

Team Number: SJCHS168

School Name: San Juan College High School

Area of Science: Environmental Science

Project Title: Oxygen gas as time flies

**Problem Definition:**

What will happen if the oxygen gas runs out? Will it run out, and if it does, when? Our project will determine when and if the oxygen gas will run out in a closed environment with set variables (i.e factories, people, etc.) Is atmosphere is slowly degrading from the way humans are treating it? If it is, we want to know how long the human race has to live.

**Problem Solution:**

A closed environment will be used due to unknown factors in the normal world. Factories will be used to represent normal producers of greenhouse gas. (i.e factories, power plants, cars, etc.) Plants will be used to convert carbon dioxide into oxygen gas from photosynthesis. Human and organisms will be used to do the opposite from respiration. Water will not be a factor.

**Progress to Date:**

We are still working out imperfections in the program but all systems are working as expected.

We switched from Boost.Python to the Qt graphical user interface library for C++ and the Qt integrated development environment which is made for writing programs that use Qt.

Boost.Python is a library which makes it easier to write code in C++ for Python we wanted to do this because python has a graphical user interface and C++ is faster than python, but python's graphical user interface is very limited, also Boost.Python is hard to install and work because it has little documentation. Which caused us to switch to Qt which has a much better graphical user interface and lots of documentation. We have collected our sources, but are still looking through

them. We have our graphical user interface ready to graph data and take in user input. We have progressed on understanding how much oxygen gas is declining each year which is about 19 molecules out of 1 million molecules of oxygen gas (“Tell About,” n.d.). We have also progressed on learning how plants affect the carbon dioxide which is about 1 molecule for every eight of carbon dioxide, but is replaced by other organisms (Reich, 2010, p. 774).

### **Expected Results:**

The program should tell us when or if the oxygen gas will run out in the foreseeable future or if it will be here forever. Our team does not expect that carbon dioxide will affect the oxygen gas enough to endanger the human race due to its insignificant size compared to other gasses. We expect our graphs to have information on how long the variables (People, plants, etc.) last, because if the plants die out the humans and the animals will not have any food which will lead to their extinction. There will be a steady climb in the animals, plants, and factories. Whereas the will be a slow decline in oxygen gas which could lead to the extinction of the human race.

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### **Sources:**

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website: <http://scrippsco2.ucsd.edu/index>