YEAR 7 GEOGRAPHY – CYCLE 2 AND 3 – CLIMATE CHANGE

BOX 1: KEYWORDS PART 1	
climate change	a **change** in global **temperature** and **precipitation** patterns
Quaternary period	period of **time** → **2.6 million years ago to** the **present day**
glacial	period of **time** with **colder global temperatures** e.g. an ice age
interglacial	period of **time** with **warmer global temperatures**
natural resource	found in **nature** → **used** by humans e.g. **water, coal**
raw materials	the **basic materials** from which **products** are **made** e.g. **wood**, **cotton**
fossil fuels	**fuels** formed from **fossilised plants** and **animals** e.g. **coal, oil** and **gas**
greenhouse gases	e.g. **carbon dioxide** and **methane** → they can come from **burning fossil fuels** → they **absorb outgoing radiation** → this **warms** the **atmosphere**
atmosphere	the **thin layer** of **gases** that **surrounds** the **Earth** e.g. oxygen, nitrogen
biosphere	all of the **living** things on **Earth** including **plant** and **animal life**
lithosphere	the **ground** layer of Earth → e.g. the **crust**, **rocks**, **soils** and **landforms**
hydrosphere	all of the **liquid water** on the Earth e.g. **ocean, rivers** and **lakes**
cryosphere	all of the **frozen water** on the Earth e.g. **snow, ice sheets** and **glaciers**
carbon cycle	**carbon moving** between **spheres** e.g. from biosphere to atmosphere
climatologist	**scientists** who **study** the **climate** of the **Earth**

BOX 2: THE GREENHOUSE EFFECT	
greenhouse effect ☺	**1.** incoming **solar radiation** from the sun enters the atmosphere **2.** some of this **radiation** is **reflected** to **space** **3.** some of this outgoing **radiation** is absorbed by **greenhouse gases** **4.** this makes the Earth **warm enough** for **life** to survive ☺
enhanced greenhouse effect ☹	**1.** incoming **solar radiation** from the sun enters the atmosphere **2.** some of this **radiation** is **reflected** to **space** **3.** **more** of this outgoing **radiation** is absorbed by greenhouse gases because there are **more greenhouse gases** in the atmosphere **4.** this **warms** the planet **too much** ☹

BOX 3: THE HUMAN CAUSES OF CLIMATE CHANGE	
burning fossil fuels	creates **electricity** → but **releases greenhouse gases** e.g. **carbon dioxide** → **50%** of **greenhouse gases** in **atmosphere** from **burning fossil fuels**
agriculture (farming)	e.g. **cattle farming** (for beef) and **growing rice** → but **releases methane** → **20%** of **greenhouse gases in atmosphere** from **agriculture**
deforestation	**trees cut down** (logging) → **fewer trees** to **absorb carbon dioxide** → **less photosynthesis** → **more carbon dioxide** in atmosphere

BOX 4: THE NATURAL CAUSES OF CLIMATE CHANGE	
orbital changes	**shape** of **Earth's orbit around Sun changes** over time → **increases** or **decreases temperatures** on **Earth**
volcanic activity	**volcanic eruptions** release **ash** → **blocks sunlight** → the **1991** volcanic **eruption** of **Mount Pinatubo decreased** global **temperatures** by **0.5° C**
solar output	**amount** of **solar radiation varies** → **increases** or **decreases temperatures**

BOX 5: IMPACTS OF CLIMATE CHANGE	
temperature rise	**atmosphere** → **1° C** global **temperature rise** in **last 100 years**
ice sheets melting	**cryosphere** → **Arctic sea ice** has **decreased**
permafrost melting	**frozen ground** in **polar biome** (permafrost) **contains methane** → **when permafrost melts** → **methane released** → **even higher temperatures**
sea level rise	**hydrosphere** → **sea levels have risen 19 cm** since 1900 → **flooding**
death of coral reefs	**corals** need **shallow water** → **deeper** and **warmer water kills reefs**
extreme weather	**more floods, droughts, storms** and **more intense hurricanes**
wildfires increase	**higher temperatures** → **more fires** → **fewer trees** → **more carbon dioxide** → **even higher temperatures**
food insecurity	**extreme weather** → **smaller yields** (amount of plants grown) → **famine**
water stress	**unreliable precipitation** → **more drought** → **unreliable water supply**
desertification	**higher temperatures** and **reduced rainfall** → **increases desertification** → **healthy** land turns to **desert** land → **food insecurity**
mass migration	**people moving** to **new areas** to **escape effect** of **climate change**
illnesses	**mosquitos thrive** in **warm conditions** → **more** illness from **malaria**
biodiversity loss	**biosphere** → **habitat destruction** e.g. **corals, ice sheets, rainforests**

BOX 6: KEYWORDS PART 2	
mitigation	**reducing** the **causes** of **climate change e.g. reducing greenhouse gases**
adaptation	**changing** the **way we live** to **cope with effects** of **climate change**
local strategies	things that **small areas** e.g. **towns** can do to **mitigate and adapt**
national strategies	things that **whole countries** can do to **mitigate and adapt**
global strategies	things that **the whole world** can do to **mitigate and adapt**
sustainable management	**sustainable management** → **using natural resources** in a way that **will not harm** the **planet** for **future generations**
renewable energy	**producing electricity** from **sources** that will **not run out** e.g. **wind, solar**
carbon footprint	**amount** of **carbon dioxide produced** by an **individual** or **group**
food miles	**distance food travels** to **customer** → **produces carbon emissions**

BOX 7: MITIGATION	
1. alternative energy	**no greenhouse gases released** e.g. **solar, wind, tidal, HEP, nuclear**
2. carbon capture	**carbon dioxide** is **collected** and **stored underground**
3. planting trees	**afforestation** → **increase carbon sinks** → **less carbon** in **atmosphere**
4. international agreements	**international agreements** → **Paris Agreement (2015)** → **countries agreed** to **reduce greenhouse gas emissions** by **60%** by **2050**

BOX 8: ADAPTATION	
1. agriculture	**change** how we **farm e.g.** grow **'drought resistant crops'** → these are plants **that** can still **survive** even when it is **warmer** and **drier**
2. water supply	we can **use water more carefully** to **make sure** there is **enough** for **everyone** even when it is **warmer** and **drier**
3. sea level rise	**reduce risk from sea level rise** by **building 'sea walls'** to **stop flooding**

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