


# THE BENEFITS OF PUBLIC TRANSPORT TO THE ENVIRONMENT

| Key Learning Area                                                                           | Unit or lesson title and main focus questions                                                                                                                          | Most appropriate level and suggested number of lessons |
|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
|  Geography | <b>The benefits of public transport to the environment</b><br>How will the Sydney Metro Northwest work towards an environmentally sustainable future for my community? | Stage 2-3                                              |
|  Science   |                                                                                                                                                                        | 2-4 lessons                                            |
|  English   |                                                                                                                                                                        |                                                        |

## Teacher briefing

Students explore the environmental effects of car transport and highways and examine how these issues are addressed by the Sydney Metro Northwest environmental impact statements. They create environmental scorecards for cars and trains, and devise information podcasts that identify the benefits public transport brings to the environment.

### Requirements for these lessons

- ▶ Interactive whiteboard
- ▶ Internet connection
- ▶ Laptops, computers, iPads with bookmarked sites
- ▶ Hard copies of articles
- ▶ Digital cameras.

### Assessment

Opportunities for formal or informal assessment include retrieval charts, environmental scorecards and podcasts created either individually or in small groups.

### Key terms and vocabulary

Sydney Metro Northwest, environmental impact statements, sustainability, air quality, ozone layer, ozone depletion, water quality, resources.

## Web links

### Free podcast recording software – Audacity

<https://sourceforge.net/projects/audacity/>

Apple Garageband is also very easy-to-use podcasting software.

The links to articles and documentaries on the environmental impact of cars on the environment are only a guide. Teachers should use any suitable material in their library or through their own web research.

### Sydney Trains Environment page

<http://www.sydneytrains.info/about/environment/>

### National Geographic

<https://www.nationalgeographic.com/environment/green-guide/buying-guides/car/environmental-impact/>

### Royal Automobile Club

<https://rac.com.au/about-rac/advocating-change/sustainability>

### Green Vehicle Guide

<https://www.greenvehicleguide.gov.au/>

### Clean up Australia

<http://www.cleanup.org.au/au/Factsheets/batteries.html?kw=batteries>

### ABC Behind the News: ‘Ozone Layer’

<http://www.abc.net.au/btn/story/s2986293.htm>

### ABC Behind the News: ‘Congestion tax’

<http://www.abc.net.au/btn/story/s2428050.htm>

### The Hills Shire Council: Greenhouse Gas Reduction PDF (1.7MB)

[https://www.sydneymetro.info/sites/default/files/19\\_Ch\\_17\\_Climate\\_Change\\_and\\_Greenhouse\\_Gas\\_Emissions.pdf%3Fext%3D.pdf](https://www.sydneymetro.info/sites/default/files/19_Ch_17_Climate_Change_and_Greenhouse_Gas_Emissions.pdf%3Fext%3D.pdf)

## Syllabus links

### Geography K-10

Stage 3 - Factors that shape places – humans shape places

(GE3-1) describes the diverse features and characteristics of places and environments

(GE3-2) explains interactions and connections between people, places and environments

(GE3-3) compares and contrasts influences on the management of places and environments

(GE3-4) acquires, processes and communicates geographical information using geographical tools for inquiry.

### Science K-10

(ST2-4WS) investigates their questions and predictions by analysing collected data, suggesting explanations for their findings, and communicating and reflecting on the processes undertaken

(ST3-4WS) investigates by posing questions, including testable questions, making predictions and gathering data to draw evidence-based conclusions and develop explanations.

### English K-10

(EN2-6B) identifies the effect of purpose and audience on spoken texts, distinguishes between different forms of English and identifies organisational patterns and features

(EN3-1A) communicates effectively for a variety of audiences and purposes using increasingly challenging topics, ideas, issues and language forms and features.

## Learning experiences

### Step 1 – Groups (two to three students)

Research the environmental effects of cars and report back to the class.

Ideas:

- ▶ Students form small groups and research different key environmental issues from the examples listed: air quality, Greenhouse gases, ozone depletion, and water quality, use of non-renewable resources, fuel costs, and noise issues
- ▶ Provide students with bookmarked websites and articles to research (See web links)
- ▶ Visit the school or local library and find relevant books and information, collect relevant newspaper articles, watch ABC 'Behind the News' reports (See web links)
- ▶ Gather data from the school community. Arrange with other teachers for students to ask other classes and teachers about their ideas on how cars affect the environment.

### Step 2 – Groups (three to five students)

Groups use what they have found in their research, and participate in environmental roundtable discussions to organise their information into a retrieval chart. This will be used to present the key issues they have found to the class.

| Issue | Cause | Effect on the environment |
|-------|-------|---------------------------|
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#### Step 4 - Groups (two to three students)

Students create short (two to three minute) information podcasts identifying the benefits of public transport .

Ideas:

- ▶ A group discussion highlighting a key benefit of public transport to the local area, or to Sydney, New South Wales or the whole of Australia
- ▶ Discussion of an action plan that will lead to improving public transport in the local area.

Students record their podcasts using free software such as Audacity on their laptops or computers and upload them to the class blog or website.

<https://sourceforge.net/projects/audacity/>

### Teacher references and extension work

#### Extension ICT activities

Students can use their new knowledge and create digital posters, urging students and families to use cars less often. The posters could be printed and used around the school, or attached to the school website, class website or blog.

Students work as a class to create a visual advertisement that advocates using public transport such as the Sydney Metro Northwest. This filmed advertisement could be presented to the school during assembly or attached to the school's website.

