The BitL tool – geography years F–2

Geography: Years F–2

What do you observe?

Use senses to make observations through the 7 key concepts about local places in order to recognise how people feel, use and think about familiar and unfamiliar places.

What questions do you have?

Pose questions about what places are like and how they connect to other places and people.

What can you do to find out?

Collect and record information about what a place is like, to gather data about a place and its connection to people.

How can you represent this?

To represent data eg numbers in tables, components of the environment as pictures, locations on labelled maps, plans and models.

How can you make sense of this?

Interpret and draw conclusions from the inquiry.

How can you share ideas and respond?

Present information, share ideas with others and think about responses.

Pedagogical questions:

- What do you hear, see, smell, taste and feel? (sensory impressions).
- What might have been here before that we can't see now?
- What does it make you feel? (emotion)?
- What is this place?
- Where is this place?
- How is this place used?
- How was this place once used?

Pedagogical questions:

Encourage students to think about this place considering the 7 key concepts of Place, Space, Environment, Sustainability, Scale, Change and Interconnection.

Examples of questions highlighting the concepts:

- What are the stories about this place? What happens here?
- Why is this place important to you? To others?
- Why is this place here?
- How is this place cared for?
- Has this place always been like this?
- What could you change?
- How is this place part of a bigger place?
- What parts (features) make up this place?

Pedagogical questions:

- What ideas do you and others have about this place?
- Who can you ask about these ideas?
- What can you collect and record?
- Where can you look (for data)?
- If you can't go to the place - how can you find out about the place?
- What (type of) information or data should you look for?
- Who can you talk to - interview?
- What are the stories?
- What technology can you use?

Pedagogical questions:

- How can you show or map what you found?
- Which words can you use to describe direction and location?
- How can you show where places are?
- How can you show how big or small the spaces are?
- What needs to be included in your representation? (eg legend).

Pedagogical questions:

What have you found out about :

- What places are like?
- Where places are located?
- How spaces are arranged?
- How places can be cared for?
- How places can change?
- How places are connected to people?
- How places are connected to environments?
- How people are connected to environments?
- How does this help you answer your questions?

Pedagogical questions:

- How can you share with others what you have found out about places?
- What is the best way to share this?
- Who needs to know about this?
- What do you want them to know and understand?
- What words will you use?
- How has this changed your thinking about places?
- How might this change the way you feel about places?
- How has what you have learnt changed your plans for the future of your place?

Example: Year 1: Year 1 Content description: Geographical knowledge and understanding

The natural, managed and constructed features of places, their location, how they change and how they can be cared for.
Elaboration: describing local features people look after, for example the park or a heritage building near your school, and finding out why and how these features need to be cared for, and who provides this care.

What is this place like?
What are the parts of this place?
Is there anything from nature here?
Is there anything that people made here?
Where is it? Inside or outside?
What does it look like?
What do you notice when you go there? (sensory impressions).
What do you see and how do you feel?
How does it smell, and sound?
What might have been here before that we can't see now?

What questions do you have about this building, at or near your school?
What are the stories about this building?
Why is this building here?
How is it cared for?
Who cares for it? Why?
Is this place important? Who is it important to?
Has this place always been like this or has it changed?
How is this building part of the school / community?

Who can you ask to find out what life was like when the building was first built?
What ideas do you and others have about this building?
How can you find out how the historical building might have changed and why?
Where can you look for information about its history?
What can you collect and record?
What ideas do you have?
Who else might have ideas?
Who could you ask?
Are there stories about how this place was once used?
Who can you ask about how it is cared for?
What are the stories about this building?

How might you draw or map where this building is?
Which words can you use to describe its location?
Could you draw a bird's-eye view?
How could you show where the different features are?
What labels might help people understand your drawing?
How could you show how big or small things are? How could you represent the changes?
Could you use tables, charts, models, drawings or photographs to show how this building has changed over time?

Do photos and drawings help you to answer your questions?
What have you found out about this historical building and its stories?
What have you learnt about how places can change?
What have you learnt about why we might need to change places?
What have you learnt about caring for special places?
Why, and how do people care for historical or special places?
Who cares for these places?

How can you share what you learned about this historical building?
Who should you tell about this?
Who might want, or need to know?
What is the best way to share this?
What new ideas do you have about caring for special places?
Are there more places in your school / community that are special, that you could care for?
What actions should you and others take to care for special places?

The BitL tool – geography years 3–4

Geography: Years 3–4

What do you observe?

Make observations through the 7 key concepts about local and national places and environments in order to compare them.

What questions do you have?

Develop geographical questions about the similarities and differences of places and environments at local and national scales, and about resources that environments provide to sustain life.

What can you do to find out?

Collect and record relevant geographical information about the characteristics, features and use of places and environments on a local and national scale.

How can you represent this?

Represent location and features of places by constructing large scale maps using simple cartographic conventions. Use simple geographical terminology and mapping conventions - simple labels, grid references, compass directions and distance.

How can you make sense of this?

Interpret geographical data to identify distributions and patterns. Use this to draw conclusions.

How can you share ideas and respond?

Present your ideas using geographical terminology in a range of communication forms. Reflect on learning and propose how you might act, or respond as a result. Identify the expected effects of your proposal.

Pedagogical questions:

- Using your senses what do you notice when comparing places? (at the local and national scale).
- Where are these places located?
- What is natural here?
- What has been built here?
- Where are these natural and built features located?
- How is the space used here?
- How does this place make you feel?
- What weather conditions might you experience here?
- What type of vegetation do you see here?
- What do people do here?
- Can you see how people look after this place?

Pedagogical questions:

Encourage students to think about this place considering the 7 key concepts of Place, Space, Environment, Sustainability, Scale, Change and Interconnection. Examples of questions highlighting the concepts:

- What is interesting or unexpected?
- What confuses or surprises you?
- What questions could you investigate?
- Why is this, where it is?
- How did it come to be like this?
- How do different places and environments compare? (locally and nationally).
- What are the similarities?
- What are the differences?
- Where are the features and characteristics located? (eg resources). Why are the resources there rather than somewhere else?
- How is the space organised?
- What are the historical stories of this place? What might have been here in the past that we can't see now?
- What has changed over time? How has it changed?
- How might it change in the future?
- How do people use this place?
- Why is this environment important to people who live or visit here? Are people's views about this similar/different? How? Why?
- How does this environment help you to live? How do these features help other living things survive?
- How is this place used, cared for, protected and managed? Are these actions sustainable?

Pedagogical questions:

- How could you investigate your questions? What do you need to do to investigate your questions?
- What is the best way to find out?
- What has worked before? What have you done to find data and information about other things like this before?
- Where can you look for data? Can you go there? Could you do field work? Could you make sketches? What could you draw?
- What other sources might be useful? What information should you look for? Would photographs, satellite images media or the internet be useful? Where can you find these sources?
- How will you know if it is relevant?
- Who could you interview about this?
- What else might you need to know?

Pedagogical questions:

- How could you draw or model the locations and features and characteristics of these places?
- How can you show distance, direction and location on a map? How can you represent the space and how it is organised?
- How can you compare the features of different places?
- How can you represent the patterns? Which cartographic conventions might be useful? What needs to be included on your map? (eg scale, legend, title, North Point).
- How could you describe and show the interconnections between places or environments?

Pedagogical questions:

- What does the information show?
- Where are the patterns? What do the patterns in the data tell us?
- How are the different features and characteristics distributed?
- How does this help you answer your questions?
- How is this like/different to other examples/situations? How might you explain this?
- Has there been a change over time? What effect has change had?
- Does everyone think and feel the same way about this place? How does the way people think and feel about a place influence their ideas and actions?

Pedagogical questions:

- How can you share your findings?
- What options might there be for communicating what you found out? What words could you use to explain ideas?
- How has this changed what you think or how you might act in the future? How will you respond? What next? What actions might you take? What could you do? What might happen if you did act? What if you didn't?
- Who would want to, or need to know about this? Who might be able to use this learning? How might they use it?
- How do people's views about this place influence how they care about it? How do people's views influence how they might want to respond?

Example: Year 3 Content description: Geographical knowledge and understanding

The many Countries/Places of Aboriginal and Torres Strait Islander Peoples throughout Australia. Ideas from DECD Aboriginal Cultural Studies (ACS) resource, community section:Picture book about connection to home: Randall B. & Hogan M. (2008) Nyuntu Ninti, ABC Books
www.Harpercollins.com/harperimages/ommoverride/NYUNTU_NINTI_teacher_notes.pdf Other resources: Kanyini (2006) www.youtube.com/watch?v=TwuJbJaCLtc & Horton's map

What do you notice about Bob Randall's home?

What is this place?

Where is this place?

What can we see in the different Countries/Places of Aboriginal and Torres Strait Islander Peoples?

What is the weather and climate like in these places?

What questions could you investigate?

What do you notice about your home?

Where is your home?

What does 'home' mean to you? What does home mean to your classmates? What does home mean to the Aboriginal Cultural Specialist?

What are the differences and similarities of these different Places of Aboriginal and Torres Strait Islander People (ATSI) across Australia?

How could you investigate your questions?

What do you need to investigate your questions?

How might you find out about the similarities and differences of these environments?

Where can you look for data? In the field? Can you go there?

How can you represent what you noticed about these environments?

Could you use a map to represent the different ATSI Country?

Would another representation be more useful? Are some representations better for particular data? (eg a climograph for the climate data, a picture map to show the different environments).

What does the information about environments show?

Where are the patterns?

Where are the similar environments found? Are they close together or distant? Do they have similar characteristics and features? (eg resources).

What do the patterns tell you about these places and environments?

How can you share what you found out about these different environments?

What words and photographs could you use to explain your ideas? Why would you choose this way of sharing?

Are there other ways to share?

Who could you share these ideas with?

The BitL tool – geography years 3–4

Geography: Years 3–4: pg 2

Where are the Yankunytjatjara lands located? How could you describe what is near? Where do they start and finish? How might you describe this? What are the important things to pay attention to in these stories about what life was like for Kaurna people before European settlement?	Is it the same or different to where you live? What is the same/different? What else is it like? How do Aboriginal people connect with their place? What stories do they tell about Place/Country? Why is Country important to the Aboriginal people? What is the same about how Yankunytjatjara people view the world to your view? What is different about how Yankunytjatjara view the world? What do other students think about the importance of their homeland? What are the historical stories of this place? How was the space organised? (eg Where did they put their homes?). Where did they get their food and water from? Why there? How did it help them to live? Is this still the same or has it changed? How? What is the role of the environment and resources now? How was this place cared for in the past? Has this changed? Why? How is this place used, cared for, protected and managed? How do people's feelings about places influence how they act to protect places?	Could you find other sources? (eg photographs, satellite images). How are you going to find out about the features and characteristics of these places? How will you find out about the important resources here? Could you use the internet or library? What type of information should you look for? How will you know if it is relevant? Who can you ask about this? (eg make use of an Aboriginal Community Education Officer or Cultural Specialist). What else might you need to know?	How can you show what the important features are? (eg the resources in these areas and where resources are located). How can you represent the space used and the way the space is organised? Which cartographic conventions might be useful? What needs to be included on your map? (eg scale, legend, title, direction). How could you describe the connections between people and their place?	How does this help you answer your questions? Why is the location of language groups important to you? To others? How is the ATSI people's connection to Country the same as the connection other Australians have to the land? How is this connection different? Has there been a change over time? Do all ATSI people feel the same way towards Country? What effect has change had? Does everyone think and feel the same way about this place? Do the traditional owners of the land feel the same way that other groups do about their Country? How does the way people think and feel about Country influence their ideas about how to use resources, and their actions for sustainability?	Who would be interested in this? Why? How has this changed what you think about these places? How has this changed your ideas about how other people feel about, and look after these places? How do people's different views about places influence how they care about them? Does this change the way you might act towards the environment in your part of Australia? What might happen if you did act? What if you didn't?

The BitL tool – geography years 5–6

Geography: Years 5–6

What do you observe?

Make observations through the 7 key concepts of Place, Space, Environment, Sustainability, Scale, Change and Interconnection, about the things that change the characteristics of places and environments in order to identify and describe them.

Pedagogical questions:

- Where are these places located?
- What natural environmental features (landforms, vegetation, water bodies, animals, weather conditions) can you see and experience in these places?
- How are the environmental features arranged in these places?
- Who lives here and uses these places?
- What has been built here? How is the built environment arranged?
- How does the natural environment influence the built environment and vice versa?
- What are the patterns in these environments?
- How is the space used here?
- What evidence can you see of the impact of people here?
- What has changed here?
- What differences and similarities exist if we look at places like this locally, nationally or globally?

What questions do you have?

Develop geographical questions to investigate and frame an inquiry about:

- the reasons for the diversity of people and places around the world
- how people and places of the world are interconnected and how they might change.

Pedagogical questions:

Encourage students to think about this place considering the 7 key concepts of Place, Space, Environment, Sustainability, Scale, Change and Interconnection.

Examples of questions highlighting the concepts:

- What questions could you investigate?
- What is interesting or unexpected?
- What confuses or surprises you from your observations/ data?
- Why is this place where it is?
- How did it come to be like this?
- What else is it like? (locally and globally). Is this unusual or is this the same everywhere?
- What is the same? What is different? (locally and globally).
- What are the stories about this place?
- Has it changed over time? (long and short term).
- How is it changing? Why is it changing?
- Who or what do the changes influence? How do you know?
- What might happen in the future?
- How do people and their environment rely on each other in this place?
- How do people connect with this place and other places?
- What features of the place affect the people here?

What can you do to find out?

Locate, collect and record relevant geographical data from both primary and secondary sources (eg people, maps, plans, photographs, satellite images, statistical sources and reports).

Use ethical protocols and evaluate sources for their usefulness.

Pedagogical questions:

- How are you going to investigate your questions?
- Can you do fieldwork to investigate?
- Where can you look for data and information about this?
- What other useful sources can you find? (eg different perspectives, maps, plan, etc).
- What ideas do you and others have?
- Who can you ask?
- How can you evaluate your sources?
- What information/data should you look for?
- What is the best way to collect and record data?
- How can you find out about where places/things are positioned relative to others?
- How will you evaluate the data/units/measures used?
- Is this useful information/data? How do you know? Is it contestable? How?
- What do you need to consider to ensure your data collection doesn't harm people or the environment?

How can you represent this?

Represent geographical information on large and small-scale maps that conform to cartographic conventions (eg border, source, scale, legend, title and direction).

Use appropriate spatial technologies.

Pedagogical questions:

- What type of visual representation might help to analyse the spatial data?
- How could you draw, map or model the data to visually represent it?
- What other representations can you look at and evaluate for your own uses? (eg maps, population pyramids, graphs).
- Which mapping conventions will you use?
- Which cartographic skills and representations are useful?
- What are the appropriate geographical words to use?
- How can you emphasise useful data using the spatial technologies? (eg Google maps, computer generated maps).
- How might you show direction, location, distributions, patterns, trends, and relationships? (eg choropleth maps).

How can you make sense of this?

Interpret the patterns, trends and distributions in order to draw conclusions about connections between the people, places and phenomena of your world.

Pedagogical questions:

- What do your representations show?
- What doesn't it show? Why is this so?
- How might you explain the patterns, distributions and trends in the data?
- How might this happen? Can you suggest a relationship or a reason for this?
- Are there other ways of looking at the same data and coming to a different conclusion?
- What impact is change having? Why?
- How do the connections between people, places and phenomena have an impact on what you have found out?

How can you communicate and respond?

Present your ideas using geographical terminology and a range of communication forms. Propose individual and group actions based on what you learnt from your inquiry and describe the expected effects of this proposal.

Pedagogical questions:

- How can you share what you found out? What other ways might you use to share this?
- What geographical tools and terms will help?
- Who is your audience?
- Who might care about this? Who might need to know this?
- How might this affect your future?
- How might this affect other places? People? Environments?
- How might it affect them?
- How has your learning changed the way you see the future?
- What might you do differently? What might you keep doing the same as before? Why?
- What action might you propose?

Example: Year 6 Content description: Geographical knowledge and understanding

The location of the major countries of the Asia region in relation to Australia and the geographical diversity within the region. Using Geogspace website Year 6 exemplar illustration: http://www.geogspace.edu.au/ to look at diversity in the Asian region

What do you notice about Asia?

Which direction is Asia from Australia?

Which is the nearest Australian town? Which is the nearest Asian country?

How could you describe the absolute location of an Asian country using latitude and longitude?

What features of Asian countries stand out? How are they similar and different to Australia?

What questions could you investigate?

What is interesting or unexpected about the Asian region?

What confuses or surprises you in the data or patterns?

Why are the boundaries for Asia where they are?

What are the different cultures represented within Asia?

What issues might there be for you doing field work in Asia?

Who might have information about Asia?

Which information will be the most relevant to your questions? How is the data about Asia the same as data from your local area?

How is the data from Asia different to data from your local area?

How can you represent Asia on a map?

What type of map and spatial technologies best represent the data you have?

Would Google Earth, Google maps, Mapmaker or Gapminder be useful to show the comparison of Asia with Australia? How?

What does the information tell us?

What are the maps and graphs of Asia showing? What does this information mean?

How can you interpret the diversity and changes in the Asian information?

How can you help other people understand what you've found out about the diversity in Asian countries? How could you communicate it?

What maps, graphics and digital technologies will help you communicate your ideas?

The BitL tool – geography years 5–6

Geography: Years 5–6: pg 2

How are Asian countries similar and different to each other? How is the space used? What connections do you observe between Australian people and Asian people? What connections can you see between Australian people and Asian places? How are these connections changing over time?	What is the same about regions within Asia? What is different about them? Is this unusual or is this the same everywhere? What other places is Asia like? Has Asia changed over time? How is Asia changing? Why is it changing? Who or what do the changes influence? How do you know? What might happen in the future? What connections are there between Australian people and Asian people? How do people in Asia connect with, and rely on, people in other places? How are these connections similar/different between Australia and other places? What changes these connections? How does Asia influence and affect Australia? How does Australia influence and affect Asia?	What other useful sources can you find? (eg interviewing different groups of people, using maps, plans, sourcing records from government departments and Non-Government Organisations (NGO's). What information could you look for about the people and places of Asia and Australia? Is this useful information/data? How do you know? How can you evaluate your sources and the data? How can you check for contestability? How will you consider ethics? How can you ensure that collecting this information won't harm people or the environment?	How can you use digital mapping technologies to show comparative population changes across Asia? How can you use graphics to show patterns in the lifespan data from Asia? How might you represent the average number of births per woman in the Asian region? How might you show comparisons of different countries across the region? Is there a relationship between the age profile and the birth-rate? What other relationships can you find? What is effective about using Gapminder, or other tools, to show change over time? Which mapping conventions and terms will help others understand your map? How might you show direction, location, distributions, patterns, trends, and change over time? Can you do all of this on one map or graph? Do you need multiple representations?	How have the populations changed over time? What factors affect population? What factors are affected by population? Have some factors changed more rapidly than others? What might have caused the differences and changes over time? Can you suggest a relationship or a reason for this? How do the patterns in other Asian countries compare to Australia? Are they similar or different to Australia? Can you identify these same patterns and trends in other Asian countries? What is the impact of the patterns or trends in population? Are there other ways of looking at this same data and coming to a different conclusion? What other conclusions are possible?	Who else needs to know about how populations are changing in Asia? How might the trends influence your future? What does this mean to you? How has your learning changed the way you see the future of Australia in the Asian region? How might this affect other places? People? Environments? What action might you propose? Why?

The BitL tool – geography years 7–8

Geography: Years 7–8

What do you observe?

Observations are made in order to identify and explain geographical processes using primary and secondary sources through the 7 key concepts of Place, Space, Environment, Sustainability, Scale, Change and Interconnection.

Consider the reliability of observations and sources and how these might change at different scales.

What questions do you have?

Develop and identify geographically significant questions to frame an inquiry using appropriate geographical concepts.

What can you do to find out?

Locate, collect, select and record relevant geographical information from a range of appropriate primary and secondary sources. Collect data and information as evidence of change over time.

Use ethical protocols and evaluate sources for their reliability and usefulness.

How can you represent this?

Represent data in a range of appropriate forms (eg climate graphs, compound column graphs, population pyramids, tables, field sketches and annotated diagrams, with and without the use of digital and spatial technologies).

Represent the spatial distribution of different types of geographical phenomena by constructing appropriate maps at different scales that conform to cartographic conventions, using spatial technologies as appropriate.

How can you make sense of this?

Analyse geographical data using qualitative and quantitative methods. Identify spatial distributions, patterns and trends, propose explanations for these and infer relationships between them.

Apply geographical concepts to draw reasoned conclusions based on analysis of the information collected.

How can you communicate and respond?

Present findings, arguments and ideas in a range of communication forms selected to suit a particular audience and purpose. Use geographical terminology and digital technologies as appropriate.

Reflect on learning to propose individual and collective action in response to a contemporary geographical challenge, taking account of environmental, economic and social considerations, and predict the expected outcomes of their proposal.

Pedagogical questions:

- What do you observe here?
- What tools might extend your ability to observe and/or collect data?
- What are the significant natural features and phenomena? What are the significant built features and phenomena?
- Where are the features and phenomena located?
- How do people use, and manage this place or phenomena?
- What patterns of distribution or connections can you see?
- What geographical processes (natural and human) can you see at work?
- What evidence exists of human impact or interaction?
- What evidence can you see of change?

Pedagogical questions:

Encourage students to think about this place considering the 7 key concepts of Place, Space, Environment, Sustainability, Scale, Change and Interconnection.

Examples of questions highlighting the concepts:

- Which questions will best specify and focus your investigation?
- Which geographical concepts are most important for your investigation?
- What is happening? Which geographical processes are acting here?
- Who, and what are these processes affecting?
- How is this place changing?
- What might have changed over time that you can't see?
- Why is it changing?
- How might people plan for, and manage this change?
- Why is it where it is?
- What diversity of views do people have?
- How do people rely on, or use this, to sustain life or enrich life?
- What are the interconnections between people, place and environment involved in this situation or challenge?
- Which factors impact or influence this place or phenomena? How?
- Which factors influence the spatial distribution?
- What questions arise at different scales? Locally, nationally, globally? Are there patterns or not?
- How do interconnections change places and environments?
- How do interconnections affect people's lives?

Pedagogical questions:

- What information/data should you look for in order to investigate your inquiry questions?
- Where can you look for relevant information?
- Who can you ask?
- How will you check for relevance, validity, reliability and contestability?
- What fieldwork data might inform this inquiry?
- Where can you look for primary data in the field? Where can you look for secondary data?
- What type of data can you access?
- What tools might help to collect data in your fieldwork? What tools might help to collect and record data from primary and secondary sources?
- How will you consider ethics and possible harm to people (or the environment) your inquiry may cause?

Pedagogical questions:

- How could you draw, map or model the information collected in order to view and interpret the spatial patterns and distributions?
- How is information about direction, location and features of the place accurately communicated by labelling?
- Which cartographic conventions are important?
- Which tools might be of use to help identify trends, distributions and patterns? (eg tables, graphs, population pyramids, maps, field sketches).
- How will you choose a suitable scale? How might a change of scale aid interpretation of the information?
- Which technology aids representation?

Pedagogical questions:

- What does the data indicate?
- How might you analyse this data?
- How might you explain this? How can you explain the geographical processes at work here?
- How does this help answer your questions?
- What conclusions have you drawn, and what are your reasons for these?
- How does this compare to other examples and situations?
- What impact is change having? Why?
- How might you consider the environmental, economic, and social factors?
- What different viewpoints and opinions are there about this phenomena? Why?
- How might you explain the effect of interconnections?
- How can you explain differences at the national and global scales?
- How can you ensure your data is valid and accurate?

Pedagogical questions:

- How can you share your conclusions/suggestions/feelings?
- How will you present your conclusions and build your arguments for your audiences?
- Which terminology, technology and conventions will be most effective for your audience and purpose?
- Now that you know this, what do you think and feel about this? Why?
- What should happen next? What are your proposals? What will you do, or change? What do you propose others do? Who should be involved?
- Who might this action affect? Why?
- What are the environmental, economic, and social considerations to your proposal?
- What impact might your proposal have? What are the likely outcomes for the future?

Example: Year 7 – Unit 1 Water in the World Content description: Geographical knowledge and understanding

The nature of water scarcity and ways of overcoming it, including studies drawn from Australia and West Asia and/or North Africa . Geogspace- Murray Darling Basin plan *http://www.geogspace.edu.au/core-units/years-7-8/exemplars/year-7/y7-exemplars-y7-illus2.html* ***Global Education resources:*** *http://www.globaleducation.edu.au/teaching-activity/the-safe-water-challenge-7-8.html* ***Students are faced with the issue of global water scarcity.***

What do you observe about where Australia's water is located? Where is there plenty? Where is water scarce?

What does the secondary data show about how this has changed over time?

What questions could frame an inquiry about drought?

How, and why, does drought occur?

How do we decide how much is enough water?

What data and information will be relevant to your investigation about drought?

What type of fieldwork data might inform an inquiry about drought?

What are the best representations to show the location of water resources, availability, quality and quantity? (eg tables, graphs, population pyramids, maps and field sketches).

What can you conclude from the patterns in the local, national and global water data?

What management responses would you suggest to deal with a drought challenge?

The BitL tool – geography years 7–8

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What does the local, national and global data show? What can you observe from regional and global water data? Where is water scarce in West Asia? Where is water scarce in North Africa? What patterns do you see? Which geographical processes can you observe in a time of drought? What is happening or changing here?	Which factors influence the spatial distribution of the water? How does the availability of water affect the location of towns/settlements? How does the location of people in settlements, or land use, affect the availability of water? How do people rely on, or use water, to sustain life and enrich life? How do people rely on, or use water, to sustain life and enrich life? Are there patterns in the distribution of water? How does Australia compare to other similar places? (eg West Asia and North Africa). What is the drought data at the local, national and global level? Who, and what, is drought affecting? Are there any people or industries benefiting from drought? How? Has it always been like this in Australia? West Asia? North Africa? What is the same or different now? How might people plan for, and manage, change of water availability in the future? What different views do people have about the management of drought? In what ways are places valued and perceived differently as a result?	Would photographs, interviews and surveys be of use? Where can you source secondary data about water availability? Where can you source statistics about water needs or usage? What tools might help to collect and record data from primary and secondary sources? Could you ask the authority which manages the water resources? Have there been related investigations, which might be useful to compare to this study? Locally or nationally? Recent or historical studies? How will you know the data is relevant to the current situation and location? How will you check for validity and reliability of the data? Are there any ethical concerns to consider when collecting this data? Could the collection of this data lead to harm of the environment or people?	What are the best representations to show the location of water resources, availability, quality and quantity? (eg tables, graphs, population pyramids, maps and field sketches).	How might you explain the reasons for the distribution of water? How can you explain the geographical processes at work here? Does this explanation hold true at all scales - local, national and globally? How does this help you answer your questions about drought? How does the situation in Australia compare to West Asia and North Africa? Can you make inferences about the effects of water scarcity on people and places? How might you explain the environmental, economic, and social factors that are acting? Has the drought data changed over time? Why? What impact does this have on people, and the environment? What might this mean to other people? What different viewpoints and opinions are there about drought? Why? How does this inquiry help you to explain individual and government responses to drought? What criteria might be appropriate to judge alternative management solutions in a drought? How can you explain what might happen if there are further changes?	How might people and government prepare, or manage, their future when drought is a possibility? How might economic, environmental, and social factors influence their response? What action do you suggest at a local level? Are there different approaches to this challenge at a regional, national and global level? What impact might each proposal have? What are the likely outcomes for the future? Is each proposal sustainable? How would you communicate and argue for your preferred drought response proposal? How do your ideas compare with the ideas of others, and with ideas of the past? What evidence will support your argument?

The BitL tool – geography years 9–10

Geography: Years 9–10

What do you observe?

Observations are made using primary and secondary sources in order to identify, analyse and evaluate geographical processes through the 7 key concepts of Place, Space, Environment, Sustainability, Scale, Change and Interconnection.

Consider reliability and how observations might change at different scales.

What questions do you have?

Use initial research to identify, develop and modify geographically significant questions, and frame an inquiry that identifies and applies geographical methodologies (evaluated for appropriateness) and concepts.

What can you do to find out?

Select and critically evaluate a range of primary and secondary sources. Critique information for reliability and usefulness. Collect and record relevant geographical data using ethical protocols. Ensure collection of an appropriate range of viewpoints.

How can you represent this?

Accurately represent multi-variable data in a range of appropriate graphic forms. (eg scatter plots, tables, field sketches and annotated diagrams, with and without the use of digital and spatial technologies).

Represent the spatial distribution of geographical phenomena by constructing special purpose maps that conform to cartographic conventions, using spatial technologies as appropriate.

How can you make sense of this?

Evaluate data using qualitative and quantitative methods. Using the data and representations make generalisations and inferences, propose explanations for distributions, patterns, trends, relationships and anomalies, and predict outcomes.

Apply geographical concepts to synthesise information from various sources, and draw conclusions based on the analysis of data and information, taking into account alternative points of view.

Consider how geographical information systems (GIS) might be used to analyse geographical data at a more elaborate level.

How can you communicate and respond?

Present findings, arguments and explanations in a range of appropriate communication forms, selected for their effectiveness and to suit audience and purpose; using relevant geographical terminology, and digital technologies as appropriate.

Reflect on, and evaluate the findings of the inquiry to propose individual and collective action in response to a contemporary geographical challenge, taking account of environmental, economic and social considerations; and explain the predicted outcomes and consequences of their proposal.

Pedagogical questions:

- What are the characteristics of these phenomena or places?
- What geographical processes do you observe?
- What tools might extend your ability to observe and/or collect data?
- What is the location and distribution of the phenomena?
- Does the data show patterns, associations or distributions?
- Does the data change over time?
- What evidence can you observe of the geographical processes?
- What evidence can you observe of the spatial change over time? Spatial variations?
- What evidence shows the interconnections between environments, places and people?
- What is the evidence of humans managing environments for sustainability?
- How does data differ from the local to the global?
- What do the secondary sources show?
- How can you be sure your observations are accurate and valid?
- What can't you see or observe here?

Pedagogical questions:

Encourage students to think about this place, process or phenomenon considering the 7 key concepts of Place, Space, Environment, Sustainability, Scale, Change and Interconnection.

Examples of questions highlighting the concepts:

- What are the questions arising from your initial research or observations? (primary source).
- What are the associations, distributions or patterns? Are they significant?
- What questions arise from secondary sources?
- How could you modify your questions to improve them?
- How are geographical processes acting at the local, national and global scales?
- How does this change the characteristics of places?
- How do perceptions change at different scales?
- What are the alternative considerations/perspectives? (eg economic, social, and environmental).
- What are the outcomes and consequences of change?
- How do interconnections influence people, change places and environments in this situation?
- How might people manage the changes to influence their future? What are the options for management? Are the options sustainable? What are the alternative strategies?
- How, and why did this happen?
- How does this compare with elsewhere?

Pedagogical questions:

- What information/data should you look for in order to investigate your inquiry questions?
- How can you find relevant geographical data and information?
- Where can you look for this data?
- How can you ensure spatial distributions, patterns and associations are identified from the type of data you collect?
- Would background information or preliminary research be of use?
- How will you check for validity, reliability of the secondary sources? (contestability).
- Who might you interview to provide insight?
- Is it ethical to gather this data and information?
- What are the limitations of your data and information?
- Where can you look for primary data in the field? Where can you look for secondary data?
- What tools might help in your fieldwork?
- What tools might help you to collect and record data from secondary sources?
- Would triangulation of data be of use in this inquiry?

Pedagogical questions:

- How can you appropriately represent your data?
- How can you visually represent the data in order to aid the communication of the patterns and distributions?
- How is the type of representation determined by the nature of the data?
- Which digital or spatial technologies are useful?
- How could you identify and communicate trends in the data?
- How might you describe and represent the associations, distributions and patterns and the relationships between them?
- How do you know if they are significant?
- How can you consider the accuracy of the multivariable data?
- Which special purpose maps might be appropriate to display this data?
- Which cartographic conventions are most appropriate?
- Which terminology conveys your meaning most appropriately?
- How will you choose a suitable scale? How might a change of scale aid interpretation of the data?

Pedagogical questions:

- What does the data tell us?
- How valid is the data and the methodology of collecting it? Is there conflicting data?
- How does the data you have collected compare with the current geographical thinking?
- How current is the data, and will it be relevant into the future?
- How can you explain the geographical processes involved?
- What explanations might account for the distributions and patterns?
- What evidence led to your explanation?
- How will you know if a pattern, trend relationship, or anomaly is significant?
- What conclusions have you come to? How can you justify your conclusions?
- What different viewpoints and opinions are there, and why?
- How will you consider alternative points of view?
- What alternative strategies might be suggested? How will you set the criteria to judge alternative suggestions?
- What proposals can you suggest for future action? Which is your preferred proposal? How can you justify your response?
- What other questions do you have?
- How could you improve your inquiry next time?
- What does this mean to you?
- How will it affect you, and others locally/nationally /globally?
- Can you generalise and infer from the data collected, or sourced, to other situations?
- What can you infer from the data about the impact of change?
- What are the future outcomes – short term and long term?

Pedagogical questions:

- How can you share your conclusions and proposals?
- How might you present findings, arguments and explanations appropriately for the audience and purpose?
- How will you acknowledge multiple perspectives and sources?
- So what? Now that you know this, what should you think, feel, do about this? Why?
- Which of your decisions might be influenced by this knowledge?
- How might sharing your proposal shape your actions, and the actions of others?
- What are the possible outcomes and consequences of this proposal? Who decides?
- How might you consider economic, social and environmental outcomes and consequences that might result from the proposal?
- Who might benefit? Who might be disadvantaged? What is the cost?

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Example: Year 10 - Unit 2 Geographies of human wellbeing Content description: Geographical knowledge and understanding

The reasons for spatial variations between countries in selected indicators of human wellbeing
Geogspace year 10 exemplar: Illustration 4: Rich and Poor http://www.geogspace.edu.au/ Students examine a range of data and statistics (gathered from a variety of agencies) which look at death rates, birthrates, infant mortality rates, life expectancy and other measures of wellbeing and wealth to compare variations between countries.

Can data show geographical processes that impact on wellbeing? (eg Death rates, birth rates etc).

What does the data look like?

Can you see changes in the data?

Is there a difference between countries in regards to wellbeing?

How does data differ within a country? (eg life expectancy from region to region).

How does wellbeing data differ from the local to the global?

What do you already know about human wellbeing? How is human wellbeing described or defined by the United Nations (UN)? Is this universal, or are there different views?

What questions might you investigate relating to the spatial distribution of wellbeing?

What are the associations, patterns and distributions that are significant?

Is the diversity within countries as broad as the diversity between countries?

What questions arise from the primary and secondary sources?

What is the diversity of wellbeing measurements within a country or region?

How do wellbeing measurements compare at the local, national and global scale? How is wellbeing perceived at these scales?

What changes are occurring over time in the countries you have investigated?

How is wellbeing changing in developing countries vs developed countries? Why is it changing?

What are the outcomes and consequences of change?

Where is wellbeing staying constant? Why?

How do the connections between people, places and environments influence wellbeing?

How do the interconnections between people and environments influence factors like life expectancy?

What might happen in the future?

How does wellbeing affect demographics, town planning, and future planning for use of resources? Nationally and globally?

What are the options or strategies for management of wellbeing? Are the options sustainable? How?

What relevant demographic data can you find, and where will you look for it?

How can you find relevant geographical data and information? How will you evaluate the relevance of data to your study?

Where will you find population, census, and economic data?

How can you ensure spatial distributions, patterns and associations are identified from the type of data you collect?

What background information and historical data would be of use to this study? What information can be sourced from governments or Non-government organisations in the area of wellbeing? (eg World Vision).

Whose opinions are of value in this inquiry? Why? Could interviewing recent migrants be useful?

Is it ethical to gather this data and information? Why/why not?

How will you check for validity and reliability of the primary and secondary sources?

How can you best represent data to show similarities and differences in wellbeing?

How can you show patterns and distributions of wellbeing factors?

How can you best represent the age/sex demographic of a place?

How can you represent population density? (eg choropleth map).

What conventions and terminology are required when representing wellbeing data?

How might the scale that you use influence the representation or interpretation of this data?

Which technology aids representation?

How could you use spatial technology? (eg Geographical Information Systems (GIS) to represent the distribution, patterns and trends of human wellbeing).

How is data configured to be comparable? (eg crude birth and death rates, infant mortality rates).

What explanations might account for the variations in wellbeing indicators between countries?

Are social, economic and environmental factors equally important? What evidence led to your explanation?

Are alternative conclusions plausible? Are the global variations in human wellbeing sustainable?

What does this mean to you? How will it affect you and others locally, nationally and globally?

Is it possible to generalise and infer from the data collected or sourced to other situations?

What strategies are currently in place to aid developing countries and promote improvements in wellbeing? Why?

How would you analyse and evaluate alternative strategies to the geographical challenge of worldwide variation in human wellbeing?

What additional questions do you have?

How valid is the data, and the methodology you used to collect it, or represent it?

What are the limitations of your investigation?

How could you improve your inquiry next time?

Is the economic and social data equally important? Why/why not?

How can you share your conclusions about the global challenges found in variations of human wellbeing indicators?

How can you share your conclusions, and make proposals for a preferred future?

How might you present findings, arguments and explanations appropriately for the audience and purpose?

Who needs to know about what you have learned?

How will this knowledge and understanding change how you and others think, and act in the future?

How will you acknowledge multiple perspectives and sources?

How might you consider economic, social and environmental outcomes and consequences that might result from the proposal? Who might benefit from your proposal?

Who might be disadvantaged? What is the cost? To whom?

What are the possible outcomes and consequences of your proposal?

Who decides which proposal is enacted?