Secrets for the Successful Introduction of GIS into the Core Curriculum

AGTA Conference
Launceston 2006
GIS at PLC

PLC is a girls independent school of 1400 students using Macintosh computers.

- 1 computer laboratory and 5 roving laptops
- 7 years
- 1200 students
- 16-20 hours
- 5 staff members
- 4 Work Experience students
- 2 students – Geomatics
How Did We Do This?

The Start 1997

- Aurisa GIS in Schools Competition
- Maptitude
- Digital map local area
- Public Transport routes
Early Beginnings

New Laboratory- 1999

- MapInfo
- 2 day MapInfo training
- Digital Map of Gardiner’s Creek
- Year 9 Trial group
- IT in class support
- San Francisco to Local Area
Question

GIS elective or Core Geography?

Statement:
- If this is good enough for one class it’s good enough for everyone.

Question:
- How are you going to do this?
Transferring Skills

- Step by step instructions- 10 week course
- GIS activities
- Question “But where’s the Geography?”
GIS Today - Year 9
GIS is a part of Core Geography

4 terms- 4 units

- Introduction-
  layers, editing,
  legends, layouts.
- Microclimate
- Urban
  Neighbourhood
  Cities in Time
Year 9 How Healthy is our creek?

- Down the Creek!
- Water Quality
- Hypothesis based
- Snapshot of the creek
- 3 sites downstream
- 12 sites in total
Results of Litter Survey

2004 Snapshot Gardiner’s Creek: Results for Selected Litter types.

Pie Chart of Litter casual 2003-2004:
- Cans
- Bottles
- Plastic
- Paper

Map showing locations of litter with pie charts indicating types.
GIS Today – Year 10
Tourism

Bali Case Study
- Satellite Image
- Physical factors
- Settlements
- Employment
- Population movement
- Cultural clashes
Year 10 Population
China
China GIS

- Geographical Skills
  - Distribution
  - Choropleth maps
  - Proportional symbols
  - Spatial Association

- GIS Skills
  - Thematic maps
  - Proportional symbols
  - Making a query
  - Making calculations
China GIS Layers
Relief of China
Spatial Association

China: High mountainous areas

China: China: Summer Temperatures
Does Altitude Affect Temperatures?
How Do Physical Factors Affect Population Distribution

- Relief
- Rivers
- Summer Temperatures (isotherms)
- Winter Temperatures (isotherms)
- Annual Rainfall
Where Do People Live?

China: Provinces and Population of Major Cities

Population of cities:
- 9,300,000
- 4,650,000
- 930,000

POPULATION
Population Density - Equal Counts

Population Density in China - Equal Counts
Gross Domestic Product

China: GDP per Capita
Life Expectancy
Melbourne’s Liveability Survey

Melbourne’s Liveability: Presence of Geographic Characteristics of Interest
Melbourne’s Liveability
Take a Break!

- Is this an appropriate sequence?
- Where is the geography?
- What GIS skills are evident?
- How would you assess these activities?
- What difficulties do you perceive in delivering something like this in your school?
- What secrets have you learned so far?
- What improvements could you suggest?
GIS Senior Years

- Mozambique
- Local Park
- Retail catchment areas
- CData 2001
  - Victoria - regional comparisons
  - IB - Extended essays
    - Gambling and socio-economic groups
    - Changing migrant movements over time
    - Land use study - 3D
Year 11 IB River Study
Year 10 Enrichment
Amnesty

- Using Census Data to determine What makes an Amnesty Member?

- Age
- Sex
- Education
- Income
- Internet Use
Census for Schools

- CDATA 2001 MapInfo platform

- Postcode and Suburb maps
  - Choose criteria
  - Aggregating data
  - Percentage of population
  - Thematically map
  - Rank each postcode
  - Sum ranks for each postcode
Year 10 Enrichment
Amnesty

% Internet Use at Home and Work
Year 10 Enrichment
Cancer Council

How Does ‘Relay for Life’ impact upon Daffodil Day?

- Spreadsheets
  - Postcodes of Victoria
  - Income 4 years
  - Daffodil Day
  - Relay for Life
  - Venues for Relay for Life
Year 10 Enrichment
Cancer Council
A Comparison Daffodil Day Income at Relay for Life Venues

Impact of Relay for Life on Daffodil Day Income 2004
Factors Facilitated its’ Introduction

External Factors

- Affordable software
- GIS in Schools Competition
- Land Victoria data on line
- GIS Teachers Network
Factors Facilitated its’ Introduction

Internal

- IT support initially
- Student centred approach (colour coding and cheat sheets)
- Support - time & financial
- Faculty embraces change
- Staffing policy
- software knowledge-ability to customise
- Personal interest
The Future

➢ Statement:
  - If this is good enough for one school in Victoria it’s good enough for everyone.

➢ Question:
  - How are we going to do this?