# HSIE: Geography Stage 3 learning sequence – geographical skills focus – mapping and data representation

**Learning sequence description**

In this sequence, students focus on the geographical skills of mapping and data representation. They learn to construct tables, graphs and maps, and interpret these to identify distributions and draw conclusions about how climate influences the distribution of where people live.

## Syllabus outcomes and content

**GE3-1** – describes the diverse features and characteristics of places and environments

* investigate how the natural environment influences people and places.

**GE3-4** – acquires, processes and communicates geographical information using geographical tools for inquiry

* represent data in different forms, for example, plans, graphs, tables, sketches and diagrams
* represent different types of geographical information by constructing maps that conform to cartographic conventions using spatial technologies as appropriate
* interpret geographical data and information, using digital and spatial technologies as appropriate, and identify spatial distributions, patterns and trends, and infer relationships to draw conclusions.

## Geography K-10 [Syllabus](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/learning-areas/hsie/geography-k-10) © 2020 NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South WalesLesson 1 – Tables and graphs

Students are learning to:

* interpret and compare climate data from tables and graphs

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| Item | Learning experience | Differentiation strategies and/or adjustments | Resources |
| 1.1 | **Australian climate**  Ask students to recall their understanding about climate and review how climate data can be represented in tables and graphs.  Show students a table of climate data and identify the features and purpose of a table.  Ask students to identify any patterns or trends that they see in the data.  Explain that a table is a graphical tool used for recording data. Explain that geographers conduct field surveys to collect data, and that they record this in a table.  Show students a graph of the climate data from the table.  Ask if students can identify the same patterns or trends that they found in the table.  Ask students if they think it is easier to see patterns or trends in a table or in a graph.  Students draw a climate graph or a temperature and rainfall graph for Sydney, NSW. Alternatively look up and graph the climate data for student’s local region plus a second, different region in NSW. Compare the climate graphs and discuss how climate could influence where people live. Use a Claim-Evidence-Reason graphic organiser to make an argument supporting the impact of climate on where people live. |  | Student workbook |
| 1.2 | **Climate change**  Show students an example of a table with data for climate in NSW over the past 100 years. Ask students to plot temperature and rainfall on separate graphs, then think about and identify trends and patterns in each graph. As an extension opportunity, ask students to identify a trend or pattern by comparing both graphs simultaneously. |  | Student workbook |
| 1.3 | **Opportunity for monitoring student learning**  Creating a graph – Student work.  Students construct a hand-drawn or computer-generated graph using from a climate data table.  **What to look for**   * graph contains a heading, axis labels and correct data for temperature and rainfall * Claim-evidence-reason provides plausible explanation of how climate impacts on where people live. |  | Student workbook |

## Lesson 2 – Mapping

Students are learning to:

* represent data and information by constructing a topographical vegetation map that conforms to cartographic conventions
* interpret geographical data in the form of a map to identify the impact of climate on distributions and patterns in vegetation
* infer a relationship between climate and the distribution of vegetation
* draw a conclusion about the relationship between climate and the distribution of vegetation.

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| Item | Learning experience | Differentiation strategies and/or adjustments | Resources |
| 2.1 | **Climate maps**  **Explain that geographers use climate surveys to identify patterns in the distribution and density of plant growth. This data can be combined with climate data and an inference drawn about the influence of climate on the distribution of vegetation. The information can be used to help plan new and future developments that may influence where people live.** |  | Student workbook |
| 2.2 | **Large scale vegetation maps**  Explain that students are going to construct a vegetation map.  Review student understanding about the features of a map and identify that a map includes a title, legend and features.  Show students an example of a topographical map and identify features such as:   * contours * coordinates * scale.   Provide an opportunity for students to conduct a vegetation survey and draw a map of their survey area. Include features like buildings, roads, fences, gardens, playground equipment and pools.  Use data from the vegetation survey table to add vegetation to the map.  Indicate density (or number of plants) by using symbols for individual plants and colour shading for high density planting like shrubs and grass.   * create a legend and think of a title for the map * direction |  | Student workbook |
| 2.3 | **Making inferences**  Ask students to review the climate information from the data tables and graphs in Activity 1 for Broken Hill and Sydney. Then compare this information with the information from the climate types map as well as the vegetation types map for Broken Hill and Sydney. Ask students if they can identify a trend or pattern relating to the vegetation and climate?  Ask students to think about how many people live in Sydney compared to Broken Hill. How do they think climate and vegetation might influence where people live?  Use the Claim-Evidence-Reason graphic organiser to construct an inference. Then write a 1-paragraph conclusion describing the influence of climate and vegetation on where people live. |  |  |
| 2.4 | **Opportunity for monitoring student learning**  Vegetation map – student work.  Students construct a vegetation map that conforms to cartographic conventions, using spatial technologies as appropriate.  **What to look for**   * vegetation map has a title * legend shows colours, shades and symbols that are used on the map * map is drawn to scale and the scale is indicated * map accurately represents data from survey table. |  |  |

**Reflection and evaluation**

These simple questions may help you reflect on your students’ learning and plan for next steps.

What worked well and why?

What didn’t work and why?

What might I do differently next time?

What are the next steps for student learning based on the evidence gathered?