Wilmington Anti-Idling Working Group
June 11, 2015

SCHOOL VEHICLE ANTI-IDLING CAMPAIGN

The general aim of the proposed campaign is to reduce vehicle idling at schools in the 19801 and 19802 zip codes in Wilmington. This work is a continuation of a recent Nemours-driven initiative to reduce children's asthma visits to emergency rooms, funded by the Center for Medicare and Medicaid Innovation. Survey data from the University of Delaware suggest that the population within the two targeted zip codes experiences more than double Delaware's asthma rate.

Project partners include: Wilmington Area Planning Council (WILMAPCO), Delaware Department of Natural Resources and Environmental Control (DNREC), Nemours Health and Prevention Services (NHPS), and the American Lung Association.

Vehicle idling contributes to poor air quality, which has been tied to causing and exacerbating respiratory conditions such as asthma. As a first step, we are pursuing school bus idling reduction through a bus driver-targeted encouragement initiative at the district level. Last year, an anti-idling and asthma safe school bus cleaning encouragement activity was provided to bus drivers in the Christina School District.

As will be developed below, we also seek to reduce idling of personal vehicles at one to three schools within the 19801 and 19802 zip codes during the 2015 – 16 school year. Working through key staff at these schools, we hope to reduce vehicle idling through an awareness campaign, *provide an opportunity for real world science education*, and use the results of our efforts to expand the program to schools across Delaware in the years come.

On the following page we detail what a campaign could look like at a school for illustrative purposes. We fully understand that the program's content will vary based on the interest of the school, the grades it serves, local needs, etc.

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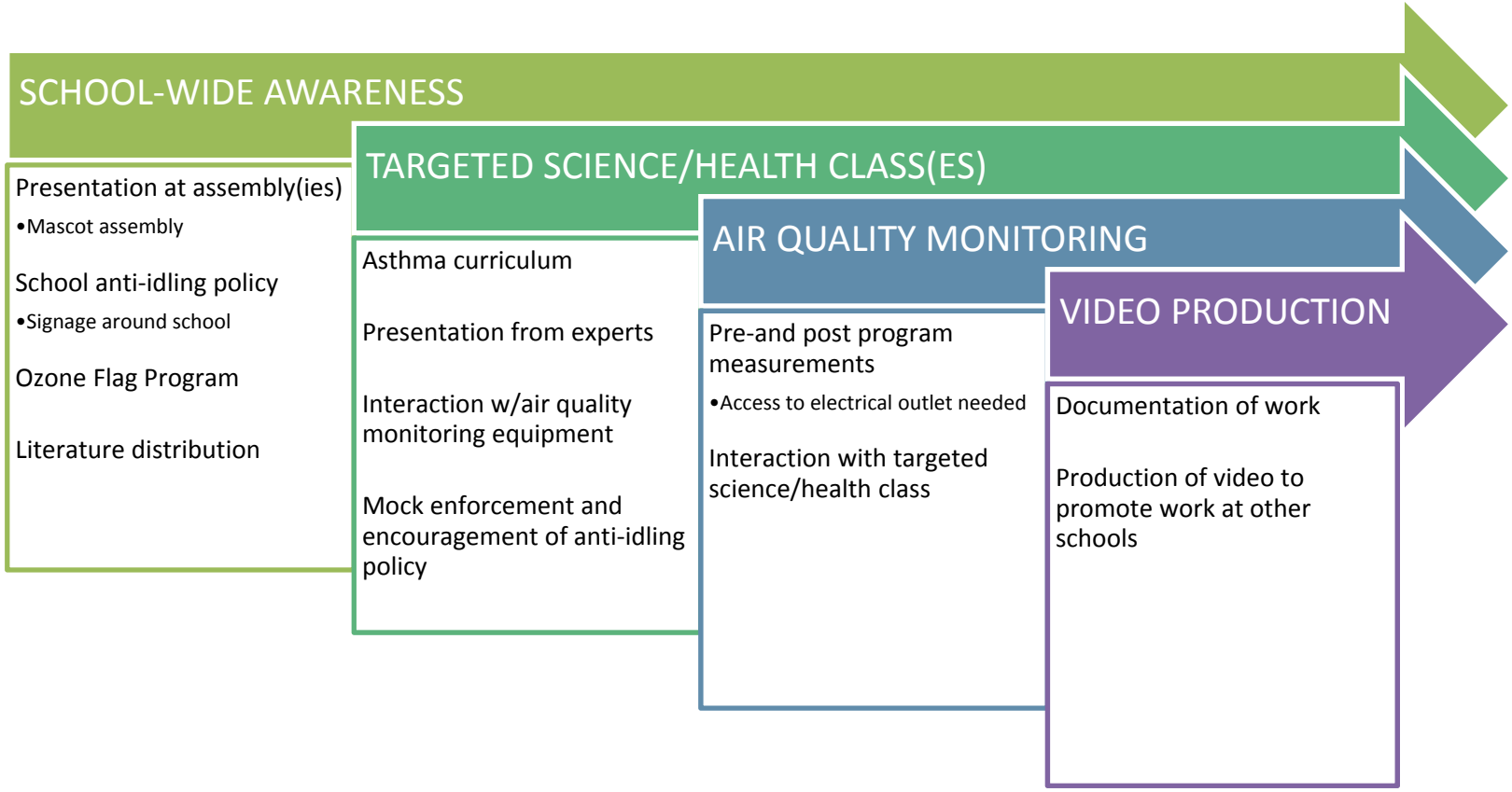

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Connection to the Next Generation Science Standards

This project offers an opportunity for teachers to fulfill many of the Next Generation Science Standards (NGSS). These standards, developed with input from scientific and educational research communities, aim to prepare students for educational and employment opportunities in science-related fields. The NGSS gives particular attention to curricular gaps that appear to exist amid rapid changes in technology and the global economy. Ultimately, the NGSS intends to improve scientific literacy, raise academic performance at the international level, and boost the USA's competitive economic edge in technology.

The potential for a class to interact directly with scientific air quality monitoring equipment and DNREC researchers would help satisfy the first dimension of the NGSS – Practices. Coursework could be developed surrounding: 1.) the background to air pollution and air quality monitoring, 2.) structuring a scientific investigation of local baseline and post intervention conditions, 3.) real world experience with technology used to analyze air emissions, 4.) drawing conclusions that can be peer-reviewed, and 5.) presenting results from scientific analyses.

Engaging in the full range of scientific practices helps students understand how scientific knowledge develops and gives them an appreciation of the wide range of approaches that are used to investigate, model, and explain the world. If designed properly, this project could satisfy each of the eight science and engineering practices identified in NGSS. These include:

1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

Other NGSS may be applicable, depending on how the coursework is developed. Requirements could be satisfied within the Connections to the Common Core State Standards for Literacy in Science and Technical Subjects arena, specific to science and Engineering Practice. Additionally, standards could also be met within the Science, Technology, Society and the Environment arena.