# Montgomery Academy Geography Dept.

Welcome to Geography

Name: _____

Previous Score: _____/91   New Score: _____/91

# Weather Hazards & Climate Change

**Multiple choice knowledge checker**

| | | |
|---|---|---|
| 1. | | What is a natural hazard? |
| ○ | A. | An extreme hazard caused by human activity. |
| ○ | B. | An extreme natural event that threatens people or has the potential to cause damage, destruction and death. |
| ○ | C. | A hazard caused by climate change. |
| ○ | D. | A hazard resulting from the movement of tectonic plates. |

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| 2. | | What helps explain the location of world climate zones and the distribution of weather hazards? |
| ○ | A. | Global atmospheric circulation |
| ○ | B. | The Hadley Cell |
| ○ | C. | Low pressure systems |
| ○ | D. | Tropical storms |

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| 3. | | True or false? When the Sun's rays strike the Earth, they are concentrated differently on areas of the land depending on latitude. At the Equator the Sun's rays are concentrated so it is much hotter than at the Poles where they are more spread out |
| ○ | A. | True |
| ○ | B. | False |

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| 4. | | Air at the Equator is heated strongly so it rises, creating low pressure conditions. The air then flows north and south high in the atmosphere, then sinks as it cools. Which convection cell is responsible for this? |
| ○ | A. | Polar Cell |
| ○ | B. | Ferrel Cell |
| ○ | C. | Hadley Cell |
| ○ | D. | Pressure Cell |

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| 5. | | True or false? As air rises at the Equator it cools, condenses and brings cloud and rain. |
| ○ | A. | True |
| ○ | B. | False |

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| 6. | | Air sinks at 30 degrees north and south of the Equator. What kind of pressure does this bring? |
| ○ | A. | High pressure |
| ○ | B. | Low pressure |

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| 7. | | What kind of weather is associated with sinking air 30 degrees north and south of the Equator? |
| ○ | A. | Cloudy skies |
| ○ | B. | Cloudy skies and heavy rain |
| ○ | C. | Clear, dry skies |
| ○ | D. | Thunderstorms |

| | | |
|---|---|---|
| 8. | | From the equator, moving north, identify the correct order of the three convection cells |
| ○ | A. | Polar, Ferrel then Hadley Cell |
| ○ | B. | Ferrel, Polar then Hadley Cell |
| ○ | C. | Hadley, Ferrel then Polar Cell |
| ○ | D. | Ferrel, Hadley and Polar Cell |

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| 9. | | True or false? Winds on the surface of the Earth are caused as air moves from high to low pressure areas in the convection cells. |
| ○ | A. | True |
| ○ | B. | False |

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|---|---|---|
| 10. | | On the surface of the Earth, winds bend as the Earth spins. What is this effect known as? |
| ○ | A. | Coriolis effect |
| ○ | B. | Cirrus effect |
| ○ | C. | Gravity effect |
| ○ | D. | Trade winds |

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| 11. | | True or false? Surface winds bend to the right in the northern hemisphere and to the left in the southern hemisphere. |
| ○ | A. | True |
| ○ | B. | False |

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| 12. | | True or false? Tropical storms occur between 5 and 30 degree north and south of the Equator. |
| ○ | A. | True |
| ○ | B. | False |

| 13. | True or false? Tropical storms occur between 5 and 30 degrees north and south of the Equator because due to areas of intense high pressure. |
|---|---|
| ○ A. | True |
| ○ B. | False |

| 14. | When are hurricanes most likely to occur in the Atlantic Ocean? |
|---|---|
| ○ A. | August to October |
| ○ B. | January to March |
| ○ C. | June to August |
| ○ D. | November to January |

| 15. | What are tropical storms that move north in the Indian Ocean known as? |
|---|---|
| ○ A. | Hurricanes |
| ○ B. | Typhoons |
| ○ C. | Cyclones |
| ○ D. | Willy-willies |

| 16. | What temperature does the ocean need to be for a tropical storm to form? |
|---|---|
| ○ A. | 25°C |
| ○ B. | 26°C |
| ○ C. | 27°C |
| ○ D. | 28°C |

| 17. | True or false? Tropical storms occur when air pressure is high. |
|---|---|
| ○ A. | True |
| ○ B. | False |

| 18. | Wind within a tropical storm is constant and doesn't vary with height so clouds rise to high altitudes without |
|---|---|

|  | being torn apart. What it this better known as? |
|---|---|
| ○ A. | Low wind shearing |
| ○ B. | Low wind shear |
| ○ C. | Coriolis effect |
| ○ D. | Low pressure |

| 19. | What is the centre of a tropical storm known as? |
|---|---|
| ○ A. | Eye |
| ○ B. | Nose |
| ○ C. | Mouth |
| ○ D. | Centre |

| 20. | What is the name of the clouds that form at the centre of a tropical storm? |
|---|---|
| ○ A. | Stratus |
| ○ B. | Cirrus |
| ○ C. | Nimbus |
| ○ D. | Cumulonimbus |

| 21. | When does a tropical storm lose its energy? |
|---|---|
| ○ A. | When air temperatures increase. |
| ○ B. | When the tropical storm makes landfall. |
| ○ C. | When oceanic temperatures increase. |
| ○ D. | When wind speeds increase. |

| 22. | Identify the direction tropical storms spin in the northern hemisphere. |
|---|---|
| ○ A. | Clockwise |
| ○ B. | Anti-clockwise |

| 23. | True or false? A cross section of a tropical storm is symmetrical in shape. |
|---|---|
| ○ A. | True |
| ○ B. | False |

| 24. | Identify the conditions associated with the eye of a tropical storm. |
|---|---|
| ○ A. | Calm, temperatures are warmer, no wind or rain. |
| ○ B. | Calm, temperatures are colder, no wind or rain. |
| ○ C. | Temperatures are warmer, strong wind and rain. |
| ○ D. | Temperatures are colder, strong wind and rain. |

| 25. | Which of the following can be caused by a tropical storm? |
|---|---|
| ○ A. | Tsunami |
| ○ B. | Storm surge |
| ○ C. | Earthquake |
| ○ D. | Drought |

| 26. | True or false? Climate change is likely to have an impact on tropical storms. |
|---|---|
| ○ A. | True |
| ○ B. | False |

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| 27. | | Which of the following are expected to be impacts of climate change on tropical storms? (**You may choose more than one**) |
| ○ | A. | There may be more tropical storms in areas such as the South Atlantic and parts of the sub-tropics. |
| ○ | B. | The frequency of tropical storm is likely to increase. |
| ○ | C. | The frequency of category 4 and 5 storms is likely to increase. |
| ○ | D. | Tropical storms are expected to become more intense. |

| | | |
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| 28. | | Which of the following are primary effects of Hurricane Katrina? (**You may choose more than one**) |
| ○ | A. | 300,000 houses destroyed. |
| ○ | B. | 1,800 people died. |
| ○ | C. | 3m people without electricity |
| ○ | D. | $300bn of damage to buildings and economy |

| | | |
|---|---|---|
| 29. | | Which of the following is not a primary, social impact of Hurricane Katrina? |
| ○ | A. | 300,000 houses destroyed. |
| ○ | B. | 1,800 people died. |
| ○ | C. | 3m people without electricity |

| | | |
|---|---|---|
| ○ | D. | $300bn of damage to buildings and economy |

| | | |
|---|---|---|
| 30. | | Which of the following is not an example of a primary, economic impact of Hurricane Katrina? |
| ○ | A. | The UN stated 75% of farmers and fishermen lost their income. |
| ○ | B. | Damage to cotton & sugar cane cost $1.1bn. |
| ○ | C. | Looting was rife, due to a lack of food and supplies. |
| ○ | D. | $300bn of damage to buildings and economy |

| | | |
|---|---|---|
| 31. | | Which of the following is not an example of a primary, environmental impact of Hurricane Katrina? |
| ○ | A. | 80% of New Orleans was flooded due to broken levees. |
| ○ | B. | Sea turtle breeding beaches damaged. |
| ○ | C. | Large areas of farmland were destroyed. |
| ○ | D. | 3m people lost power. |

| | | |
|---|---|---|
| 32. | | Identify the secondary, social impact of Hurricane Katrina. (**You may choose more than one**) |
| ○ | A. | People were dehydrated due to contaminated surface and ground water. |
| ○ | B. | Flooding caused landslides. |
| ○ | C. | New Orleans population declined as people didn't return |
| ○ | D. | Farmland was contaminated by flood waters. |

| | | |
|---|---|---|
| 33. | | Identify the secondary, economic impact of Hurricane Katrina. |
| ○ | A. | People were dehydrated due to contaminated surface and ground water. |
| ○ | B. | Oil facilities were damaged raising petrol prices |
| ○ | C. | Flooding caused landslides. |
| ○ | D. | People sheltered in the Superdome. |

| 34. | Identify the secondary, environmental impact of Hurricane Katrina. |  |
|---|---|---|
| O | A. | People sheltered in the Superdome. |
| O | B. | The fishing industry was disrupted due to oil leaks contaminating fishing waters. |
| O | C. | Damaged oil facilities leaked oil and damaged ecosystems |
| O | D. | 3m people lost power. |

| 35. | True or false? Immediate responses to a disaster occur during and immediately after the event. Long-term responses occur in the following weeks, months and years. |  |
|---|---|---|
| O | A. | True |
| O | B. | False |

| 36. | Which of the following is not an example of an immediate response to Hurricane Katrina? |  |
|---|---|---|
| O | A. | The government televised a warning for people to prepare and evacuate. |
| O | B. | 80% of New Orleans Evacuated. |
| O | C. | Coastguard, National Guard and anyone with a boat commenced a search & rescue |
| O | D. | They rebuilt and strengthened the levees |

| 37. | Which of the following is not an example of a long-term response to Hurricane Katrina? |  |
|---|---|---|
| O | A. | $800m spent on strengthening the levees. |
| O | B. | $35bn spent on rebuilding schools and homes. |
| O | C. | Emergency water supplies brought in after 3 days |
| O | D. | Debris from damage took many years to clear. |

| 38. | Which of the following is not a way the effects of tropical storms can be reduced? |  |
|---|---|---|
| O | A. | Monitoring |
| O | B. | Prediction |
| O | C. | Protection |
| O | D. | Probation |
| O | E. | Planning |

| 39. | What is the use of satellites to seek cloud patterns associated with tropical storms an example of? |  |
|---|---|---|
| O | A. | Monitoring |
| O | B. | Prediction |
| O | C. | Planning |
| O | D. | Protection |

| 40. | What is the reinforcement of buildings to reduce the impacts of tropical storms an example of? |  |
|---|---|---|
| O | A. | Monitoring |
| O | B. | Prediction |
| O | C. | Planning |
| O | D. | Protection |

| 41. | Early warnings, issued by national hurricane centres is an example of what? |  |
|---|---|---|
| O | A. | Monitoring |
| O | B. | Prediction |
| O | C. | Planning |
| O | D. | Protection |

| 42. | Preparing disaster supply kits in the event of a tropical storm is known as what? |  |
|---|---|---|
| O | A. | Monitoring |
| O | B. | Prediction |
| O | C. | Planning |
| O | D. | Protection |

| 43. | True or false? An extreme weather event is where the weather is severe or out of season and different to the usual pattern. |  |
|---|---|---|
| O | A. | True |
| O | B. | False |

| 44. | Which of the following is not an example of extreme weather experienced in the UK? |  |
|---|---|---|
| O | A. | Storm Events |
| O | B. | Flooding |
| O | C. | Droughts and heatwaves |
| O | D. | Extremes of cold weather |
| O | E. | Typhoons |

| 45. | True or false? Air masses affect the type of weather the UK experiences. |  |
|---|---|---|
| O | A. | True |
| O | B. | False |

| 46. | Identify the type of pressure system that brings strong winds and rain to the UK. |
|---|---|
| ○ A. | High pressure |
| ○ B. | Low pressure |

| 47. | Which of the following is not a cause of flooding in the UK? |
|---|---|
| ○ A. | Tsunami |
| ○ B. | Storm surge |
| ○ C. | Prolonged rainfall |
| ○ D. | Torrential rainfall |

| 48. | Which of the following is the correct definition of a drought in the UK? |
|---|---|
| ○ A. | 10 or more consecutive days with less than 0.2mm on any one day. |
| ○ B. | 15 or more consecutive days with less than 0.2mm on any one day. |
| ○ C. | 20 or more consecutive days with less than 0.2mm on any one day. |

| 49. | Which of the following is not an example of a potential impact of a storm event? |
|---|---|
| ○ A. | Death |
| ○ B. | Downed power supplies |
| ○ C. | Roads can melt and railways can buckle |
| ○ D. | Disruption to transport |

| 50. | Which of the following is not an example of a potential impact of a flood event? |
|---|---|
| ○ A. | Crops ruined |
| ○ B. | Death by drowning |
| ○ C. | Landslides |
| ○ D. | Increased risk of falling in the snow |

| 51. | Which of the following is not an example of a potential impact of a drought and heatwave? |
|---|---|
| ○ A. | Reservoirs run low |
| ○ B. | Death by drowning |
| ○ C. | Railway lines can buckle |
| ○ D. | Elderly vulnerable to heat exhaustion |

| 52. | Which of the following is not an example of a potential impact of extreme cold weather? |
|---|---|
| ○ A. | Increased injuries caused by people falling. |
| ○ B. | Storm surge |
| ○ C. | Roads, railways and airlines shut. |
| ○ D. | Crops fail and cattle may not survive. |

| 53. | Which type of extreme weather event was the Big Freeze? |
|---|---|
| ○ A. | Storm Event |
| ○ B. | Flooding |
| ○ C. | Drought/ heatwave |
| ○ D. | Extreme cold weather |

| 54. | Which air mass was responsible for bringing the Big Freeze to the UK? |
|---|---|
| ○ A. | Tropical continental |
| ○ B. | Arctic Maritime |
| ○ C. | Polar Maritime |
| ○ D. | Polar Continental |

| 55. | Over which sea did the Big Freeze pick up water that resulted in heavy snowfall over the UK? |
|---|---|
| ○ A. | Irish Sea |
| ○ B. | North Sea |
| ○ C. | English Channel |
| ○ D. | Norwegian Sea |

| 56. | Which of the following is not an example of a social impact of the Big Freeze? |
|---|---|
| ○ A. | 7 people died |
| ○ B. | 7,000 schools were forced to close |
| ○ C. | Businesses lost out on Xmas sales. |
| ○ D. | 100,000 people without water. |

| 57. | Which of the following is an example of a primary impact of the Big Freeze? |
|---|---|
| ○ A. | More accidents on the roads due to ice/snow. |
| ○ B. | Hundreds of schools were forced to close |
| ○ C. | Insurance claims increased. |
| ○ D. | There was a shortage of food in some supermarkets. |

| 58. | Which of the following is not a response to the Big Freeze? | |
|---|---|---|
| O | A. | Local government stockpiled salt and grit. |
| O | B. | The Met Office sent warnings prior to the event. |
| O | C. | High on the Pennines on the M62, the military was called in to help rescue vehicles. |
| O | D. | Drifting snow led to the isolation of a number of villages |

| 59. | True or false? The frequency of extreme weather events in the UK is increasing. | |
|---|---|---|
| O | A. | True |
| O | B. | False |

| 60. | Since the 1980s what has happened to temperatures in the UK? | |
|---|---|---|
| O | A. | Stayed the same |
| O | B. | Increased by around 1°C |
| O | C. | Increased by around 2°C |
| O | D. | Decreased by around 1°C |

| 61. | What has happened to winter rainfall in the UK since the 1980s? | |
|---|---|---|
| O | A. | Remained the same |
| O | B. | Increased |
| O | C. | Decreased |

| 62. | True or false? There have been more weather records broken recently than ever before. | |
|---|---|---|
| O | A. | True |
| O | B. | False |

| 63. | True or false? The UK experienced its highest recorded temperature in 2019. | |
|---|---|---|
| O | A. | True |
| O | B. | False |

| 64. | Which of the following is not an example of a future prediction for UK weather? | |
|---|---|---|
| O | A. | Precipitation is expected to become even more seasonal. |
| O | B. | Some rivers are expected to flood more frequently in winter due to increased rainfall. |
| O | C. | Air temperature is expected to increase, causing more drought. |
| O | D. | Precipitation is expected to become less seasonal. |

| 65. | True or false? Climate change cannot be responsible for individual extreme weather events. | |
|---|---|---|
| O | A. | True |
| O | B. | False |

| 66. | True or false? Scientists suggest that the increasing frequency of extreme weather events can be |
|---|---|

| | blamed on climate change. | |
|---|---|---|
| O | A. | True |
| O | B. | False |

| 67. | True or false? The increase in the temperature of the Atlantic Ocean may simply be a long-term cycle or due to the position of the jet stream and not climate change. | |
|---|---|---|
| O | A. | True |
| O | B. | False |

| 68. | True or false? There has been an unprecedented increase in global temperature since the 1970s. | |
|---|---|---|
| O | A. | True |
| O | B. | False |

| 69. | An increase in greenhouse gasses in the atmosphere has what impact? | |
|---|---|---|
| O | A. | Less infrared radiation reflected from the surface of the Earth can escape the enhanced greenhouse gases leading to an increase in temperature. |
| O | B. | More shortwave radiation from the sun can pass through the atmosphere leading to an increase in global temperatures. |

| 70. | Which of the following is not an example of a natural cause of climate change? |
|---|---|
| ○ | A. | Orbital changes |
| ○ | B. | Solar output |
| ○ | C. | Agriculture |
| ○ | D. | Volcanic activity |

| 71. | Which of the following is not an example of a human cause of climate change? |
|---|---|
| ○ | A. | Burning Fossil fuels |
| ○ | B. | Solar output |
| ○ | C. | Deforestation |
| ○ | D. | Agriculture |

| 72. | Which of the following is not an example of evidence for climate change? |
|---|---|
| ○ | A. | An increase in average surface air temperature by 1°C over the last 100 years. |
| ○ | B. | Average precipitation has increased by 3000mm per year. |
| ○ | C. | The warmest ocean temperatures since 1850. |
| ○ | D. | Sea levels have risen by 19cm since 1900. |

| 73. | Which of the following is not an example of a natural recorder of climate change? |
|---|---|
| ○ | A. | Tree rings |
| ○ | B. | Ice Cores |
| ○ | C. | Igneous rock cores |
| ○ | D. | Ocean sediment |

| 74. | True or false? The Quaternary period has over twenty cycles of cold glacial periods, and warmer glacial periods. |
|---|---|
| ○ | A. | True |
| ○ | B. | False |

| 75. | Identify the social effects of climate change. **You can select more than one**. |
|---|---|
| ○ | A. | Increased risk of diseases and skin cancer. |
| ○ | B. | Milder winters will lead to fewer winter-related deaths. |
| ○ | C. | Flood risks increases insurance costs. |
| ○ | D. | Sea-level rise will increase flooding and coastal erosion. |

| 76. | Identify the environmental effects of climate change. **You can select more than one.** |
|---|---|
| ○ | A. | Increased droughts in the Mediterranean area. |
| ○ | B. | Declining fishing in the Lower Mekong delta. |
| ○ | C. | Ice melts, so wildlife declines in places such as the Arctic. |
| ○ | D. | Increase in forest growth in northern Europe. |

| 77. | Reducing or preventing the **causes** of climate change is known as what? |
|---|---|
| ○ | A. | Adaptation |
| ○ | B. | Mitigation |
| ○ | C. | Migration |
| ○ | D. | Prediction |

| 78. | Identify the examples of climate mitigation listed below. **You can select more than one** |
|---|---|
| ○ | A. | Alternative energy production |
| ○ | B. | Carbon capture |
| ○ | C. | Managing water supplies |
| ○ | D. | International agreements |

| 79. | True or false? Climate adaptation does not involve reducing or stopping global warming. Instead it involves responding to climate change by limiting its negative effects. |
|---|---|
| ○ | A. | True |
| ○ | B. | False |

| 80. | Constructing flood defences such as the Thames barrier is an example of which type of adaptation strategy? |
|---|---|
| ○ | A. | Changes in agricultural systems |
| ○ | B. | Managing water supplies |
| ○ | C. | Managing sea level rise |