



SCIENCE AND
INDUSTRY
ENDOWMENT
FUND



STEM Community Partnerships Program

Camden local scenario

Air Quality

The quality of the air impacts our community. With increasing levels of particles from dust storms, bush fires and human activities, changing gas emissions from transport, industry and agriculture, there is a greater risk of respiratory and cardiopulmonary problems.

In 2015, Australian Environment Ministers established the National Clean Air Agreement to assist governments to create action plans that address air quality issues. State bodies have responsibility for monitoring and managing the air quality in their jurisdictions while local governments respond to local air pollution issues. Recent research highlights the need for increased stakeholder engagement in improving air quality and raising public awareness of the issue.

We have recently seen the impact of dust from drought affected fields and the bushfires decreasing the air quality and health of people in the Camden region. Pollution may consist of smoke, dirt, pollen, mould and other small particles which are taken in by the lungs and then can impact the functioning of the body. Climatic changes also increase the creation and dispersal of these pollutants. As our population grows and gets older, we may see an increase in asthma, stroke and cardiac disease.

Solutions to reduce the amounts of pollutants released into and carried by the air are needed. There are also solutions needed for the other influences on this problem.

Camden Council has the challenge to ensure they provide the relevant services and activities to cater for this problem.



Camden during fires 3rd December 2019 CEoD

Your task

Your task is to use the information above, and resources provided below as a start to identify a local problem and design a STEM-focussed solution.

(Question, Design, Explore, Communicate)

Resources

CSIRO research

- ECOS Issue 228 <https://ecos.csiro.au/breathing-air-quality-down-under/>
- Atmospheric Composition & Quality <https://research.csiro.au/acc/research-themes/air-quality/>
- Air quality <https://blog.csiro.au/air-quality-how-were-minimising-smoke-impact/>
- Citizen science <https://www.csiro.au/en/News/News-releases/2020/Citizen-science-to-aid-bushfire-recovery>
- Atmospheric monitoring and modelling <https://www.csiro.au/en/Research/OandA/Areas/Assessing-our-climate/Air-pollution>

Reports

- NSW Department of Planning, Industry and Environment Research
<https://www.environment.nsw.gov.au/topics/air/research/air-quality-in-nsw>
<https://www.environment.nsw.gov.au/topics/air/air-quality-statement>
<https://www.environment.nsw.gov.au/research-and-publications/publications-search/dustwatch-report-february-2020>
<https://www.environment.nsw.gov.au/research-and-publications/publications-search/emergency-air-quality-monitoring-in-response-to-bushfires>
- Department of Agriculture, Water and the Environment
<https://www.environment.gov.au/protection/air-quality/publications/national-clean-air-agreement>

Articles

- NSW Health Smoke and dust https://www.health.nsw.gov.au/news/Pages/20200202_00.aspx
<https://www.health.nsw.gov.au/environment/air/Pages/air-factsheets.aspx>
- Better Health Channel, 2013, *Air Pollution*, State Government of Victoria
http://www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Air_pollution
- Sydney Morning Herald 16/12/19 Noyes, J “No safe level: pollution labelled a public health emergency”
<https://www.smh.com.au/national/nsw/no-safe-level-pollution-labelled-a-public-health-emergency-20191215-p53k5d.html>
- Air quality live update <https://www.dpie.nsw.gov.au/air-quality/current-air-quality>
<https://www.environment.nsw.gov.au/topics/air/monitoring-air-quality/sydney/monitoring-stations/camden> <https://aqicn.org/map/australia/nsw/camden/sydney-south-west/>
- ABC 21/11/19 Kidd, J “Sydney smoke ‘unlikely to clear for days’ as bushfires burn around NSW”
<https://www.abc.net.au/news/2019-11-21/sydney-smoke-from-fires-unlikely-to-clear-today-authorities-warn/11723876>
- ABC 14/01/20 Greenbank, A “Pollution experts team up to propose major new study into health impacts of bushfire smoke” <https://www.abc.net.au/news/2020-01-14/pollution-experts-propose-study-into-fire-smoke-health-impacts/11866756>