KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

CURRICULUM GRADE 10 -12 DIRECTORATE

NCS (CAPS)

JUST IN TIME DOCUMENT

GRADE 10

GEOGRAPHY

2024

TEACHER DOCUMENT

MARKING GUIDELINE

ACTIVITY1:1 THE ATMOSPHERE

1.1.1 D troposphere (1)
1.1.2 B. mesosphere (1)
1.1.3 A. stratosphere (1)
1.1.4 C. burning of fossil fuels (1)
1.1.5

a) Troposphere (1)

b) Stratopause (1)
c) Ozone (1)
d) B (1)
e) (thermosphere) A and (stratosphere)C (2)

ACTIVITY 1.2: THE OZONE LAYER

1.2.1 Ozone layer – is a layer which absorbs harmful rays from the sun. (2)

1.2.2 Stratosphere (1)
1.2.3 Absorption of the UV- Ultraviolet rays (2)
1.2.4 **Social effects:**

- Increase risks of cataracts
- Early aging and skin cancers
- Blindness

Environmental effects:

- Melting ice caps and rising sea levels
- Reduced habitats for polar bears
- Disruption of photosynthesis

[Must show social and environmental effects] (4)

ACTIVITY 1.3: HEATING OF THE ATMOSPHERE

1.3.1 **Insolation:** term used to describe the energy given off by the sun. (1x2) (2)

1.3.2 Sun (1 x 1) (1)

1.3.3 **Terrestrial radiation**: Heat emitted (given off) by the Earth's surface. (1x2) (2)

1.3.4 Terrestrial radiation- Heat emitted (given off) by the Earth's surface.
Conduction- The transfer of heat through contact of air molecules.
Convection- The transfer of heat through vertical movement of air molecules.
Release of latent heat- heat released when condensation occurs (3 x 2) (6)

1.3.5 Clouds will reflect (2)
Absorb (2)
scatter the incoming heat (2) (ANY TWO) (2 x 2) (4)

ACTIVITY 1.4: DIFFERENCE IN TEMPERATURE

1.4.1 Latitude (1 x 1) (1)

1.4.2

a) Temperature- temperature are higher/warmer at the equator than the poles where temperatures are lower/colder
b) Latitude- at the equator the latitude/ latitudinal position is lower (0-5 N/S) while at the poles the latitude/latitudinal position is higher (80-90 N/S)
c) Angle of the sun's rays- At the equator smaller angle (direct rays) while at the poles larger angle (oblique rays) (3 x 2) (6)

1.4.3 Altitude (1 x 1) (1)

1.4.4 Warmer temperatures are found closer to the surface since there is a higher concentration of gases that can absorb and retain heat, while as you go higher in altitude the concentration of gas particles become less.

Less heat absorbing particles are found at the summit of this mountain and therefore temperatures will be colder. (2 x 2) (4)

1.4.5 Cold Benguela current (1 x 1) (1)

1.4.6 The relationship between cold ocean currents, rainfall and temperatures on the west coast is that cold ocean currents lead to cold temperatures resulting in clear skies and dry conditions on the west coast. (1 x 2) (2)

ACTIVITY 1.5: GREENHOUSE EFFECT

1.5.1 **THE GREENHOUSE EFFECT**: refers to the way in which the earth is able to trap heat within its atmosphere. (1 x 2) (2)

1.5.2 carbon dioxide; methane: water vapor; nitrous oxide; CFC (ANY ONE)

(1 x 1) (1)

1.5.3 Burning of fossil fuels

Deforestation

Use of CFCs in the manufacturing industry

Use of more cars resulting in more exhaust emissions(ANY TWO) (2 x 2) (4)

1.5.4 Some of the strategies to reduce greenhouse effect is cut down the emissions of greenhouse gases that are produced from power plants so alternative source of green energy can be used. Solar, wind etc. move towards cars that reduce carbon/renewable energy. Farms can use natural/ organic fertilizers. Halting any deforestation and using the land sustainably and restoring nature. (4x2) (8)

ACTIVITY 1.6: GLOBAL WARMING

1.6.1 Global warming (1 x 1) (1)

1.6.2 Temperatures have increased in the polar region where the bear lives.(2 x 2)(4)

1.6.3 Melting ice and Rising sea level, warmer temperatures will affect the marine life that the bear feeds on. Therefore, impacting on the survival. (3 x 2) (6)

ACTIVITY 1.7 FORMS OF WATER

1.7.1 sublimation
1.7.2 freezing
1.7.3 evaporation
1.7.4 melting
1.7.5 deposition
1.7.6 condensation (6x1) (6)

ACTIVITY 1.7: SYNOPTIC MAP

1.8.1 It is a map showing a summary of weather conditions. (1x2) (2)

1.8.2

Precipitation symbol	Name
A. 	Rain
B. 	Fog
C. 	Thunderstorm
D. 	Snow (3x1) (3)

1.8.3

Air temperature	30°C
Dew point temperature	9°C
Cloud cover	⅛
Precipitation	None
Wind speed	10 knots
Wind direction	North west (6x1) (6)

[11]

SOLUTIONS

ACTIVITY 2.1.

2.1.1. A – Crust (1)
B – Inner Core (1)
C – Mantle (1)

2.1.2. A – Solid (granite) (1)
B – Solid (Iron) (1)
C – Semi solid (Pliable) (1)

2.1.3. The temperature increase as you go deeper/ The temperature ranges from 60^0C to 200^0C where it merges with the mantle. (2)

2.1.4. It is the only layer on which plants can grow and humans can live. (2)
The rocks from the bottom of earth react with oxygen and water to form new essential minerals and rocks. (2)
The layer is made of rocks were natural cycles take place. (2)
It consists of fertile soil that sustain the growth of vegetation that Is important for live on earth. (2)

2.2.1 A – Crust (1)
B – Mantle (1)
D - Inner Core (1)

2.2.2 Inner core (1)
Crust (1)

2.2.3 Inner core (1)
Its +- 6000ºC (1)

2.2.4. Continental crust is made of granite (1) and is thinner (1) in density and composes silicone (1)
Oceanic crust is made of basalt (1) and is denser (1) and composes iron (1).

Activity 2.3

2.3.1 Igneous (1)

2.3.2 Deep under the surface (1)

2.3.3 Intrusive – rocks form from magma below the surface of the earth (1)
Extrusive – rocks forming from lava on the surface of the earth (1)

2.3.4 Fine to coarse crystalline rocks (2)
Contain valuable minerals (2)
Colourful rocks (2)

2.3.5 Used in the building industry to cover the walls and to make kitchen tops (1)
Granite is used for tombstones (1)
The source of precious metals (1)

2.3.6 Develops from molten minerals (2) which wells up from the mantle (2) and forms crystals as it cools down (2)

Activity 2.4

2.4.1 Igneous rocks
2.4.2 Metamorphic rocks
2.4.3 Igneous rocks
2.4.4 Sedimentary rocks
2.4.5 Metamorphic rocks
2.4.6 Igneous rocks
2.4.7 Sedimentary rocks

2.4.8 Metamorphic rocks (8X1) (8)

Activity 2.5

2.5.1 Alfred Wegener (1)

2.5.2 Panthalassa (1)

2.5.3 Pangea (1)
2.5.4 North – Laurasia (1)
South – Gondwana (1)

2.5.5 Africa, Australia, South America, Antarctica, India (ANY TWO)

2.5.6 India (1)

Activity 2.6

2.6.1	Crustal plates that move on the molten Mantle (1)	(1 x 1)	(1)
2.6.2	Nazca and Pacific (2)	(2 x 1)	(2)
2.6.3	Diverging (1)	(1 x 1)	(1)
2.6.4	Parts of the Earth's crust move on the molten Mantle because of huge convection currents. (2)	(1 x 2)	(2)
2.6.5	The coastline of the continents surrounding the Atlantic Ocean could fit together like a jigsaw puzzle (2)		

Living animals in widely separated lands are similar (2)
Fossil plants on different continents are the same (2)
Fossil animals on different continents are the same (2)
There are numerous geological similarities (similar rocks) between eastern South America and western Africa (2)
There are ridges in the floors of the main oceans halfway between continents (2)
The sea floor spread away from these ridges; distinct patterns of stripes can be seen in the magnetism of rocks on either side of the ridges (2) (8)
[Any 4] (4 x 2) (8)

Activity 2.7

2.7.1 F (1)

2.7.2 E (1)

2.7.3 D (1)

2.7.4 Compressional (1)

2.7.5 Anticline (1)

2.7.6 G (1)

2.7.7 H (1) (7 x 1) (7)

Activity 2.8

2.8.1 Normal (1)
2.8.2 The earths crust that moves up (2) relative to the surrounding landscape because of the tectonic forces (2)
2.8.3. Production of geometric electricity from underground (2)
Tourist attraction (2)
Lakes can be used for fish breeding (2)
(ANY TWO)
2.8.4 The earths crust that moves down (2) relative to the surrounding landscape because of tectonic forces. (2)
2.8.5 Graben / Rift Valley (1)
2.8.6 Fault plane (1)

Activity 2.9

2.9.1 Focus (1) (1)

2.9.2 Destruction of homes (1)
Destruction of infrastructure (1)
Damage to property (1)
Death amongst people (1) (2x1) (2)
(ANY TWO) (2)

2.9.3 Epicentre was on land (2) (2)

2.9.4 Difficult for emergency services to reach remote areas due to damaged infrastructure (2)
Lack of clean water as water pipelines are damaged/destroyed (2)
Leakage of sewage as sewage lines are damaged/destroyed (2)
Exposure to elements because of homes being destroyed (2)
Lack of medication for the ill (2)
Search and rescue take long due to the damaged buildings/infrastructure (2) (Any ONE) (1x2) (2) (2)

2.9.5 Designing buildings so they're flexible enough to absorb vibrations without falling or deteriorating (2)
Strengthening support material (2)
Protect and prepare possible sites of earthquakes from severe damage through the following processes:
earthquake engineering (2)
household seismic safety and seismic retrofit (including special fasteners, materials and techniques) (2)
seismic retrofitting - modification of existing structures to make them more resistant to seismic activity, ground motion, or soil failure due to earthquakes (2)
Construct earthquake-resistant buildings:
Interior support walls called shear walls, made of reinforced concrete, strengthen the structure, and help resist rocking forces.
Cross-bracing reinforces walls with diagonal steel beams.
Base isolators act as shock absorbers and allows a building to sway (2)
Public awareness campaigns about the impact of earthquakes (2)
Information how to prepare your home for the possible occurrence of earthquakes (2)
Regular earthquake and evacuation drills (2)
Continuous research on earthquake predictions (2) (4x2) (8)
(Any FOUR)
(8)

Activity 2.10

2.10. A Seismic waves (1)

B Epicenter (1)

C Focus (1)

D Fault plane (1)

E Crust (1) (5x1) (5)

Activity 2.11

2.11.1 G
2.11.2 H
2.11.3 I
2.11.4 E
2.11.5 J
2.11.6 A
2.11.7 B
2.11.7 D (7x1) (7)

Activity 2.12.

2.12.1 Intrusive: when magma from the mantle does not reach the earth's surface and solidifies. (1)
Extrusive: igneous rock form from magma on the earth's surface. (1)
2.12.2 A – laccolith (1)
B – lopolith (1)
2.12.3 Diamonds (1), gold (1), copper (1), zinc (1) (ANY ONE)
2.12.4 Composite volcano (1)
A composite volcano is made up of alternate layers of lava and ash.
It is tall steep sided. (2)
Positive impacts:
Rock weathers to form fertile soil. (2)
Tourist attractions which generates income. (2)
Possibility of generating geothermal energy. (2)

Negative impacts: Injury or death. (2) Loss of properties and businesses. (2) Burns farmlands and vegetation. (2) (ANY FOUR)	(4x2) (8)

Population Geography-Marking guide

[POPULATION DENSITY AND DISTRIBUTION]			
3.1			
3.1.1	Number of people per square km	(1 × 2)	(2)
3.1.2	India – 464 people/km China – 153 people/km	(2 × 1)	(2)
3.1.3	Land area of India is smaller than that of China	(1 × 2)	(2)
3.1.4	Steeper gradient makes it difficult to practice farming and build settlements Insufficient water supply hinders agricultural activities Insufficient water supply limits industrial activities Poor soil quality limits agricultural activities in an area	(2 × 2)	(4)
			[10]

ACTIVITY THREE [POPULATION INDICATORS]			
3.2			
3.2.1	The average number of years a person is expected to live	(1 × 2)	(2)
3.2.2	3.8 years	(1 × 1)	(1)
3.2.3	Covid 19 pandemic was responsible for many deaths	(1 × 2)	(2)
3.2.4	Uneducated people are not able to understand precautionary measures Illiterate people do not understand instructions to use medicine	(2 × 2)	(4)
3.2.5	Awareness campaigns on healthy lifestyle Improve public health system Invest more money in education Improve food security (ANY THREE)	(3 × 2)	(6)
			[15]

[POPULATION INDICATORS]			
3.3			
3.3.1	Sex structure Age structure	(2 × 1)	(2)
3.3.2	Japan	(1 × 1)	(1)
3.3.3	Low birth rate High life expectancy Low infant mortality rate (ANY TWO)	(2 × 2)	(4)
3.3.4	Information from population pyramid can help the government when doing budget Government can use stats from population pyramid to decide on interventions (education and healthcare system) (ANY TWO)	(2 × 2)	(4)
			[11]

[POPULATION GROWTH]			
3.4			
3.4.1	Define the term overpopulation	(1 × 2)	(2)
3.4.2	2012	(1 × 1)	(1)
3.4.3	Death rate was low due to lack of advancements in medical technology. Infant mortality was high due to some cultural practices such as infanticide	(2 × 2)	(4)
3.4.4	Life expectancy has increased due to medical technology advancements Increase in birth rate due to low status of women in societies Low levels of literacy amongst women (ANY TWO)	(2 × 2)	(4)
			[11]

[POPULATION GROWTH]			
3.5			
3.5.1	One child policy	(1 × 1)	(1)
3.5.2	More tax for those who have more than one child Loss of employment for those who have more than one child	(2 × 2)	(4)
3.5.3	Birth control programmes Sterilization target goals were set and made mandatory for people who had two children	(2 × 2)	(4)
3.5.4	Lac of employment as more people compete for jobs Service delivery is hindered as there are too many people		
			[13]

POPULATION MOVEMENTS			
3.6			
3.6.1	Decrease in the actual number of people living in rural areas	(1 × 2)	(2)
3.6.2	Rural population is declining	(1 × 2)	(2)
3.6.3	31.67%	(1 × 1)	(1)
3.6.4	Poverty in rural areas Poor access to basic services in rural areas Poor infrastructure (Any TWO)	(2 × 2)	(4)
3.6.5	Businesses will shut down Businesses makes less profit Productivity in farms decreases Loss of job opportunities decrease buying power in rural areas Lack of investments in rural areas (Any THREE)	(3 × 2)	(6)
			[15]

POPULATION MOVEMENTS			
3.7			
3.7.1	Movement of people from rural areas to urban areas	(1 × 2)	(2)
3.7.2	Rural – urban migration leads to the decrease in number of people living in rural areas	(1 × 2)	(2)
3.7.3	Businesses will shut down Businesses makes less profit Productivity in farms decreases Loss of job opportunities decrease buying power in rural areas Lack of investments in rural areas (ANY TWO)	(2 × 2)	(4)
3.7.4	Improve infrastructure in rural areas Assist subsistence farmers with training and equipment Improve service delivery Improve public transport system (ANY THREE)	(3 × 2)	(6)
			[14]

TOPIC: WATER MANAGEMENT GRADE 10 ACTIVITITY 4.1 SOLUTIONS		
4.1.1	It is form of energy that is generated from the power of water in motion	1 x 1 (1)
4.1.2	Gauteng	1 x 2 (2)
4.1.3	Boating ,Paddling, Swimming	1 x 2 (2)
4.1.4	• Store and supply water for domestic, agricultural • To practice aquaculture • Supply water to industries • To generate hydro electricity • Recreational use e.g. boating, paddling Swimming etc	2 x 2 (4)
4.1.5	• Population growth, leading to high demands of water • Urbanisation, high demand of piped water for people living in urban areas • Alien plants, consume lot of water • Irrigation in agriculture, more water is wasted on agriculture during irrigation • Industrialisation, Heavy industries requires high amount of water to operate	

	• Water pollution. More water is polluted by human, industries, agriculture,	3 X 2 (6)
		[15]

TOPIC: WATER MANAGEMENT **ACTIVITITY 4.2 SOLUTIONS**		**GRADE: 10**
4.2.1	Defeat Day Zero	1 x 1 (1)
4.2.2	It is the day officials move from Phase One prevention restrictions to Phase Two disaster restrictions	1 x 2 (2)
4.2.3	• Water is a basic need • Thinking of Day Zero • Water insecurity • No other source of water • Limited water supplies (ANY TWO)	2 x 2 (4)
4.2.4	**Strategies by people** • Do not leave taps running • Use little water for each task • Use short showers instead of daily baths • Run the tap slowly when rinsing any material • Reduce flushing water by putting plastic bottle in a cistern Collect plastic, glasses and metal for recycling, this will reduce the amount of waste water • Limit population growth by taking birth control measures **Strategies by the Municipality** • Increasing tariffs will make residents use less water • Mend leaking tapes • Desalinisation in coastal areas • Construct more dams and reservoirs • Offer training to consumers on water usage • Hire skilled operators in water plants • Recycle water • Building dams to store water • Cloud seeding to artificially increase rainfall • Crop rotation to protect soil to store water • Redirecting water to provide for irrigation in areas prone to drought • Harvesting rain water from rooftops • Development of sustainable agricultural practices Water-restrictions (ANY FOUR)	(4 X 2 (8)
		[15]

TOPIC: WATER MANAGEMENT ACTIVITITY 4.3 SOLUTIONS	GRADE: 10	
4.3.1	(a) Jameson (b) Howiesons Poort	(1x1) (1) (1x1) (1)
4.3.2	○ Restricting consumption to 50 litres per person to stabilize the output. ○ Increase the number of town reservoirs	(2x1) (2)
4.3.3	○ Dams control flow of water, helping to prevent floods ○ Dams store water for domestic, agricultural and industrial use ○ Dams regulate the flow of water in rivers ○ Dams serve as habitat for aquatic life ○ Dams can be used for fishing and other recreational activities. (ANY TWO)	(2x2) (4)
4.3.4	A. Dams B. Store C. Consumers	(3x1) (3)
4.3.5	○ "The crippling drought has nearly emptied dams" ○ "It is unlikely to recover unless we receive significant rainfall." "we are restricting consumption to 50 litres per person a day with immediate effect."(ANY TWO)	(2x2) (4)
		[15]

TOPIC: WATER MANAGEMENT ACTIVITITY 4.4 SOLUTIONS	GRADE: 10	
4.4.1	Grey water is used water which is still quiet clean.	(1x2) (2)
4.4.2	○ Irrigation of crops ○ Flushing of toilets	(2x1) (2)

4.4.3	○ Close taps when not using water ○ Fix dripping taps and leaks ○ Use water saving showerheads ○ Flush toilets less often ○ Rather take a shower and fewer baths ○ Reuse dirty water for cleaning ○ Recycle water ○ Use grey water to flush toilets ○ Switch the water off while shaving or brushing your teeth ○ Remove alien plants (ANY FOUR)	(4x2) (8)
		[12]

TOPIC: WATER MANAGEMENT **ACTIVITITY 4.4 SOLUTIONS**		**GRADE: 10**
4.5.1	Flood - When water rises beyond its natural level and overflows into normally dry areas.	(1x2) (2)
4.5.2	Human caused floods – Floods resulting from unnatural activities conducted by people whereas the natural floods usually result from heavy and prolonged rainfall.	(2x1) (2)
4.5.3	(a) Economic impact (b) Environmental	(1x1) (1) (1x1) (1)
4.5.4	○ Putting evacuation plans in place ○ Provision of safe shelter ○ Constant update and warnings about the floods ○ Provision of sandbags. ○ Provision of fresh water ○ Provision of canned food stuffs. (ANY FOUR)	(4x2) (8)
		[14]

TOPIC: WATER MANAGEMENT ACTIVITITY 4.6 SOLUTIONS		GRADE: 10
4.6.1	18 000 residents.	(1x1) (1)
4.6.2	R682.8 million.	(1x1) (1)
4.6.3	November 2008	(1x2) (2)
4.6.4	7000 ESKOM customers did not have electricity /"7000 Eskom customers are still without electricity supply across the Western Cape".	(1x2) (2)
4.6.5	○ Provision of building material ○ Provision of sandbags ○ Provision of food parcels/fresh water/(accept examples from the infographic) (ANY TWO)	(2x2) (4)
4.6.6	○ Loss of income for farmers. ○ Closing of businesses selling agricultural products. ○ Increase in the price of food ○ Loss of jobs (ANY THREE)	(3x2)(6)
		[16]