

Service-Learning Certification Form

___ On Campus
___ Off Campus

SECTION 1

Instructor(s):

School:

Course: ICS, Biology, AP Environment,
Chemistry

Department:

Period(s) Participating

Grade Level(s):

Project Name: *Analysis and Alleviation of Air
Pollution*

Anticipated # of students:

Date Submitted:

SECTION 2 Project Description:

Conduct research into the causes and manifestations of air pollution then compile their findings in an article or series of articles for publication. As the students learn about the structure and composition of the atmosphere, develop experimentation techniques, and think critically. Indoor air pollution is as serious a problem, if not more than outdoor pollution. Our students and teachers spend most of their time in crowded classrooms. What effect does this have on their ability to learn? After collecting and analyzing the data the findings are presented and recommendations can be made.

SECTION 3 Community Need(s):

Especially in the Los Angeles area, air pollution has caused major health and environmental hazards: in particulate form, it damages humans' and animals' respiratory systems; in chemical form, it contributes to the erosion of buildings and landscapes. But many people do not consider or know what to do to help alleviate the matter. Classrooms that have a large amount of students are classrooms that increased concentrations of carbon dioxide, higher humidity and temperature. Is there proper ventilation? Is it being used properly?

SECTION 4 Community Partner(s):

UCLA: GLOBE in the City program

City of Los Angeles Environmental Affairs Department: <http://www.lacity.org/ead/>

LA Public Department of Health Services (Environmental): <http://lapublichealth.org/eh/progs/envirp/ehenvpro.htm>

TreePeople: <http://www.treepeople.org>

South Coast Air Quality Management District: <http://www.aqmd.gov/>

SECTION 5 Student Voice

- After using qualitative and quantitative measures to determine the quality of their air, students will determine what specific concerns they feel need addressing.
- Students will determine what legislation to research, what environmental groups to contact, and what eco-friendly companies or promises to analyze.
- Students will exercise their judgment in preparing an article.
- Students will determine and pursue the best avenue for press release.
- Students will assess the need for follow-up efforts.

SECTION 6 California Content/Skill Standard(s)

- *Earth Sciences* Grades 9-12: Energy in the Earth System 4.b.c.; Biogeochemical Cycles 7.b.; Structure and Composition of the Atmosphere 8.a.b.c.
- *Biology/Life Sciences* Grades 9-12: Ecology 6.d.
- *Science Investigation and Experimentation* Grades 9-12: 1.a.b.c.d.f.g.j.l.m.

(OVER)

SECTION 7 Project Components:

- Students will discuss their initial knowledge of and concern for air pollution in their community.
- Students will learn about the structure and composition of the atmosphere.
- Students will conduct scientific experiments monitoring the air quality in their community and will also note their sensual observations (i.e. smoggy, humid, or clear).
- Students will learn how human activities have impacted and continue to impact atmospheric conditions.
- Students will research legislation regulating air emissions, taking into consideration demands made by an interest group or groups and environmental agency/ies.
- Students will research promotional materials produced by a company/companies that claim(s) to be “eco-friendly.” They will compare the company’s claims to scientific research.
- Students will then write about their findings, either validating or decrying claims made by companies and governmental officials (i.e. whether it is efficient to drive a hybrid vehicle) and also including suggestions of how people can reduce their contribution to air pollution (i.e. carpool, write a legislator, or plant a tree). Students will prepare their article for submission to a local newspaper..

SECTION 8 Reflection Prompts

- Students consider their perceptions of air pollution both before and after the exercise.
- Students analyze the accuracy of their testing and critique the methods and propriety of their research.
- Students assess the need for further investigation.

SECTION 9 Outcomes and Assessments:

- Students will obtain knowledge of the structure and composition of the atmosphere as well as the impact of human activities on air quality.
- Students will develop critical thinking skills and be able to scientifically critique both governmental policy and advertisements. In doing so, they will engage in civic concerns.
- Students will be able to convert their scientific research and terminology into a clear and concise publication.
- Students will be able to analyze a need for further action.
- Students will demonstrate care and concern for the environment and cultivate environmental action skills.

SECTION 10 Accommodations/Support for Diverse Learners:

- Appropriate tasks will be assigned to all students.
 - Students will be encouraged to work collaboratively and respect the talents of each of the members of their group.
 - Locations will be accessible. When not available alternative sites will be sought.
 - Each group member will have equal opportunities to make significant contributions to the project.
 - Students with IEPs will be identified and individual needs will be addressed.
- I agree to the above accommodations for diverse service learners. Initials_____**

SECTION 11 Administrator Comment(s) / Recommendations:

Submitted by: _____ Date: _____
Teacher Signature

Approved: _____ Date: _____
Principal or designee Signature

Original to: ____APSCS **Copies to:** ____SIS Coordinator ____Teacher(s)