Meteorological (Weather) Hazards

1. Tier 3 Vocab

Planning : Actions taken to enable communities to respond to, and recover from, natural disasters, through measures such as emergency evacuation plans, information management, communications and warning systems.

Prediction: Attempts to forecast when and where a natural hazard will strike, based on current knowledge. This can be done to some extent for tropical storms.

Protection: Actions taken before a hazard strikes to reduce its impact, such as educating people or improving building design.

Monitoring: Recording physical changes, such as tracking a tropical storm by satellite, to help forecast when and where a natural hazard might strike.

Global atmospheric circulation: The worldwide system of winds, which transports heat from tropical to polar latitudes. In each hemisphere, air also circulates through the entire depth of the troposphere which extends up to 15 km from the Earth's surface.

2. Formation of Tropical Storms

1	The sun's rays heats large areas of ocean in the summer and autumn. This causes **warm, moist air** to rise over the particular spots
2	Once the **temperature is 27°**, the rising warm moist air leads to a **low pressure**. This eventually turns into a thunderstorm. This causes air to be sucked in from the **trade winds**.
3	With trade winds blowing in the opposite direction and the rotation of earth involved (Coriolis effect), the thunderstorm will eventually start to **spin**.
4	When the storm begins to **spin faster than 74mph**, a tropical storm (such as a hurricane) is officially born.
5	With the tropical storm growing in power, **more cool air sinks** in the centre of the storm, creating calm, clear condition called the **eye of the storm**.
6	When the tropical storm hits land, it **loses its energy source** (the warm ocean) and it begins to lose strength. Eventually it will 'blow itself out'.

3. Primary effects of tropical storms

- The intense winds (over 74mph) of tropical storms can destroy whole **communities, buildings** and **communication networks**.
- As well as their own destructive energy, the winds can generate abnormally high waves called **storm surges**.
- Sometimes the most destructive elements of a storm are these subsequent **high seas and flooding** they cause to coastal areas.
- Intense rainfall of up to 200mm a day can cause localised flooding

4. Secondary effects of tropical storms

- People are **left homeless**, which can cause distress, poverty and ill health due to lack of shelter.
- **Shortage of clean water** and **lack of proper sanitation** makes it easier for diseases to spread.
- **Businesses are damaged** or destroyed causing employment.
- Shortage of food as **crops are damaged**.

5. What is climate change and what evidence is there for it?

Climate change is a large-scale, long-term shift in the planet's weather patterns or average temperatures. Earth has had tropical climates and ice ages many times in its 4.5 billion years.

Evidence for climate change:

Global temperature	Average global temperatures have increased by more than **0.6°C since 1950**.
Ice sheets & glaciers	Many of the world's glaciers and ice sheets are melting. E.g. the Arctic sea ice has declined by **10% in 30 years**.
Sea Level Change	Average global **sea level has risen by 10-20cms** in the past 100 years. This is due to the additional water from ice and thermal expansion.

6. Command Words

Assess – Make an informed judgement by using the evidence available.

Compare – Identify both similarities and differences. Clearly state how they are similar or different.

Describe – Set out the key characteristics. (Say **what** is happening).

Explain – Set out purposes and reasons. (Say **why or how** it has happened.

Evaluate – Using the available evidence make a judgement about how effective or positive something is.

Identify – Name or highlight a key characteristic.

Justify – Make a point and support it with evidence.

Outline – Set out the main characteristics, often looking for one key characteristic.

To what extent – Judge the importance or success of a strategy or event. Ensure that you provide a measure of the success.