**Extreme weather homework activity**

Delete/amend as required

A selection of questions relating to the attached resources to develop the following requirements from the specification:

* **1.1**

How can weather be hazardous.

* **1.1a**

Why do we have weather extremes; The extremes in weather conditions associated with…temperature and precipitation.

* **9.1.4**

Extract, interpret, analyse and evaluate information

* **9**

Use Choropleth maps

* **9.1.6**

Describe, interpret and analyse geo-spatial data presented in a GIS framework

Using the **climate average maps** answer the following questions. You may need a map!

**Section 1 - Mean Max. Temperature**

**Part A: Extracting information**

1. **What** is the **average** mean maximum temperature in **London**?
2. **What** is the **lowest** average maximum temperature in the **Cairngorms** National Park
3. Is the **average** mean maximum temperature in **Exmoor** National Park **higher** or **lower** than the surrounding area?

**Part B: Describing and explaining patterns**

1. **Describe** the **location** of the areas with the **lowest** mean maximum temperature
2. **Describe** the **location** of the areas with the **highest** mean maximum temperature
3. Can you **suggest** which **factor** is the most important for **explaining** the **distribution** of **lower** mean maximum temperatures?

**Section 2 - Mean Min. Temperature**

**Part A: Extracting information**

1. **What** is the **mean** minimum temperature in **Manchester**?
2. **What** is the **mean** minimum temperature in **York?**
3. Is the **average** mean minimum higher in the **Yorkshire** **Dales** National Park, or the **Lake** **District** National Park?

**Part B: Describing and explaining patterns**

1. **Describe** the **location** of the areas with the lowest mean minimum temperature
2. **Describe** the **location** of the areas with the highest mean minimum temperature. Can you **explain** the **distribution** of warmer areas in relation to human activity?
3. Can you **suggest** two **factors** that explain the distribution of lower mean minimum temperatures?

**Section 3 – Mean rainfall**

**Part A : Extracting information**

1. **What** is the **highest** average rainfall value in **Snowdonia** National Park?
2. **What** is the **lowest** average rainfall value in the **Pembrokeshire** **Coast** National Park?
3. Is the **average** rainfall in Norwich **higher** or **lower** than:
   1. **Plymouth**?
   2. **Glasgow**?
   3. **Bristol**?

**Part B : Describing and explaining patterns**

1. **Describe** the **distribution** of the wettest areas in the **UK**
2. **Describe** and **explain** the relationship between **relief** and **rainfall**
3. **Describe** the **location** of the driest areas in the UK, **naming** at least two cities in the driest areas, and **explain** how their **location** on the East side of the UK explains their low rainfall.

Using the **climate anomaly maps** answer the following questions.

In general, an anomaly is something that is different from usual.

The climate anomaly maps map the deviation from the long-term average in each year from 1919-2015 (i.e. whether the year was hotter/colder/wetter/drier than the 1961-1990 average)

The questions will ask about anomalies:

* A cold anomaly means that the year was colder than the 1961-1990 average
* A warm anomaly means that year was hotter than the 1961-1990 average
* A wet anomaly means that the year had more rainfall than the 1961-1990 average
* A dry anomaly means that the year had less rainfall than the 1961-1990 average

**Section 1 – Mean Temperature**

**Part A: Extracting information**

1. **Which** year had the **largest** **cold** anomaly nationally?
2. **Which** year had the **largest** **warm** anomaly nationally?
3. **Which** of these years were **close** to the long-term 1961-1990 average **nationally**?
   1. 2011
   2. 1947
   3. 1996
   4. 1973
   5. 1970

**Part B: Describing and explaining patterns**

1. **Describe** the **trend** in mean temperature anomalies since 1990.
2. **Describe** the **pattern** of mean temperature anomalies during the 1960s
3. **Contrast** the **pattern** of mean temperature anomalies in the 1960s and the 1940s

**Section 2 – Mean Max. Temperature**

**Part A: Extracting information**

1. **In** **which** year was the South of the UK unusually cool?
2. **Name** the **three** most unusually warm years before 1960
3. In which year since 2000 were mean max temperatures near the long term 1961-1990 average?

**Part B: Describing and explaining patterns**

1. **Describe** the **temporal distribution** of the years with the **highest** mean maximum temperature.
2. **Describe** the **temporal distribution** of the years with the **lowest** mean maximum temperature.
3. Considering the years 2003, 1997 and 1959, which were all hotter than average years, which do you think caused the most problems to people, and why?

**Section 3 – Mean Min. Temperature**

**Part A: Extracting information**

1. **In** **which** years between 1910and 1939 was the UK especially cold?
2. **Name** the **three** most unusually warm years between 1940 and 1960
3. In which year since 1990 were mean min temperatures closest to the long term 1961-1990 average?

**Part B: Describing and explaining patterns**

1. **Describe** the **temporal distribution** of the years with the **highest** mean minimum temperature.
2. **Describe** the **temporal distribution** of the years with the **lowest** mean minimum temperature.
3. Considering the years 1919, 1963 and 2010, which were all colder than average years, which do you think caused the most problems to people, and why?

**Section 4 – Mean rainfall**

**Part A: Extracting information**

1. **Which** single year was the driest?
2. **Which** are the **three** wettest years since (and including) 2000?
3. 2003, 1996, 1975, 1955, 1933 and 1921 were all dry years, but **which** one was the driest in areas that are normally **wettest**?

**Part B: Describing and explaining patterns**

1. **Describe** the pattern of wet/dry years since 2010.
2. **Describe** the distribution of unusually high rainfall in 2012 and explain why its distribution helps explain the severe flooding that resulted.
3. The 1970s was an unusually dry decade. **Describe** the temporal pattern of rainfall anomalies during the 1970s and **explain** why the period 1971-1976 was the most disruptive to human activity.