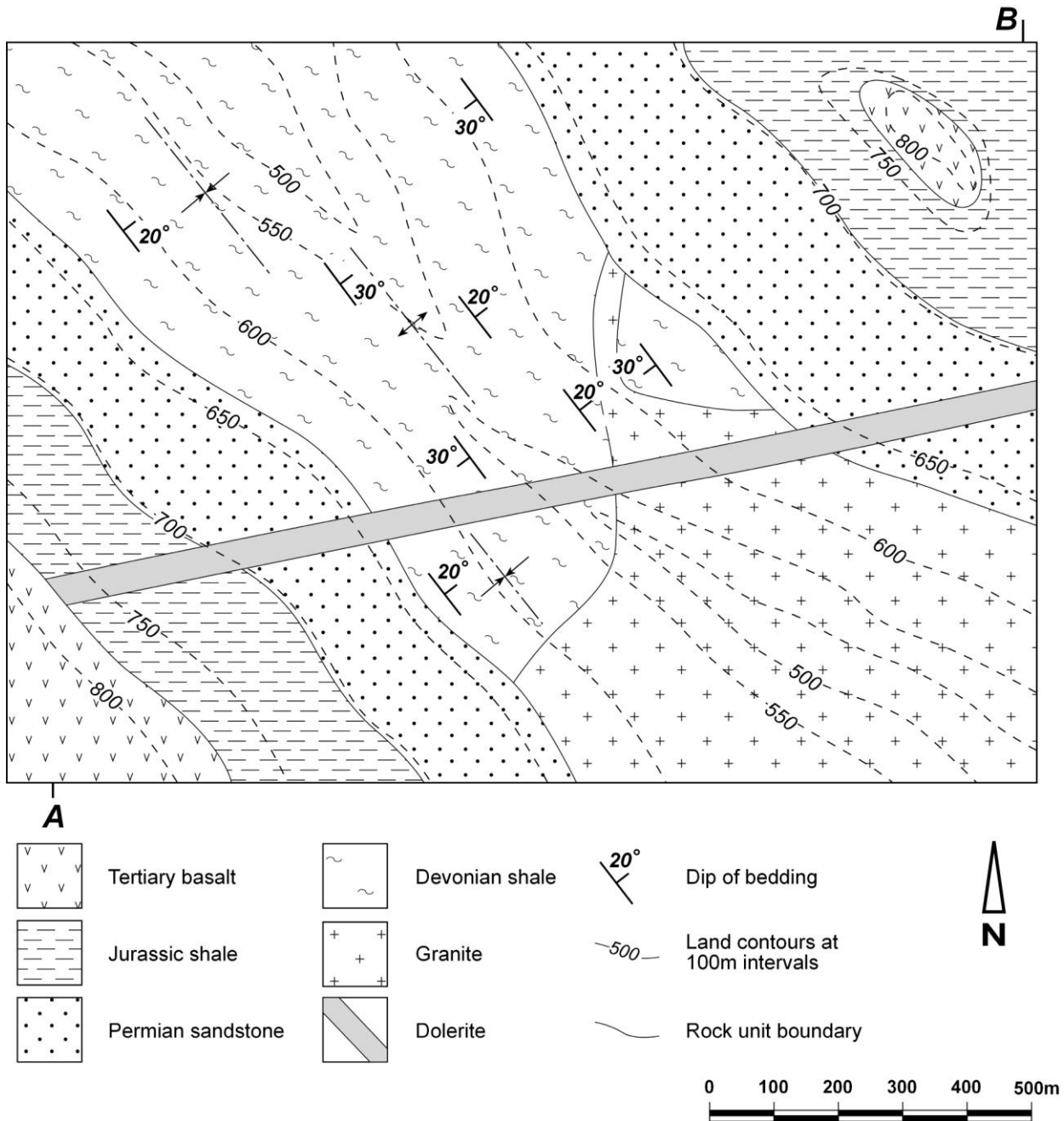


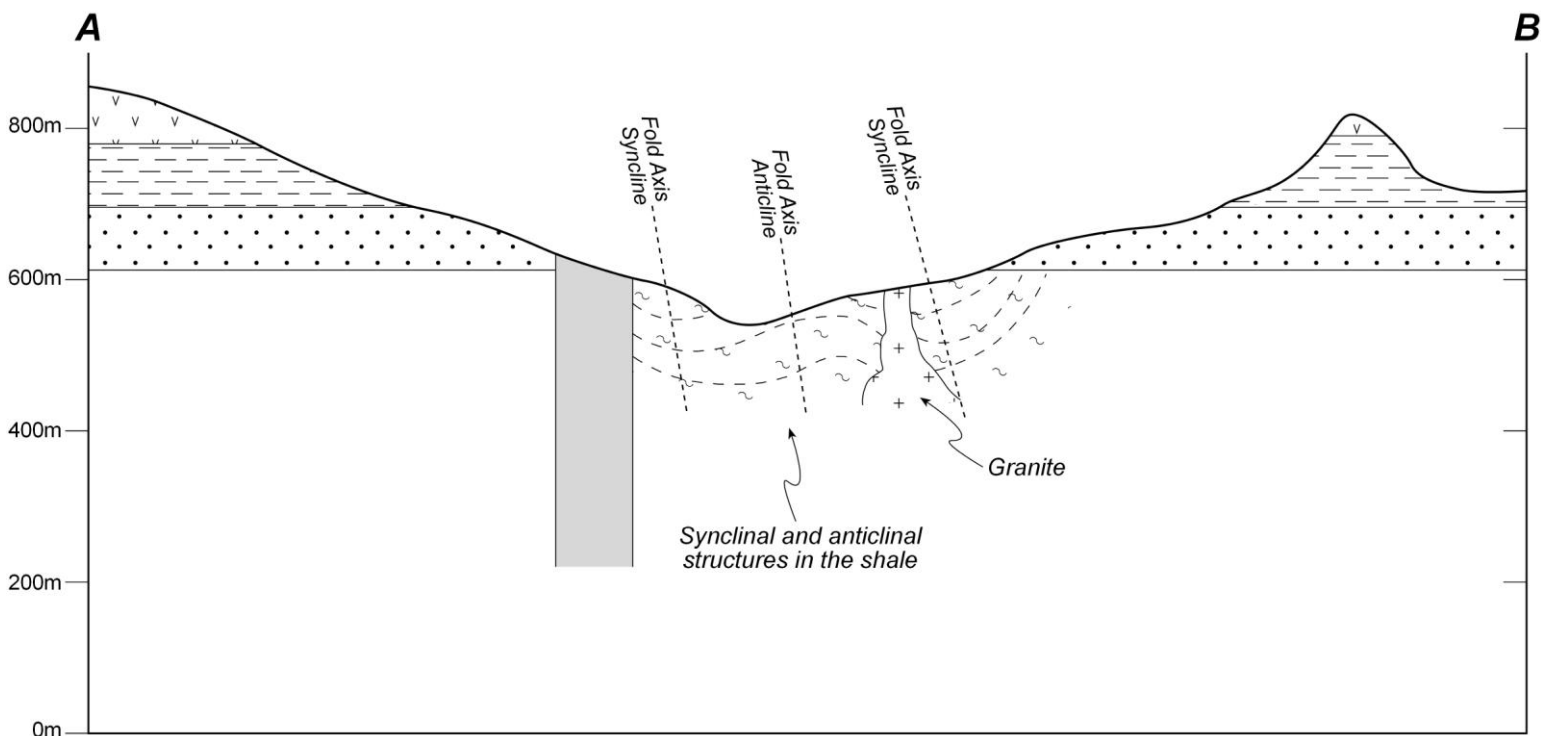
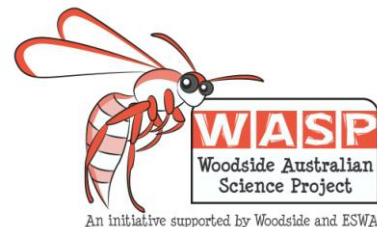
Geological Mapping Exercise 10 - Answers

1. For the geological map below:

- Draw the topographical profile A-B using the contour lines
- Draw a geological cross section along the profile using a vertical scale of 1cm : 100m.
- Interpret the sub-surface geology by constructing appropriate geological boundaries.
- On your cross section show the possible sedimentary layering that may have existed above the present day ground surface.



Geological Mapping Exercise 10 - Answers



2. Show the dips of the Devonian shale along the line of the cross section.
3. What is the dip of the Permian sandstone? Give a reason for your answer. **No dip = horizontal bedding, this can be seen as the boundary follows the contour lines.**
4. What is the relative age of the granite, the dolerite dyke and the Permian sandstone? **The granite is oldest, then the Permian Sandstone and the dyke is youngest (cross cutting relationships)**
5. Identify on your cross section an unconformity. Give a reason for your answer. **There are two places, to the right and left of the cross section that are unconformities (angular)**
6. Write a brief geological history of the area.

The Devonian Shale was deposited, folded and then intruded by granite. The Permian Sandstone and Jurrasic Shale was deposited on top of this and then cut by dolerite. A Tertiary Basalt flow then occurred and since then weathering and erosion has caused a channel to form, exposing older materials to the surface.