**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
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| **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
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**Scoring**

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| Heartbeat SCORING 46.1Full 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 46.2Full 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. |