

# TEACHERS WITHOUT BORDERS PROGRAMME

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basic education

Department:  
Basic Education  
REPUBLIC OF SOUTH AFRICA

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In Bill Gates words, at the Mandela Day 'Living Together' address: "Maintaining the quality of this country's higher education system while expanding access to more students will not be easy. But it's critical to South Africa's future" – working together, we can help achieve this."

## Contributing schools to date:

Clifton School	Milnerton High	Rustenburg Girls' High	St Peter's
Durban Girls'	Northwood High	St Anne's DC	St Stithians
Fairmont High	Roedean	St John's DSG	Wynberg Boys' High
Herzlia High	Rondebosch Boys'	St Mary's DSG Kloof	Wynberg Secondary

1. State whether the following statements are **TRUE** or **FALSE**. Only write down the question number and the answer.
- 1.1. F (1)
- 1.2. F (1)
- 1.3. T (1)
- 1.4. T (1)
- 1.5. F (1)
- (5)**
2. Latitude or distance from equator  
Mountains or relief  
Ocean currents  
Altitude  
Distance from the sea (1x5=5)
3. Water is transparent so rays penetrate deeper (bigger area to heat) while only the top surface of land warms up.  
Water moves & distributes heat (waves and currents)  
Evaporation from water surface (uses energy) so cools the water down  
Water reflects much of the sun's energy (albedo)  
Land masses only need  $\frac{1}{2}$  as much heat to raise the temperature by  $1^{\circ}\text{C}$  as the same mass of water.  
**ANY 3** (3x2 = 6)
- 4.1. The sun heats the earth's surface in the form of short wave radiation called insolation. The earth then heats the atmosphere in the form of long wave radiation called terrestrial radiation. (6x1=6)
- 4.2.  $1140\text{m} - 40\text{m} = 1100$ ,  $1100/100=11$ ,  $11 \times 0.65^{\circ}\text{C} = 7.15^{\circ}\text{C}$ ,  $20 - 7.15^{\circ}\text{C} = 12.85^{\circ}\text{C}$  (4)
- (10)**

- 5.1. Table 1 = Bloemfontein      Table 2 = Durban?      (1)
- 5.2. There is a smaller difference in the max and minimum temperatures of Durban as it is at the coast (Durban has a smaller temperature range). Vice versa for Bloemfontein because it is far from the coast **(Any of the two)**      (2)
- 5.3. 25 °C (24.9 °C)      (2)
- 5.4. September, 20 °C      (1+2=3)
- 5.5. Nov, 6 °C      (1+2=3)
- 5.6. Mozambican      (1)
- 5.7. South, warm      (1+1=2)
- 5.8. A high rainfall or increases rainfall      (2x1=2)
- 5.9. Summer      (1)
- (17)**
6.      1.      Warm moist air
2.      air rises and cools down.
3.      Windward side
4.      Clouds form
5.      Leeward side or rain shadow
6.      Rain shadow (dry conditions) or leeward side
7.      Orographic rainfall or relief rainfall      **(7x1=7)**