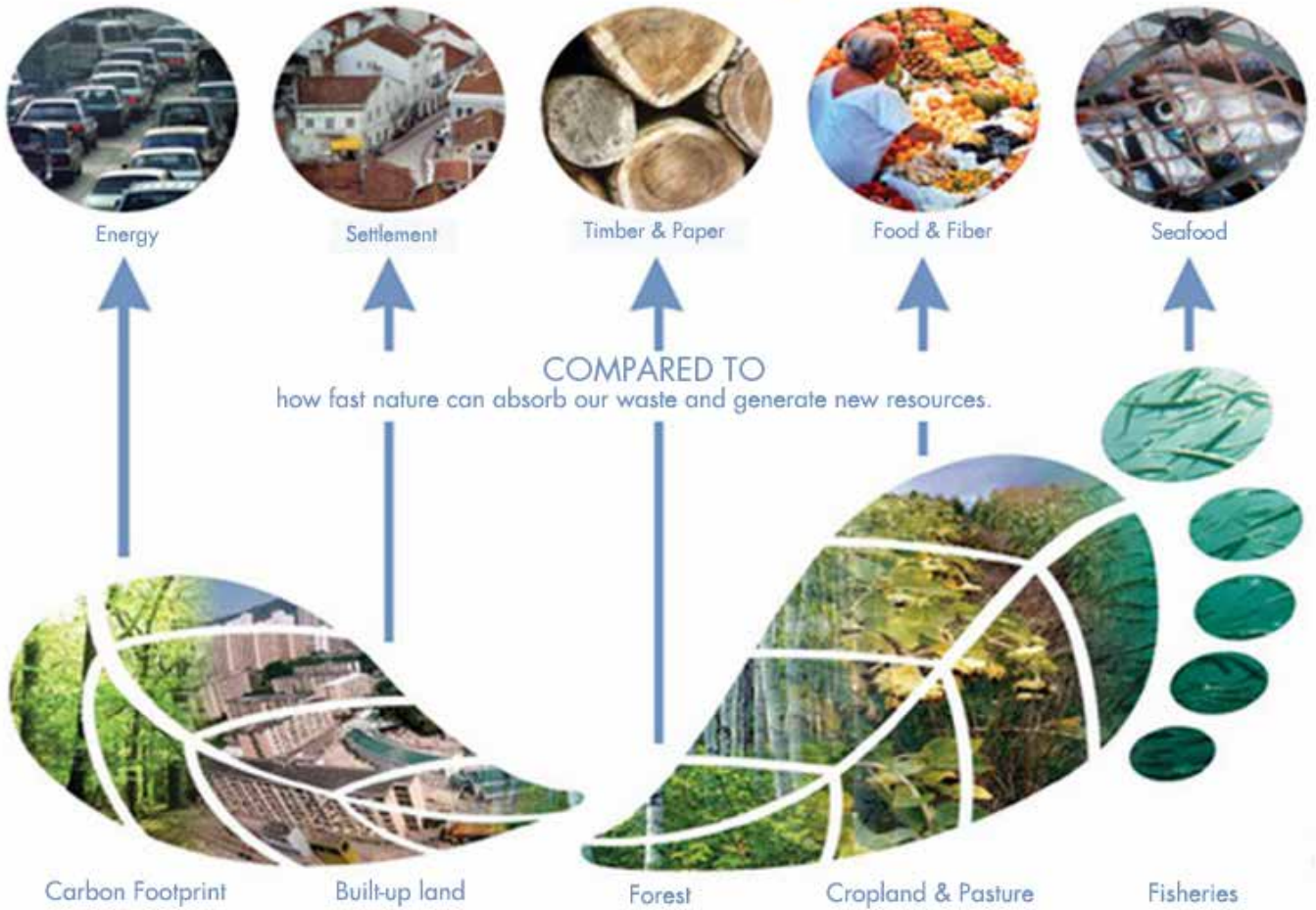
www.googolpower.com

THE GLOBAL GOALS
For Sustainable Development

WORLD'S LARGEST LESSON

The Ecological Footprint

MEASURES
how fast we consume resources and generate waste

Energy   Settlement   Timber & Paper   Food & Fiber   Seafood

COMPARED TO
how fast nature can absorb our waste and generate new resources.

Carbon Footprint   Built-up land   Forest   Cropland & Pasture   Fisheries

http://www.footprintnetwork.org/en/index.php/GFN/page/footprint_basics_overview/

THE GLOBAL GOALS
For Sustainable Development

WORLD'S LARGEST LESSON

James

Age: 13
Country: USA

Hi, my name is James. I am 13 years old and I am in 7th grade. I live with my family: my mom, dad, younger sister, and older brother in Florida in the United States. We live in a 5 bedroom house (about 3,500 square feet with running water and electricity) near the city of Miami. Both of my parents work during the day while I attend school with my siblings. My dad is an engineer and my mom is a nurse.

Every night, after we get home from school or work, my parents make us dinner. Usually we have some type of fish or meat every night with some sides (salad, fruit, vegetables, potatoes etc.). Sometimes we will have pasta. My mom and sister enjoy grocery shopping together at our supermarket. That is where we go to get most of our food.

Because we are a big family, we have chores around the house every day. These include taking out the trash (one bag per day usually), washing the dishes, vacuuming, and doing laundry.

Both of my parents have a car that they use to get to and from work. They drive about 60 miles a week because they also take me and my siblings to sports practice. I ride the bus to school with my siblings and the rest of the kids in the neighbourhood.

My family likes to travel. Once a year we go skiing in Colorado (it is about a 4 hour plane ride) to get away from the hot weather in Florida. We love spending time together!

Photo Source: https://www.flickr.com/photos/chrishunkeler/8917825411/

THE GLOBAL GOALS
For Sustainable Development

WORLD'S LARGEST LESSON

Lorena

Age: 8
Country: Brazil

Hi, my name is Lorena and I am from a small town in Brazil near São Paulo. I live in an average size home with four rooms with my parents and younger brother. My grandparents live down the street from us. Most of our electricity comes from renewable resources. We use about 80 kWh per month.

My favorite meal to eat is fish. Because we live near the coast, my mom makes fish a lot. We also have other types of meat too but not as often. I like dairy (milk and eggs) too, but we only eat it a few times a week. All of the food we eat comes from Brazil. My mom spends a lot of time shopping at the market to buy fresh food for us. Lots of fruit and vegetables!

My family doesn't buy new things often. We only purchase things when we really need them. My dad likes to read the paper but he only gets it once or twice a week. We recycle almost everything we can.

I walk everywhere I go. In the mornings, I walk to school with my younger brother. My mom walks to work and my dad rides the bus. We don't usually fly anywhere unless we go to visit family in Brasília, maybe once every few years.

When I have free time, I enjoy spending time with my friends and family. I like to visit the beach and go to the market with my mom.

THE GLOBAL GOALS
For Sustainable Development

WORLD'S LARGEST LESSON

Adrienne

Age: 6
Country: Italy

My name is Adrienne and I am from Italy. I live with my mother, father and two brothers (one older, one younger) in a brick apartment built after 1980. There are four bedrooms, one for me and for both of my brothers, and my parents' room. In the winter, our apartment is heated using electricity, we keep it around 20° C.

My family likes to eat lots of fish and meat, we have it for dinner almost every night. We eat eggs, milk, and dairy occasionally. My mom and I enjoy going to the market so most of the food we eat is fresh and locally grown. We consume about the same amount as most other people in our city.

My brothers and I usually ride our bikes to school, except in the winter when it is really cold (then my parents drive us). If my whole family goes somewhere together, we drive a car from a car sharing scheme (around 3,000 km per year) or take public transportation (around 80 km per year).

My family likes to travel and we usually go on vacation at least once a year. We like to visit other countries in Europe. My favourite country I've ever been to is France. We tend to drive or take the train when we travel.
On the weekends I have fun spending time with my friends and family. My friends and I enjoy playing together and going to the park when the weather is nice. My brothers like to play football and other sports.

Photo Source: https://www.flickr.com/photos/sleepyjeanie/6262137134/

THE GLOBAL GOALS
For Sustainable Development

WORLD'S LARGEST LESSON

Surya

Age: 11
Country: India

My name is Surya and I am from Delhi in India. I live at home with my parents and grandfather. I am an only child. During the week I attend school while my parents work. My mother is a university lecturer and my father is software programmer. We have a dog and a cat as pets.

We live in an average size home in the city. The weather in India can be very extreme. It is usually pretty warm in Delhi so we rarely heat our home, but when we do we use coal.

We do not eat any meat and we only occasionally eat dairy products. We will eat rice, lentils and vegetables at some point most days. My favourite food is kulfi, which is a frozen dessert, kind of similar to ice cream.

On the weekends, or some days after school, I like to play sports with my friends. Our favourite thing to play is football or cricket, however I also enjoy playing tennis with my parents and grandfather.

We do not own a car but often take taxis to travel around the city. Sometimes we also take the bus. My mother often has to travel for her job, and will fly to other cities and countries two or three times a year. We go on holiday every year, mostly to other parts of India, when we tend to take the train but sometimes we fly.

Photo Source: https://www.flickr.com/photos/worldbank/3492484806/

THE GLOBAL GOALS
For Sustainable Development

WORLD'S LARGEST LESSON

Appendix 5

Ecological Footprint Calculator

Complete each of the categories for a typical day in your home. Add the points in each category to obtain a subtotal, and transfer each subtotal to the summary chart. Use the grand total to calculate your ecological footprint. Adapted from: *Teaching Green - The Middle Years*

Water Use

Question	Answers/Points	My Score	Points I could save
1. My shower (or bath) on a typical day is:	No shower / no bath (0) Short shower 3-4 time a week (25) Short shower once a day (50) Long shower once a day (70) More than one shower per day (90)		
2. I flush the toilet:	Every time I use it (40) Sometimes (20)		
3. When I brush my teeth:	I let the water run. (40) I don't let the water run (0)		
4. We use water-saving toilets	Yes (-20) No (0)		
5. We use low-flow showerheads	Yes (-20) No (0)		
	Water Use Subtotal:		

Food Use

Question	Answers/Points	My Score	Points I could save
1. On a typical day, I eat:	Meat more than once per day (600) Meat once per day (400) Meat a couple times a week (300) Vegetarian (200) Vegan (150)		
2. All of my food is grown locally or is organic	Yes (-20) No (0)		
3. I compost my fruit/vegetable scraps and peels.	Yes (-10) No (0)		
4. Most of my food is processed.	Yes (20) No (-20)		
5. Little of my food has packaging.	Yes (-20) No (0)		
6. On a typical day, I waste:	None of my food (0) One-fourth of my food (25) One-third of my food (50) Half of my food (100)		
	Food Subtotal:		

Transportation Use

Question	Answers/Points	My Score	Points I could save
1. On a typical day, I travel by:	Foot or bike (0) Public transit / school bus (30) Private vehicle; carpool (100) Private vehicle; 1 person (200)		
2. Our vehicle's fuel efficiency is	More than 30 miles/gallon (-50) 24 - 30 miles/gallon (50) 17 - 23 miles/gallon (100) Less than 17 miles/gallon (200)		

Question	Answers/Points	My Score	Points I could save
3. The time I spend in vehicles on a typical day is:	No time (0) Less than half an hour (40) Half an hour to 1 hour (100) More than 1 hour (200)		
4. How big is the car in which I travel on a typical day?	No car (-20) Small (50) Medium (100) Large (SUV) (200)		
5. Number of cars in our driveway?	No car (-20) Less than 1 car per driver (0) One car per driver (50) More than 1 car per driver (100) More than 2 cars per driver (200)		
6. Number of flights I take per year?	0 (0) 1-2 (50) More than 2 (100)		
	(Remember points from 1 and 2 on previous page) **Transportation Subtotal:**		

Shelter Use

Question	Answers/Points	My Score	Points I could save
1. My house is:	Single house on large lot (50) Single house on small lot (city) (0) Townhouse/ attached house (0) Apartment (-50)		
2. Divide number of rooms in the home (no baths) by the number of people living at home.	1 room per person or less (-50) 1-2 rooms per person (0) 2-3 rooms per person (100) more than 3 rooms per person (200)		
3. We own a second, or vacation home that is often empty.	Yes (200) No (0)		
	Shelter Subtotal:		

Energy Use

Question	Answers/Points	My Score	Points I could save
1. In cold months, our house temperature is:	Under 15°C((59°F) (-20) 15 to 18 $^{\circ}$C (59 to 64 $^{\circ}$F) (50) 19 to 22 $^{\circ}$C (66 to 71 $^{\circ}$F) (100) 22 $^{\circ}$C (71 $^{\circ}$F) or more (150)		
2. We dry clothes outdoors or on an indoor rack.	Always (-50) Sometimes (20) Never (60)		
3. We use an energy-efficient refrigerator.	Yes (-50) No (50)		
4. We have a second refrigerator / freezer.	Yes (100) No (0)		
5. We use 5 or more compact fluorescent light bulbs.	Yes (-50) No (100)		
6. I turn off lights, computer, and television when they're not in use.	Yes (0) No (50)		
7. To cool off, I use:	Air conditioning: car (50) Air conditioning: home (100) Electric fan (-10) Nothing (-50)		
8. My clothes washer is a:	Top load (100) Front load (50) Laundromat (25)		
	Energy Use Subtotal:		
			Points I

Question	Answers/Points	My Score	could save
Clothing Use			
1. I change my outfit every day and put it in the laundry.	Yes (80) No (0)		
2. I am wearing clothes that have been mended or fixed.	Yes (-20) No (0)		
3. One-fourth (or more) of my clothes are handmade or secondhand.	Yes (-20) No (0)		
4. Most of my clothes are purchased new each year.	Yes (200) No (0)		
5. I give the local thrift store clothes that I no longer wear.	Yes (-50) No (100)		
6. I never wear _____ % of the clothes in my closet.	Less than 25% (25) 50% (50) 75% (75) More than 75% (100)		
7. I buy_____ new pairs of shoes every year.	0-1 (0) 2 to 3 (20) 4 to 6 (60) 7 or more (90)		
	Clothing Subtotal:		
Stuff I Use			
1. All my garbage from today could fit into a:	Shoebox (20) Small garbage can (60) Kitchen garbage can (200) No garbage created today! (-50)		
2. I recycle all my paper, cans, glass and plastic.	Yes (-100) No (0)		
3. I reuse items rather than throw them out.	Yes (-20) No (0)		
4. I repair items rather than throw them out	Yes (-20) No (0)		
5. I avoid disposable items as often as possible.	Yes (-50) No (60)		
6. I use rechargeable batteries whenever I can.	Yes (-30) No (0)		
7. In my home we have __ number of Electronics? (Computer, TV, Stereo, VCR, DVD, X box, Game boy, etc.)	0-5 (25) 5-10 (75) 10-15 (100) more than 15 (200)		
8. How much equipment is needed for typical activities? A lot =boat, snowmobiles, dirt bikes ,Very little soccer, bicycling)	None (0) Very little (20) Some (60) A lot (80)		
	Stuff Subtotal:		

Summary

Transfer your subtotals from each section and add them together to obtain the grand total.

Water Use _____

Food Use _____

Transportation Use _____

Shelter Use _____

Energy Use _____

Clothing Use _____

Stuff I Use _____

Grand Total _____ ÷ 350 = _____ Earths

If everyone lived like I do, we would need the above number of Earths to sustain the people of the world.

Use the last column on the chart: Look at your answers. Are there things that you could do to save points? Mark down the points you could save. How many "planets" (350 points each) could you save with your lifestyle changes? _____

Worldwide there are 4.7 biologically productive acres available per person, and this doesn't include all of the other plants' and animals' needs.

Some average footprints:
United States: 24 acres
Canada: 22 acres
Italy: 9 acres
Pakistan: Less than 2 acres