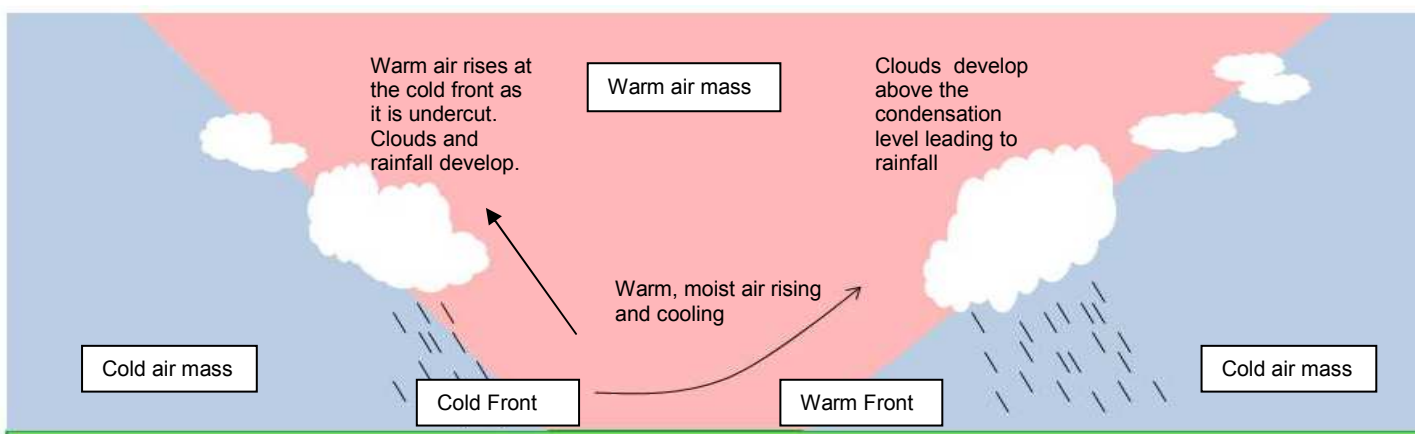
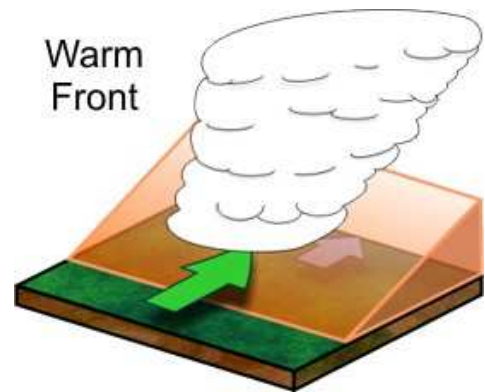
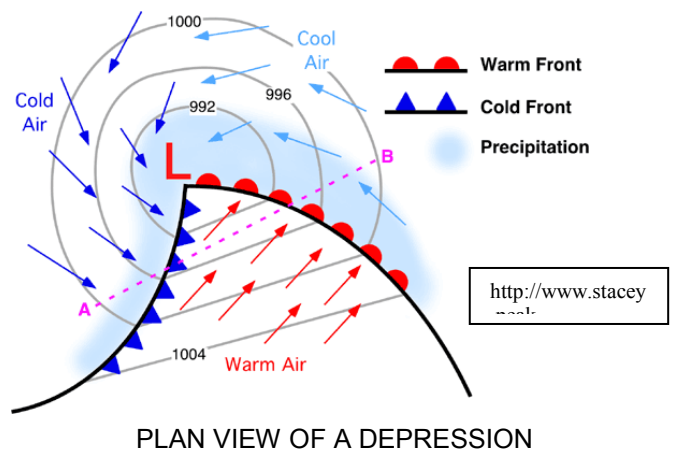


DEPRESSIONS

Depressions are areas of low atmospheric pressure but unlike anticyclones occur where two air masses meet one warm the other cold. Depressions consequently have **fronts** (a boundary between two air masses). Winds always blow anticlockwise in a depression. This is what a depression looks like on a weather map. *Think of two ways in which you can tell that the pressure is low.*

You will notice that the fronts are shown in different ways and always tell you what the air is like behind the line. So a line with red semi circles tells you that the air behind the front is warm. A cold front has blue triangles and tells you that the air behind the front is cold.

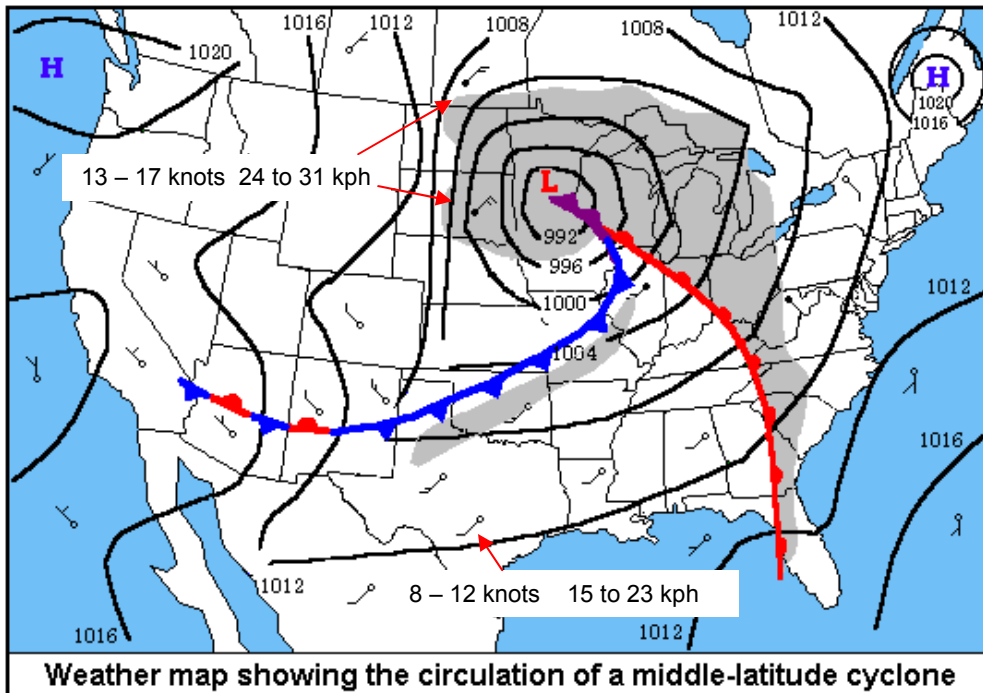
The map shows that a depression develops where a warm and cold **air mass** meet. Low pressure at the surface of the earth draws air in (rather like a vacuum sucks air in) and the warm, unstable air rises. As the warm air rises over the cold air, water vapour in the air starts to cool. At the **condensation level** clouds start to form. This process can eventually lead to **precipitation**, much of the time this will be rain but when conditions are very unstable there may be hail or snow in the winter.



A

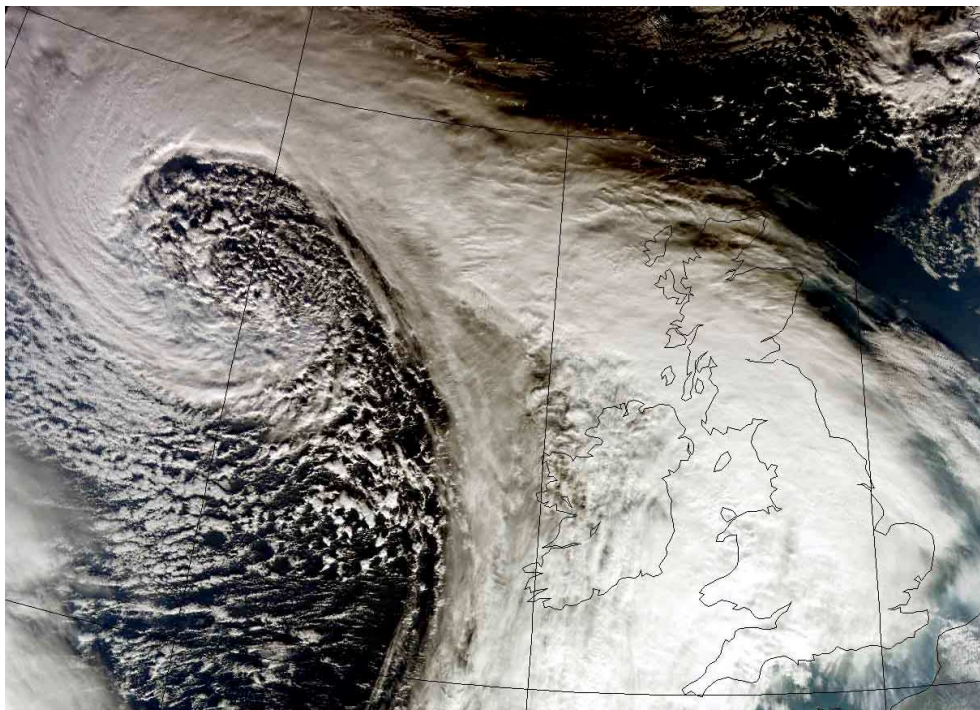
B

This diagram is a cross section through a depression along the line A B shown on the map above. You can see more clearly how the processes lead to clouds and rainfall at the fronts.



Each of these circles marks the position of a ground weather station. Wind speeds are high in a depression and are shown by a line showing the direction from which the wind has blown. The small feathers indicate the wind speed.

————— 1000 —————
Isobars



This is what a depression looks like from space. This photo was taken by a satellite over the British Isles.

Notice the dense cloud cover. The cloud cover is so extensive that it has merged at the cold and warm fronts.

ACTIVITIES

1. Define these important terms in your own words. Front Isobar. Air mass
2. Using the maps and diagrams to help you, draw on to the satellite image the position of the warm and cold fronts.
3. Look at the map of a depression over the USA above. Try to describe and explain the changes in weather that would be experienced in New York as the depression passes over (from west to east).