



COLLECTING AND ANALYSING DATA WITH A LITERACY FOCUS

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CONTENT

1. Presentation

- The benefits of consistent primary data collection.
- Tying data collection to other skills
- A literacy progression
- Templates and frameworks
- Worked example yr 7, 8, 9, extension



2. Collaborative workshop

- Use templates and frameworks to insert a lesson sequence into each unit.
- Leave with identified skills, driving questions and literacy goals.

WHAT HAVE I DONE?

Based on a personal goal (stage 6 class) and a school goal (literacy)

- At least one piece of data collection per unit from 7-10.
- Linked that to the skills progression.
- Overlaid school literacy goals.
- Included digital analysis and presentation skills.

- Where am I heading - more student based planning of field work in stage 5.

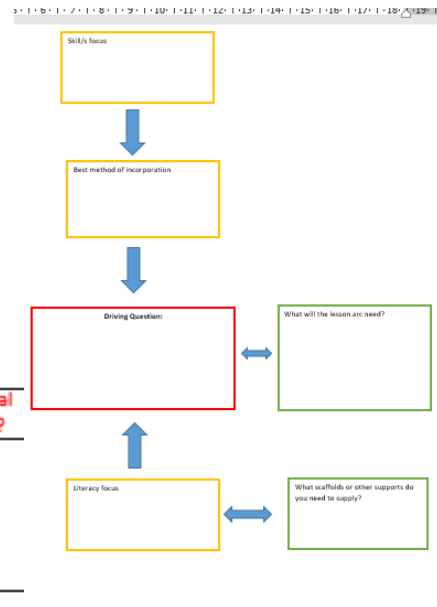
(Have to be in the head space of teaching content through the process – the collection, analysis and reporting will take time, so it must cover content.)

BENEFITS

1. The simple answer – engagement.
2. The longer answer – it makes sense of geography.
 - Applied science
 - Integrates data collection skills with analysis skills and literacy skills
 - A sensible way to include digital technologies
 - Students will write more about what they have done
 - More fun to teach
3. The boring answer – it makes sense of your paperwork.

TEMPLATES

Unit of work	Primary data Skills	Driving question	Possible NESA verbs	Interpretation activities	Literacy requirements	Formal task?
Landscapes and landforms	Field sketch and sketch map Photo analysis Finding north	How has the Twin Waters Estate changed since 2017?	Describe Outline	Change over time – satellite photographs. Identify and list changes	Label and refer to sources. Full sentences, proper punctuation and grammar. 3 rd person, past tense.	
Where would you live?	Survey use and analysis Create digital map.	How does the perception of liveability change with age and location?	Describe Demonstrate Distinguish Extract	Create 2 column graphs comparing perspectives of adult and teen.	As above plus: 2 PEEL paragraphs Introduce hypothesis statements "As...changes...changes"	Yes
Water Wars	Drawing a cross section Water quality tests Create digital map	How are catchments changed by people?	Explain Apply Account	Topo map interpretation. Transect drawing. Satellite interpretation. Results analysis	3 peel paragraphs. Must use hypothesis statements. Calculate the lexical density and length.	Yes
Chocolate, the good the bad and the tasty	Effective survey design and analysis	What are the potential consequences of consumer choices?	Critically analyse Compare Contrast discuss	Identify Australian and international brands. Identify brands that have positive and negative global effects. Flow chart.	4 Peel paragraphs with sophisticated linking phrases. Must refer to ethical issues in third person. Set lexical density and length goal from last work or average.	
Sustainable biomes and food. The place of plastic.	Sustainability assessment – sorting, weighing	What strategies can be used to increase global food security?	Critically analyse Compare Discuss Recommend	(food waste and plastic use per person) Pie graph.	Introduce ALARM model. Student and teacher set lexical density and length goal.	
Managing for sustainability	Transect, quadrats, photo taking, transect, rubbish	What are the causes and consequences of	Evaluate Analyse Interpret	Photographic interpretation Graphs and tables	Adjusting formal and lexically dense language to suit a poster – identifying what is important the	yes



YR 7 EQ: HOW DOES LIVEABILITY CHANGE WITH AGE AND LOCATION?

Lesson arc:

L1: Introduction to liveability – identify that it is related to needs and perceptions.

L2: Students complete liveability **survey** for their home town.

HW: Students ask parents to complete same **survey** for same town.

L3: Verbally **summarise** difference and then **graph categories and totals**.
Create table as a class to compare towns.

L4-L5: **Map** using Google my maps . (Includes revisit of **lat/long**)

L6: **Answer the EQ** using the sources they have produced.

LIVEABILITY: Quality of life, health, safety, education, etc.

Quality is determined by the... factors, including...

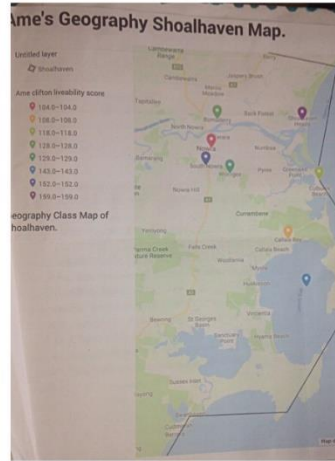
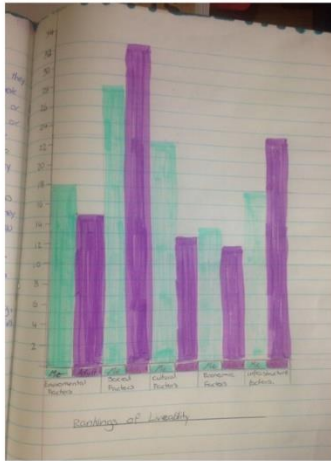
Neighborhood liveability survey

Think about the neighborhood in which you live and then answer it against each of the following liveability items. When completed:

- Add the scores and compare it with the rating of others in your group.
- Discuss the reasons for your ratings.
- Make a comparison to a group located in each of the others.
- Compare your group's ratings with that of other groups.

Liveability survey

Criteria	Liveability Score	Ranking
Environmental factors		
• Clean, fresh air	1-5	1-5
• Quality of urban design	1-5	1-5
• Noise	1-5	1-5
• Safety	1-5	1-5
• Maintenance of public places	1-5	1-5
Social factors		
• Level of crime	1-5	1-5
• Level of safety	1-5	1-5
• Availability of services	1-5	1-5
• Diversity of population	1-5	1-5
• Physical safety	1-5	1-5
Economic factors		
• Cost of living	1-5	1-5
• Quality of public services	1-5	1-5
• Opportunities for post-school education	1-5	1-5
Health factors		
• Access to local services and facilities	1-5	1-5
• Availability of private health care	1-5	1-5
• Quality of public health care	1-5	1-5
• Age of new facilities	1-5	1-5



Literacy goals:

- Label and refer to sources
- 2 Peel paragraphs
- Hypothesis statements

often change with age

Point - Location - Towns in Shoalhaven - Source 2

Evidence - Age - Perspective - source 1

Point - Liveability Changes with geographical location & age.

Evidence - ~~Age Changes~~ The age of a person changes the perceived liveability of a particular place because when a person is younger, the location ^{they'll} want has something more to do with fun & enjoyment while ~~so~~ an adult may want to be closer to work. (their perspective & needs) *change with age*

Explain - For example source one shows that a young teenager finds the local restaurants much better than ~~the~~ an adult who finds it less enjoyable ~~but~~ however finds the infrastructure and social factors ~~more~~ extremely higher.

Link - This shift in perspective means that for ~~in~~ a

A LITERACY PROGRESSION

- What is your end goal?
- How will you get there?
- Small steps!
- Match the verb to the right stage and then make the question interesting to the students.
- Have an option to go “up” or “down” within the question.
- Use the writing templates your English/History dept are already using.

****MUST be either in the marking criteria of tasks or in the feedback of non-formal tasks if it is a goal.****

YR 8: HOW ARE CATCHMENTS CHANGED BY PEOPLE?

Lesson arc:

Previous learning: water cycle and catchments.

L1: **Identifying local catchments** on topographic maps, identify areas of change.

L2: **Predicting** how water quality and quantity would change across the catchment – look at **vegetation and land use transect**.

L3: **Water quality testing** in class.

L4: **Build digital map** to show change in water quality and also identify waterways and catchment boundaries.

L5: **Answer EQ**

L6 and 7: Look at global examples – Ganges, Amazon and MDB

SKILLS PROGRESSION

- Use the progression in the syllabus.
- Which ones benefit from hands on data collection?
- Which ones can you do with little money?
- Which ones can you link with a good driving question?
- Which ones logically go together to form a whole investigation?

YR 9: HOW DO HUMAN ACTIONS AFFECT MANGROVE ECOSYSTEMS?

(Previous work: biophysical processes and threatening processes.)

Lesson arc:

L1: Compare local mangroves to the Sundarbans in Bangladesh.

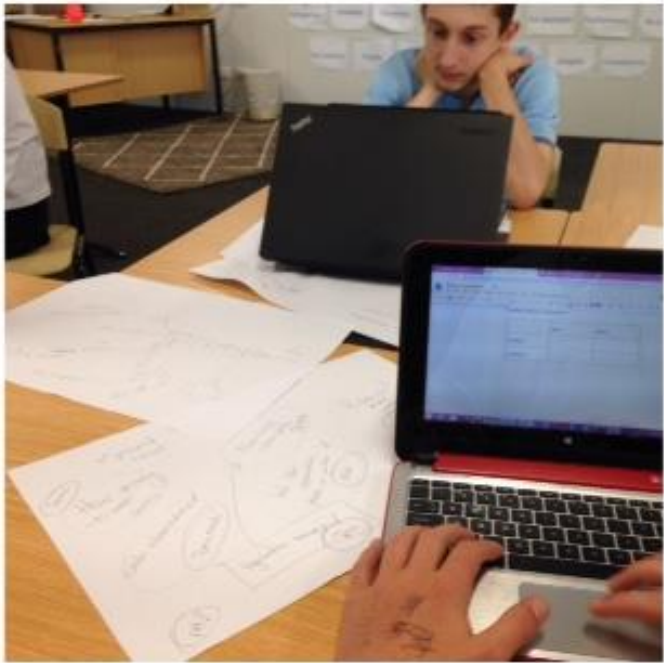
L2: Introduce question and ask students help to plan field work.

FW: (2 sites) **Transect, seedling quadrants, rubbish survey, wildlife survey, over head drone photography.**

L3: **Verbally summarise**, assistance with data collation.

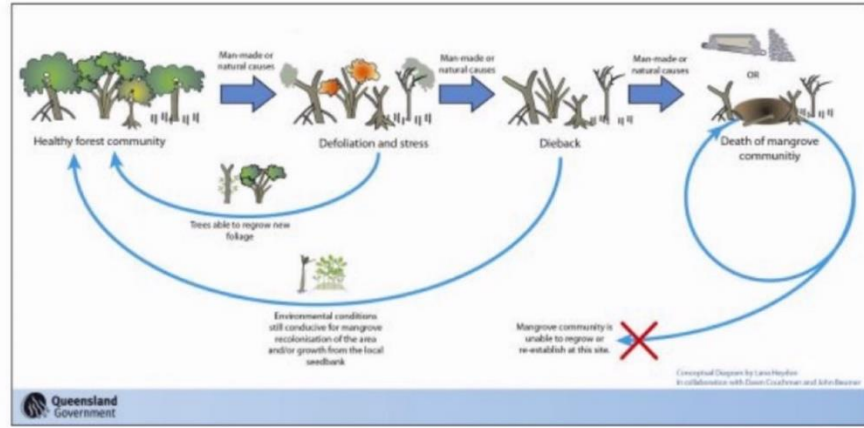
L4 – L6: **Graphing, drawing transect, drawing precis maps, calculating density, photo interpretation.**

HW: Formal presentation and **writing** of explanation



Student
planning plus
drone = fun!





Human Impacts On Mangrove Ecosy

Source

are crucial as they protect coastlines including from sediments and pollutants.

tivity of mangroves are reduced because of cities such as pollution, construction of docks, piers, and also littering. These human practises prevents generation of wetland vegetation pollutes water and ngerous to ecosystem health within the mangrove

ch as oil spills have devastating effecton many throughout nature including mangroves as tter mangroves roots, which in turn causes the trees to die. water flows within many ecosystems can cause silt to from hills and block wetlands. This can cause such as mangroves to dry out. This in turn can s which can affect many

Rubbish Tally

Site 1 - Lady Denmon

Quadrant Number	Type Of Ground	Rubbish Tally
1	Dry leaves	12
2	Wet, seedlings	1
3	Dry leaves	3

Site 2 - Moona Moona

Quadrant Number	Type Of Ground	Rubbish Tally
1	Wet sand	6
2	Grass	0

Fauna Survey

Species	Lady Denmon	Moona Moona
Soldier Crabs	~90	~100
White Bats	~5	~5
Masked Boobies	~5	~5
Sea Gulls	~10	~10
Littered	~10	~10

Community Survey

98.2% of local residents interviewed believe that mangro be protected as it is a nursery animals. It is also important for t As the graph to the right shows thought that mangroves are in it is a nursery and supports eco community also said that the p prevent erosion.

Additional literacy goals:

Lexical density goal.

Language to suit poster.

Full bibliography.

EXTENSION/CO-CURRICULAR

- Built nest boxes with Landcare as part of our environmental club
- Extension students chose to use this as a basis for entering the Geospatial competition.
- Investigated how they would optimise placement of the nest boxes to ensure use.
- Turned into a whole term of self directed extension work.
- Having the literacy and skills goals already in mind allowed me to support them to move up multiple levels. Showed a sophistication of inquiry and language.



Extension
planning and
literacy goals:

Students plan
field work.

Students plan
enquiry.

Students source
secondary data.

Multi-data
analysis.

Complex digital
map creation.

<https://nowracs.maps.arcgis.com/apps/Cascade/index.html?appid=cffc3d5e56d8412e8e2129b5d24e37a1>

The image is a screenshot of an Esri Story Map. At the top left, the Esri logo is visible next to the title "Using Spatial Technology to Optimize Nest Box Placement." In the top right corner, it says "A Story Map" with a share icon. The main visual is a photograph of a group of about ten people, including several children and one adult, gathered in a grassy field. They are looking at something on the ground. A semi-transparent black box with white text "A great partnership" is overlaid on the top part of the photo. In the center, there is a video player. The video title is "Aims and development of the project." in orange text. Below the title, the video thumbnail shows a young girl, Lizzie, sitting at a table with a wooden nest box. The video player has a play button in the center and icons for a clock and a share symbol in the top right. Below the video player, the text "Lizzie Explains the origins of the project." is visible.

esri Using Spatial Technology to Optimize Nest Box Placement. A Story Map

A great partnership

Aims and development of the project.

Sugar Glider Project by LP

Lizzie Explains the origins of the project.

YOUR TURN

[HTTPS://TINYURL.COM/Y5OSVOKD](https://tinyurl.com/y5osvokd)

1. Start with scope and sequence – identify units that have options.
2. Put into the table in order.
3. Use the verb list and school goals to identify literacy steps.
4. Use the skills list to decide on relevant skills for each unit.
5. If needed, use the unit template to develop a relevant driving question.

Further thinking:

- What will the lesson arc need to include?
- What will you need to do to make it happen (excursion, buy equipment etc)
- How can I encourage student planning of the inquiry process?