Sample Assessment Schedule – 2025

Physics, and Earth and Space Science: Demonstrate understanding of the effect on the Earth of interactions between the Sun and the Earth-Moon system (92046)

Evidence

<table>
<tr><th>Q</th><th>Evidence</th><th>Achievement</th><th>Merit</th><th>Excellence</th></tr>
<tr><td>ONE
(a)</td><td>
<table>
<tr><th>Season length</th><th>Name of season</th></tr>
<tr><td>1 December to 28 February</td><td>Summer</td></tr>
<tr><td>1 March to 30 May</td><td>Autumn</td></tr>
<tr><td>1 June to 31 August</td><td>Winter</td></tr>
<tr><td>1 September to 30 Novmber</td><td>Spring</td></tr>
</table>
</td><td rowspan="4">• 3 out of 4 seasons correct.
• Describes the axial tilt.
• Describes the length of the Earth’s orbit around the Sun.
• Describes the seasons in June for each hemisphere.
• Describes the seasons in December for each hemisphere.
• Describes that the South Pole is either tilted towards or away from the Sun.</td><td rowspan="4">• Explains why London and Wellington (mid-latitudes) experience seasons.
• Explains why seasons occur at opposite times.
• Explains why the South Pole experiences two seasons.
• Explains why Aotearoa New Zealand experiences all seasons.</td><td rowspan="4">• Discusses why London and Wellington experience seasons at different times, and relates this to differences in latitude.
• Discusses why the South Pole experiences only two seasons in a year compared to Aotearoa New Zealand, and relates it to latitude.</td></tr>
<tr><td>(b)</td><td>The Earth is on a 23.3° tilt and takes 365.25 days to orbit the Sun.</td></tr>
<tr><td>(c)</td><td>The Earth is tilted on its axis by approximately 23.5° relative to its orbit around the Sun. This tilt causes the mid latitude areas (London and Wellington) to receive varying amounts of solar radiation at different times of the year. When London (Northen Hemisphere) is tilted towards the Sun, it will receive more solar radiation at a more direct angle which causes it to be more concentrated, and it experiences summer. At the same time, Wellington (Southern Hemisphere) is tilted away from Sun and receives less solar radiation which makes it colder, and it is winter. However, when Wellington (Southern Hemisphere) is tilted towards the Sun it receives more solar radiation and experiences summer, while London (Northern Hemisphere) is tilted away making it experience winter. Since London is above the Equator, it will have summer when the Northern Hemisphere is tilted towards the Sun (June) while Aotearoa New Zealand experiences winter, as it is below the Equator. In December, the opposite occurs, due to the differences in latitude.</td></tr>
<tr><td>(d)</td><td>The Earth is on a 23.5° tilt, and during the Earth’s orbit, the South Pole is either tilted towards or away from the Sun. Furthermore, the South Pole is at 90°S, while Aotearoa New Zealand is at a lower latitude of 34 – 47° S, which is closer to the Equator. The differences in latitude means that Aotearoa New Zealand experiences more variation in solar radiation throughout the year, which allows it to have all four seasons. However, the South Pole experiences more extreme variations in solar radiation, as it only receives sunlight when it is faced towards the Sun, and receives no sunlight when it is facing away from the Sun, which causes it to have only two seasons.</td></tr>
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N0	N1	N2	A3	A4	M5	M6	E7	E8
No real answer	1 achieved point	2 achieved points	3 achieved points	4 achieved points	2 merit points	3 merit points	1 excellence point	Both excellence points