Carbon Footprint Contest
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Objectives:
Participants will be able to
1. Define carbon footprint
2. Describe actions that effect their carbon footprint
3. Understand why one should decrease their carbon footprint.
4. Articulate things that they can personally do to decrease their carbon footprint.

Materials Needed:
- Computers with Internet access
- Chalk board
- Pens and paper for each student
- Compact florescent light bulbs for each student (optional)
- A prize (teacher’s choice!)

Workshop Outline:
Day 1

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Day 2

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Time 50 min Total

Day 1

Icebreaker - 5 min
Have each student write their definition of a carbon footprint on a piece of paper.

Introduction - 5 min
In the decade since its coinage, the term “carbon footprint” has become increasingly common in the popular discussion of environmental issues. Many people, however, are not entirely sure what this buzzword means. A carbon footprint is one way of measuring one’s ecological footprint, which is a measure of a person or groups demand on the environment compared to the environment’s capacity to regenerate. Based on this, an ecological footprint shows how much productive land and sea would be needed to regenerate the resources used by that person/group and to safely dissipate the waste products they produce. Additionally, one can also calculate how many Earth’s would be needed to support the world’s population, if everyone lived a similar lifestyle.

More specifically, one’s carbon footprint measures the amount of green house gasses (GHGs) produced by a person/group/product. This value is usually expressed in terms of weight of carbon emitted on an annual basis.

Today we will calculate each of your individual carbon footprints. Once you know the size of your carbon footprint, you will devise a way to reduce it.

**Activity – Calculating your carbon footprint - 10 min**

Have each student go to [http://www.nature.org/initiatives/climatechange/calculator/](http://www.nature.org/initiatives/climatechange/calculator/) on their computer and follow the online directions to calculate their carbon footprint. Make sure they chose the individual calculation.

You may have to assist your students with some of the terms on the calculator. Therefore, you should go through the calculation at least once yourself, prior to class time, to make sure that you are familiar with all of the terms used, and so that you can guide the students and answer their questions.

In particular, students often have trouble estimating the amount of miles they drive. In order to help them with this it would be useful to calculate an average number that you think represents your students (based on the average distance to school, and places of interest like the mall, the movie theater, etc). You can then give this number to your students to help them estimate their own mileage. Similarly, it would be helpful to decide ahead of time what to consider a long flight and what to consider a short flight.

For the questions concerning air filters, appliance, etc, have them think about what their parents do, and choose occasionally when in doubt.

When they are finished, have each student record their footprint on the board. Record these numbers for later use.

**Topic Discussion – How can you reduce your footprint - 10 min**

Briefly have students discuss the results they got from the calculator. Were they surprising? What behaviors contributed the most to their footprints? (see pie chart on right) How do the values they achieved compare to the national behavior breakdowns? (see pie chart on left).

Based on their results, have each student devise a plan to change three things that they think will reduce their footprint the most.

Some guidelines:
- Encourage the students to change things that they believe they could reasonably change in their own lives.
○ For example, unless you live in a very small town, or a city with public transit, saying that you will not drive at all is an unreasonable and unacceptable answer.
○ You may want to choose maximum mileage decreases that you think are plausible and tell students to use this value if they choose to change their mileage. This value will differ based on your location.

**Activity – First contest: Change three things – 10 min**

Have your students return to the website and recalculate their footprints with the three changes they chose.

When they have finished have them write their new value next to their old value on the board and calculate their footprint decrease. The person whose three changes resulted in the biggest decrease will get a one-point advantage on the second contest.

**Day one wrap up – Discuss and review – 10 min**

Have your students briefly review which strategies worked and which did not. Discuss whether they think they would be able to actually make these changes. Have them brainstorm what other changes they think they could make to decrease their footprint.

At this point explain to the students that you will be repeating this activity in a month or so to see who can actually decrease their footprint the most, in that time. (While you may tell your students this before you begin the activity, as it may get them excited about the lesson, you may want to wait until the end of class to tell them, as it encourages them to be honest in their initial calculations.)

(Optional: give each student a CFL light bulb to take home. Explain that this is a very easy way to reduce your impact and will get them started on reducing their footprints. If you do hand out light bulbs, be sure they are securely packaged, as a broken CFL can be a hazardous thing.)

**Day 2**

**Review – 10 min**

As it will have been several weeks since your last discussion, take a few minutes to have students review, as a group, the concept of a carbon footprint. It may be helpful to write these things on the board.

**Discussion – What changes have you made? – 20 min**

Have each student tell the class the changes they have made to reduce their carbon footprint. How successful do they think they were? What were some difficulties they faced? Do they think they can, or will continue to live in this new way?

Did students come up with similar solutions? Did they have similar problems?

**Activity – Second contest: recalculate your footprint – 10 min**

Have students return to the web site and recalculate their footprints. While they are doing this you may re-write their original scored on the board.

When they have finished their calculations have them write their new scores, and number of points decreased, on the board beside their initial scores.
Discuss new scores and award prize – 10 min
As before, have students discuss their scores. Did the changes they made work as well as they had hoped?
AWARD PRIZE to student who was able to decrease their footprint the most!

References

http://www.nature.org/initiatives/climatechange/calculator/
http://www.climatecrisis.net/