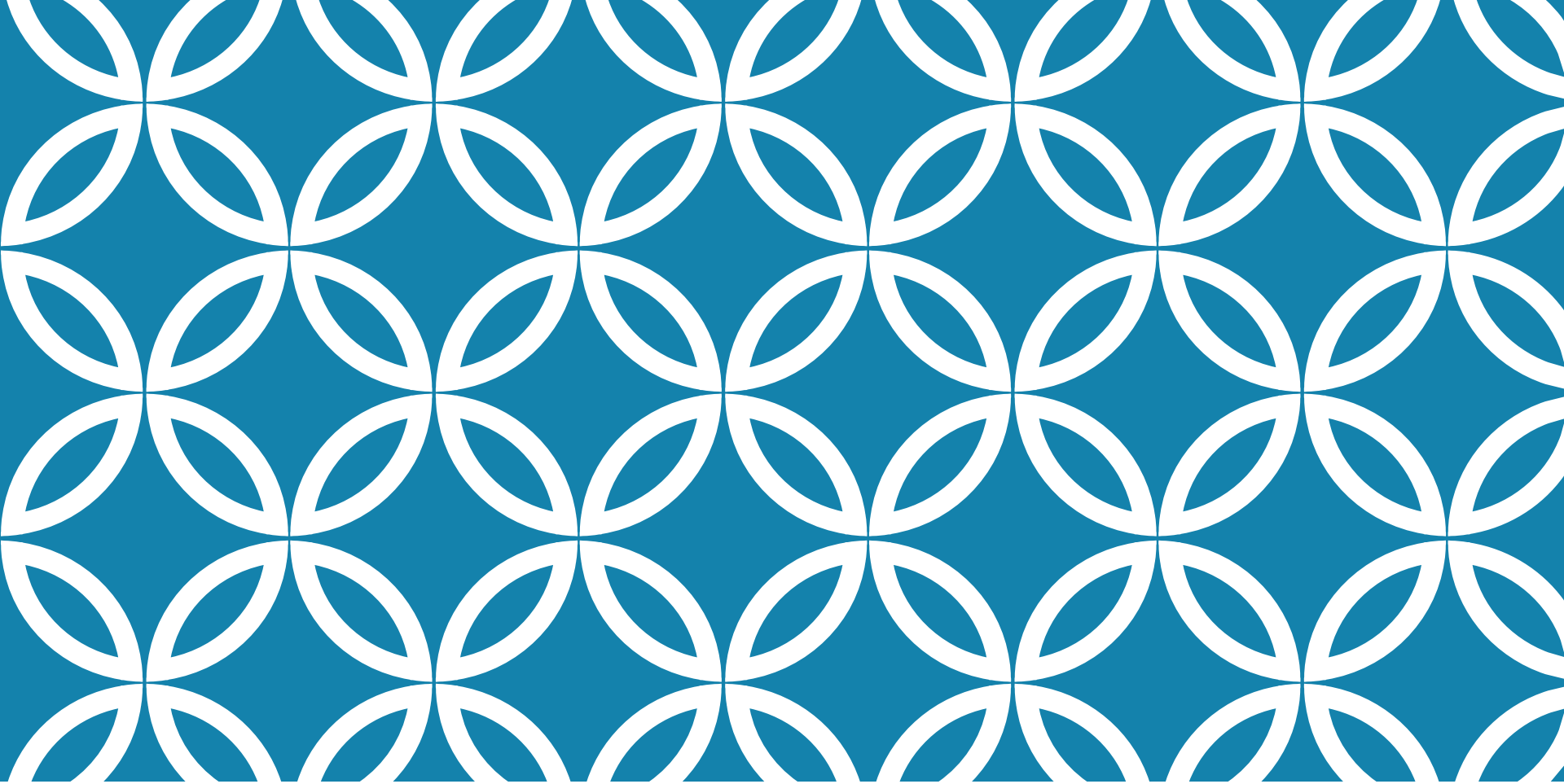


COLLECTING AND ANALYSING DATA WITH A LITERACY FOCUS

Leah Arthur

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.)

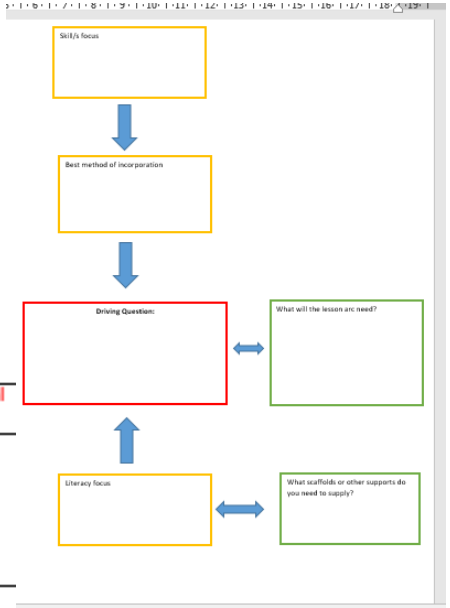
BENEFITS

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. 3rd 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.

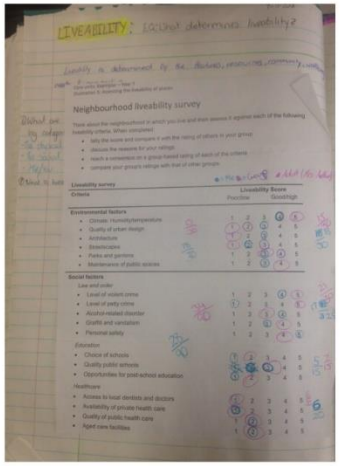
L2: Students complete liveability survey for their home town.

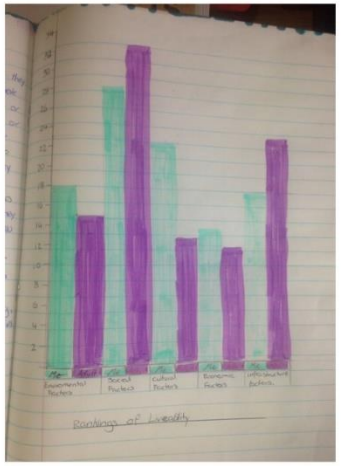
HW: Students ask parents to complete same survey for same town.

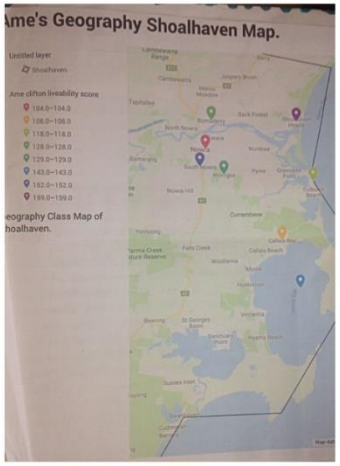
L3: Verbally summarise difference and then graph categories and totals. Create table as a class to compare towns.

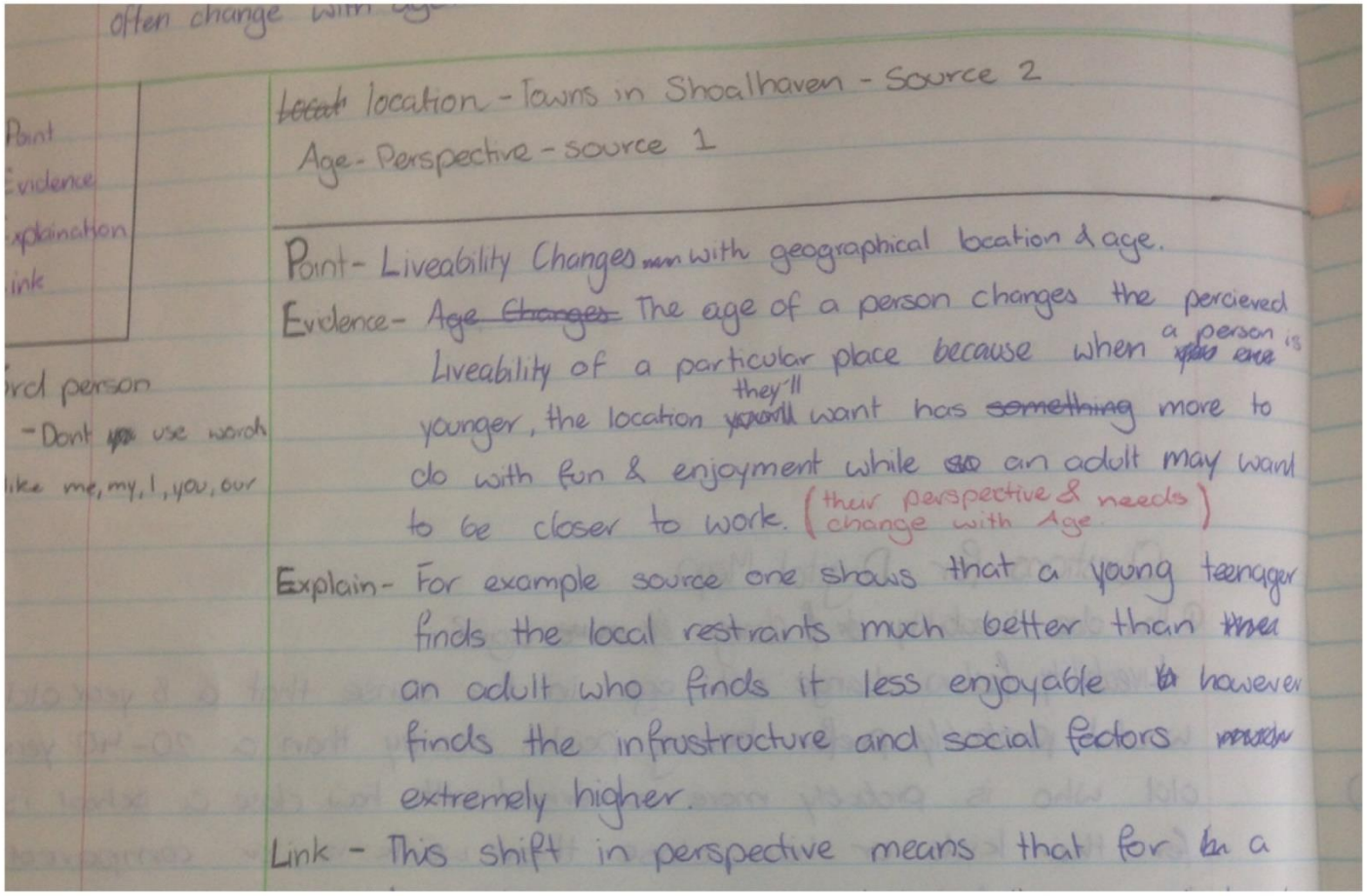
L4-L5: Map using Google my maps . (Includes revisit of lat/long)

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









Literacy goals:

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

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.

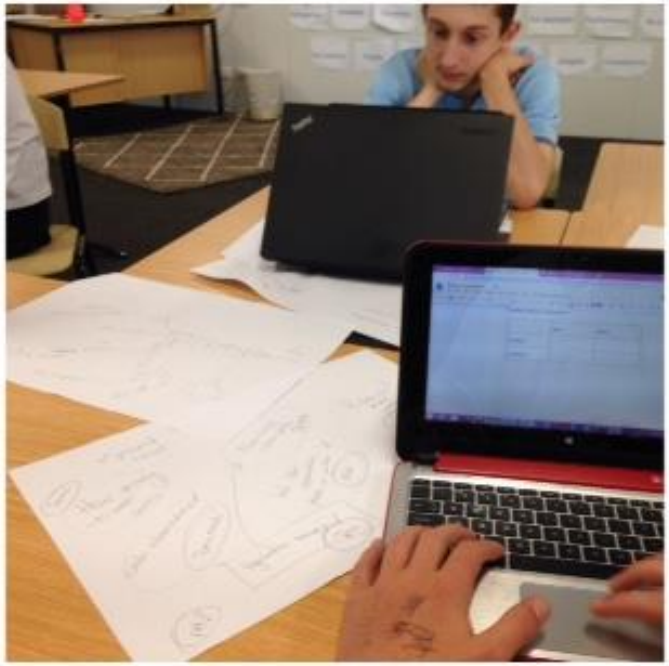
L2: Introduce question and ask students help to plan field work.

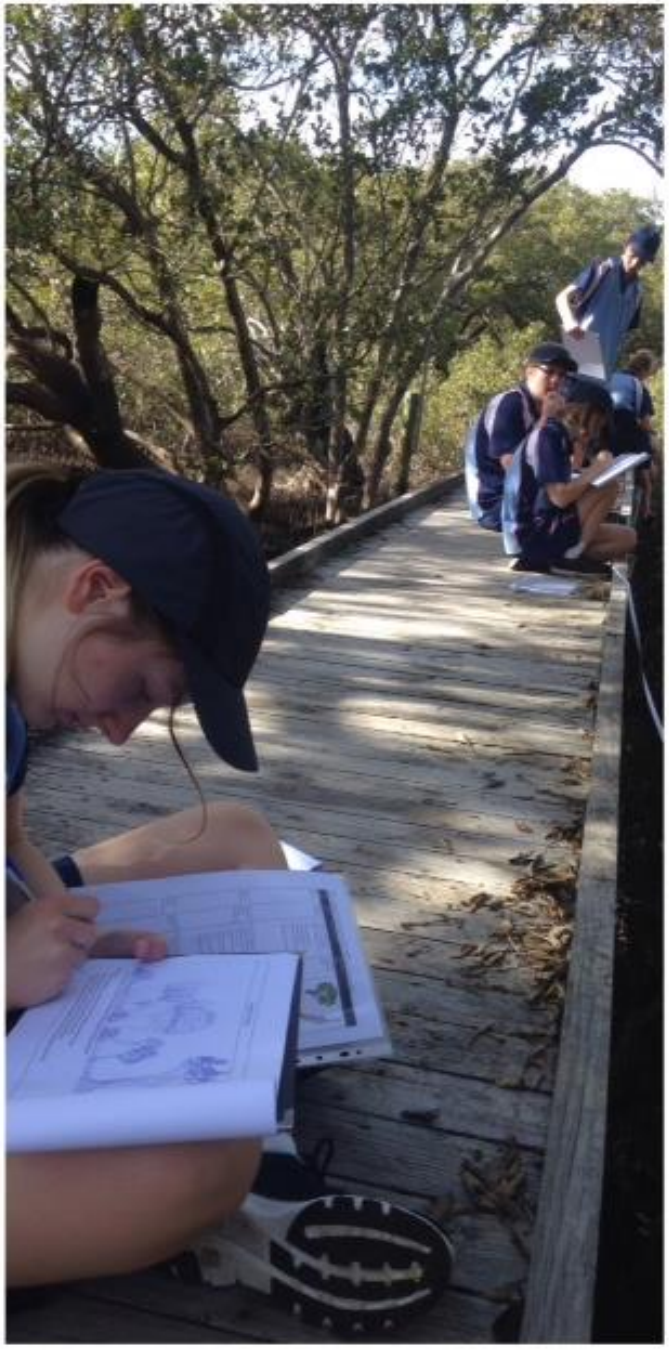
FW: (2 sites) Transect, seedling quadrants, rubbish survey, wildlife survey, over head drone photography.

L3: Verbally summarise, assistance with data collation.

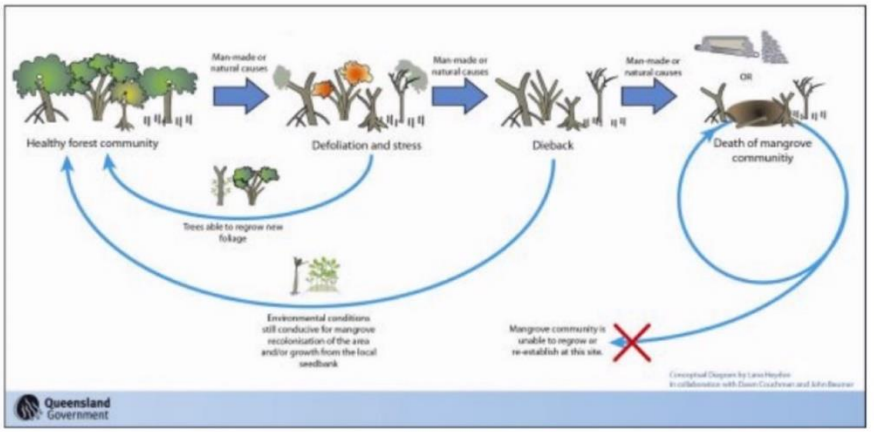
L4 – L6: Graphing, drawing transect, drawing precis maps, calculating density, photo interpretation.

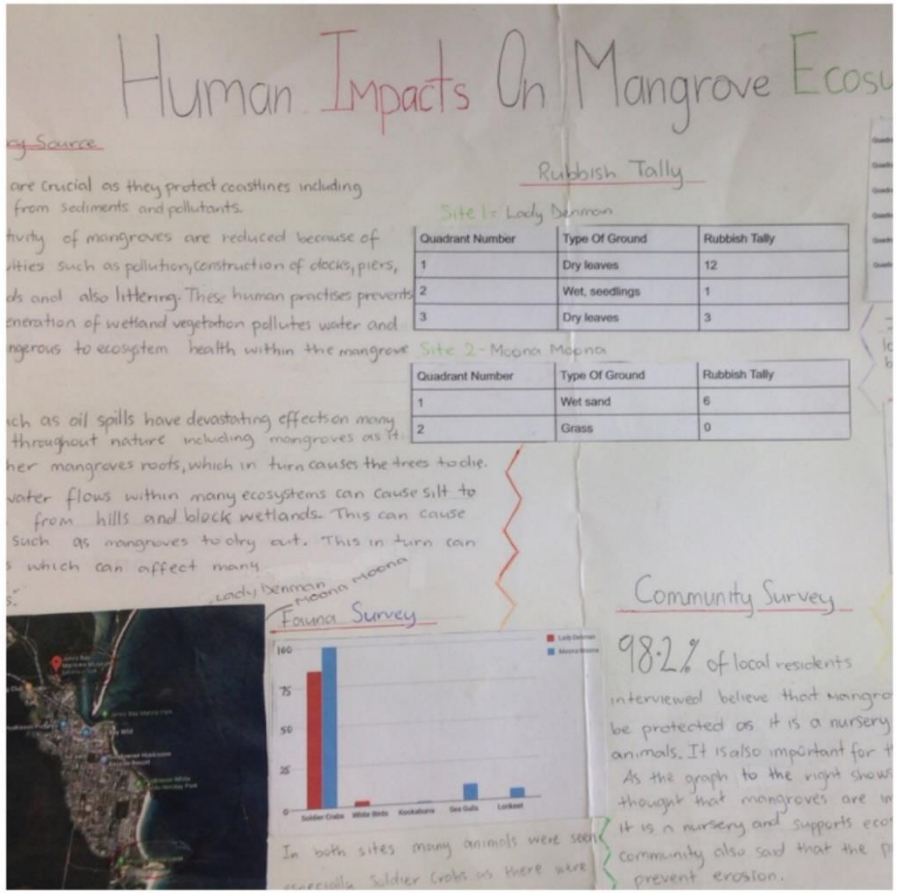
HW: Formal presentation and writing of explanation





Student planning plus drone = fun!





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=cefc3d5e56d8412e8e2129b5d24e37a1

YOUR TURN

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?