education

Department of Education
FREE STATE PROVINCE

GRADE 7

NATURAL SCIENCES

MEMORANDUM

NOVEMBER 2025

TIME : 90 MINUTES

QUESTION 1

1.1.1 B ✓

1.1.2 B ✓

1.1.3 C ✓

1.1.4 C ✓

1.1.5 C ✓

1.1.6 C ✓

1.1.7 C ✓

1.1.8 B ✓

1.1.9 B ✓

1.1.10 B ✓ **[10]**

1.2.1 C ✓

1.2.2 E ✓

1.2.3 A ✓

1.2.4 B ✓

1.2.5 D ✓ **[5]**

1.3.1 Equator ✓

1.3.2 Heat transfer ✓

1.3.3 Equinox ✓

1.3.4 Wasted energy✓

1.3.5 Gravity✓ **[5]**

SECTION A:[20]

QUESTION 2

2.1.1 No✓,The ball is not moving or in motion it is being held still in the lady's hands✓

(Any correct and relevant answer) (2)

2.1.2 Potential energy- energy stored in an object or system✓ (1)

2.1.3 Gravitational potential energy of the ball changes✓to kinetic energy when the ball is released.✓ *(Any correct and relevant answer)* (1)

2.2.1 Heat is transferred through electromagnetic waves. ✓ The fire gives off radiation that travels through the air to warm objects and everyone in the room✓ (2)

(Any correct and relevant answer)

2.2.2 Hot air becomes less dense when heated ✓, The lighter hot air rises while the cooler dense air moves down to replace it.✓ (2)

(Any correct and relevant answer)

2.2.3 Radiation ✓, heat is transferred directly from the fireplace through empty space to the person without needing a medium✓ (2)

(Any correct and relevant answer) **[11]**

QUESTION 3

3.1 Independent Variable – Box colour ✓ (1)

Dependent Variable - Temperature✓ (1)

3.2 Dark colours (like black) absorb more heat than light colours(white/silver) which reflect heat. ✓

(Any correct and relevant answer) (1)

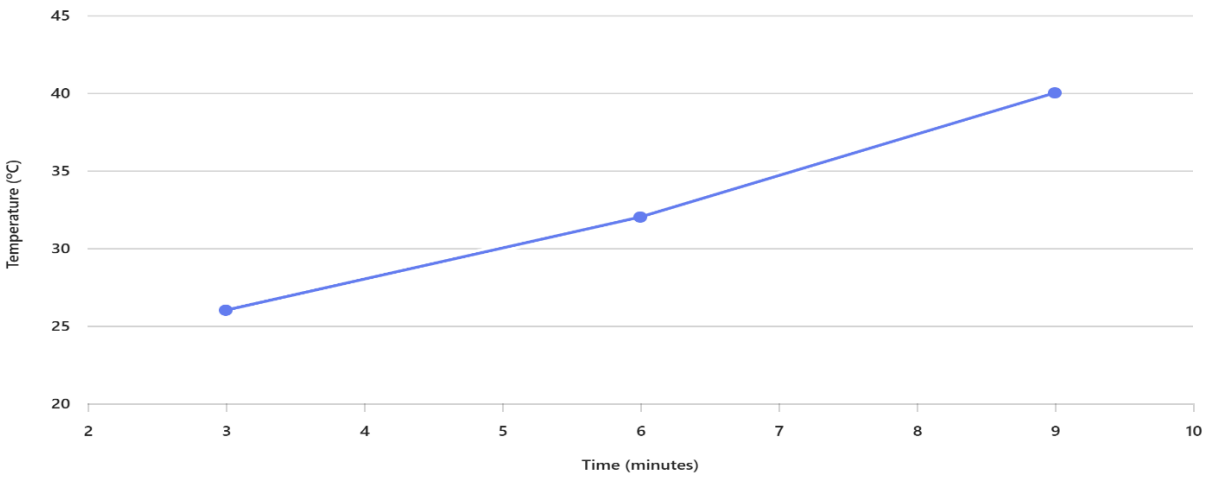
3.3 Correct title: Temperature change in boxes of different colours over time ✓ (1)

(*any relevant heading)*

Correctly labeled axes : x- time (minutes)

y- Temperature (˚C) ✓ (1)

Correctly plotted and joined lines of all three boxes ✓



[6]

QUESTION 4

4.1 Wool has air spaces✓ in between which traps the heat ✓ (2)

(Any correct and relevant answer)

4.2 Curtains, Ceiling insulation, Carpets✓ (1)

Mark only 1 *(Any correct and relevant answer)*

4.3 Electrical energy is converted to heat energy in the heating element.✓Heat energy is then transferred to the water by conduction and convection until the water boils.✓ *(Any correct and relevant answer)* (2)

4.4 Some of the electrical energy is converted to unwanted forms of energy such as sound and heat energy.✓

(Any correct and relevant answer) (1)

4.5 Energy efficiency – A measure of how well energy is used ✓to do a task without being wasted.✓ *(Any correct and relevant answer)* (2)

4.6 Switch off light and appliances when not in use ✓ (1)

(Any correct and relevant answer)

[09]

QUESTION 5

5.1.1 The tilt of the Earth refers to the slant of the Earth's axis away from the perpendicular to its orbital plane. ✓

The Earth's axis is tilted at an angle of 23.5°.✓ (2)

5.1.2 The Northern and Southern Hemispheres experience different seasons because the Earth's axis is tilted. ✓

When one hemisphere is tilted towards the Sun, it experiences summer, while the other tilted away experiences winter. ✓

(Any correct and relevant answer) (2)

5.1.3 The Sun's rays cause different seasons✓ because they hit different parts of the Earth at different angles throughout the year. ✓ (2)

(Any correct and relevant answer)

5.1.4 If the Earth were not tilted, there would be no seasons.✓ Every place on Earth would get about the same amount of sunlight all year round, so the climate would stay almost the same throughout the year. ✓ (2)

(Any correct and relevant answer)

[08]

5.2.1 We cannot see the moon at Point D because it is between the Sun and the Earth✓, so the side facing the Earth is not lit by the Sun. ✓ (2)

(Any correct and relevant answer)

5.2.2 Different phases of the moon are caused by the changing positions of the Moon, the Earth and Sun✓, which affect how much of the Moon's lit side we can see from Earth✓ (2)

5.2.3 Tides are caused by the gravitational pull of the moon and Sun on Earth's oceans✓, high tides occur where the pull is strongest, and low tides occur where it is weaker. ✓ (2)

[06]

SECTION B :[40]

GRAND TOTAL:[60