

GEOGRAPHY BULLETIN

The Geography classroom: Inside and out



Volume 47 No 2 2015

In this issue:

Integrating spatial technologies
into the Geography classroom **7**

DETROIT – A large city of the
developed world **17**

NEW REPUBLIC – The Decline of
Detroit in Five Maps **22**

DRONES: ICT in action **25**

Geography in the Reality World **35**

Tsunami: The Ultimate Guide **39**

EXECUTIVE 2014 – 2015

President

Susan Caldis

Vice Presidents

Milton Brown, SurfAid International

Lorraine Chaffer, Education consultant

Dr Grant Kleeman, Macquarie University

Martin Pluss, Loreto Normanhurst

Honorary Secretary

Susan Caldis (acting)

Minute Secretary

Paul Alger, Retired

Honorary Treasurer

Dr Grant Kleeman, Macquarie University

Councillors

Paula Cooper

Robert Gandiaga, Casula High School

Keith Hopkins, Loreto Kirribilli

Nick Hutchinson, Macquarie University

Brett Jackson, Sydney Boys High School

Lisa Kendall, St Mary of the Sea
College, Wollongong

Grace Larobina, Hills Grammar School

David Latimer, Stella Maris College

John Lewis

Kerry McEwan, Barrenjoey High School

Sharon McLean, St Ignatius College

Carol Pogson, Canberra Grammar School

Darren Tayler, ACARA

Public Officer

Dr Grant Kleeman, Macquarie University

GEOGRAPHY BULLETIN

Editors

Lorraine Chaffer, Education consultant

Dr Grant Kleeman, Macquarie University

Articles and letters should be sent to the Editors:

Lorraine Chaffer

Email: lchaffer@tpg.com.au

Dr Grant Kleeman

Email: gkleeman27@gmail.com

Design and layout:

Jill Sillar, Professional Teachers' Council NSW

jill.sillar@ptc.nsw.edu.au

ISSN 0156-9236



The
Geography Teachers' Association
of New South Wales Inc.

OFFICE OF THE GEOGRAPHY TEACHERS' ASSOCIATION OF NEW SOUTH WALES

ABN 59246850128

Address: 56 Bland Street, Ashfield NSW 2131

Postal Address: PO Box 577

Leichhardt, NSW, 2040, Australia

Telephone: (02) 9716 0378, Fax: (02) 9564 2342

Website: www.gtansw.org.au

Email: gta.admin@ptc.nsw.edu.au

ANNUAL MEMBERSHIP (Subscriptions include GST)

Personal membership \$90.00

Corporate membership (school, department or business) \$180.00

Concessional membership (retiree, part-time teacher or student) \$40.00



Covers: Fieldwork
Image: Lorraine Chaffer

The Geography Bulletin is a quarterly journal of The Geography Teachers' Association of New South Wales. The 'Bulletin' embraces those natural and human phenomena which fashion the character of the Earth's surface. In addition to this it sees Geography as incorporating 'issues' which confront the discipline and its students. The Geography Bulletin is designed to serve teachers and students of Geography. The journal has a particular emphasis on the area of the Pacific basin and its near neighbours and a specific role in providing material to help meet the requirements of the Geography syllabuses. As an evolving journal the Geography Bulletin attempts to satisfy the requirements of a broad readership and in so doing improve its service to teachers. Those individuals wishing to contribute to the publication are directed to the 'Advice to contributors' on the preceding page. Articles are submitted to two referees. Any decisions as to the applicability to secondary and/or tertiary education are made by the referees. Authors, it is suggested, should direct articles according to editorial policy.

© Copyright 2015 Geography Teachers' Association of New South Wales Inc.

Unless otherwise indicated in an article, non-profit organisations such as schools and universities may make up to 30 photocopies of any article in this journal without obtaining further permission.

GEOGRAPHY BULLETIN



The
Geography Teachers' Association
of New South Wales Inc.

Volume 47, No2 2015
EDITOR: Lorraine Chaffer

Editorial.....	2
Integrating spatial technologies into the Geography classroom	7
DETROIT – A large city of the developed world	17
NEW REPUBLIC – The Decline of Detroit in Five Maps	22
DRONES: ICT in action	25
Geography in the Reality World	35
Tsunami: The Ultimate Guide	39
Benefits of GTA NSW Membership.....	40

STUDENT
CONTENT



Lorraine Chaffer, Editor

In this second edition of the Geography Bulletin for 2015 the focus is on the Geography classroom. The issue features articles on the use of technology in Geography from Clare Kinane, *Geography in the Reality World*; Patricia Smith and Vanessa Sefton, *Drones: ICT in Action* and Lorraine Chaffer *Integrating Spatial Technologies into the Geography Classroom*. Alexandra Lucas has written about her experience using Detroit as a case study of a large city in the developed world study for HSC Geography.

Significant Events in Semester 1 2015

Dubbo Conference "Geography from the ground up"

Highlights of the conference included:

- an overview of GIS applications relevant to the Geography classroom with Mick Law from Contour Education, follow-up fieldwork on the Macquarie River and a GIS workshop to map fieldwork data.
- skills workshops presented by Lorraine Chaffer and Dr Grant Kleeman
- the provision of a Stimulus Booklet for the Dubbo Region with questions and answers
- an exam setting / assessment workshop presented by Sharon McLean



Teachers undertaking fieldwork activities on the Macquarie River, Dubbo

Geography Skills Workshops for Teachers New to the Teaching of Geography

Workshops on interpreting topographic maps, synoptic charts and climatic graphs were the focus of professional development days held in Parramatta and Potts Point, presented by Lorraine Chaffer and Dr Grant Kleeman. Many participants were inexperienced geographers or with little or no Geography training, keen to develop their own skills and to get advice on teaching those skills to students. Surprisingly, synoptic charts were a bigger challenge for many participants than topographic mapping.

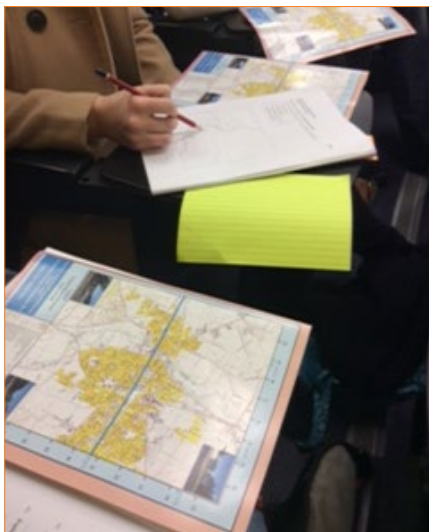
HSC Lectures in Wollongong, Sydney and Newcastle

Over 200 students and 25 teachers attended the HSC lectures organised by Lorraine Chaffer. Many thanks to Susan Caldis (Urban Places), David Hamper (Ecosystems at Risk), Chris Tanna (Skills and Urban Places), Sharon McLean (Skills and exam advice) and Dr Grant Kleeman (People and Economic Activity) who presented lectures across the three venues. Participants journeyed from as far away as Murwillumbah and Bateman's Bay and left with greater confidence and a variety of valuable resources including:

- copies of the presentations
- up to date statistical data and examples
- skills how-to tables with examples and practice questions
- worked answers to all HSC skills questions since 2001
- analysis of past HSC questions
- weblinks to relevant videos and media articles
- excellent advice on how to maximise HSC Geography results.

"Going to Sydney was the best professional development I have done this year"

"I would like to personally thank the GTA and the 4 presenters for an informative and well organised lecture. I am currently teaching Year 11 Geo for the first time in a school that has never taught Geo before which is one crazy but super fun adventure. All four presenters were inspiring, knowledgeable and gave practical and relevant advice for which I'm grateful. Within the first 10 mins I messaged my Head Teacher and told him 'this is already the best!' A huge thank you also for the USB of resources. I can't wait to tell my students about it on Monday and take them with me next year."



HSC students at Wollongong University lectures practice important skills

Collage of materials presented at the HSC Lectures



Collage of materials presented at the HSC Lectures



Significant Events in Semester 2 2015

Release of the NSW K-10 Geography Syllabus in August

For many teachers, the implementation timeline was the most important aspect of the syllabus release at this time.

Implementation

2016 – Familiarisation and planning, optional to teach K-6

2017 – Start teaching K-6, Years 7 and 9

2018 – Start teaching Years 8 and 10

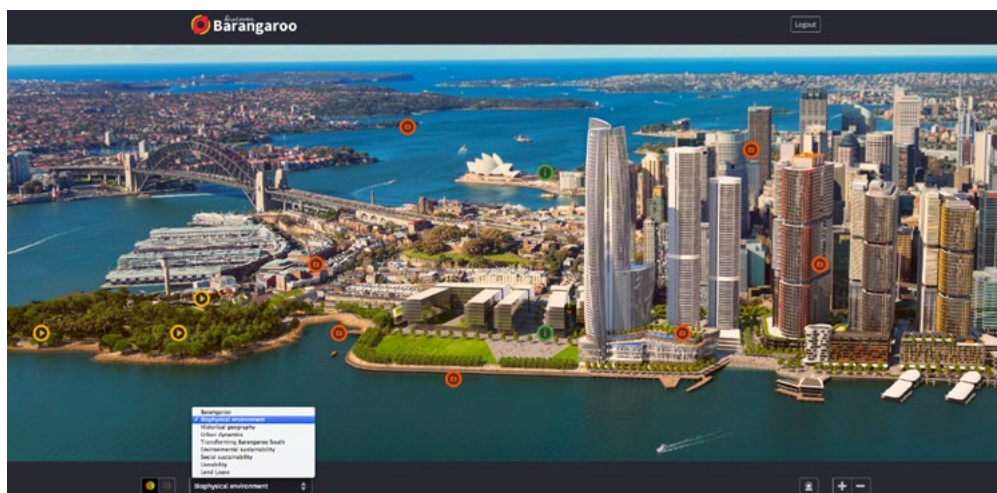
GTANSW is planning a professional development conference for Semester 1 2016.

Teachers are advised to familiarise themselves with the syllabus and to start before looking at the large variety of resources that are available during the remainder of 2015.

BOSTES will provide support materials and professional development so watch the website and updates for news.

Launch of Discover Barrangaroo Learning Portal

This interactive online resource, launched in June provides an in-depth case study about the \$6 billion urban regeneration project, Barrangaroo.



Sample page from the Discover Barrangaroo website:

<http://discoverbarrangaroo.com.au>



iGEO Olympiad

Milton Brown, GTANSW council member is accompanying winners of the Australian Geography Competition to Russia for the iGEO Olympiad. We look forward to Milton's report in the next bulletin. Congratulations to the student winners and to Milton and wish them a wonderful experience.

GTANSW Annual Conference: Sustainable futures: our place, our subject

The GTANSW Annual Conference will be held on Thursday 5 November 2015 at Novotel Central.

Registration will commence at 8.15am and the conference will open at 8am and conclude at 5.30pm.

The conference theme is 'Sustainable futures: our places, our subject' in the context of the new K-10 Geography syllabus and evidence based best-practice geography teaching methodology

The cost will be \$260 for GTA members and \$300 for non members.

Sessions will be lead by a range of representatives including those from BOSTES, universities, GTANSW Council and World Vision

The conference flyer has been sent to schools and conference details and updates will be posted to the GTA website.

Condolences

GTA NSW extends its condolences to the family and friends of respected Geography educator and past GTANSW executive member Robyn Greene who passed away in July.

EDITORIAL

ATTENTION – ALL GEOGRAPHY TEACHERS



Geography Teachers' Association of NSW **ARTHUR PHILLIP AWARDS**

ENTRIES NOW OPEN FOR THE 2015 GEOGRAPHY FIELDWORK COMPETITION

The Geography Teachers' Association of NSW (GTA NSW) organises an annual competition for students and schools to foster an enthusiasm for Geography through engagement and rewards. The emphasis of the competition is fieldwork and the gathering of primary data as part of authentic research in geography.

The competition is open to all secondary schools, both members and non-members of GTA NSW.

All categories of the competition are based on the research action plan outlined on page 17 of the Years 7–10 Geography syllabus. The steps of this research plan have also been applied to the senior Geography course for the purposes of this competition and fit neatly with the Senior Geography Project.

Competition entries to be received by Friday 20 November 2015

COMPETITION CATEGORIES:

1. The GTA Fieldwork and Visual Presentation Competition for Years 7–9
2. The Global Education Research (Fieldwork) Competition for Years 7–12
Three categories: Stage 4, Stage 5, Stage 6
3. The Dr Don Biddle Issues in Australian Environments Fieldwork Competition for Year 10 only
4. The Brock Rowe Senior Geography Project Fieldwork Competition for Year 11 only.

To find out more about the 2015 Arthur Phillip Geography Fieldwork Competition and to download Student Entry forms go to:

www.gtansw.org.au

Integrating spatial technologies into the Geography Classroom

Lorraine Chaffer
Vice President GTA NSW
Geography Education Consultant

Spatial technologies are specifically referred to in the Australian Curriculum: Geography and NSW Geography Syllabus K–10 (2015). They are geographical tools, to be used by students along with maps; graphs and statistics, fieldwork and visual representations to acquire, process and communicate geographical information.

What are spatial technologies?

"Spatial technologies include any software or hardware that interacts with real world locations. Examples include, but are not limited to, virtual maps, satellite images, global positioning systems (GPS), geographic information systems (GIS), remote sensing and augmented reality. Spatial technologies are used to visualise, manipulate, analyse, display and record spatial data"

<http://syllabus.bos.nsw.edu.au/hsie/geography-k10/geographical-tools/>

The NSW K–10 Geography Syllabus "Continuum of Tools" gives examples of spatial technologies that could be used at each stage of geographical study. It is intended that students will become familiar with a range of tools at each stage, progressing from their use for acquiring geographical information in early stages of learning to representing, analysing and communicating geographical data and their findings from geographical inquiry in later years.

Continuum of Tools NSW K–10 Geography 2015

Stage	Spatial Technologies
1	Virtual maps Satellite images
2 & 3	Virtual maps Satellite images Global positioning systems (GPS)
4	Virtual maps Satellite images Global positioning systems (GPS) Geographic information systems (GIS)
5	Virtual maps Satellite images Global positioning systems (GPS) Geographic information systems (GIS) Remote sensing data Augmented reality

<http://syllabus.bos.nsw.edu.au/hsie/geography-k10/continuum-of-tools/>

Challenges for teachers

The challenge for many teachers is overcoming a lack of confidence with spatial technologies, a shortage of time to learn and a fear of failure.

I have found that most spatial technologies applicable for use in schools can be mastered given time and perseverance. Teachers can build skills and confidence slowly by

1. Choosing one tool at a time eg. Google Maps, NSW Globe, Google Earth, National Geographic Mapmaker Interactive
2. Using one selected tool wherever possible until confident in the ability to integrate its use into topics currently being taught
3. Using online tutorials
4. Limiting activities to one aspect of the selected tool at a time
5. Implementing for the first time into classes with students quick to learn and willing to help each other and their teacher.
6. Ensuring computers have the required software and the school system supports its operation
7. Always having a PLAN B in case of issues with ICT (Making this a practical activity eg a simple fieldwork activity in the school grounds using pre-prepared worksheets and toolkits will limit student disappointment)

"The introduction of spatial technology into the curriculum is more than just about the introduction and use of a new technology but really is concerned with engaging students in meaningful spatial learning."

"By now most teachers have heard, if not participated in spatial technology activities. However for many the steps towards introducing spatial technology and related concepts into their classroom are daunting, if not insurmountable. There is a range of impediments to the introduction of spatial technology in the classroom. They included factors such as software

Integrating spatial technologies into the Geography Classroom

and data access, hardware availability, computer room access and teacher expertise. While not denying the existence of these very real implementation stumbling blocks, there is a need to develop a strategy at teacher and system level to enhance the use of spatial technology in the curriculum. This website and associated Spatialworlds blog sets out to “demystify” the area of spatial education for teachers, who in the majority are untrained in the area. The website also aims to give some practical across the curriculum starting points that can be employed to introduce spatial technology into the curriculum.”

Spatial technologies and the Australian Curriculum
From Spatialworlds at <https://sites.google.com/site/malcolmmcinerney/home>

Relevance of Spatial Technologies

Contemporary tools for geographical inquiry

Spatial patterns of natural and human features of

environments can be analysed using maps and images already created by others eg using Google Earth to observe the characteristics of mountain or desert landscapes.

Maps can also be created to communicate observations or data collected during geographical inquiry, including fieldwork. For example

- using Google Maps to create a local (large scale) map showing changes in water quality along a creek or Google Tour Builder to show features of an environment or community
- using National Geographic Mapmaker Interactive to create a national or global (small scale) map showing settlement patterns or the location of different types of food production.
- creating maps using Google Earth with several layers of information to show relationships between geographical features such as settlement and transport or landuse and topography.

1. Select a base map

2. Select the map scale eg World, Australia

3. Select layers to create a map – human or natural features

National Geographic Mapmaker Interactive

<http://mapmaker.education.nationalgeographic.com/?ls=000000000000#/>

Integrating spatial technologies into the Geography Classroom

Life and career links

Spatial technologies are an integral part of the everyday life of students. Computer, tablet and smartphone applications such as Facebook, interactive maps and games all have spatial components. Spatial technologies were recently used in emergency responses to the Nepal Earthquake and now play an integral part in disaster planning and management within Australia.

Spatial technology is creating employment opportunities in many industries. Educational

institutions in Australia and online are offering courses with a focus on spatial technologies as the demand for trained employees.

Websites such as *Geospatial Revolution* (videos showing the use of spatial technologies) and *Destination Spatial* <http://www.destinationpatial.org/Home.aspx> (links to study options in different Australian states) illustrate and reflect the growing importance of spatial technologies in understanding, analysing and managing our lives and Earth's environments.

Geospatial Revolution website illustrates the application of spatial technologies to address real world problems

<http://geospatialrevolution.psu.edu>

Destination Spatial explanation for students

What's it all about?



Spatial science helps everyone make decisions and a spatial science professional can work in just about any industry that exists. Spatial sciences involve the collection, measurement, mapping, analysis and presentation of physical and manmade features.

Imagine a combination of geography, mapping, town planning, cartography, technical drawing and surveying with a strong IT flavour.

Now with mobile technology, satellites and loads of easy-to-move data you can not only find out what it is but where it is. Just think about how you and your students use your smartphone!

Spatial technologies can help us solve problems across our society.

They can help find the quickest route from A to B, help natural resource managers monitor biodiversity as well as the impacts of climate change, help local councils manage assets or help the public better understand newsworthy items.

Whether you are experiencing spatial technologies through the news, the resource and mining boom or through environmental concerns, spatial science, like IT, is a technology that is helping professionals and the public understand what is going on in the world.

Spatial science helps everyone make decisions.

<http://www.destinationpatial.org/CMS-Teachers.aspx#1>

Integrating spatial technologies into the Geography Classroom



Destination Spatial site map

<http://www.destinationspatial.org/Home.aspx>

Integrating Spatial Technologies at St Ignatius College, Riverview

In May 2015, Mick Law from *Contour Education* spent a week at St Ignatius College, Riverview as “*Geographer in Residence*” assisting teachers and students with the integration of spatial technologies into Geography classes from 7–12. Google maps, Google Earth, NSW Globe and Google Tour Builder were applied to units of work being studied, including fieldwork.

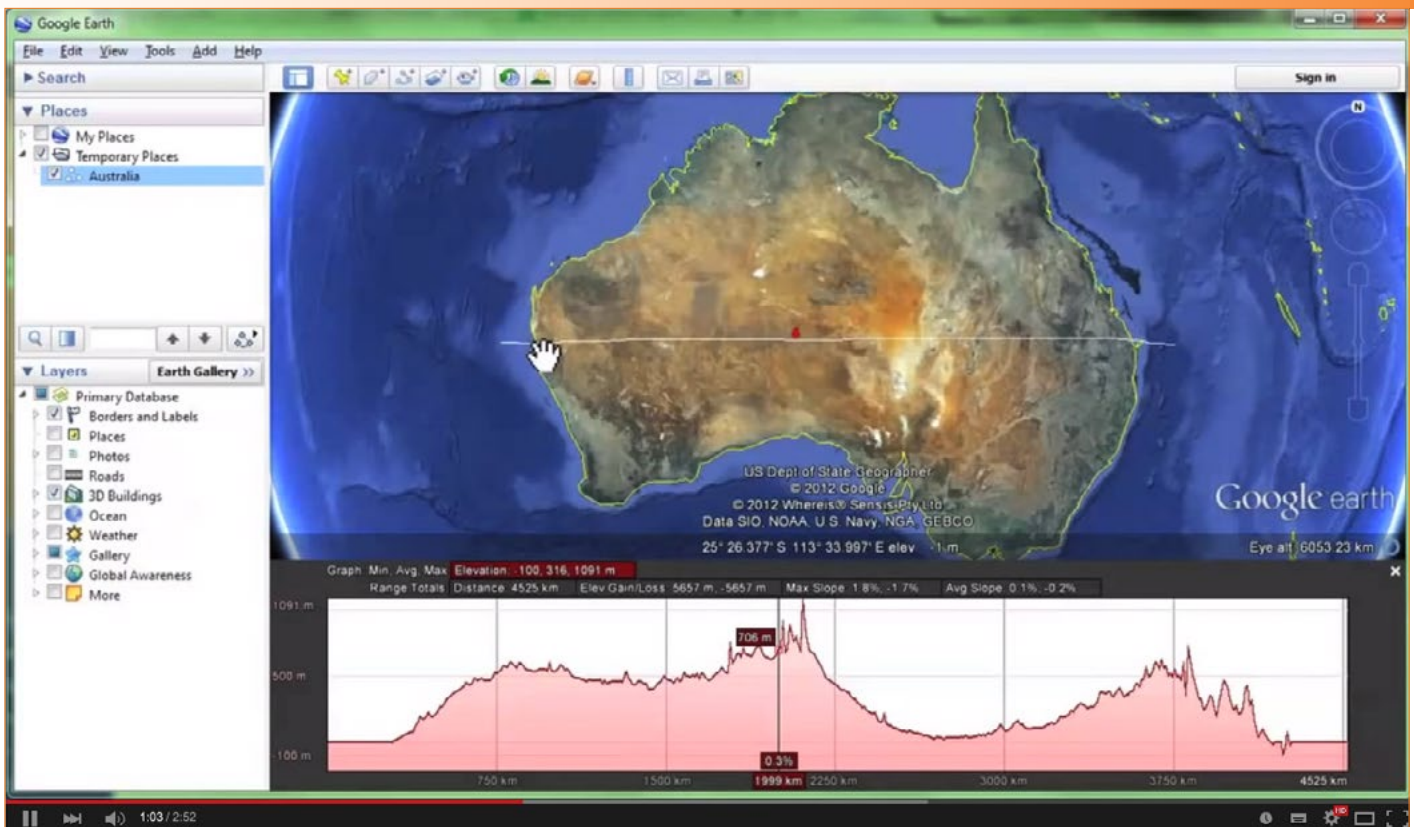
I visited St Ignatius College during Mick Law’s visit with the aim of building my own confidence with spatial technologies. Encouraged by what I saw, and with practice and the help of online tutorials I am now confidently using Google Earth to create cross sections, Google Maps to plot quantitative data collected during fieldwork and Google Tour Builder to incorporate images and qualitative information collected during fieldwork.

Creating elevation profiles using Google Earth

Stage 4 students studying mountain environments were taught to use Google Earth to create topographic profiles of mountainous regions of the world. Following a quick demonstration, students were able to create their own transects and profiles. Mount Everest and the Himalayas, Mt Fuji in Japan and the Andes Mountains in South America were popular choices among students. By moving a marker on the transect they had created, students could read the altitude at different locations across their transect. This activity could be extended to include calculating local relief and gradient in follow up lessons using the vertical and horizontal scales on the images.

Students were able to navigate (zoom over) their chosen location to see the landscape in 3D and in doing so identify valleys, ranges and other features of the mountain terrain.

Integrating spatial technologies into the Geography Classroom



Screen capture showing a transect across Australia and associated profile – from Contour Education tutorial “Google Earth for educators: Visualising elevation”.

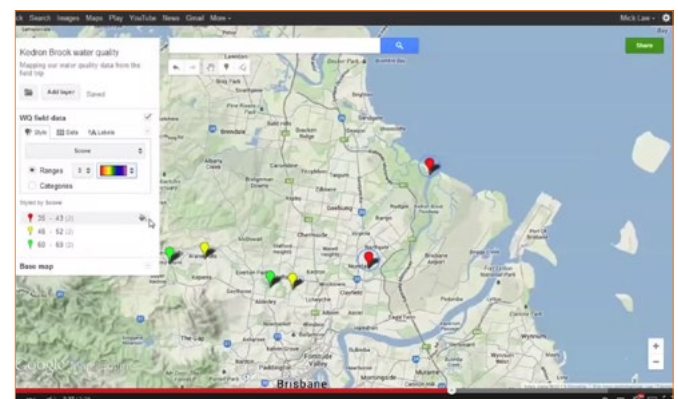
<https://www.youtube.com/watch?v=mjSwzazVkQ8>

Creating a map using Google Maps

Stage 5 (year 9) students studying catchments also learned to create elevation profiles and to identify catchments using *Google Earth* before moving on to create a My Map using *Google Maps*. The map was to show variations in water quality along a section of creek. For this activity the students did not complete their own water quality testing but were given a table of results from another school. After an explanation by Mick Law on the spatial information needed to create a map e.g. place names, latitude & longitude the students were able to show the locations where water was tested, and assign different coloured markers to each place based on the water quality scores in the table.

Site	Lat.	Long.	Score 1 Salinity	Score 2 Turbidity
1				
2				
3				

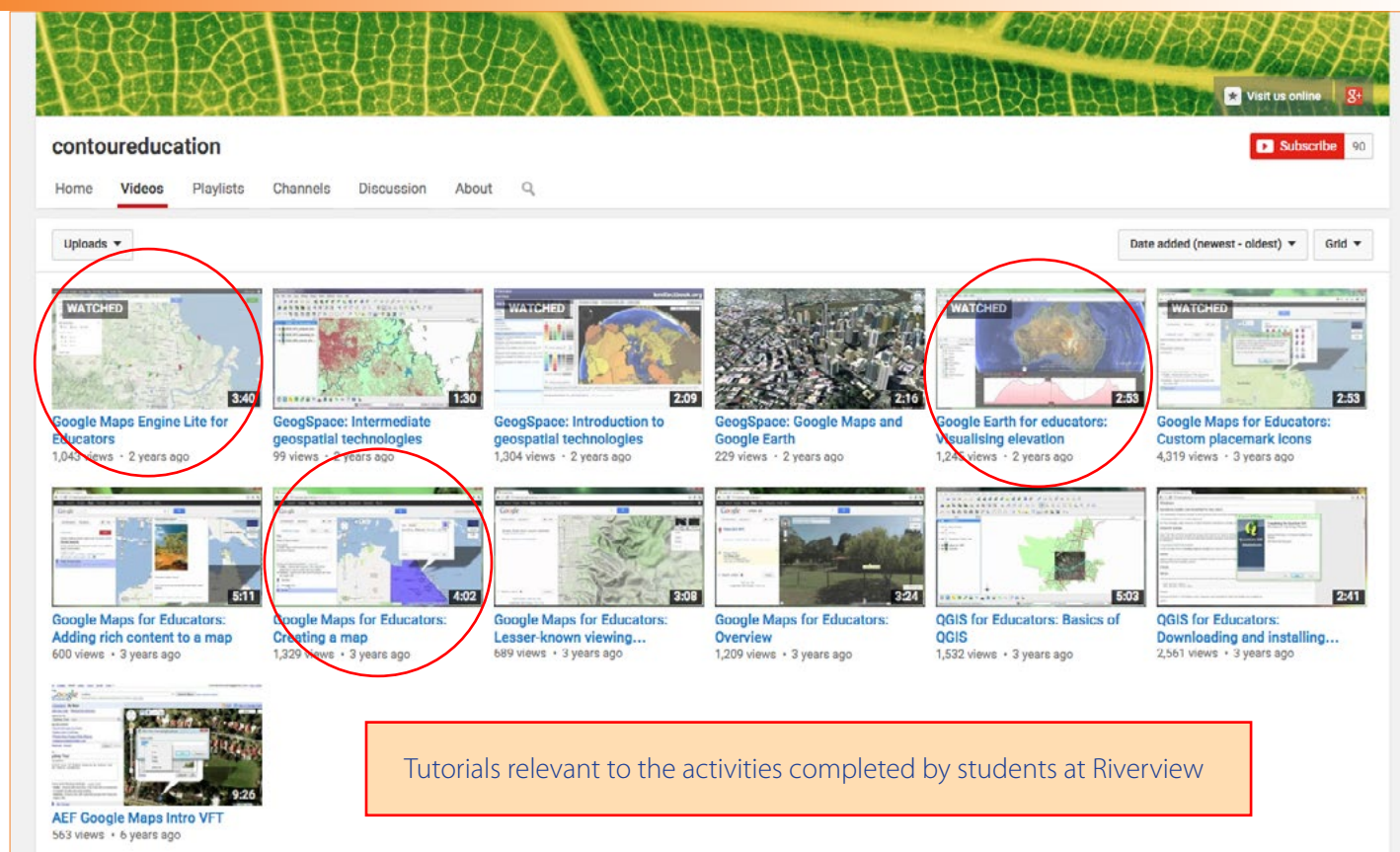
Example of a simple data table used to create a map using Google Maps



An example of a My Map in Google Maps showing variations in water quality.

Tutorials for each of these activities are available for teachers and students on the *Contour Education YouTube* channel – with excellent step-by-step instructions.

Integrating spatial technologies into the Geography Classroom



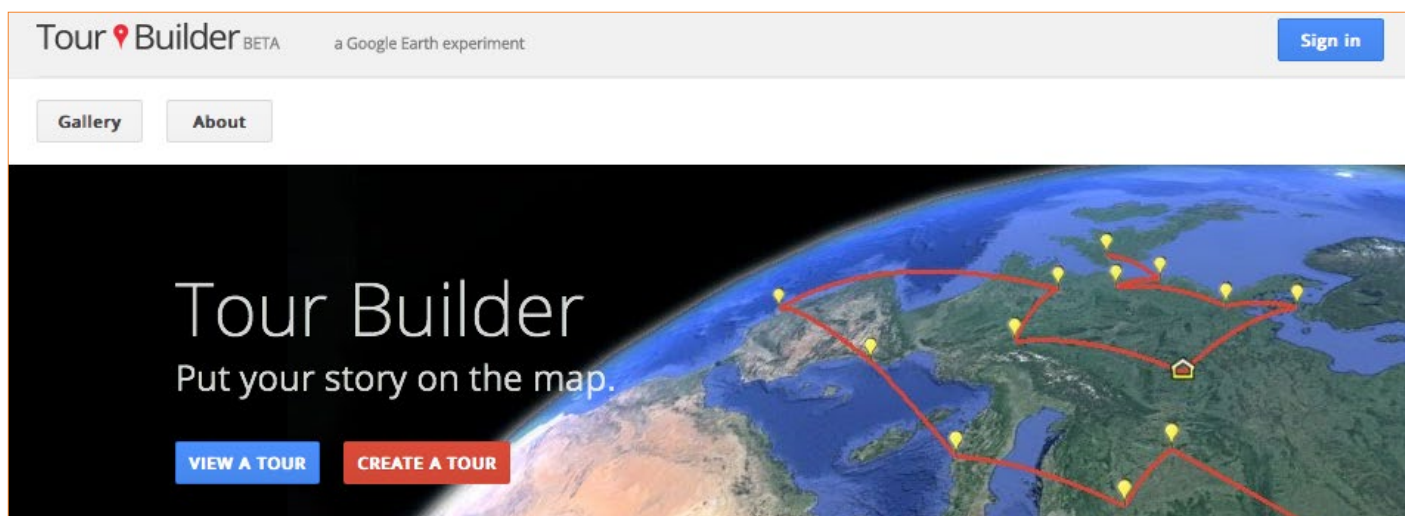
Contour Education YouTube Channel site map

<https://www.youtube.com/user/contoureducation/videos>

Fieldwork and Google Tour builder

Stage 5 (Year 10) students at Riverview were studying Changing Australian Communities. They completed fieldwork in the suburb of Pyrmont in Sydney that involved visiting 17 different sites to **observe, record** and **photograph** current and past landuse activities. Students were required to identify evidence of changes to the character of the suburb (social, economic and environmental) and to propose reasons for the changes.

They assessed the role of different indicators of change on the current characteristics of the suburb. Students worked in small groups to follow a route mapped for them. At the completion of the fieldwork, students were required to integrate their findings and photographs into a story map using **Google Tour Builder**. This activity formed part of an assessment along with written responses to several short answer questions about the changing community of Pyrmont.



"Tour Builder is a new way to show people the places you've visited and the experiences you had along the way using Google Earth. It lets you pick the locations right on the map, add in photos, text, and video, and then share your creation."

<https://tourbuilder.withgoogle.com/>

Integrating spatial technologies into the Geography Classroom



Riverview students observing real estate values Jackson's Landing



Evidence of old and new landuses observed along the harbour

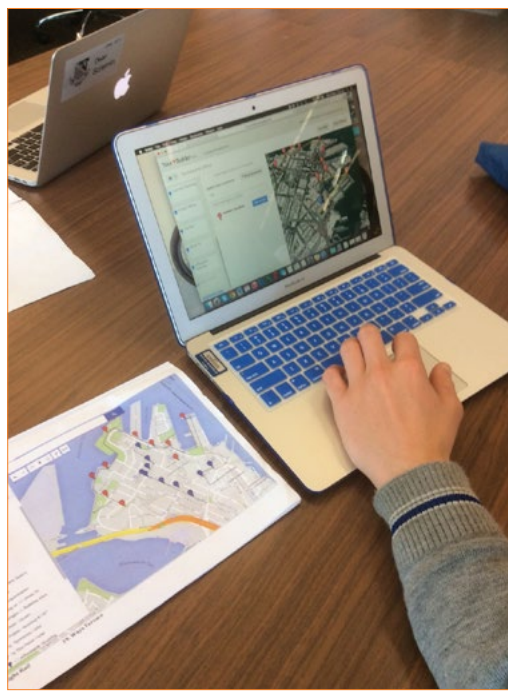


Taking photographs at the old quarry site as evidence of change

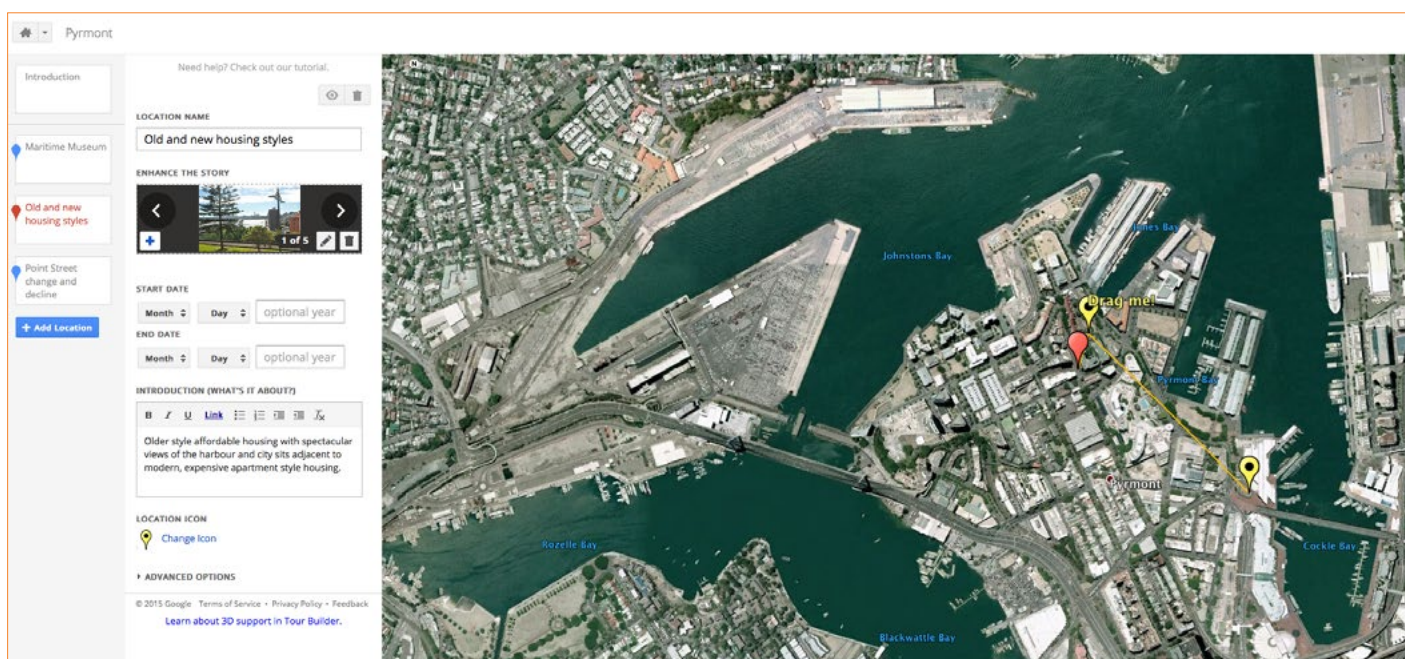


Observing and discussing different housing options – in this case old style social housing beside expensive apartments – all with harbour and city views

Integrating spatial technologies into the Geography Classroom



Plotting locations and uploading photographs using Google Tour Builder



Sample of work in Tour Builder - plotting and naming locations and adding images and observations to illustrate Pyrmont's changing community.

I found Tour Builder very user friendly and easy to navigate. Most students were quick to learn how to use the program and assisted those needing more guidance. Once again there are tutorials available on YouTube and other education websites such as *Free Technology for Teachers: How to Create Tours With Google Earth Tour Builder*.

Many thanks to St Ignatius College, Riverview for facilitating my visit to Geography classes and Year 10 fieldwork activity at Pyrmont and also to Mick Law for making the integration of spatial technologies all seem

so easy. Google Earth, Google maps and Tour Builder are easy to learn spatial technologies that engage students through technology and the link to real world places. The skills students will learn using these applications have workplace and career relevance and add to the contemporary relevance of Geography in the curriculum.

Note: NSW Globe is newer spatial technology resource worth investigating for its quality satellite imagery, links to NSW government data such as land values and GIS capabilities.

Integrating spatial technologies into the Geography Classroom



View of Pyrmont from the Anzac Bridge . Source: Wikimedia Commons

Frequently asked questions about using Google Tour Builder

Why do I need to sign in with a Google account to create tours?

Your Google account gives you a place to save your tours and share them with your friends and family.

How do I upload images or videos to my tour?

In both the Introduction panel and the Placemark panels, you have the ability to add multiple images and videos via the large field labeled "Add Photo". From here you can upload from your local computer, from your Google Drive or from anywhere on the Internet via Google Search.

Who can see my tour once I've made it?

Only you: your tour is private by default. Once you've finished your tour, just click "share tour" to share it with your friends and family or make it public for anyone to see.

Can I update my tour after creating it?

Yes. You can always go back and edit your tour on the map: add pins, delete pins, make pins private, etc.

Once I've shared a tour, can I go back and make it private?

Yes. You can always go back and mark your tour as private after sharing it. Anyone who received a link to your tour before you marked it private will be notified that the tour settings have changed

<https://tourbuilder.withgoogle.com/>

Weblinks

Contour Education

<http://www.contoureducation.com>

Contour Education YouTube channel

<http://www.contoureducation.com/links>

Interactive Geospatial Technologies Blog

<http://geospaceinteractivegeospatial.blogspot.com.au/p/googles-geospatial-tools.html>

Geospatial Revolution

<http://geospatialrevolution.psu.edu>

Google Maps

<https://www.google.com.au/maps/@-46.0263178,106.6955827,4z?hl=en>

Google Tour Builder

<https://tourbuilder.withgoogle.com>

Geographic Mapmaker Interactive

<http://mapmaker.education.nationalgeographic.com/?ls=00000000000000#/>

GIS Mapping your world video

<https://youtu.be/6AlH5TvFoLw>

Introduction to Spatial Technologies video

<https://youtu.be/z6IzhePkuxc>

Spatialworlds

<https://sites.google.com/site/malcolmmcinerney/home>

Spatial World's Blog

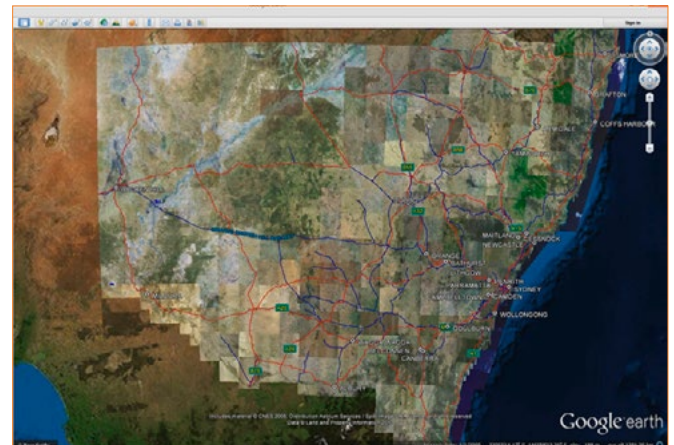
<http://spatialworlds.blogspot.com.au/2011/09/more-than-tool.html>

The Story Map Gallery - students can see the power of maps to tell a geographical story.

<http://storymaps.arcgis.com/en/gallery/#s=0>

NSW Globe

<http://globe.six.nsw.gov.au/>



NSW Globe, Tutorial Figure 17.



Sustainable futures: our place, our subject

Novotel Central – Thursday 5 November, 8.30am – 5.00pm

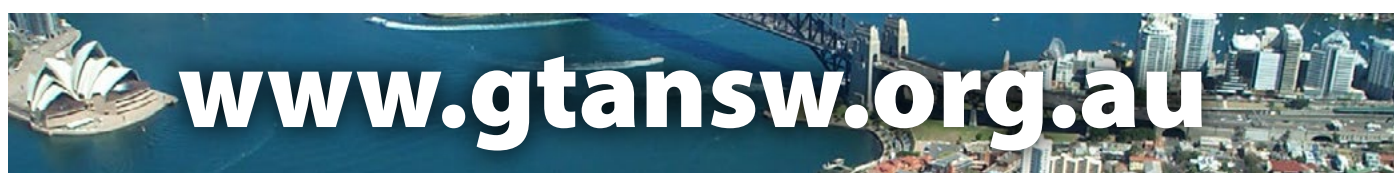
Registration: 8.00am – 8.20am

Agenda for 2015 GTA NSW Annual Conference

Time	Event
8.00am – 8.20am	Registration
8.30am – 8.45am	Conference open and welcome
8.45am – 9.00am	Welcome to Country
9.00am – 9.40am	Session 1: Introducing sustainability in Geography
9.40am – 10.35am	Session 2: BOSTES – Introducing the new K-10 Geography syllabus
10.35am – 11.00am	MORNING TEA
11.00am – 12.50pm	Session 3: Introducing key focus areas within the new syllabus - Geographical concepts - Aboriginal and Torres Strait Islander histories and cultures - Physical geography
12.50pm – 1.30pm	LUNCH
1.30pm – 1.45pm	Awards Ceremony
1.45pm – 2.20pm	Session 4: A career using studies in Geography
2.20pm – 3.25pm	Session 5: Contemporary case studies via inquiry and fieldwork - Regional NSW and Sydney - Barangaroo
3.30pm – 3.45pm	AFTERNOON TEA (Delegates who are attending the Barangaroo site tour will depart the Novotel at 3.30pm for the remainder of the afternoon – please note this is limited to 20 people at this point in time)
3.45pm – 4.50pm	Session 6: Effective teaching and learning in Geography to support the new K-10 Geography curriculum (rotational workshops – delegates choose 2) 1. Tools and Skills 2. Focusing on Fieldwork 3. Barangaroo Learning Portal 4. Sustainability across the curriculum 5. Using technology in the classroom 6. Water Literacy Program 7. World Vision Resources 8. Teaching Geography at Sydney Olympic Park
4.50pm – 5.00pm	Evaluation and close of conference

Please note: some sessions are subject to change and in the process of being confirmed

Cost: GTA NSW Member \$260, Non-member \$300, Concession: Member \$150, Non-member \$200



DETROIT –

A large city of the developed world

Alexandria Lucas,
Warners Bay High School



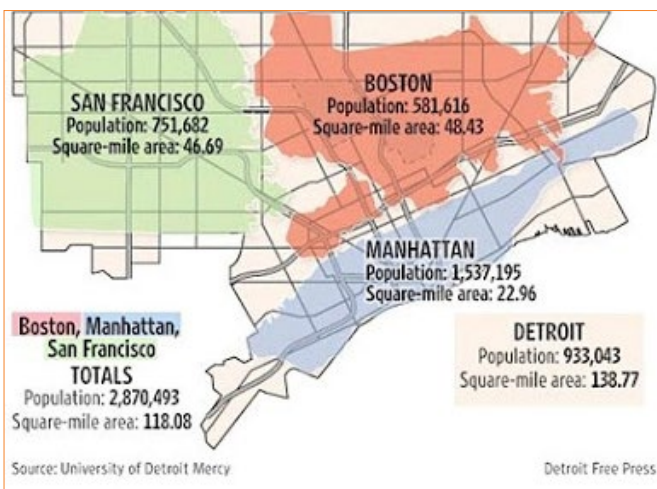
Image Source: Wikimedia Commons

Teachers are constantly looking for new and engaging case studies for senior students. These studies need to be contemporary, easy to research and directly related to the syllabus content. Living out of a large city, my HSC students felt that Sydney was just as foreign to them as any international city. This led to the decision in 2013 to teach Detroit as the case study for this section of the course.

Detroit is an excellent alternative to the Australian cities many teachers choose for their students to study for the HSC. The Urban Places topic calls for *'a case study of the results of the urban dynamics in a large city selected from the developed world'*. Detroit illustrates the dynamics of suburbanisation, urban decline, urban renewal and consolidation. Located at 42° 33' N and 83° 04' W, in the state of Michigan, USA, Detroit was a famous motor car manufacturing city that declared bankruptcy in 2013 after 40 years of urban decline. After the city's bankruptcy a extraordinary amount of media reports, statistics, infographics, documentaries and government released information about the rise, fall and rebuilding of Detroit became available. Students have shown increased levels of engagement with this section of the course and in 2013 candidates who chose the urban option in the extended response section of the HSC paper scored highly.

The following map puts the scale of Detroit as a large city in perspective.

Comparing Detroit to three other major US cities



Source: http://1.bp.blogspot.com/_H6XW_a4TYus/SjNV85UAgvI/AAAAAAAAA44/T98M-yLkJPA/s400/detroit+comparison+map.jpg

Derelict Packard Automobile Works

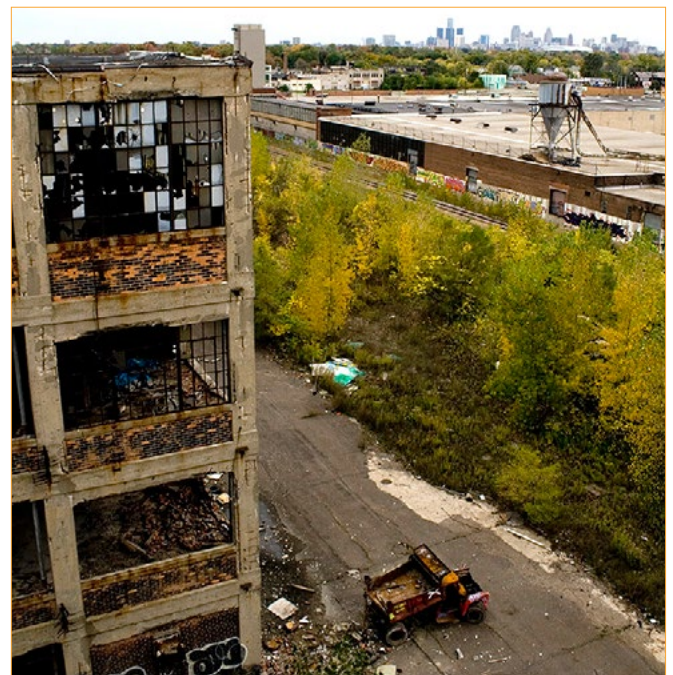


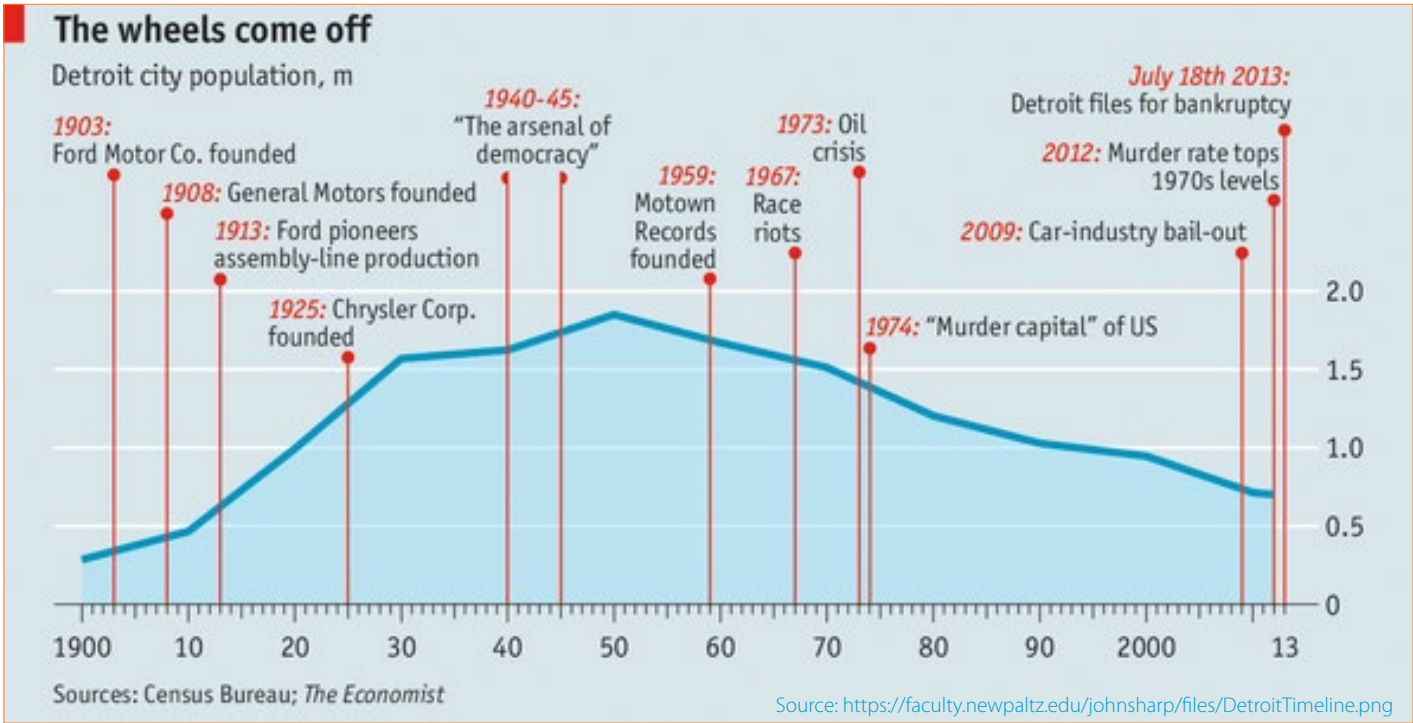
Image Source: Wikimedia Commons

Background

When teaching Urban Places I start with the Urban Dynamics section. This is mostly due to the requirements of our internal assessment schedule and my desire to use the dot point concerning the suburb/country town as a fieldwork assessment item. I found this worked well as a lead up to studying Detroit as the local study involved discussing the concept of urbanisation and the push/pull factors associated with it. From here, I then develop the students' knowledge on the factors that cause change in cities (eg economic restructuring) and how this brings about different urban dynamics. After examining all of the urban dynamics and illustrating them using one example of each from around the world, students were ready to explore the urban dynamics operating in Detroit and the consequences for the city.

Detroit – A large city of the developed world

The infographic below provides an overview of the rise and fall of Detroit.



A quick google search for ‘Detroit infographics’ will not disappoint when developing resources for this case study.

How to structure the case study

From the introductory work my teaching approach for this case study involved using a timeline for a study of each urban dynamic and exploring each within the specified time period.

Students were given an outline of each dynamic operating in Detroit and an explanation on how to examine the effects on the city. A large amount of time was spent exploring the syllabus ‘dash points’ to ensure students understood the meaning of each point or concept eg *culture of place*. When students demonstrated an understanding of these syllabus points they were provided with a media file of articles, You Tube videos, images, infographic weblinks,

An example of a summary scaffold when examining the media file

1970s-present – Urban Decay			
Definition and drivers			
Social Structure and Spatial patterns of advantage and disadvantage, wealth and poverty, ethnicity	Changing economic character, nature and location of residential land, commercial and industrial development	Culture of place as expressed in the architecture, streetscape, heritage architecture, noise, colour, street life, energy, vitality and lifestyles	Growth, development, future trends and ecological sustainability.

Detroit – A large city of the developed world

newspaper articles and the documentary *Detropia*. Students worked independently to compile notes into summaries, interspersed with class discussions on their findings. The change of pace was good for the students, who were given ownership over their work, in an environment where information sources had already been edited to ensure usefulness and relevance to the syllabus. This approach has been shown to aid student's memory of content for exams because they are involved in processing information for themselves. The approach relies on students having a thorough understanding of the syllabus language to enable them to match the statistics found in articles to the correct dash point. After students have completed compiling the information the focus turns to the HSC, explaining how the information might be examined with students completing practice questions and essay scaffolds.

A brief overview of the urban dynamics of change operating in Detroit

Suburbanisation 1940 – 1970

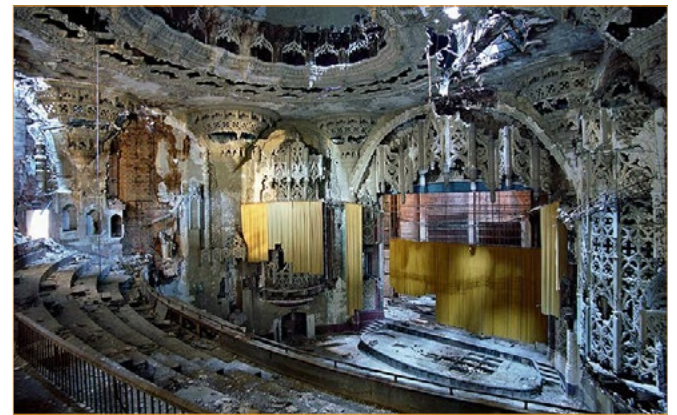
Due to a lack of natural boundaries, suburbanisation in Detroit happened with ease. Detroit is famous for being the motor city and as such, it's highly paid manufacturing workers had the opportunity to purchase motor vehicles at reduced prices. During WWII further expansion of freeway services led to greater ease of accessing the city via road. After the war, many auto industry companies decentralised, moving further out of the city into newer facilities that had been constructed for war manufacturing operations. Slowly people began to move toward the suburbs for all the things suburbanisation is associated with such as large

spaces and cheap land. Unique to pushing Detroit's suburbanisation was a forced integration policy that caused race riots, the two most notable ones occurring in 1943 and 1967. After the race riot in 1967 the process of suburbanisation was coined the "white flight". The most mobile people of Detroit, the wealthy, made up predominately of white Americans, moved to the outskirts of the city, forming a doughnut shaped circle of wealth and distinct pattern of ethnicity around the city. The process of suburbanisation and the economic restructuring of the automobile industry is what lead to the decline of Detroit.

Abandoned housing



... and the interior of a derelict theatre in Detroit.

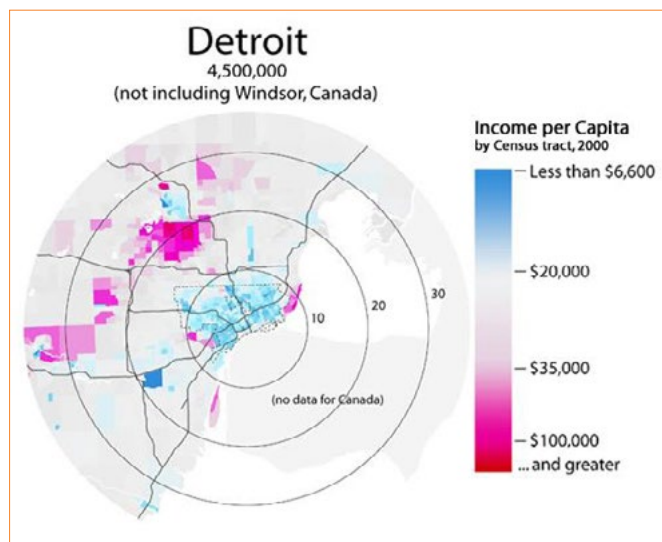


Source: http://3.bp.blogspot.com/_L52qel-j4jM/TSNY7OmJubl/AAAAAAAAA8k/8F8BpEoghHc/s1600/detroit-01.jpg

Urban Decline 1970 – present

The urban decline of Detroit is well documented and a quick Google search will reveal hundreds of articles, blogs, images and infographics for this section. The documentary *Detropia* highlights Detroit's urban decline brilliantly. As the wealth moved to the suburbs with residents, so did their tax payments, leaving the city of Detroit with a lack of money to run city services. This was compounded by the declining motor industry and subsequent loss of jobs. The population started to decline and during this time Detroit became known as the murder capital of the US. A lack of funds forced the city to turn off street lights, close schools in

Map of Detroit showing Income per Capita



Source: https://en.m.wikipedia.org/wiki/Detroit,_Michigan

Detroit – A large city of the developed world



Source: http://www.huffingtonpost.com/2013/07/22/detroit-bankruptcy-infographic-chart-debt_n_3625421.html

neighbourhoods with low numbers, reduce emergency services and limit bus routes. The patterns of spatial advantage and disadvantage become clear, areas of low population density and high home abandonment had very limited services available and the city directed its limited funds to small areas of concentrated population. The city of Detroit filed for bankruptcy in 2013 and at this point its population was 83% black African American with an unemployment rate of 15.8% and the highest per capita crime rate of the United States' 25 largest cities.

Urban farming by Hantz group



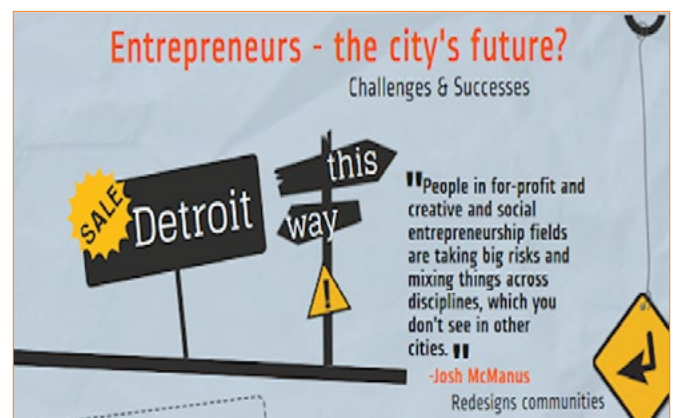
Source: <http://www.hantzfarmsdetroit.com/>

... and a local community group



Source: <https://foodlabdetroit.com/media/detroits-newest-urban-farming-trend-pretty-fishy>

Encouraging urban renewal



Source: <http://america.aljazeera.com/content/dam/ajam/images/shows/Stream/DetroitTreplnfoGraphicThumb2.png>

Urban Renewal and Consolidation

2010 – present

A shortage of information on this urban dynamic requires a more targeted approach to Googling. The links included at the end of this article show that urban renewal is occurring in Detroit and some new concepts have developed to describe associated changes including "ruin porn" and 'urban exploring' – a form of tourism that is now boosting the Detroit economy. Consolidation is part of the city's urban renewal projects. Detropia covers this urban dynamic very well, especially in how it affects *culture of place*. The city's government has forcibly moved people out of less densely populated areas in order to concentrate on restoring services to smaller, more manageable parts of the city. One-third of Detroit's land mass has been abandoned and is now vacant, yet there are some very exciting renewal projects which link into the **sustainability, the future and growth** sections of the syllabus. Urban farming is one form of renewal with 700 urban farms currently yielding more than 120 tons of produce each year. Detroit is ambitious and intends to become the first food self-sufficient city as a result of

Detroit – A large city of the developed world

the success of urban farming initiatives. The rise of the arts scene and the changing demographics of the city as a result of the number of artists and creatives moving into downtown Detroit (due to living affordability) is a major driver of urban renewal. The clashes occurring between traditional Detroiters and the new 'hipsters' and consequent gentrification of downtown Detroit also makes an interesting study.

Resources

Use the following resources as a start to using Detroit as a study of the operation of urban dynamics in a large city in the developed world.

- Detropia – <http://www.detropiathefilm.com/> a documentary showing the results of urban decline, urban renewal and consolidation. Stream on Netflix or purchase on iTunes. The documentary provides a great virtual fieldtrip for students as it takes you into community meetings, interviews with locals and provides excellent footage of the current state of Detroit.
- Thematic map exercises can be created from the following weblinks when examining the results of urban decline and urban renewal, especially *social structure, patterns of advantage and disadvantage, wealth and poverty, ethnicity*.
<http://www.neighborhoodscout.com/mi/detroit/grand-lawton/#schools>
<http://www.newrepublic.com/article/113946/detroit-bankruptcy-2013-maps-numbers>
- National Geographic have published a number of articles on Detroit, all with excellent visuals, maps, interviews and articles. A few are listed below for Urban decline, renewal and sustainability
<http://www.nationalgeographic.com/taking-back-detroit/index.html>
<http://news.nationalgeographic.com/news/2014/09/1409010-detroit-mounds-debris-dumping-vacant-lots/>
<http://news.nationalgeographic.com/news/special-features/2014/08/140822-detroit-michigan-water-shutoffs-great-lakes/>
- For urban renewal and sustainability the following links are valuable
<http://www.theguardian.com/travel/2014/mar/02/detroit-michigan-first-steps-urban-renewal>
http://www.huffingtonpost.com/2013/11/26/detroit-in-20-years-2033_n_4269422.html
<http://detroitfuturecity.com/about/>
- New Republic article with thematic maps
<http://www.newrepublic.com/article/113946/detroit-bankruptcy-2013-maps-numbers>
- National Post – a comparison of Detroit over time
https://nationalpostcom.files.wordpress.com/2013/02/fo0202_detroit1200c.jpg - this has a great comparison of Detroit over time.

New vehicles awaiting shipment by rail, Detroit 1973



This article was first published July 18, 2013 -

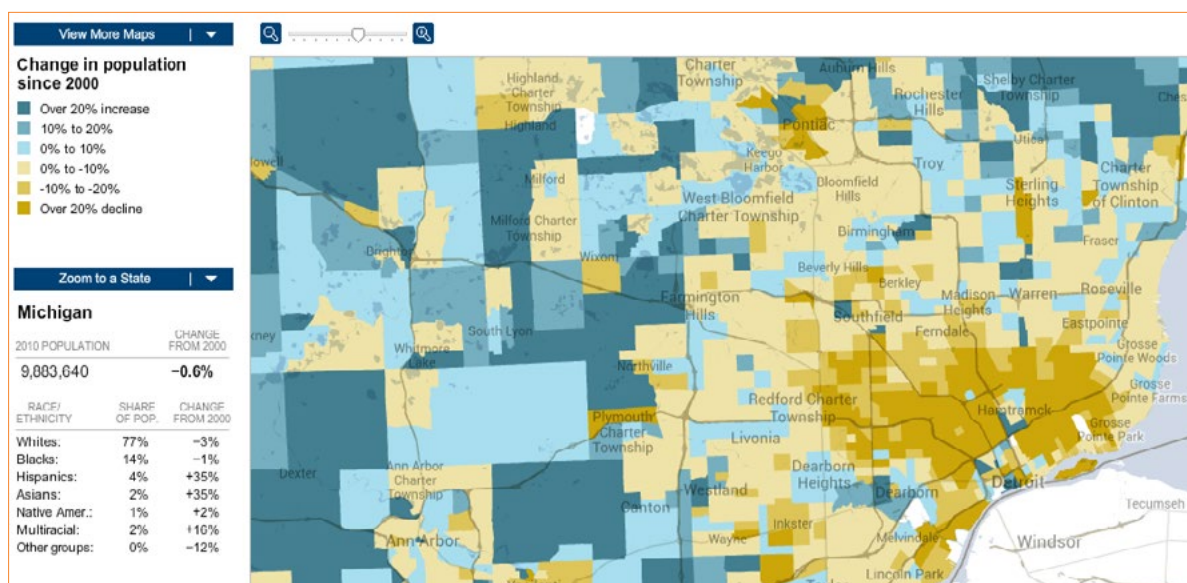
Source: <http://www.newrepublic.com/article/113946/detroit-bankruptcy-2013-maps-numbers>

The Decline of Detroit in Five Maps

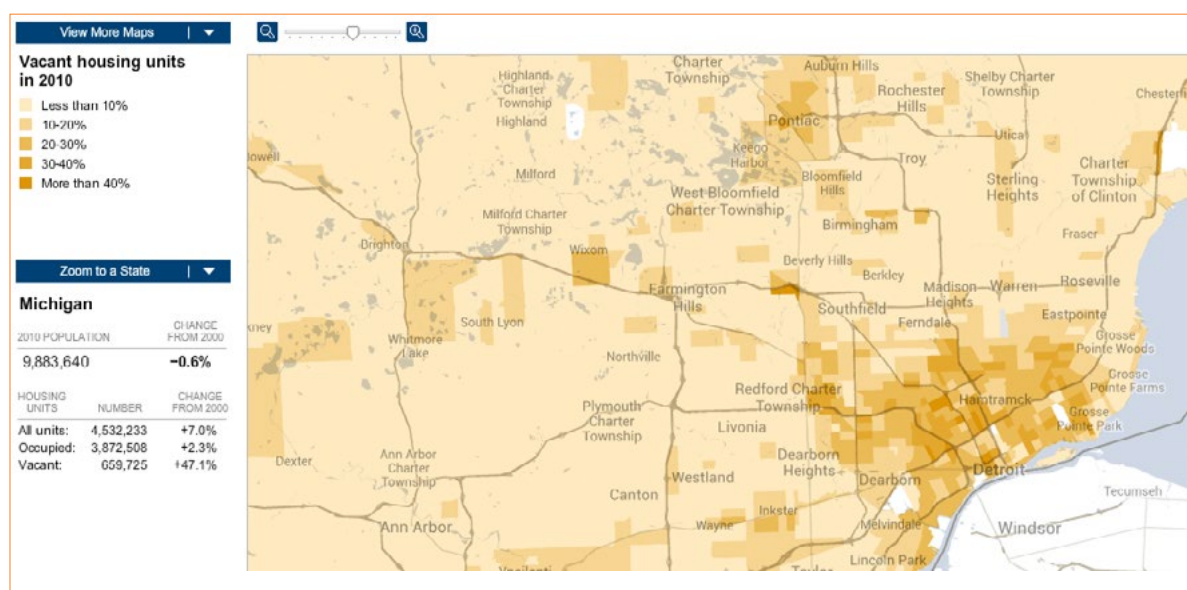
By Nate Cohn @nate_cohn

Detroit was once the nation's fourth most-populous city. Today, it became the largest American city to [file for bankruptcy](#). The Motor City has been in decline for decades; its population peaked at 1.8 million in 1950 and declined to just 700,000 people in the last Census. Predictably, its economy faltered—especially over the last decade. The unemployment rate is over 18 percent; fewer than half of adult residents are employed. A shrinking tax base made the city's debt unsustainable—forcing it into bankruptcy. The decline of Detroit is illustrated by two **New York Times** features documenting the [2010 Census](#) and the [2006-2009 American Community Survey](#).

Over the last decade, Detroit's population fell by nearly 26 percent. Detroit's suburbs have lost residents too, but not nearly as many.

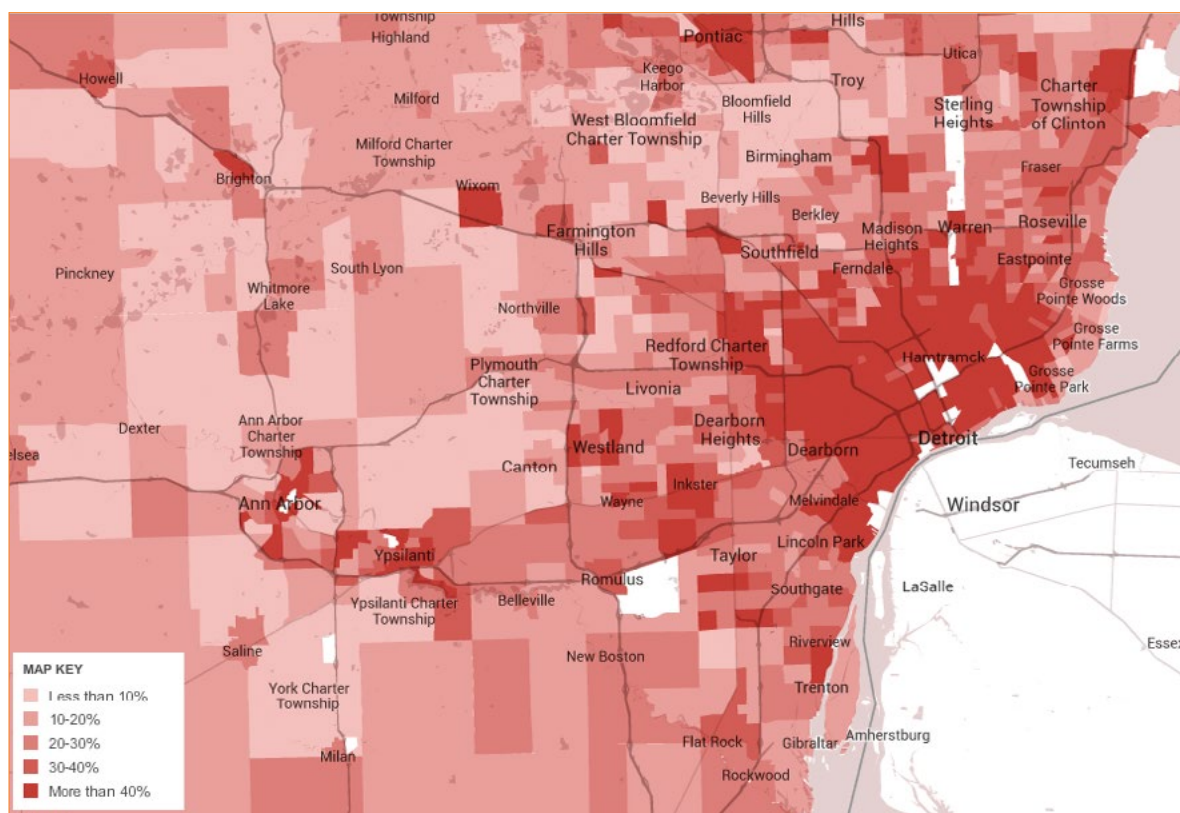


It is not quite right to say that Detroit is empty. 700,000 people still live there. But at its peak, the city housed 1.8 million people, and thousands of homes are now abandoned. In some neighborhoods, half of all homes are vacant.

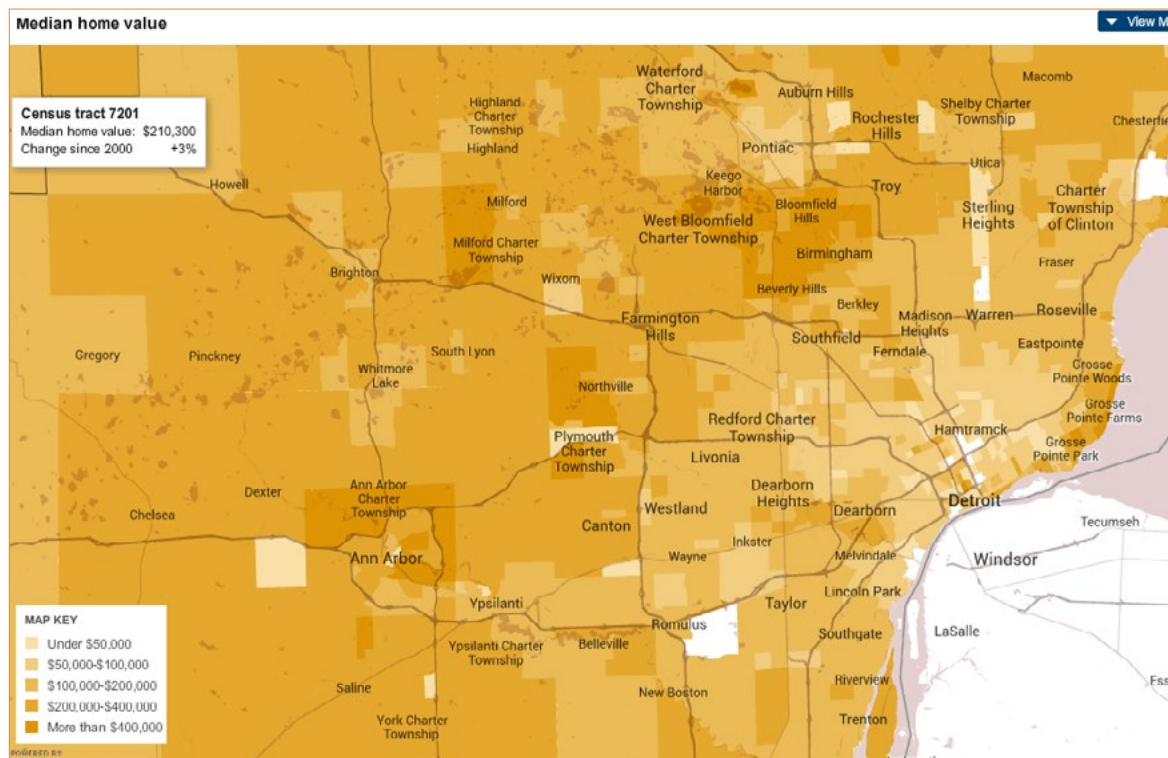


New Republic – The Decline of Detroit in Five Maps

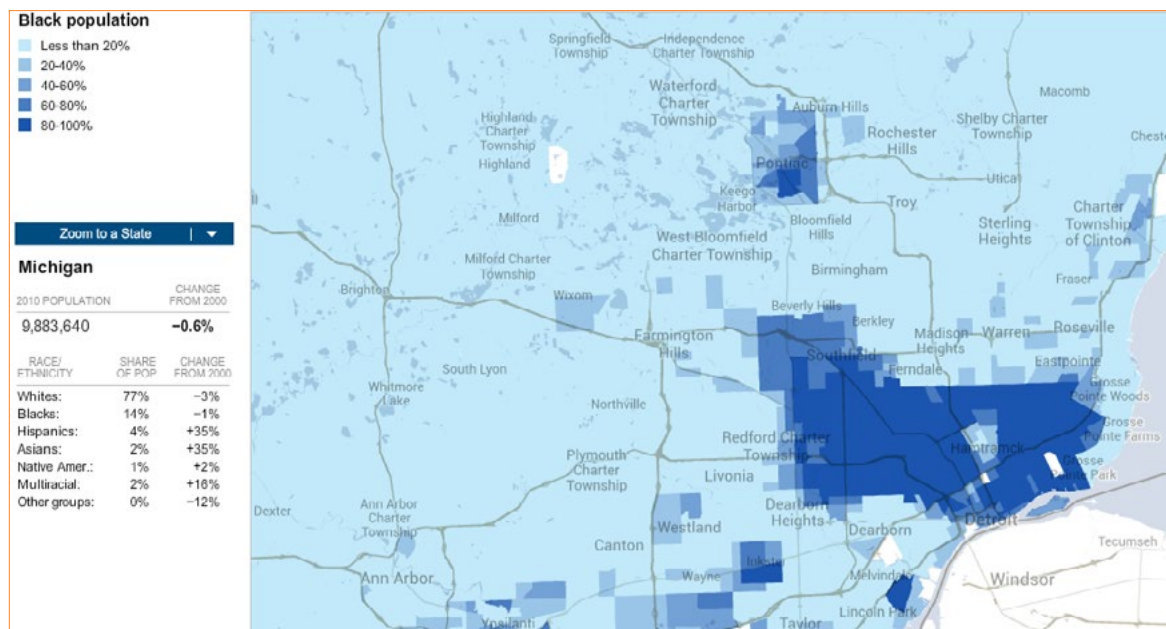
Detroit's urban core is deeply impoverished. The median household income is just \$26,000--the map below shows areas where households make less than \$30,000 per year



Home values are extraordinarily low. In some neighborhood, the median home is worth less than \$40,000.



And no discussion of Detroit is complete without mention of race and segregation. In 1950, when Detroit's population was at its peak, the city was 82 percent white. After decades of white flight, that number is reversed: the city is now 82 percent black and 10 percent white. On the map below, Detroit's city limits are obvious—especially its northern boundary, along the infamous "Eight Mile Road."



www.geocareers.net.au

Meet a Geographer – Caring for the environment

Kathryn Goyen

**Professional Development Coordinator – LandLearn
Department of Primary Industries (DPI)**

In my work every day is different! Some examples of things that I do, include researching issues relating to sustainable agriculture and natural resource management, writing the information up into activities, and trialling these activities with school students. I also run workshops with teachers showing them ideas of activities that can be undertaken in schools. On some days I will be in the office, however on other days I am out in forests or paddocks taking teachers and students on fieldwork looking at salinity, or issues associated with water use or land management.

Read more about Kathryn Goyen at GeoCareers –

http://geocareers.net.au/environmental_care/goyen_k.htm

The GeoCareers website is an initiative of the Australian Geography Teachers' Association (AGTA).



DRONES: ICT IN ACTION

**Patricia Smith and Vanessa Sefton,
Monte Sant' Angelo Mercy College, North Sydney**

Introduction and conclusion by Lorraine Chaffer GTA NSW

The development of ICT hardware and software creates many opportunities for Geography teachers to collect geographical data in the field and develop student conceptual knowledge and understanding. Starting with a small project that builds confidence with new equipment and / or software benefits both students and teachers, who can then extend the use of that technology to other aspects of geographical study such as observing and recording changes to natural and human environments over time, environmental processes and management.

The use of drones at Monte Sant' Angelo Mercy College was the initiative of two classroom teachers seeking to develop the geographical skills of their year 9 students in a way that was exciting and different.

Using drones for skill development

At Monte Sant' Angelo Mercy College we were looking at a way to engage students in the learning of geographical skills as well as allowing them to collect their own data and make observations. The skills that were identified specifically for Year 9 Geography were types of photos, large-scale versus small scale of photographs, calculating distance using photographs and maps, determining aspect and estimating time of day from photographs.

After discussion and a little help from the ICT Department we decided that using a drone could bring those skills to life. The school purchased a drone and while this might seem quite extravagant, a drone capable of taking still and video images can be purchased from the Apple Store for \$299.95. In some schools faculties, such as Science, could share this cost.

After learning how to fly the drone and assessing its capability, a lesson was created with the purpose of taking photographs that could be used to develop geographical skills. A Lesson Plan and Risk Assessment used in preparation for the drone related lessons have been included in this report along with comments made by participating students. Three student worksheet examples conclude this article.

Student feedback

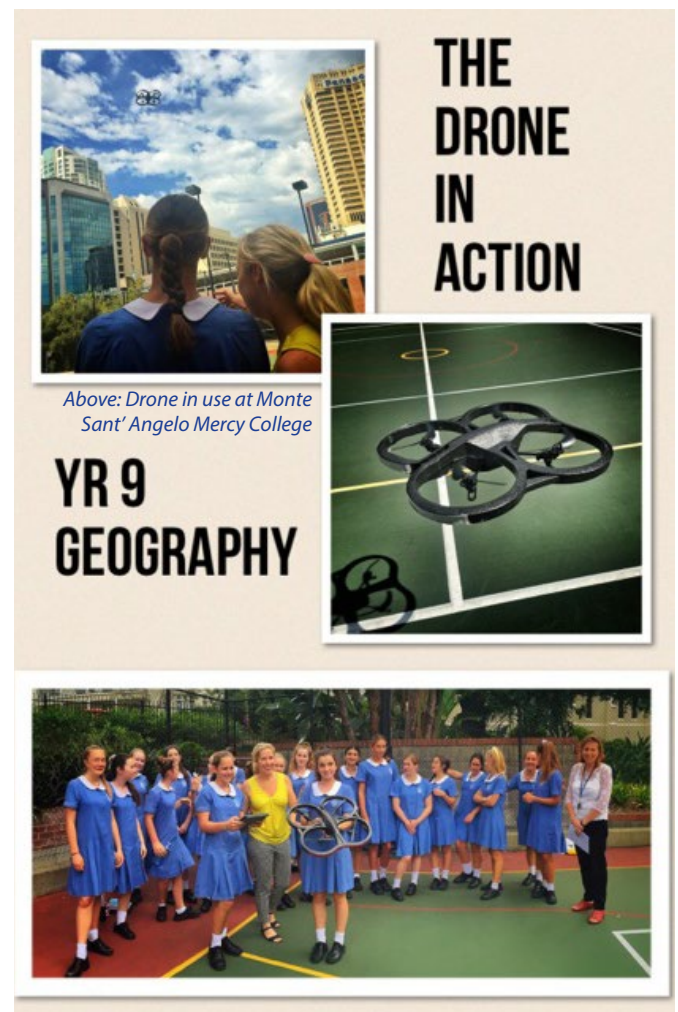
Has using the drone helped in your understanding of large and small-scale photos?

100% found this really helpful to understand scale

Has using the drone helped in your understanding of the time of day the photos were taken?

85% said yes they found it really helpful and now understand this skill, 15% said it helped a little but are still a bit confused

Has using the drone helped in your understanding of determining the direction the photographer was facing?



Above: Drone in use at Monte Sant' Angelo Mercy College

**YR 9
GEOGRAPHY**

Above: Year 9 students fly the drone over the school grounds to take aerial photographs and video footage

85% said yes they found it really helpful and now understand this skill, 15% said it helped a little but are still a bit confused

Can you now differentiate between different types of photos?

81% yes they can, 15% still a little confused and 5% still cannot differentiate between photos.

Lesson Plan

Subject/Course: Year 9 GEOGRAPHY	Date: Friday 20 th March 2015
Topic: Geographical Skills and Tools	
Lesson Title: Using the Drone to teach Geographical Skills	
Lesson Objectives: By the end of the two lessons students will have a greater understanding of geographical skills including identifying types of photos, differentiating between large and small-scale photographs, calculating distance and direction, determining aspect and estimating time of day from photographs.	
Pre-lesson discussions: Prior to the lesson, teachers will discuss a range of Geographical Skills with the students – much of which is revision from Year 7 and 8.	
Summary of tasks/actions: In the first 55-minute lesson the Year 9 girls will learn about how the drone can be used to learn and apply geographical skills (including direction, scale, types of photos, aspect and distance). Some students within the class will have the opportunity to experience flying the drone on the top Tennis Court of the College. The purpose of this activity is to record both video footage and photographic data that can then be used to teach a range of geographical skills. Photos taken by the Drone will be both Vertical Aerial Photos and Oblique Aerial photos of the College. - Students will develop and gain a greater understanding of Geographical Skills and related concepts including: - Collection and observation of digital images - Determining different types of photos (Ground level, vertical aerial and oblique aerial) - Direction the photographer was facing - Scale of photographs (large scale vs. small scale) - Estimating time of day using photos - Aspect - Students will have fun integrating technology into their lesson to enhance their learning experience. - In the second 55 minutes students will return to the Geography classroom to view the footage taken from the Drone using the Ipad connected to the large screen. - Students discuss this footage and use it to answer Geographical Skills questions including the direction the photographer was facing, scale (small and large photographs), types of photographs, estimating time of day using photos, calculating distance and determining aspect. These skills relate specifically to the footage (photo and video footage) taken using the Drone. - Worksheets were created for students to demonstrate an understanding of each of these skills.	
Materials/Equipment: - Drone plus protective cover - Charged batteries for Drone - Ipad with APP used for the Drone - First Aid Kit on hand - Worksheets for the geographical skills - Risk Assessment - Survey for students at conclusion of the lesson	References: 10 Uses of Drones and Students (article and Slideshare) www.huffingtonpost.com/vala-afshar/10-uses-of-drones-in-high_b_5988758.html Drones used in creative ways at Universities (article) http://techpageone.dell.com/tech-culture/drones-used-in-creative-ways-at-universities/ Five Surprising Drone Uses (National Geographic article) http://news.nationalgeographic.com.au/news/2013/12/131202-drone-uav-uas-amazon-octocopter-bezos-science-aircraft-unmanned-robot/

Risk Assessment

1. Activity

Activity description: Using drones in Year 9 Geography		
Teachers/Leaders: Ms. V Sefton (Classroom teacher), Mrs P Smith (Teacher), member of ICT staff		
Class group: Year 9 Geography		No. of students: 23 students
Start date: 20/3/15	Finish date: 20/3/15	Supervisor ratio: One staff member to 9 students

2. Identifying potential risk to students

Inherent risk	Action required/approval
Low – Little chance of injury	Manage through regular planning processes
Medium – Some chance of an incident and injury requiring first aid	- Complete a risk assessment - Consider obtaining parental/carer permission, and if activity held off-site parental/carer permission is required - If activity is held off-site, refer to school variation of routine application
High – Likely chance of a serious incident and injury requiring medical attention	- Risk assessment must be completed - A member of the executive must approve the activity - Parental/carer permission is recommended and if the activity is held off site, parental/carer permission is required
Extreme – High chance of serious incident resulting in highly debilitating injury	- Consider conducting an alternate activity - Risk assessment must be complete - Principal approval is required prior to activity being conducted - Parental permission must be obtained for student participation

3. Supervision of students

This activity will be conducted on school grounds therefore a number of teachers may be observing the activity or be close by.

The classroom teacher, as well as another Geography teacher will supervise students.

A member of the ICT department will also be assisting with the activity.

The staff to student ratio will be at a minimum, one staff member to nine students.

All teachers supervising students will have current First Aid Qualifications.

All teachers have experience flying the drones and have been trained in how to land drones in case of an emergency or danger.

4. Activity specific equipment and facilities

First aid kit to be taken to McQuoin Centre and the Tennis Courts where the activity is taking place

School nurse is available on-site

This activity will be no longer than a 40 minutes – therefore students should not need sunscreen as they will not be more than 20 minutes flying the drone on the tennis court

Students will be wearing school uniform, therefore protective footwear will be worn

Drones will be protected by a safety barrier- this protects the students from the propeller and protects the drone from breakage

Risk Assessment

5. Legal requirements: Governing Bodies/Associations

- As of 11/12/14 it is illegal to fly any drone for commercial gain without clarification
- The drone may not fly closer than 30 metres to vehicles, boats, buildings, that are not on your private property or you must have explicit permission from the private property owner. (The drone will only be flown on the grounds of MSAMC)
- Drones are not to be flown over any populated areas such as beaches, heavily populated parks or sporting grounds when a game is taking place (The drone will only be flown on the grounds of MSAMC)
- Drones are not to be operated within a 5.5 km radius of any aerodrome, airfields, airport, seaplane taking off, helicopter landing sites which may be located at local hospitals, police stations or other locations you may not be aware of. (The drone will only be flown on the grounds of MSAMC)
- Drones can only be operated in daylight hours (The drone will be operated during school hours)
- You may not fly a drone above 123 metres. (The drone will be set to fly no higher than 27 metres)

Sources: Civil Aviation Safety Regulations 1998, rpastraining.com.au/casr-101-uav-drone-legal-or-illegal

6. Activity – specific hazards/ risk and associated control measures

Activity	Risk	Control measure
Students assemble in McQuion Centre	Low	If a student falls on the way from the classroom to the McQuion Centre, first aid will be available.
Demonstration on drones operation. A discussion of what the drone will be measuring	Low	The activity is occurring on tennis courts and in the School Hall, therefore away from building works. Students may get in the way of a drone. The drone may make contact with them. This is unlikely to happen as teacher has experience flying the drone and knows how to make an emergency landing with the drone. The drone has a protective shield on it, so if it did make contact with the student, the student will sustain minimal injury. Weather will be monitored, if it is raining or too windy the activity will be postponed to a more suitable weather climate. First aid kits and a nurse on site will be available.

A new perspective for Geographers

“For all of human history our perspective has basically been stuck at eye-level and now for the first time in history we can see the world the way the birds do”.

Chris Anderson, 3D Robotics

<http://paulstamatiou.com/getting-started-with-drones-quadcopters/>



Drone applications

Drones are being used in many situations relevant to geographical study. When students understand how drones work and use them in applications at a local scale their understanding of drone use at a global scale will be enhanced.

Drones are being used globally for:

- mapping vegetation, agricultural areas and urban places (landuse)
- monitoring changing environments such as deforestation and coastal erosion
- collecting data for GIS applications
- wildlife monitoring
- environmental management
- disaster relief and management such as the after the Nepal Earthquake
- assisting with precision agriculture
- policing
- developing GIS relevant to all of the above applications

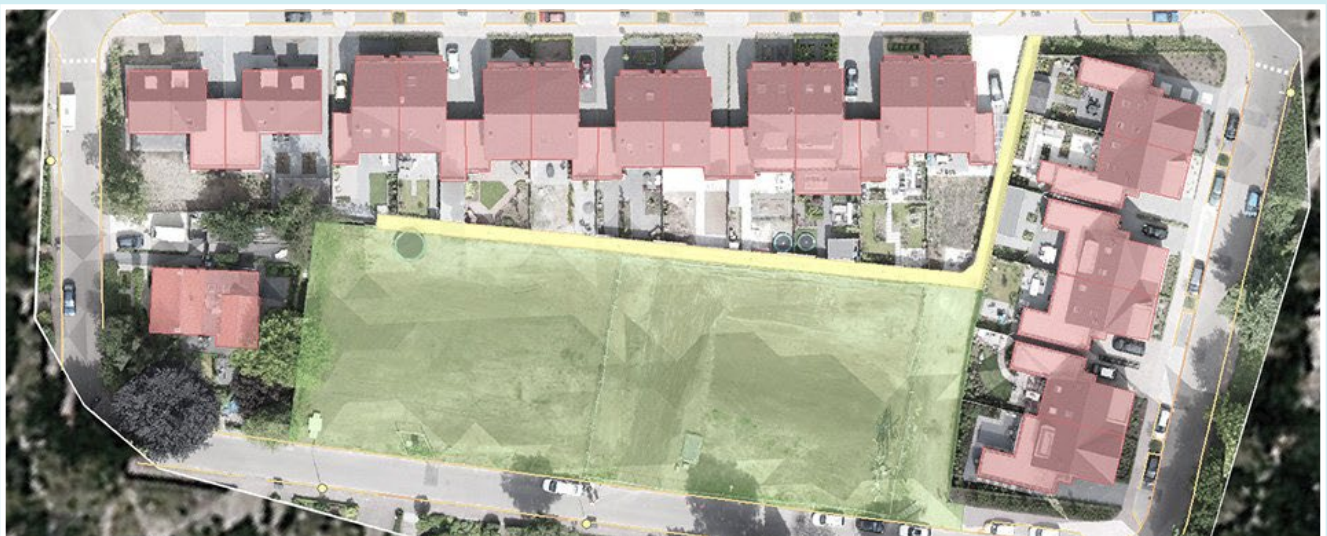
Microdrones: Mapping made easy



<http://www.microdrones.com/en/applications/areas-of-application/mapping-gis/>

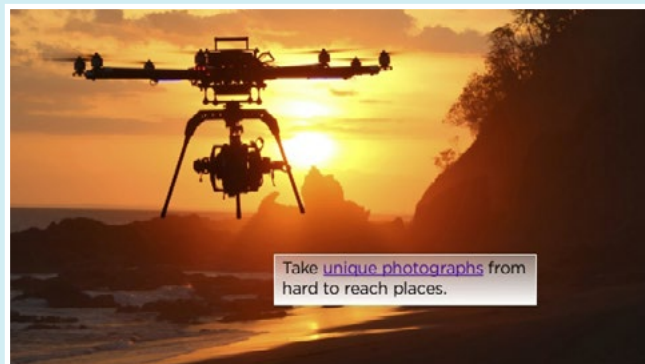
"Mapping zones/areas etc. are an important part of Geographic Information Systems, and one which is simplified primarily by the use of microdrones. Using a laser scanner, entire areas can be captured quickly and easily, and later processed on computer. Moreover, highly detailed high-resolution landscape photography can be created with professional cameras."

Drones used to map neighbourhoods



<http://www.microdrones.com/en/applications/areas-of-application/mapping-gis/>

Some uses of drones illustrated in Slideshare



www.huffingtonpost.com/vala-afshar/10-uses-of-drones-in-high_b_5988758.html

Let your drone do drone things

For aerial mapping, drones are perfect. Repeatable, accurate flight makes a drone the ideal flight platform for near-ground mapping. The combination of today's high-resolution cameras and inexpensive flying devices enables mapping at levels of detail never before imagined.

https://www.mapsmadeeasy.com/drone_mapping

Still from an animation illustrating the path a mapping drone will take



Mapping with drones

"By precisely controlling the flight pattern, flight speed and camera frame rate, it is possible to achieve perfect coverage and overlap. Plenty of overlap and nadir (straight down) images are the key components to collecting great data and making great maps".

https://www.mapsmadeeasy.com/drone_mapping

Further reading

10 Uses of Drones (article and Slideshare)

www.huffingtonpost.com/vala-afshar/10-uses-of-drones-in-high_b_5988758.html

Australian AUV (Unmanned Automatic Vehicle)

<http://www.auav.com.au>

Getting started with drones (Everything you need to know about how drones work, how to fly them and modify them).

<http://paulstamatiou.com/getting-started-with-drones-quadcopters/>

Schools use drones for learning

<http://www.nbcnews.com/video/nightly-news/51118873>

University of New England projects

<https://www.uned.edu.au/about-uned/academic-schools/school-of-science-and-technology/research/precision-agriculture/research-areas-and-current-projects/smart-drones>

ABC Splash: Rise of the machines: Using drones

<http://splash.abc.net.au/home#!/media/524587/rise-of-the-machines-using-drones>

National Geographic

http://education.nationalgeographic.com.au/education/news/data-drones/?ar_a=1

Worksheet one

Distinguishing between 'Larger Scale' and 'Smaller Scale' photographs

Smaller Scale photographs

These photos have greater distance/area represented in the photo. Therefore 1 cm on a map will show a larger distance in the photo. These photos will show LESS detail. Features will look very small and you will not be able to see much detail on the features.

Larger Scale photographs

These photos have a smaller distance/area represented in the photo. Therefore 1 cm on a map will show a smaller/shorter distance in the photo. These photos will show MORE detail. Features will look larger and you are more likely to see the finer detail on the features.

Hint: Perhaps an easy way to determine this difference is when you compare two photos/images and you are asked to identify the 'larger' scaled image between them, think to yourself 'Which one of these images is closer to being as large as in real life'? This photo will be your larger scale image and the other photo will therefore have a smaller scale in comparison. You can use this tip when comparing the scale of maps.

Using the two photos taken by the drone below, determine which of these photos has the LARGEST SCALE and which has the SMALLEST SCALE.

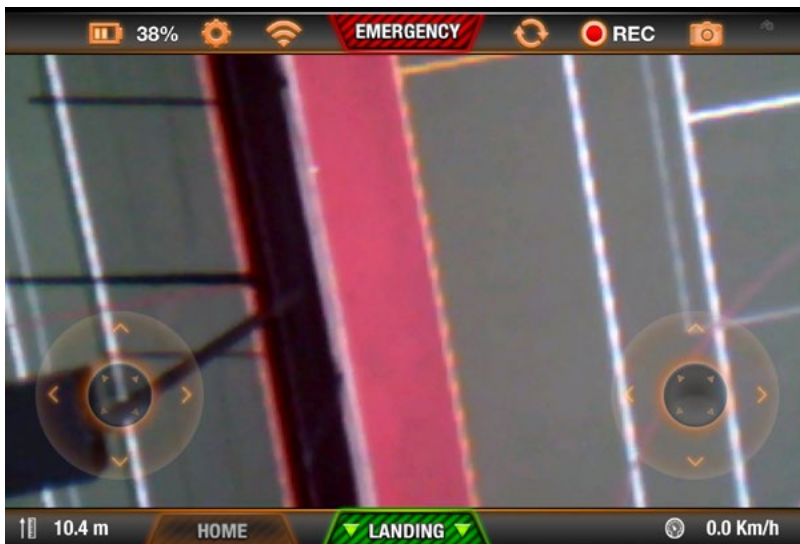


Image 1: scale.



Image 2: scale.

Worksheet two

Determining the difference between 'Ground Level', 'Oblique Aerial' or 'Vertical Aerial' photographs?

Ground Level photographs are those taken from the ground and without an angle, whereas aerial photos are taken from the air of a high point, such as a lookout or tall building. They can be either oblique OR vertical.

Oblique Aerial photographs

Oblique photos are those photos taken on an 'oblique' angle (between 3° and 90°) to the ground, to produce a 'perspective' view. They can be 'low oblique' (horizon not visible) or 'high oblique' (horizon visible). Oblique photos have the advantage of enabling geographers to show large areas of ground in a single photo. They are helpful when determining how natural and human features are distributed across the landscape. They also have the benefit of being able to show the height of features more accurately. However, scale is distorted (not uniformly even) which makes measuring distances difficult.

Vertical Aerial photographs

A vertical aerial photograph is taken with the camera lens pointing directly downwards. There is no tilt (only up to 3°). These types of photos are frequently used to produce topographic maps as they produce a reliable scale, making measurement of distances easier and more accurate. They are useful as there is nearly uniform scale throughout the photo, making measuring distances easier and more accurate. However, they do not clearly depict the height of objects (buildings, cliffs) if they are directly beneath the camera.

Identify and label the following three images as either 'Ground Level', 'Vertical Aerial' or 'Oblique Aerial' photos:



Image 1: Type of photo

Worksheet two continued



Image 2: Type of photo

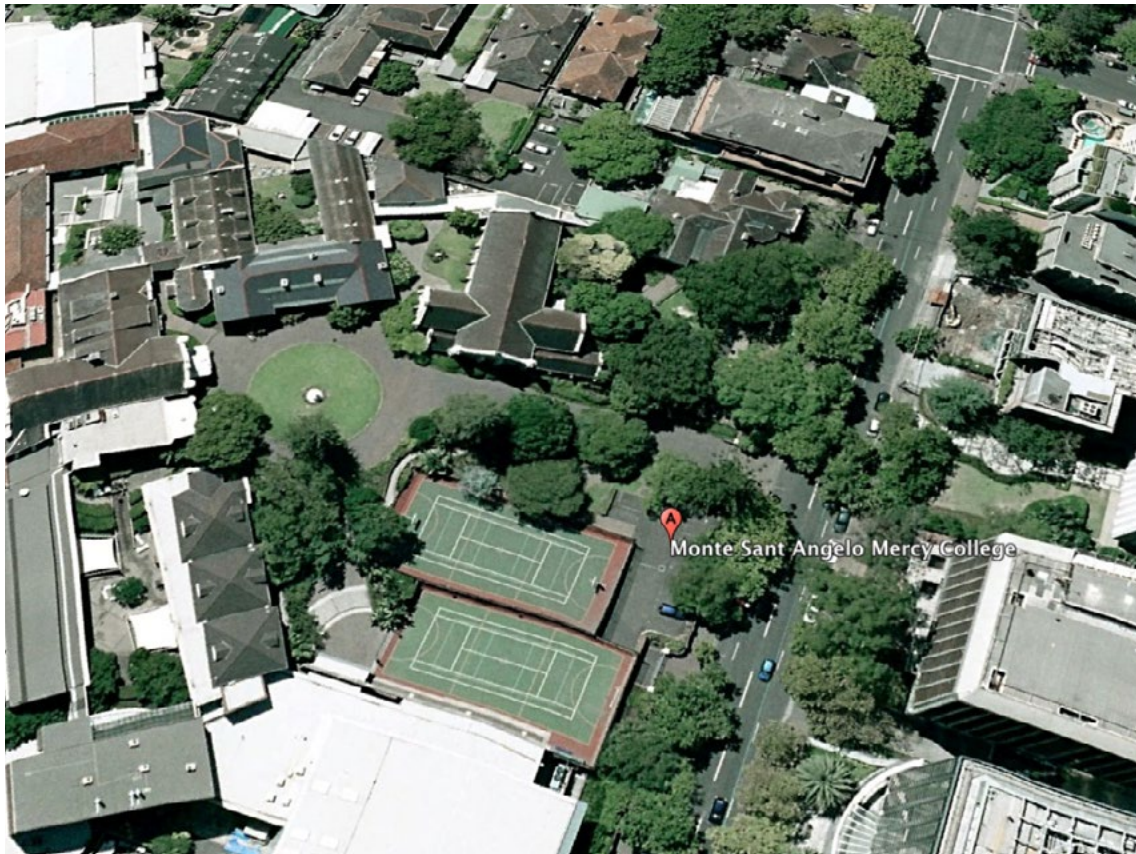


Image 3: Type of photo

Worksheet three

How do I estimate the time of day that a photograph was taken?

To estimate the time of day a photo was taken, you firstly need to look for clues within the photo. An easy clue to help you determine the time a photo was taken is **SHADOWS** found within the photo. Look for features within the photograph that cast shadows. Tall buildings and bridges are good examples. If shadows from these features appear to be long, it is likely that the time of day will be either early morning or later in the afternoon. If there are very short shadows it is more likely that the sun is directly overhead and the time will be closer to midday.

Remember, the sun always rises in the EAST and sets in the WEST – no matter where you are in the world. You will also need to determine the orientation of your photo. This can be worked out when looking at a map of the area that the photo was taken.

Using the two images below, estimate the time each photo was taken:



Image 1: Taken at approx
..... AM / PM

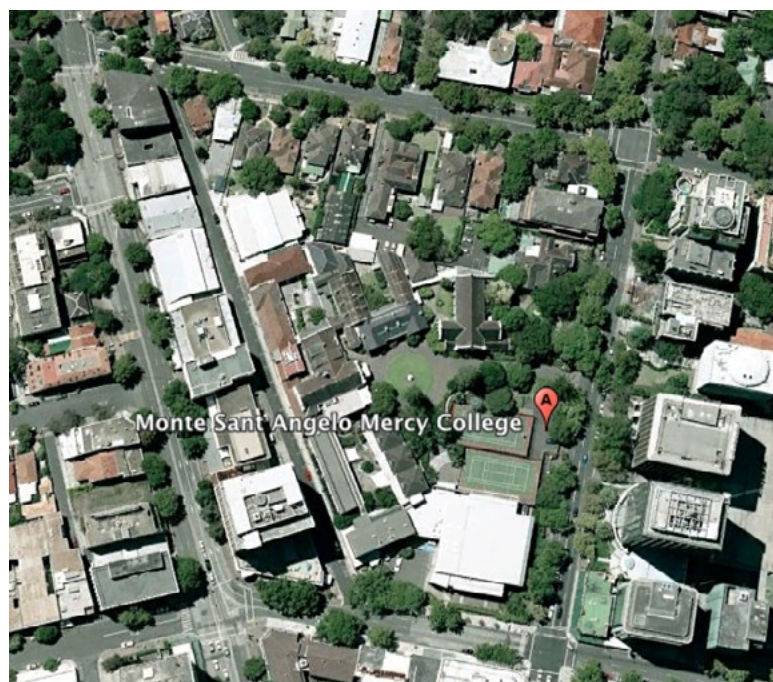


Image 2: Taken at approx
..... AM / PM

Geography in the Reality World

Clare Kinnane

Coordinator of Innovative and Online Learning, Geography Teacher,
Social Science Department Meriden School

Students need to be encouraged to look at the bigger picture and look outside their world to see what is going on. Research and assessment have moved beyond books and encyclopedias. I'm excited to be part of this new and innovative world. As a Geography teacher I often find myself relating the concepts that I am teaching to a particular scale (local, regional, global). I ask my students where is this happening? Why is it happening there? Does it occur anywhere else? In Year 7 we start off by looking at the questions that Geographers ask. So how do I make the transition to move my teaching to using the 'reality' scale? How do I bring my teaching and the students learning into the 21st Century? Simply using a tool to tick a box is not teaching a student the benefits or possibilities that are open to them. I find myself as a teacher searching harder and thinking deeper about how I can integrate technology seamlessly for the students so that it is not forced.

Through the examples below I want to share the tools and resources that I use in the 21st Century Geography classroom to engage the 21st Century Learner.

Kahoot (www.getkahoot.com)



As a tool Kahoot is invaluable for topic revision, pre and post learning and also just to have fun and boost general knowledge about the wider world. An example of a Kahoot on Geography Tools –

<https://play.kahoot.it/#/k/53b0055b-f176-46e0-b17d-f8c73c4a89d3>

Teachers

- Create a quiz, survey or discussion using the website.
- Make your quiz public or private
- Share the quiz with your students to use on any device by simply asking them to go to kahoot.it
- Launch your quiz on your device and students will be given a game pin to enter.
- Watch the fun and learning happen before your eyes.
- Ghosting – allows students to replay and beat their own score or play class against class (<http://blog.getkahoot.com/tagged/ghost-mode>)

Students

- Login from any device
- Watch the screen for questions and enter their answer on their device
- Their names and scoreboard appear on the screen.
- Can create their own quizzes and login.

Blendspace (www.blendspace.com)



This is a tool which allows teachers to combine digital resources for their students that are either found through a search of the topic or created by the teacher

them self. The site is linked to You Tube, Flickr, Google, Google Drive, Educreations, Dropbox. An example of a blendspace that I have created for Mountains – <https://www.blendspace.com/lessons/PKaUsb253URekQ/freaky-peaks-revision>

Teachers

- Create a lesson by selecting images, clips and documents.
- Once the lesson content has been created you can then share you lesson with your students by sharing the link.
- Students can then create logins to answer questions that have been set to go with the images and clips.

Students

- Can learn in their own time and at their own pace.
- Can be used as a flipped classroom resource.
- Can be given feedback from the teacher on their answers.

Verso (www.versoapp.com)



This is the ideal flipped learning tool. Teachers can either link to a digital resource or record their own

lesson for the students to answer questions, discuss a point to go deeper in their understanding of a topic. Questioning strategies – <http://versoapp.com/godeeper>

Teachers

- Link a Google doc for collaboration, a YouTube clip, a website link or any file from Google Drive
- Assign a questioning strategy for the students to complete.
- Students sign up to Verso, and use the code assigned to the class to link to your class.
- Teachers can comment and give feedback on student responses and group students according to their response.

Students

- Student responses are anonymous so they feel confident giving answers.
- Learning can happen at their own pace and in their own time.

Binumi (www.binumi.com)



This is a new tool that allows students to create their own video clips by drag and drop. This resource has a library of digital images and videos as well as

music for the students to choose from. They can also upload their own to add to the video clip that they are creating.

Teachers

- Great ideas for classroom projects found in the teacher tab.
- Students are assigned to your class for you to see their video projects.

Virtual Field Trip

A video player interface showing a map of the world with a red location pin. The video title is "Virtual Field Trip" and the duration is "45 minutes+". The video player has a play button, a progress bar, and a volume icon.

Description:
Explore the world without leaving your classroom! Have students map out an itinerary for a trip and include notes on key locations they will visit. This could be a location (London, deserts), or a theme (deforestation, poverty).

Students

- Drag and drop video creation
- Simple interface
- Library of video clips and music.



Thinglink
(www.thinglink.com)

This website allows students to make images interactive by linking resources to an image of their choosing. Teachers can also create their own as a Visible Thinking resource.

Teachers

- Student accounts are linked to the teacher account for easy viewing of students work.
- Create your own resources as a way of engaging the students.
- Comment on students work or allow students to peer-mark each other's work.

Students

- Create interactive images using links to websites, clips and their own content.
- Peer marking of each other.
- Easy interface, simple click and insert tool.



Pinterest and Twitter

Social media in the classroom can often be a contentious issue. I have used both Pinterest and Twitter with my students very successfully. Both these tools will require teachers to create a teacher account that is used for school use only so as to ensure the professional use of social media and also to model to students the correct method of using both tools. I have used Twitter successfully with both Year 9 students for the topic of Natural Hazards and Year 10 for the topic of Migration.

Teachers

- Create boards of images associated with topics to be shared with the students for discussion. (Pinterest) e.g images of the Dharavi Slum in Mumbai for Challenges of Living in Megacities.
- Allow students to make suggestions of images and have engaging class discussion around images.
- Engage students in the wider community by encouraging them to use Twitter.
- Twitter is an invaluable tool for finding resources and also generating class discussion through using hashtags.

Geography in the Reality World

Students

- Students learn the benefits of using social media in an educational context.
- The limit of 140 characters is a challenge for students and encourages them to write concisely.
- Students are able to retweet articles and link new clips of topics they are studying.
- Students can conduct polls of their classmates and also discuss issues by using hashtags.

Year 10 Twitter Task Examples –

Week 1	Watch the first 10 mins of the Hot Potato documentary https://www.youtube.com/watch?v=zixiglrO23A&list=PLIyLjb7qxaQWqnCF_C2N4bFwsHcE_AKew&index=1 Write a tweet about the effectiveness of this type of campaign.
Week 2	Click on the 10 Myths Tab at the top of the page and pick a myth and share a fact on Twitter http://thehotpotato.com.au/
Week 3 and 4	Watch one of the following 'myth' clips and write a tweet about what you understand to be the myth and second tweet about why it is false (link a document to support your point). https://www.youtube.com/playlist?list=PLIyLjb7qxaQWqnCF_C2N4bFwsHcE_AKew
Week 5	Write a tweet about the conditions on Manus Island link an article to support your point.
Week 6	Write a tweet about what part of the current immigration policy you <u>would</u> change.
Week 7	Exams
Week 8	Exams
Week 9	Link a <u>youtube</u> clip about Australian Immigrants and explain what the clip is about.
Week 10	Find an interesting infographic or image about global migration trends (or create your own?)



Sway (www.sway.com)

This is a relatively new tool which has been incorporated into the Office 365 platform. It is a great alternative to Power Point.

Teachers

- Create content that is easily accessible
- Use this as an alternative to Power Point, allows you to convert old Power Points to this new way of presenting.
- Incorporates content from a range of sources.

Students

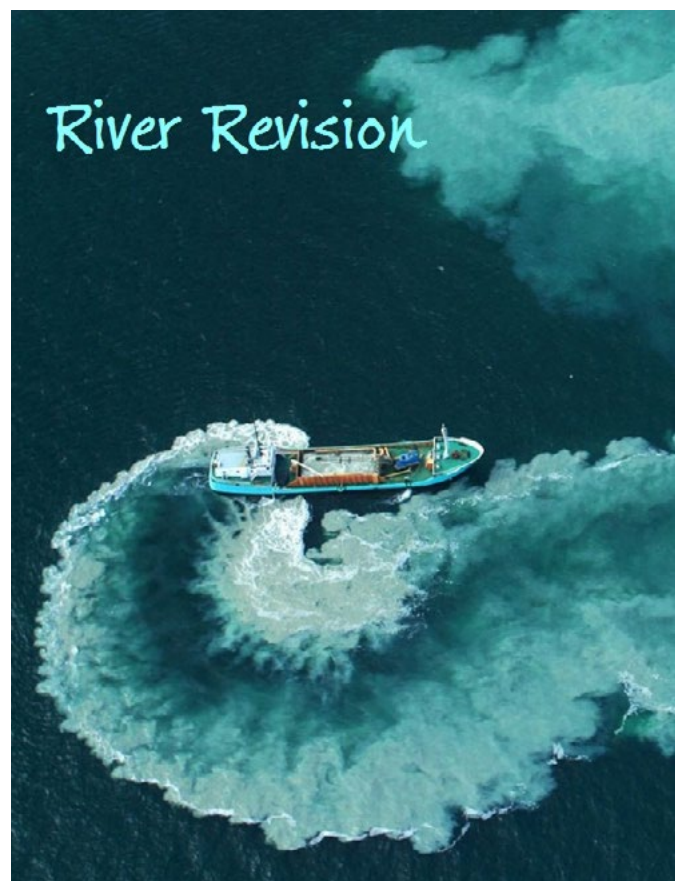
- Allows students to create digital presentations in a new platform
- Simple drag and drop creation.
- Links to content easily
- Sharing via a link

Example– https://sway.com/pzRg37JR3WfD2V-3_

Clare Kinnane

Twitter: @CKinnane

E: ckinnane@meriden.nsw.edu.au





Sustainable futures: our place, our subject

The conference theme of 'Sustainable futures: our places, our subject' is in the context of the new K-10 Geography syllabus and evidence based best-practice geography teaching methodology

LOCATION

Novotel Central
169 – 179 Thomas Street, Sydney 2000

REGISTRATION CLOSES

Thursday 29 October, limited places available, so early registration is advised

DATE

Thursday 5 November 2015, 8.30am – 5pm
with registration from 8.15am

COST (inc GST)

Member \$260, Non-member \$300
Concession: Member \$150, Non-member \$200

Conference enquiries and registration forms to the Geography Teachers' Association of NSW

Mail: PO Box 577 Leichhardt, NSW 2040, Attention – Bernadette Motulalo Phone: 02 9716 0378

Fax: 02 9564 2342 Email: gta.admin@ptc.nsw.edu.au Web: www.gtansw.org.au for conference updates

Conference Registration Form

Please complete one registration form for each conference delegate. Send completed form with payment to PO Box 577, Leichhardt NSW 2040 or fax to 02 9564 2342 before **Thursday 29 October 2015**.

GTA NSW respects your privacy – any data collected is for the purpose of the registration only.

Participant details

First name: _____ Surname: _____

School/institution: _____ NSWIT No. _____

Mailing address: _____

_____ Postcode: _____

Phone W: _____ Phone H: _____ Phone M: _____

Fax: _____ Email: _____

My Session 6 Fieldwork Options are numbers : _____ and _____

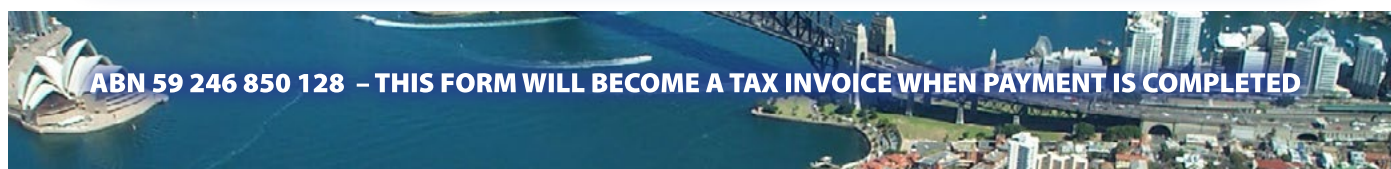
Payment

By cheque made payable to **"Geography Teachers' Association of NSW"**

or ☐ MASTERCARD ☐ VISA Name on card: _____

Card Number: _____ / _____ / _____ / _____ Expiry: _____ / _____

Signature: _____ Total Amount \$: _____

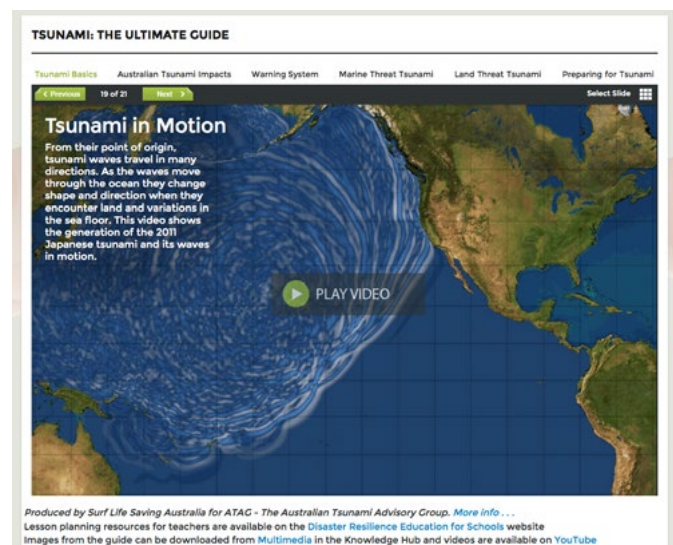




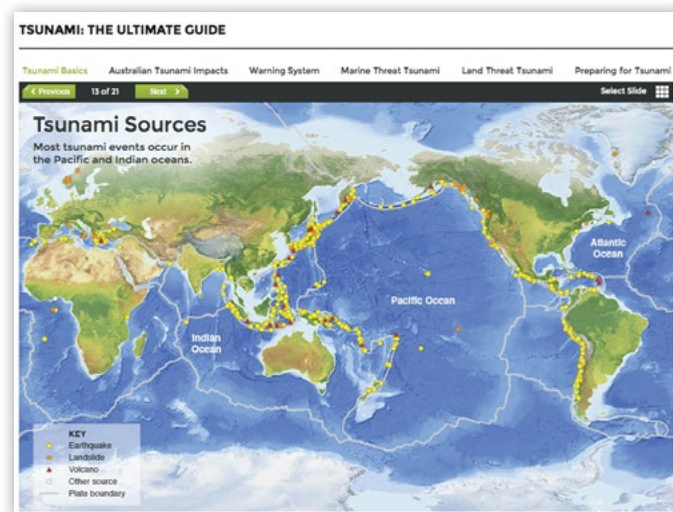
Tsunami: The Ultimate Guide is a free and interactive resource aimed at secondary school educators. Created by Surf Life Saving Australia for the Australian Tsunami Advisory Group, the resource presents authoritative and engaging information in a highly visual manner with a focus on videos, animations, maps, graphics and interviews with experts and survivors.

Australian Emergency Management – Knowledge Hub:
<https://www.emknowledge.gov.au/connect/tsunami-the-ultimate-guide/#/>

Earth's structure, tectonic plates, earthquakes, volcanoes and tsunamis are fully explained using maps, diagrams and videos. The resource provides everything students need to know about tsunami (the how, why, where and when, the tsunami threat to Australia and case studies of significant tsunami events).



TSUNAMI: The Ultimate Guide



The resource is closely aligned with the NSW Geography K – 10 Syllabus, 2015. There are lesson plans and a school kit available for teachers.

GEOGRAPHY STAGE 4: Landscapes and Landforms

Geomorphic hazard

Students

- investigate one contemporary geomorphic hazard including causes, impacts and responses, for example: (ACHGK053)
 - description of the spatial distribution of the disaster
 - explanation of geomorphic processes causing the disaster and its impacts
 - examination of the responses of individuals, groups and government to the impact of the disaster
 - discussion of management strategies to reduce the future impact of similar hazard events including the role of technology in monitoring and predicting geomorphic hazards

<http://syllabus.bos.nsw.edu.au/hsie/geography-k10/>

BENEFITS OF GTA NSW MEMBERSHIP

The Geography Teachers' Association of New South Wales (GTA) is a not-for-profit, incorporated body that represents the professional interests of Geography teachers in NSW and Geographical Education more generally. The objectives of the Association are to promote the study and teaching of geography in schools by:

- providing professional learning opportunities for teachers of Geography;
- advocating the interests of Geography teachers on matters in the State and National interest;
- providing forums where teachers of Geography and the wider community can exchange views;
- supporting Geographical Education through the development and dissemination of geographical resources; and
- promoting geographical research and fieldwork.

The GTA seeks to address its objectives via a yearly program of activities and events, which include:

- online publication of the quarterly Geography Bulletin a quality, peer-reviewed journal designed to serve the contemporary interests of Geography teachers and students.
- delivering Teacher Professional Learning Workshops and in metropolitan and regional locations, focussing on current issues, including in Global Education, the use of technology in the classroom, research and fieldwork skills.
- conducting an Annual Conference with keynote addresses from leading geographers on contemporary and emerging geographical issues as well as more practical sessions by geographical practitioners.
- hosting School Certificate and Higher School Certificate Reviews for teachers of Geography. These reviews are held in a number of regional areas across the state.

For further information about GTA NSW activities and events go to: www.gtansw.org.au



MEMBERSHIP RENEWAL/APPLICATION FORM 2015

ABN 59 246 850 128 – This form will become a tax invoice when completed, GST included.

*Please select **ONE** of the following membership options and complete the details*

☐ **Personal membership \$90.00**

Title – please tick: ☐ Dr ☐ Mr ☐ Mrs ☐ Ms ☐ Miss Other:

Surname: Given Name(s):

Home address: Postcode:

Phone: (Mob) (Home) (Work)

Fax: Email:

☐ **Corporate membership \$180.00**

Title – please tick: ☐ Head of HSIE ☐ Head Teacher of Social Science ☐ Head Teacher of Geography
☐ Co-ordinator of Geography ☐ Senior Geography Teacher ☐ Librarian

School:

School address: Postcode:

School phone: School fax:

☐ **Concessional membership \$40.00** ☐ Retiree ☐ Part-time teacher ☐ Student (verification required)

Title – please tick: ☐ Dr ☐ Mr ☐ Mrs ☐ Ms ☐ Miss Other:

Surname: Given Name(s):

Home address: Postcode:

Phone: (Mob) (Home) (Work)

Fax: Email:

School:

PAYMENT:

Membership is for twelve months commencing in January. If payment is made later in the year all back copies of *Geography Bulletin* will be forwarded. A membership reminder will be sent in December.

Please make cheques payable to: Geography Teachers' Association of NSW Inc

OR

Charge \$..... to my credit card: ☐ Mastercard ☐ Visa

Card Number: / / / Expiry: /

Name on card: Signature:

Post this form and your payment to: GTA NSW, PO Box 577 Leichhardt, NSW 2040

ADVICE TO CONTRIBUTORS

Editorial policy attempts to:

- promote material which will assist the study and teaching of geography
- encourage teachers to share their ideas on teaching geography
- provide a means by which teachers can publish articles
- inform readers of developments in geographical education

Articles are sought reflecting research and innovations in teaching practices in schools. From time to time issues of the Bulletin address specific themes.

Refereeing

All suitable manuscripts submitted to the Geography Bulletin are subject to the process of review. The authors and contributors alone are responsible for the opinions expressed in their articles and while reasonable checks are made to ensure the accuracy of all statements, neither the editor nor the Geography Teachers' Association of New South Wales Inc accepts responsibility for statements or opinions expressed herein.

Books for review should be sent to:

The GTA NSW Council
PO Box 577
Leichhardt NSW 2040

Editions

There are four bulletins each year – two published each semester.

Notice to Advertisers

'Geography Bulletin' welcomes advertisements concerning publications, resources, workshops, etc. relevant to geography education.

FULL PAGE (26 x 18cm) – \$368.50
Special issues \$649.00

HALF PAGE (18 x 13cm or 26 x 8.5cm) – \$214.50
Special Issues \$382.80

QUARTER PAGE (13 x 8.5cm or 18 x 6.5cm) – \$132.00
Special issues \$242.00

INSERTS (A4 supplied) – \$374.00
All prices include GST

Advertising bookings should be directed to:

GTA NSW Office
Telephone: (02) 9716 0378
Fax: (02) 9564 2342
Email: gta.admin@ptc.nsw.edu.au

1. **Objective:** The Geography Bulletin is the quarterly journal of the New South Wales Geography Teachers' Association, Inc. The role of the Geography Bulletin is to disseminate up-to-date geographical information and to widen access to new geographic teaching ideas and methods. Articles of interest to teachers and students of geography in both secondary and tertiary institutions are invited, and contributions of factually correct, informed analyses, and case studies suitable for use in secondary schools are particularly welcomed.
2. **Content:** Articles, not normally exceeding 5000 words (no minimum specification), should be submitted to the GTA Office gta.admin@ptc.nsw.edu.au or by mail to: **PO Box 577, Leichhardt, NSW, 2040** who will forward to the editor/s:
Submissions can also be sent directly to the editors:
Lorraine Chaffer (lchaffer@tpg.com.au) or
Dr Grant Kleeman (gkleeman27@gmail.com)
Articles are welcomed from tertiary and secondary teachers, students, business and government representatives. Articles may also be solicited from time to time. Articles submitted will be evaluated according to their ability to meet the objectives outlined above.
3. **Format:** Digital submission in Word format. Tables should be on separate pages, one per page, and figures should be clearly drawn, one per page, in black on opaque paper suitable for reproduction. Photographs should be in high resolution digital format. An indication should be given in the text of approximate location of tables, figures and photographs. Every illustration needs a caption. Photographs, tables and illustrations sourced from the internet must acknowledge the source and have a URL link to the original context.
4. **Title:** The title should be short, yet clear and descriptive. The author's name should appear in full, together with a full title of position held and location of employment.
5. **Covering Letter:** As email with submitted articles. If the manuscript has been submitted to another journal, this should be stated clearly.
6. **Photo of Contributor:** Contributors may enclose a passport-type photograph and a brief biographical statement as part of their article.
7. **References:** References should follow the conventional author-date format:
Abbott, B. K. (1980) *The Historical and Geographical Development of Muswellbrook* Newcastle: Hunter Valley Press.
Harrison, T. L. (1973a) *Railway to Jugiong* Adelaide: The Rosebud Press. (2nd Ed.)
Harrison, T. L. (1973b) The Spatial Distribution of Macadamia Plantations on the Far North Coast of New South Wales, *Journal of Rural and Agricultural Problems*, 13, 4, Oct. pp. 347–359.
O'Donovan, M. J., *et. al.* (1980) "Animal life in the North Star District of New South Wales". In W.W. Murphy, (Ed.) *Readings in Regional Geography (Vol. 2)*, Sydney: Williams and Sons.
8. **Spelling** should follow the Macquarie Dictionary, and Australian place names should follow the Geographical Place Names Board for the appropriate state.



The
Geography Teachers' Association
of New South Wales Inc.