**Task 46 – Heartbeat**

**Information about the task**

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| **Question** | **Level of difficulty** | **National curriculum mathematical context** | **Text type** | **Question types** |
| 46. Heartbeat | Trial:  High (Q46.1)  High (Q46.2) | Algebraic relationships and functions, patterns and relationships, interpret and use formulae, understand and use number and notation, calculate in a variety of ways. | Longer length continuous text with mathematical formulae to interpret. | Longer length written response to show calculation and justify answer. Translation of text to mathematical formulae. |

**Skills assessed by the task**

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| **Thinking skills** | **Literacy & communication skills** |
| **Plan**   * Activating prior skills, knowledge and understanding * Gathering information * Determining the process/method and strategy   **Develop**   * Generating and developing ideas * 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**   * Recording and interpreting data and presenting findings |

**Scoring**

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| Heartbeat SCORING 46.1  Full credit: Accept 41, or 40.  *•* 220 – *age* = 208 – 0.7 x *age* results in *age* = 40, so people above 40 will have a higher recommended maximum heart rate under the new formula.  No credit: Other responses and missing.  To answer the question correctly students have to draw on skills from the connections competency cluster. |
| Heartbeat SCORING 46.2  Full credit: Any formula that is the equivalent of multiplying the formula for recommended maximum heart rate by 80%.  *•* heart rate = 166 – 0.56 x age.  *•* heart rate = 166 – 0.6 x age.  *•* h = 166 – 0.56 x a.  *•* h = 166 – 0.6 x a.  *•* heart rate = (208 – 0.7age) x 0.8.  No credit: Other responses and missing.  To answer the question correctly students have to draw on skills from the connections competency cluster. |