Year 7 Geography Knowledge Organiser – Weather and Climate

1. **Weather** - the day to day changes in the atmosphere (air around us) which can include the temperature and precipitation
2. **Climate** - the average weather conditions of a place measured over a long period of time
3. **Barometer** – an instrument used to measure air pressure in millibars
4. **High pressure** – cool air is denser and sinks/descends, causing high air pressure (over 1000 millibars)
5. **Low pressure** – warm air, rises causing low air pressure (less than 1000 millibars)
6. **Thermometer** – instrument used to measure temperature (how hot or cold it is) in degrees Celsius or Fahrenheit (^{0}C/^{0}F)
7. **Anemometer** – an instrument used to measure wind speed, often in miles per hour
8. **Beaufort scale** – observations used to measure wind speed
9. **Wind vane** – instrument used to show wind direction (north, south, east, west)
10. **Cloud names** are given for different cloud types – e.g. (from high level to low) cirrus, cirrocumulus, cirrostratus, altocumulus, altostratus, stratocumulus, cumulus, cumulonimbus, nimbostratus, stratus
11. **Cloud cover** – the amount of sky covered by cloud, usually measured in oktas (eighths)
12. **Visibility** – the distance that can clearly be seen – usually given in metres. Fog and mist can affect visibility
13. **Rain gauge** – an instrument used to measure precipitation (rain, snow, sleet, hail)
14. **Campbell-Stokes sunshine recorder** – used to measure amount or intensity of sunshine
15. **Evaporation** – water that is heated turns into a vapour/gas
16. **Condensation** – water vapour joins together into droplets and turns from a gas to a liquid and can be seen as clouds
17. **Precipitation** – droplets become heavy and fall to the ground as rain, snow sleet or hail
18. **Transpiration** – the loss of water vapour from plants and trees
19. **Surface water/surface run off** - water which travels over the surface as rivers or is stored in lakes or puddles
20. **Ground water/ground water flow** – water which travels through or is stored in the rocks
21. **Relief rainfall** - rainfall caused when warm, moist air is forced to rise over mountains and therefore cools, condensation occurs, clouds form and then precipitation occurs
22. **Convectional rainfall** - rainfall caused by the heat of the sun. The sun heats the ground and moisture on the ground evaporates. This warm, moist air rises. Often causes heavy thunderstorms in summer
23. **Frontal rainfall** - rainfall caused when two air types (warm and cool air) meet. The warm air rises over the cooler air
24. **Altitude** = height above sea level. Temperature decreases by 1^{0}C for every 100m above sea level
25. **Latitude** = distance from the equator. Places near the equator are hotter as the sun shines more directly, sun's rays are more concentrated here
26. **Prevailing wind** = the strongest, most frequent wind. If wind blows over the sea, it will pick up moisture, if it blows over the land, it will be drier
27. **Ocean currents - The North Atlantic Drift** = this is an ocean current of warm water which is from the Gulf of Mexico and travels towards the north east to heat up the UK and Europe in winter.
28. **Distance from the sea** (the moderating effect of the sea) - the sea takes a long time to heat up and cool down, but land heats up and

cools quickly. We say the sea has a 'moderating effect' because it cools the land in summer but warms the land in winter

29. **Anticyclones** – areas of high pressure, with cool descending air, usually associated with periods of fine, settled weather and clear skies
30. **Depressions** – areas of low pressure, with warm rising air, usually associated with periods of unsettled weather, cloud and rainfall
31. **Microclimate** = the climate of a small area, which is different from the overall weather conditions. There are 5 main factors that affect microclimate:
32. **Aspect** - the direction a place is facing. In the Northern Hemisphere, the sun rises in the east and sets in the west. South facing places tend to be in the sun for most of the day
33. **Buildings** – give off heat. They can provide shelter from wind but in-between them can be very windy
34. **Surface** – darker surfaces absorb and give off heat whereas lighter surfaces reflect the heat
35. **Physical features** – trees give shade and shelter from wind, lakes and seas have a cooling effect
36. **Shelter** – hedges, fences etc break up the wind and temperatures.
37. **Hurricane, tropical cyclone, tropical storm, typhoon** – areas of extreme low pressure, caused by warm, moist rising air, resulting in cloud, heavy rainfall, strong winds and often storm surges (high tides and coastal flooding)