Project Starter Kit for Online Collaborations

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One World

Environmental Sustainability

A Starter Kit for Secondary Teachers

Contents:

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One World

Environmental Sustainability Project

The contents of this kit will enable any secondary teacher to adapt this project to their classroom. Adapted here for Social Studies, there are ample opportunities to explore this project from a science or math perspective and/or to improve literacy and writing skills. The *Washington State Standards and Essential Academic Learning Requirements* are used as a guide throughout the project design.

To seek a partner class through iEARN, teachers can post a message in one or both of these options:

- One World Project Forum, saying that you are looking for a partner, when you would like to begin and what age you students are. Include you email address for direct responses.
  http://www.iearn.org/projects/oneworld.html

- Teachers Forum, telling teachers around the world that you are looking for a partner, the ages of your students and when you would like to start. Include you email address for direct responses.
  http://foro.iearn.org/

After you establish contact, *the single most critical thing you can* do to ensure the success of your collaboration is get to know your partner teacher through frequent, friendly email or forum correspondence.

For general materials for getting started on any project, a *Basic Starter Kit* is also available. In addition, the iEARN website has many resources and materials for enhancing project work. Your iEARN colleagues around the world are the best resource of all!

One World
Introduction to the project

The One World project asks young people to think about the way they live and how they are affecting the planet.

There are three stages

- Understanding about sustainability
- Measuring your footprint
- DOING SOMETHING about it

See http://www.iearnuk.org/oneworld/english.htm for more this content.

iEARN Projects and Washington's Classroom Based Assessments

One World, an environmental sustainability project that begins by looking at the environmental *footprint* of individuals, regions and nations is accessible to elementary through high school. After measuring their footprints at www.myfootprint.org global peers are encouraged to share their results, analysis and ideas for solutions. http://www.iearnuk.org/oneworld/english.htm contains project instructions, teachers guides and links to many web resources.

One World correlates with Washington's **Social Studies EALRs**:

- Provides access to many groups of people living in different and similar environments, both primary and secondary sources. (1.1)
- Provides a meaningful audience to present thesis and product of inquiry. (1.1)
- Provides global peer group to extend development of interpersonal skills. (2.1)
- Provides multiple perspectives to compare and contrast. (3.1)
- Explores cause/effect, costs/benefits and opportunity to problem solve. (3.1)

One World correlates with Washington's **Geography EALRs**

- Use of maps to locate and compare footprints, environments and resources. (1.1)
- Explores human and physical characteristics of different regions of the world, and the implication of human presence. (2.1, 2.2)
- Focuses on impact of humans on their environment, consequences of the impact and potential changes we can expect. (3.1, 3.2)
- Compares various cultures and their impact on the environment. (3.3)

One World correlates with Washington's **History EALRs**

- Explores timeline of inventions and impacts of increased energy consumption related to changes. (1.1 ,1.2, 1.3, 3.1, 3.2, 3.3)

One World correlates with Washington's **Civics EALRs**

- Explores resource distribution as a result of foreign policy. (3.1, 3.2)
- Frames environmental sustainability as a citizenship issue and a responsability which accompanies our rights. (4.1, 4.2)

One World correlates with Washington's **Economics EALRs**

- Examines costs and consequences of economic choices. (1.3)

One World correlates with Washington's **Humans and the Environment** CBA:

- Students study two or more groups living in the same environment and compare the impact they have on their environments.
- Students use multiple web sources, data collected by global peers to identify stakeholders, and to analyze the issue of resource distribution and sustainability.
- Students analyze issue from economic, political and social perspectives, as well as environmental.
- Students propose solutions and have the opportunity to act on their proposals through this project.
- Students present their solutions to their global peers through internet forum discussion, digital photo and audio, powerpoint and podcasting. (**One World** website will host any presentations, and has a Radio Station equipped for podcasting reports.)

Project Title	**One World**
GenerativeTopic (Essential Question)	What is an *environmental footprint*? What does it mean for all of the world if even one person's *footprint* is more than ONE? What determines who uses which resources? What cultural norms predict use of resources?
Understanding Goals ❑ Literacy ❑ Culture ❑ Subject Area Content	Humans are interconnected with each other and with the environment. All humans share the resources on earth, but not equally. Using more than your share means others go without and that we will run out of resources if we don't make changes. Students understand that the stakeholders are their global peers and that they can contribute to the solution by reducing their footprint and encouraging others to do so.
❑ **Student Performances of Understanding** ❑ Skills and Knowledge ❑ Inquiry to gain understanding ❑ Apply Understanding	Consider a variety of sources and perspectives in drawing conclusions. Show increase knowledge of maps, geography and world cultures by detailing human impacts such as energy use, food consumption, water use, land use. Articulate perspective of high consumers, economic and political powers to explain complexity of real solutions to problem. Act to reduce own footprint. See above for Social Studies EALRs
Collaborative Community ❑ Teacher ❑ Student	Online peers, project coordinator and other teachers. School and community who may choose to act on their own footprints after being educated.
Ongoing Assessment ❑ Monitoring ❑ Culminating	1. Produce diagram of Ecological Footprint and post. 2. Write letter to editor concerning inequity in the use of natural resources, waste production and pollution production. Post. 3. Compare/graph costs of buying sustainable agricultural products. Debate the results. Podcast of debate? 4. Homework readings. Create 20th century timeline displaying energy consuming inventions. Discuss increased demands and diminishing resources based on readings. Compose editorial for newspaper. Post. 5. Investigate energy sources for school building needs. Report to principal and superintendant. 6. CBA-Graphic organizers due. Rough and final drafts of essay. 7. Five minute presentation taking perspective of various stakeholders and proposing solutions. (Ppt and/or podcast.) 8. School/community campaign?

iEARN Projects and Washington's Classroom Based Assessments

1. Teacher goals/Student goals: Humans are interconnected with each other and with the environment. All humans share the resources on earth, but not equally. Using more than your share means others go without and that we will run out of resources if we don't make changes. Students understand that the stakeholders are their global peers and that they can contribute to the solution by reducing their footprint and encouraging others to do so.
2. A timetable: Six weeks.
3.Specific lessons:
- How will you present this project to your students? I will use Facing the Future's Watch you Step activity. Then I will introduce them to the forums and help them find peers in other countries.
- How will you tie it into their curricular studies? It fits with state requirements and extends our studies about water issues.
- How will you get them interested in the topic? Tell them that they will be working with students in another country on the same project.
- What background knowledge do your students bring to the project? They have learned about the scarcity of water and the lack of clean drinking water in developing countries. They have good research skills.
- Will your students need to do research for their project? Yes.
- How will they be organized to gather information? Graphic organizer, diagrams, and calendar/checklists for CBA. Specific assignments to build knowledge base.
- Who will be responsible and in charge? Some group activities, but individual assignments will be graded.
- How will the appropriateness of their work be evaluated? CBA Rubric. Rubric for letter to the editor. Participation graded in debate and discussion (-,√,+)
- How you will handle the e-mail exchanges, how often, who will be in charge? Students will have own accounts and will be required to have one exchange each week with peer. I will review forum and grade exchanges based on response rubric provided.
- Conclusion of activity: When does your participation end? After Guided Inquiry.
- How will the students draw their projects to a conclusion? They will either post presentation to the One World Website, or broadcast on One World Radio Station. They will turn in CBA essays to the state.

4. Identify technological and material requirements
- Technological requirements: Internet access for all classes. Audio recording software. Digital camera. Overhead Porjector.
- Material requirements: Readings from variety of sources (see One World site) Butcher paper, poster board, markers.

Project Title	One World
Phase 1: <u>Introductory Performances</u> Activities to set the stage: What do they know? What else do they need to know to begin the project?	Introduce students to forums using basic starter kit. 1. Lesson Plan: <u>Watch where you step</u>- Group activity to examine ecological footprint. Produce diagram to scan and post. Register each students' footprint at myfootprint.org.
Phase 2: <u>Guided Inquiry</u> • Activities to engage students in learning (fieldtrips, visiting experts, vocabulary sets, map work, interviews, research….) • Activities where students prepare documents to share locally and globally.	2. Lesson Plan: <u>Have and Have-Nots</u>- Decode map of worldwide resource distribution. Students write letter to editor concerning inequity in the use of natural resources, waste production and pollution production. 3. Lesson Plan: <u>Sustainable Dining</u>- Students compare costs of buying sustainable agricultural products. Debate the results. (Speaker from PCC?) 4. Lesson Plan: <u>Renewable Energy</u>- Homework readings. Create 20th century timeline displaying energy consuming inventions. Discuss increased demands and diminishing resources based on readings. Compose editorial for newspaper. Investigate energy sources for school building needs. (Speaker from Climate Solutions?)
Phase 3: <u>Culminating Performances</u> Activities in which students share knowledge in culminating event, as well as reflect on project and learning.	5. CBA- Students produce essay and presentation taking perspective of various stakeholders and proposing solutions. 6. Post presentation to One World website and/or podcast on One World radio station. 7. Join campaign to reduce local footprint.

One World

Teachers guide to using the website www.myfooprint.org

How does the website work

When you click on the website www.myfootprint.org

You'll see a map of the world.
Click on where you live and choose the language you would like to work in. This part can be a bit fiddly but persevere.

Information required

There are 15 fairly straightforward questions to answer but you will need to have thought about the following things.

- The approximate population size in your area
- Your diet-how much meat and eggs you eat, how processed the food is and how far the food has travelled
- Waste- how much you throw away compared to a similar average household in your area. This could need some class discussion. The link below,(bottom of the table,) shows Kg of waste/ person/year for different countries http://www.oecd.org/dataoecd/11/15/24111692.PDF
- The size of your home in metres squared (remember to add up the area if your house has more than one floor)
  The link below answers frequently asked questions about housing http://www.rprogress.org/newprojects/ecolFoot/faq/#housing
- How far you travel roughly on public transport, motorbike, car, bicycle, walking or animal power in an average week in km
- How many hours spent flying each year
- How many litres/100 km your car (or the car you mostly get a lift in) uses.

This website may be useful as fuel efficiency has been calculated for recent car models http://www.vcacarfueldata.org.uk/search/search.asp
The fuel efficiency may be found in the car handbook, possibly by contacting the manufacturers or calculated by adding a specified no of litres to the fuel tank, noting the starting position on the fuel gauge, setting the distance counter to 0 and noting the distance when the fuel gauge is back to the starting position. If the distance counter is in miles this will need to be converted to kilometres (multiply by 1.609). From this the litres/100km can be calculated. To be really accurate this would need to be averaged over different driving conditions. It may not be possible to be very accurate so you may have to use average figures.

- Answering question 14, “How often do you drive in a car with someone else rather than alone” non-drivers ie children and others may wish to fill this question in as if they were the driver, if the journey is solely for them . The link below answers FAQ about the transport part of the footprint http://www.rprogress.org/newprojects/ecolFoot/faq/#transportation

Once you’ve answered all the questions the quiz will work out, using your data and assumptions made by the quiz, how many planets your lifestyle would need if everyone lived like you.

This link will take you to the answers to frequently asked questions about the footprint quiz
http://www.rprogress.org/newprojects/ecolFoot/faq/#top

So what can you do to make your lifestyle more sustainable?

Go back to the quiz and try putting other answers in, see how the footprint varies. What answers could you change that you might actually do? How low can you get your footprint (if it’s more than one planet).

If you already live a sustainable lifestyle but are using the equivalent of more than one planet, do not be discouraged by your results. The quiz is based on national consumption averages for your country. Some parts of the footprint are not easily in your control as they are based on decisions made at all levels of government. For example each resident of a city is 'responsible' for a portion of the city's infrastructure, such as roads, schools, and government offices, regardless of whether the resident uses those services. In addition, some options that could make your Footprint smaller are not available to you as a result of choices on the part of local decision makers, such as reliable and efficient public transportation as an alternative to driving.

How could anyone be using the equivalent of more than one planet?

Fair share

Some people are using less than their fair share of the planet. For a bar graph that indicates this by region and income group-click below
http://www.panda.org/news_facts/publications/general/livingplanet/about_lpr.cfm

This is graphically illustrated per country in the living planet report click on http://www.panda.org/news_facts/publications/general/livingplanet/index.cfm and download the report. On pages 10 and 11 the bar chart shows the average footprint/person/country divided into built upland, food and fibre and energy land

Energy land and Carbon sequestration

The land area calculated in a footprint includes the land area that your lifestyle takes up physically plus the energy land needed. Energy land is the land area needed to grow enough trees to soak up all the carbon dioxide released when fuels are burnt for heating or electricity. As this land area is not actually planted with trees, so more carbon dioxide goes into the atmosphere among other places .
http://www.metoffice.com/research/hadleycentre/models/carbon_cycle/intro_global.html.
http://www.rprogress.org/newprojects/ecolFoot/methods/components.html#co2

Living a lifestyle that uses more than one planet is obviously not sustainable if the earth's resources are to be fairly used.

For a graph that shows humanities ecological footprint increase over time
http://www.panda.org/news_facts/publications/general/livingplanet/index.cfm

Using significantly less than the resources available from a fair share of the planet is likely to mean that the individual is leading an impoverished and possibly unsustainable lifestyle.

http://www.fi.edu/guide/otoole/climate_worldmap.gif
This links to a map which shows possible world problems
in 2050 if we carry on as we are (business as usual).

Activity ideas

Get involved

Under "Join the campaign" (on the page with the footprint results), there is a template letter that could be sent to local government representatives.

Ask everyone to read this and then ask - What has made it difficult to change the footprint result. What could government bodies do to help? Could pupils think about writing their own letter to a local government representative about their local area? What are the problems they are concerned about in their area? What would they need to research to find out more about possible solutions to the problem?
It is not necessary to recommend commissioning a footprint index but it might be worth mentioning the concept to the government representative.

Further activity - if you could influence the National government and set national changes in motion so that the population would be more likely to live with a sustainable footprint what would you do? What arguments would you use to back up your case?

Further activity- find out if there is a detailed footprint study of your area.

Other species

The number of planets indicated at the end of the quiz is the number that would be needed even if no land area is specifically set aside for wildlife.
How much of the biosphere should be set aside for the more than 10 million other species on Earth?
This question can be looked at on the www.myfootprint.org page which gives the footprint result under "Comments and questions". Find and click on "What about other species".

"Conservation biologists believe that it may require 30-70% of the biosphere simply to maintain biodiversity – nature's complex web of interdependent life-forms. Currently, about 3% is set aside as protected parks or reserves. The United Nation's Brundtland Commission suggested the politically courageous, but ecologically insufficient goal of increasing the world's protected area to 12% of the biosphere. **To accommodate these other species, how much of the Earth's biologically productive area do you think should be set aside for them?"**

On the website a % figure can be chosen to answer this question. Adding this in will have an impact on the number of planets.
This can lead to class discussions. Page 2 of the living planet report mentions the Living planet index which is an indicator of the state of the worlds biodiversity.P3 of the Living planet report 2004 has a world map of remaining wilderness
http://www.panda.org/downloads/general/lpr2004.pdf

This report is well worth downloading as it is full of interesting information.

Population
On the page that gives the footprint result under "Comments and questions" find and click on "What about population"
http://www.rprogress.org/newprojects/ecolFoot/faq/#population

Since the size of the biosphere is finite, the greater our world family, the less nature per person.

If people have, on average, more than 2 surviving children, the population will increase. This will decrease the fair-share available to all. Unless humans change their lifestyles and environmental impact accordingly the situation will be even less sustainable. Population then is another factor in the human impact on the environment.

Look at the world population table

Activity-
Do you think population is an important issue? Is the population increasing or decreasing in your country? What, if anything should be done about population growth? Should there be a worldwide campaign that people have a maximum of 2 children per families or is this too restricting on people's freedom? What could be the problems and benefits if the population started to fall in a country/worldwide? What could be the problems and benefits if the population kept increasing in a country/worldwide?
What different media could be used to get people thinking about population issues ?

Water

http://www.peopleandplanet.net/doc.php?id=671&section=14
This link will take you a page with world maps that shows the availability of fresh water, places of scarcity, uses of water world wide. There is also information on water in the Living planet report. Water may not have a huge ecological footprint but it is obviously a vital part of our lives.

General

Lesson plans devised for American schools related to our environmental impact.
http://www.redefiningprogress.org/newprograms/sustIndi/education/k-12lessonplans.shtml

It is possible to work out a footprint which relates just to the energy land, this can be called a carbon footprint and is a large part of the ecological footprint. This website will lead you through how to do this as well as providing a lot of useful information
http://www.cat.org.uk/carbongym/carbongym.tmpl?cart=110565499277080&section=virtual
For information on carbon dioxide, greenhouse gases and climate change
http://www.cat.org.uk/carbongym/carbongym.tmpl?section=change
For tips on a low carbon lifestyle
http://www.cat.org.uk/carbongym/carbongym.tmpl?section=gym

There are many other useful links in the notes for the One world one environment presentation.