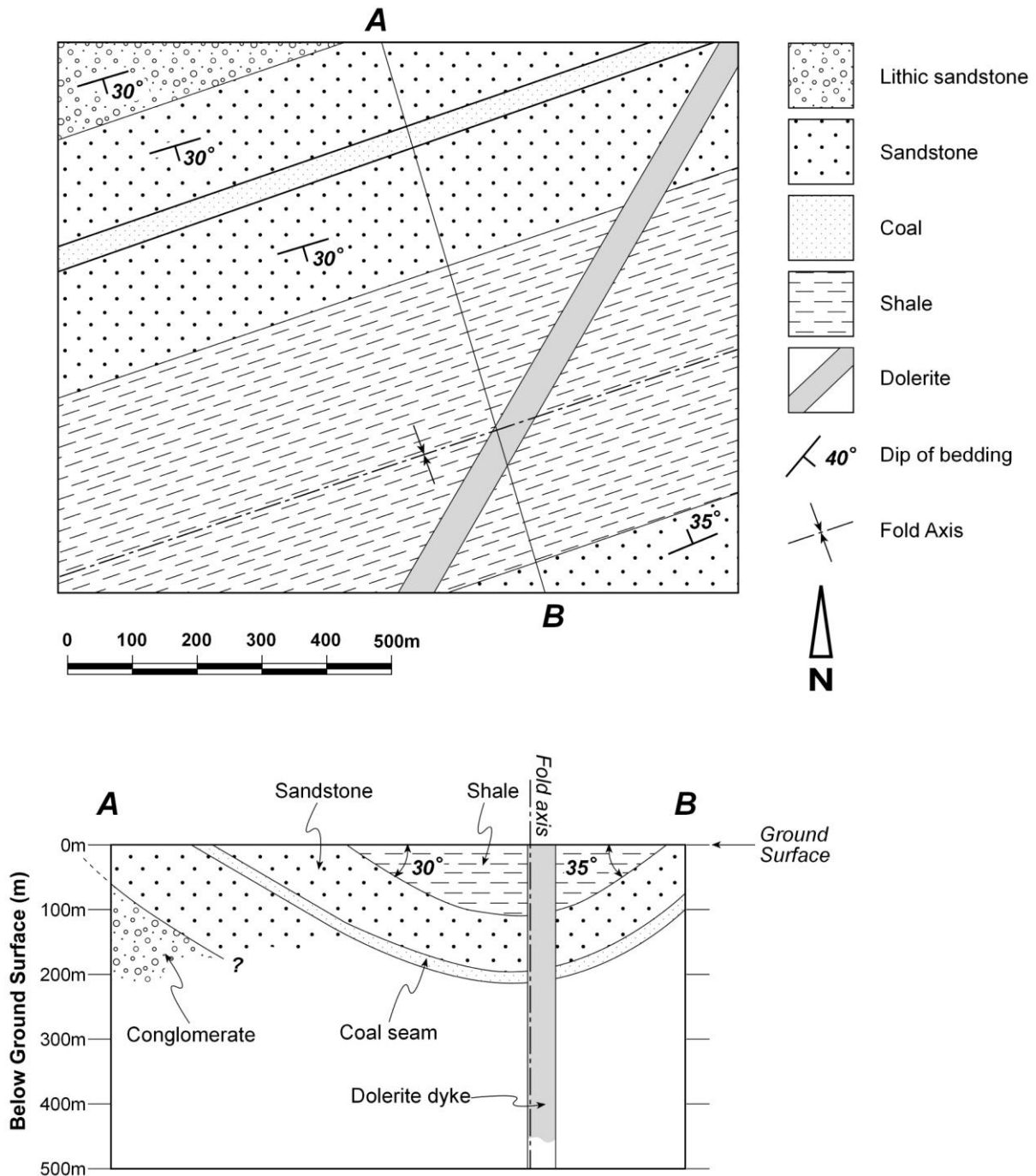


## Geological Mapping Exercise 9 - Answers

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.
- Label the fold axis on your cross section



## Geological Mapping Exercise 9 - Answers



2. What kind of fold is present? Explain how you could interpret this from the map only.

A syncline – you could see this on the map by seeing that the dips are pointing towards each other or by observing the symbol for a syncline drawn on the map at the fold axis.

3. What is the relative age of the dolerite, shale and coal seam? The coal seam was laid down first, then the shale and finally the dolerite cut both (it is youngest). You may not see that the coal seam is the oldest unless you look at the cross section as well as the map.

4. A chilled margin was observed in the dolerite. Explain what a chilled margin is and how it occurs.

A chilled margin is found on the edges of intrusion where it has cooled much more quickly, due to contact with cooler rocks. The dolerite in this area is finer grained than the rest of the intrusion.

5. Write a brief geological history of the area.

Deposition of conglomerate, sandstone, coal, more sandstone and shale. Folding to produce a syncline and then intrusion by dolerite (dyke).