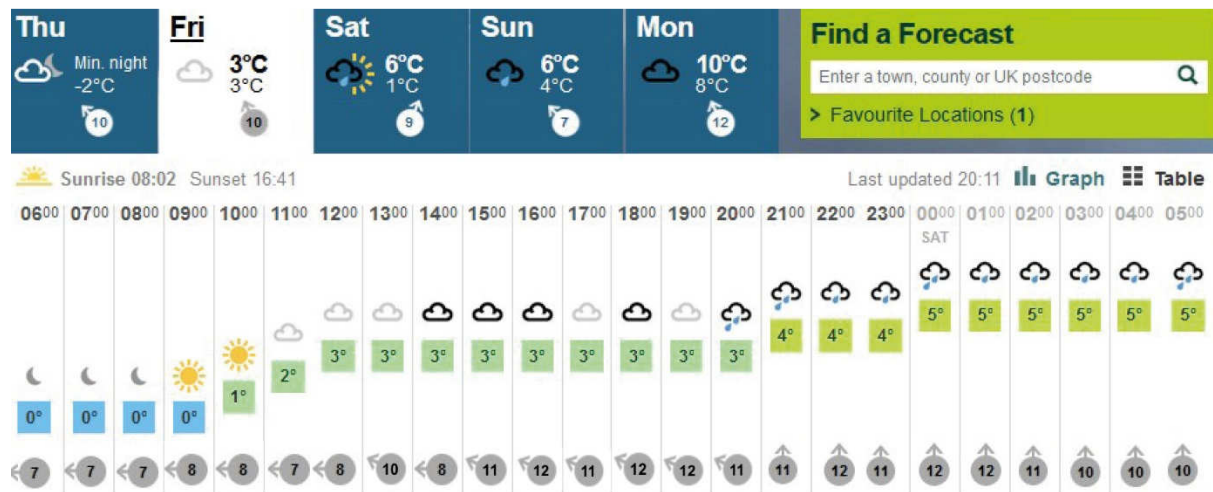


**Exercise:** This image shows a weather forecast for a UK location.

What can you say about the weather and how it is changing through the day? Can you sketch some weather maps to show what might be happening?

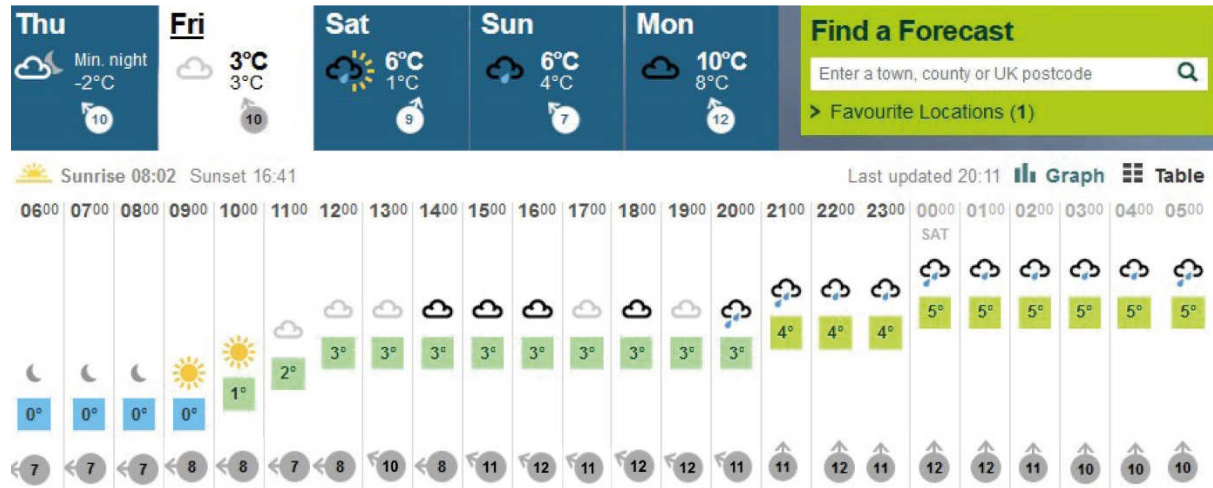


Optional guidance questions:

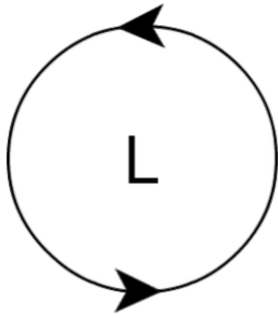
- 1) Look at the sunrise and sunset times, what time of year do you think it is?
- 2) Describe how the temperature varies through the day. Is it what you would expect?
- 3) Describe how the wind direction varies through the day.
- 4) Describe how the weather (sun, cloud and rain) varies through the day.
- 5) Think about the wind direction. What air mass is associated with that? Does it explain the temperature and precipitation change?
- 6) What other mechanisms can cause precipitation?
- 7) Looking at the temperature, wind and precipitation changes through the day, what do you think happened at 8pm?
- 8) Can you sketch a weather map for 12pm, 8pm and midnight?

## Weather systems homework exercise – Teachers Notes

Exercise: This image shows a weather forecast for a UK location. What can you say about the weather and how it is changing through the day? Can you sketch some weather maps to show what might be happening?

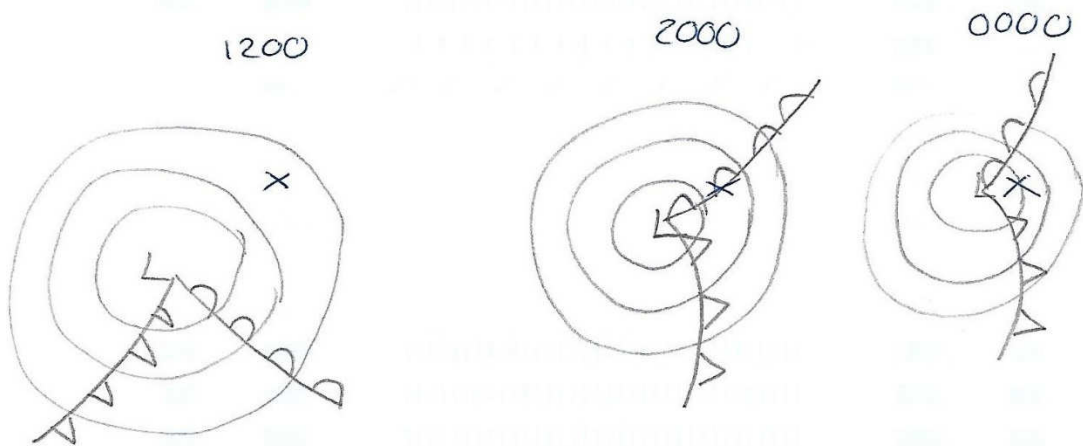


- Sunrise is at 0802 and sunset at 1641. For any UK location, this would suggest that the day is quite short and that it is winter.
- Temperatures rise from 0°C in the morning to 5°C the next morning. This is strange, you would normally expect the temperature to be warmest in the middle of the day, even in winter. However, the temperatures aren't particularly cold.
- The wind shifts from being easterly to being southerly.
- It becomes cloudier through the day and starts raining at 8pm.
- We associate rain with maritime air masses, or with fronts where two air masses meet.
- In the winter, an easterly wind/ polar continental air brings cold and mostly dry air, so it can't be that.
- The fact that it starts raining as the temperature rises, is a hint that maybe it had something to do with a warm front passing and moving into the warm sector of a depression. Cloud increases and it starts to rain. Soon after the temperatures rise. This suggests a change of air mass from cold to warmer air. We can therefore conclude it's a warm front approaching then crossing the location.
- If you think about air circulating around a depression in an anticlockwise direction;



Then, for the winds to be moving from easterly to southerly, the location must be somewhere in the top right of the depression.

Some suggested weather maps (the cross marks the place for which the forecast was made):



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