# Skills focus – mapping and data representation

**HSIE geography Stage 2 learning sequence**

**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 climate, natural vegetation and native animals in Australia.

## Syllabus outcomes and content

**GE2-1** – examines features and characteristics of places and environments.

* Explore the climate, natural vegetation and native animals of places in Australia.

**GE2-4** – acquires and communicates geographical information using geographical tools for inquiry.

* Represent data by constructing tables, graphs and maps.
* Represent information by constructing large-scale maps that conform to cartographic conventions, using spatial technologies as appropriate.
* Interpret geographical data to identify distributions and patterns and draw conclusions.

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## Lesson 1 – Tables and graphs

Students are learning to:

* interpret and compare climate data from tables and graphs
* collect and record data about Australian animals in a table
* graph data about Australian animals.

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| Item | Learning experience | Differentiation strategies and/or adjustments | Resources |
| 1.1 | **Australian climate**  Ask students to recall their understanding about weather and seasons.  Explain that the pattern of weather over time in a particular region is called ‘climate’.  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.  Compare climate data and graphs for two regions. |  | Student workbook |
| 1.2 | **Backyard wildlife**  Show students an example of a tally table and explain that a tally table can be used to record the number of things observed during a survey.  Provide an opportunity for students to conduct a survey of animals to count and record the number of some different Australian animals at home or at school.  Students create a graph of the data from their tally table. Identify a trend or pattern using the graph and write a 1-sentence conclusion. |  | Student workbook |
| 1.3 | **Opportunity for monitoring student learning**  Creating a graph – Student work sample  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 * conclusion correctly identifies and communicates a trend or pattern in the data. |  | Student workbook |

## Lesson 2 – Mapping

Students are learning to:

* represent data and information by constructing a large-scale vegetation map that conforms to cartographic conventions
* interpret geographical data in the form of a map to identify distributions and patterns in vegetation and draw a conclusion.

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| Item | Learning experience | Differentiation strategies and/or adjustments | Resources |
| 2.1 | **Vegetation survey**  **Explain that geographers use vegetation surveys to identify patterns in the distribution and density of plant growth. This information can be used to help plan new developments like housing estates, parks and other recreation areas.**  **Plan and conduct a vegetation survey at home by recording data about the number and types of plants using a table.**  **Draw pictures of some plants to show their relative size.** |  | Student workbook |
| 2.2 | **Vegetation map**  Explain that students are going to construct a vegetation map using data from their survey.  Show students an example of a vegetation map and identify features such as:   * scale * boundaries * buildings * roads * gardens   Explain that a map includes a title, legend and features.  Use the example map to demonstrate and point out that images on maps are smaller than they are in real life. Ask students why this is.  Explain that scale is the relative size of objects represented on a map. For example, 1 cm on a map may represent 1 m in real life.  Demonstrate and explain that a legend is used to show the symbols and colours used to indicate the features on a map.  Point out how symbols and colour shading are used to indicate the density (number of plants in a space).  Provide an opportunity for students to 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. |  | Student workbook |
| 2.3 | **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. |  | Student workbook |

**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?