**Task 44 – Decreasing CO2 levels**

**Information about the task**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Question** | **Level of difficulty** | **National curriculum mathematical context** | **Text type** | **Question types** |
| 44. Decreasing CO2 levels | Trial:  High (Q44.1)  High (Q44.2)  High (Q44.3) | Patterns and relationships, understand and use number and notation, calculate in a variety of ways, handling data, analyse and interpret data. | Longer length continuous text with bar chart and mathematical data incorporated for interpretation. | Longer length answers – calculation with workings and open ended written response to justify opinions. |

**Skills assessed by the task**

|  |  |
| --- | --- |
| **Thinking skills** | **Literacy & communication skills** |
| **Plan**   * Asking questions * Activating prior skills, knowledge and understanding * Gathering information * Determining the process/method and strategy * Determining success criteria   **Develop**   * Valuing errors and unexpected outcomes * Thinking logically and seeking patterns * Considering evidence, information and ideas   **Reflect**   * Reviewing outcomes and success criteria * Reviewing the process/method * Evaluate own learning and thinking * Linking and lateral thinking | **Reading**   * Locating, selecting and using information using reading strategies * Responding to what has been read   **Writing**   * Organising ideas and information * Writing accurately   **Wider communication skills**   * Communicating information |
| **Numeracy Skills** |
| **Using mathematical information**   * Using numbers * Gathering information   **Calculate**   * Using the number system * Using a variety of methods   **Interpret & present findings**   * Comparing data * Recording and interpreting data and presenting findings |

**Scoring**

|  |
| --- |
| DECREASING co2 LEVELS SCORING 44.1  Full credit: Correct subtraction, and correct calculation of percentage.    Partial credit: Subtraction error and percentage calculation correct, or subtraction correct but dividing by 6727.    No credit: Other responses, including just ‘Yes’ or ‘No’, and missing.  To answer the question correctly students have to draw on skills from the connections competency cluster. |
| DECREASING CO2 LEVELS SCORING 44.2  Full credit: No, with correct argumentation.  *•* No, other countries from the EU can have increases e.g. the Netherlands so the total decrease in the EU can be smaller than the decrease in Germany.  No credit: Other responses and missing.  To answer the question correctly students have to draw on skills from the connections competency cluster. |
| DECREASING CO2 LEVELS SCORING 44.3  Full credit: Response identifies both mathematical approaches (the largest absolute increase and the largest relative increase), and names the USA and Australia.  *•* USA has the largest increase in millions of tons, and Australia has the largest increase in percentage.  Partial credit: Response identifies or refers to both the largest absolute increase and the largest relative increase, but the countries are not identified, or the wrong countries are named.  *•* Russia had the biggest increase in the amount of CO2 (1078 tons), but Australia had the biggest percentage increase (15%).  No credit: Other responses and missing.  To answer the question correctly students have to draw on skills from the reflection competency cluster. |