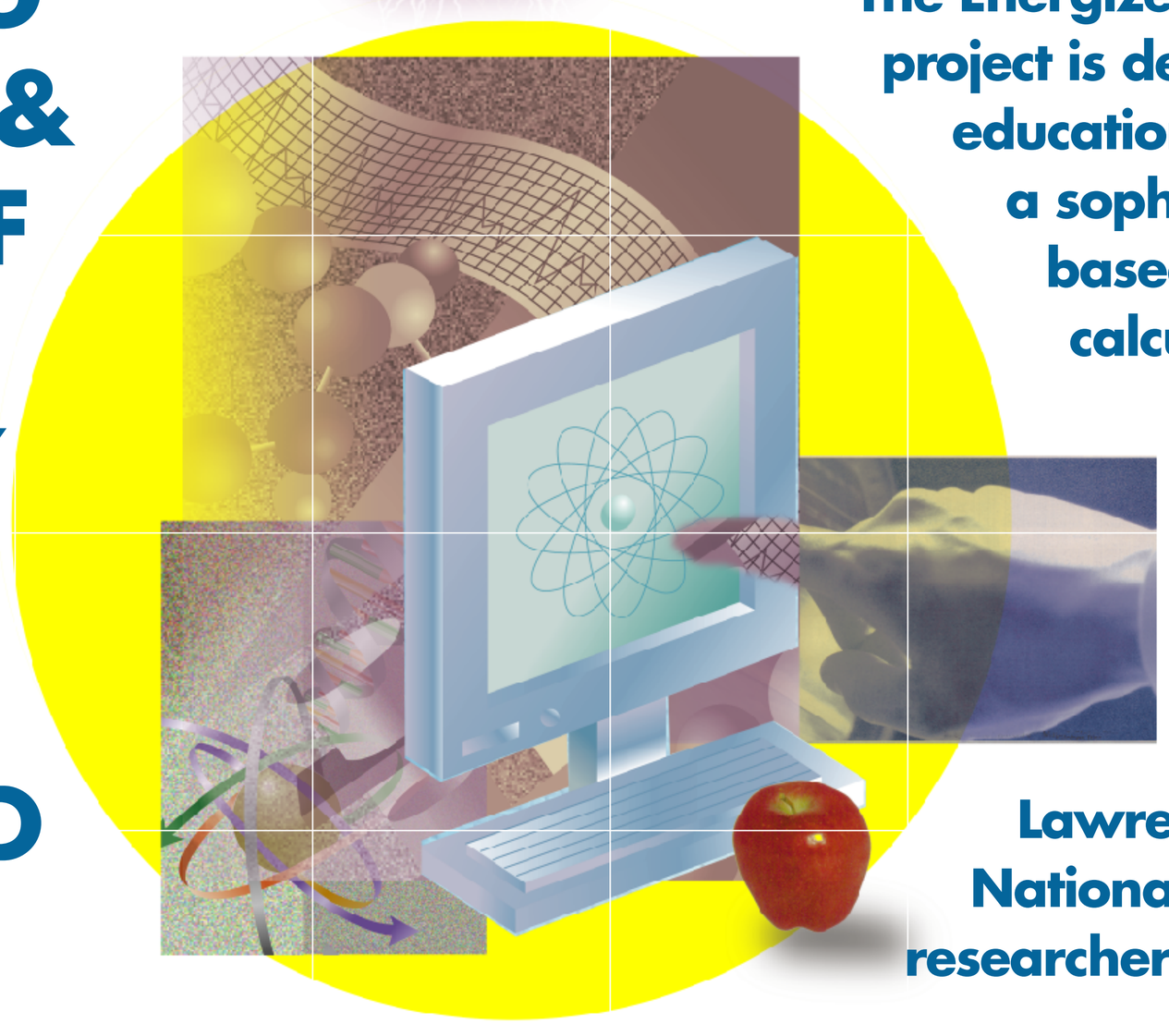
Energized Learning:

EXPLORING THE MATH & SCIENCE OF ENERGY EFFICIENCY USING A VIRTUAL WEB-BASED HOME



The Energized Learning project is deploying a new educational interface for a sophisticated web-based energy calculator and home energy audit toolkit, The Home Energy Saver, which was developed by Lawrence Berkeley National Laboratory researchers.

http://HomeEnergySaver.lbl.gov

Using the Energized Learning website, high school students will do projects involving household- and community-scale data gathering and analysis. They will:

- Gather physical information about residences, such as floor space, window area, building orientation, appliances, heating and cooling systems.
- Input data and run the Home Energy Saver program.
- Learn how energy use of buildings and appliances is calculated.
- Calculate savings of energy and money, and reductions of greenhouse gas emissions, from implementing energy efficiency measures.
- Develop recommendations to improve the energy efficiency of homes.
- Prepare reports on community-scale energy efficiency improvements.

Sample Projects:

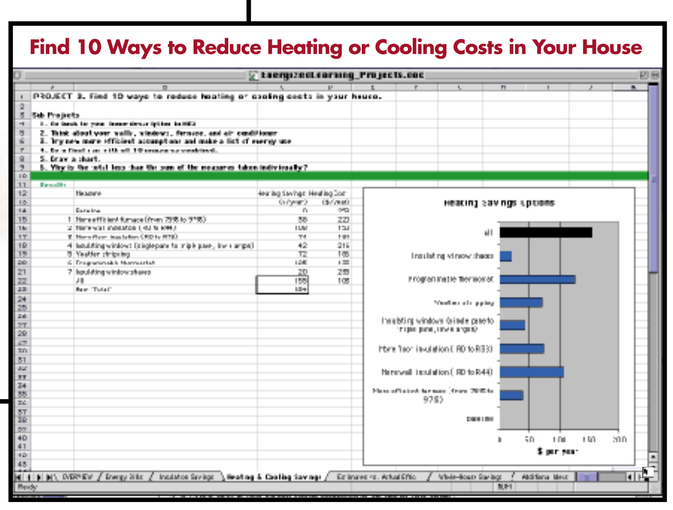
Calculate the size of the "Carbon Bubble"

Q. How large is your carbon bubble (diameter of the equivalent sphere of carbon dioxide emissions from the energy used in your home)?
Answer: 282 meters (946 feet) diameter

Q. How large is your carbon bubble compared to the size of your house?
Answer: 25,299 times as large

Q. How do the emissions associated with your house compare to those of the typical car?
Answer: 1.4 times as much

Find 10 Ways to Reduce Heating or Cooling Costs in Your House



Energized Learning engages students in "real science"—acquiring and applying scientific information in collaboration with practicing interdisciplinary researchers. Students will gain a knowledge of, and experience in a range of disciplines and learning skills:

*** Visual Arts * Earth Sciences**
*** Probability and Statistics**
*** Investigation and Experimentation**
*** Microeconomics * Web-based communications**

Mastery of the subject will also equip students to use the tool in vocational settings, for example, as energy auditors in School-to-Work programs.

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