



**Count Carbon  
Not Carbs**

**BEAT THE  
HEAT!**

CLIMATE CHANGE COMPETITION  
FOR MARYLAND SCHOOLS  
2004—2005 SCHOOL YEAR



CCBC  
The Community College  
of Baltimore County

Visit <http://bth.environmentproject.org> for details and application.

Questions? Email Allison Anderson at [aanderson@cCBCmd.edu](mailto:aanderson@cCBCmd.edu) or call 410/719-6551.

# Competition Guidelines

Welcome to the Beat the Heat! Maryland Climate Change competition, where students learn to “Count Carbon, Not Carbs.”

Instead of watching their waistlines, students will learn ways to not waste energy, as well as reduce greenhouse gases responsible for warming the atmosphere. As part of Beat the Heat! students across the state will learn to “count carbon” and develop low carbon “diets” for their schools, also known as greenhouse gas reduction plans.

Beat the Heat! consists of 4 components:

- Baseline,
- Target,
- Tools, and
- Blueprint

The “carb” in the words carbohydrates and carbon dioxide, both refer to carbon, one of the most abundant elements in the universe. Without carbon, life as we know it would not be possible. Burning carbon based fuels, however, such as coal and oil, releases carbon dioxide into the atmosphere. The climate is slowly warming as a result of accumulating carbon dioxide and other greenhouse gases in the atmosphere.

Reducing the amount of coal or oil that gets used decreases the amount of carbon dioxide that released into the atmosphere. So, in the same way that low-carb dieting can make someone aware of what and how much they eat, the Beat the Heat! Competition will clue your students into your school's energy and emissions. So let's get started watching our wastes.....

## Step 1 Baseline



A baseline is a measurement of an existing condition, which is used for comparison purposes. When you begin a diet, the baseline is what you weigh when you start.

For Beat the Heat! the baseline is the amount of greenhouse gases your school currently emits, its “weight”, so to speak.

There are many different ways to determine your school's emissions baseline, just as there are many different types of bathroom scales. Weighing yourself on different scales will likely give you different results. If a dieter wants to know how much weight they're losing, it helps to use the same scale.

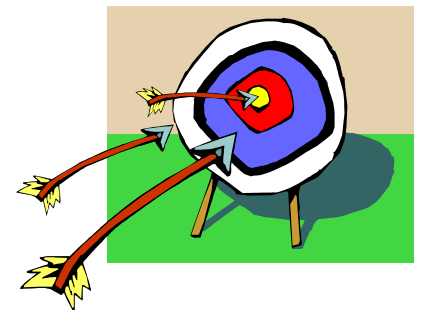
The same is true for greenhouse gas emissions. For the Beat the Heat! competition, the goal is to establish your schools greenhouse gas emissions baseline. It doesn't really matter which method you choose to set your baseline just as long as you use the same “scale” each time you measure your emissions.

There are many resources, such as online carbon “calculators, available to help you calculate your schools emissions baseline. Several of these online calculators are available at The Environment Project's website at <http://bth.environmentproject.org>.

## Step 2 Target

Beginning dieters often set a target for the amount of weight they want to lose, usually in pounds. A ten-pound weight loss from a 130-pound dieter equals 8% of their pre-diet body weight. Greenhouse gas

emission reduction targets are typically expressed as a percentage of total “weight”, or emissions, rather than a fixed amount.



No one knows exactly what percentage of greenhouse gases need to be reduced to “stabilize” the world’s climate, though some claim that reductions of 80% are necessary. A “stable” climate means returning the atmosphere to a condition where emissions from human activities play a minor or insignificant role. The global international negotiations to reduce greenhouse gas emissions have set a target of a 5% reduction of greenhouse gases below 1990 levels, though some countries have set more ambitious targets.

The second step in Beat the Heat! is to set a greenhouse gas reduction target. A target consists of two parts - the percentage reduction and the target year. Setting a target year establishes a time period in which the percentage reduction target is to be met, analogous to losing 10 pounds by time the summer bathing suit season begins.

Take your time in setting your schools’ greenhouse gas reduction target. The goal is to set targets which are meaningful and can be realistically achieved. Online resources are available to help you set your schools’ target. Go to <http://bth.environmentproject.org>.

## *Step 3 Tools*

Okay, you’ve calculated your baseline and set your target. How do you get there from here? Just as there are many different types of diets, there are many ways to reduce energy use and emissions. Some ideas may have already presented themselves. You may have noticed in calculating your schools lighting load, for example, that your school uses some incandescent light bulbs. Replacing incandescent bulb with compact fluorescents will both save money and reduce emissions.

Also, your school may already have plans underway that will result in lowering its greenhouse gas emissions. Talk to your schools facilities engineer. He may be working on installing a new more energy efficient boiler or HVAC system. Whatever you do, start slow, do research, and don’t be afraid to ask questions.



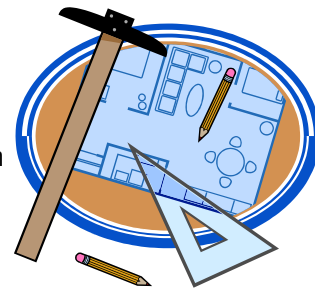
Your school’s greenhouse gas “weight” can be divided into 6 major categories: 1. Electricity, 2. Heating, 3. Recycling, 4. Green buying, 5. Transportation and 6. Landscaping. Planting trees is one of the ways to reduce

your school’s greenhouse “weight” because trees absorb carbon dioxide as they grow. If you’re interested in more information on energy use and efficiency there are many organizations that can help as well as resources available on the web. For more information, visit <http://bth.environmentproject.org>.

Two techniques that can help you make decisions about your school’s energy choices are Life Cycle Assessment (LCA) and Return on Investment (ROI). Life Cycle Assessment is a way to look at the long term overall economic and environmental impact of various energy choices. Return on Investment is a calculation that lets you determine how quickly your investment in energy saving equipment pays off. To convince school management and board officials to invest in new equipment, it is important to know how quickly the funds invested will result in money saved.

## *Step 4 Blueprint*

The final step in the Beat the Heat! competition is to work up your school’s greenhouse gas reduction “blueprint”. The blueprint should be a ready to go plan that includes a workup of:



- Complete costs associated with project;
- Projected emissions reductions, and;
- Estimated timeline/schedule to implement plan and reach target.

The plan can be submitted either in report format or via a website. Be creative!

***To get started, visit***  
**<http://bth.environmentproject.org>**

## SCORING

All school projects will be scored on the following broad categories.

A Beat the Heat! Steering Committee will serve as judges, and review and score the



completed school blueprints. In the event of a numerical tie, the judges will determine, based on a qualitative assessment, which schools wins. All judges' decisions are final. The blueprints will be scored as follows:

### **Baseline - 20%**

The process of setting the greenhouse gas emissions baseline will be reviewed with the judges looking at thoroughness of research into greenhouse gas sources, clear descriptions of steps taken and students/classes role in baseline assessment, plus accuracy of calculations used or estimations made.

### **Target - 15%**

The process and value of the reduction target set by each school team will be evaluated by the judges with a critical eye towards practicality and enthusiasm of the target percentage and timeframe, rationale of target and students/classes participation in target setting.

### **Tools - 30%**

With the plethora of options for reaching a reduction target, the judges will evaluate this section for creativity, practicality, cost-effectiveness, research thoroughness, ingenuity, contribution of students/classes, and involvement of school system hierarchy and outside experts. In this section, the unique ideas of students will truly come into play. The judges will value that creativity, as well as the as well the ideas are thought out from idea stage through implementation. Feel free to discuss tools considered but discarded and their reasons as a way of showing the judges the full picture of your research in this area.

### **Blueprint - 25%**

Judges will evaluate the finished blueprints taking into consideration their specificity, practicality, amount of research conducted, and extent of "out-of-the-box" thinking. Higher scores will be awarded to schools that realistically consider funding options for implementation.

### **Organization, Clarity, Creativity & Presentation - 10%**

Points will be assigned for project's overall organization, clarity, creativity and presentation.

## Additional Details

Once your school has chosen to participate, complete the online application and mail or fax (410-455-4537) a letter signed by the principal stating your school's participation to Allison Anderson, CCBC, 800 S. Rolling Rd., Baltimore, MD 21228.

The first 30 schools to submit a completed emissions baseline and reduction target plan will receive \$250 to defray expenses, pay for teacher's time, or cover the cost of materials or workshops. The Beat the Heat! Steering Committee, which is comprised of energy experts, educators, and representatives from area businesses, will review the submittals and offer feedback within 30 days. School teams will submit a final project blueprint. Three 3<sup>rd</sup> place finishers will receive an award of \$1,000, two 2<sup>nd</sup> place finishers will receive an award of \$1,500 and the grand prizewinning school will receive \$2,500.

## Important Dates



- |                    |  |
|--------------------|--|
| <b>October 30</b>  | Formal Applications due (Online Application Form submitted and school letter received) |
| <b>February 28</b> | School Baselines and Targets due to Beat the Heat! steering committee                  |
| <b>May 15</b>      | School Projects due to steering committee  |
| <b>Early June</b>  | Winners announced at public event  |

The project website will contain the latest due dates and information.

Online Application & Teacher Resources at  
<http://bth.environmentproject.org>