**Purpose of assessment:** To use world record data to predict a record forty years from now and to evaluate a mathematical model.

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| Understanding and Skills | | | |  |
| Understanding & Fluency | | Problem solving & Reasoning | |  |
| Display of world record data as a scatter plot and representation of the relationship as a linear function. | Use of appropriate language, conventions and symbols when graphing data, developing equations and providing explanations. | Development and evaluation of a mathematical model to determine how world records have changed over time and to predict a future world record. | Use of a mathematical argument to support a prediction.  Evaluation of the suitability of the strategy used to make a prediction. |  |
| Accurate use of technologies to present data as a scatter plot. Accurate use of procedures to effectively represent the relationship as a linear function. | Consistent use of appropriate conventions and symbols when graphing data and developing equations. Consistent use of appropriate mathematical language in explanations. | Evaluation and interpretation of a scatter plot and a linear function to accurately describe a trend in world records and make a valid prediction. | Clear explanation of a mathematical argument to support the prediction, including a logical justification of the strategies used. | A |
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|  |  |  |  | B |
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| Use of technologies and procedures to present data as a scatter plot. | Use of conventions and symbols when graphing data. Use of mathematical language in explanations. | Refers to a scatter plot to describe the trend in world records to make a rough prediction. | Description of the mathematical thinking behind the prediction and strategies used. | C |
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|  | Use of aspects of mathematical conventions, symbols and language. |  |  | D |
| Some use of technologies and procedures to present data. |  | Statements about world record trends to make a prediction. |  |
|  | Use of everyday language. |  | Isolated statements about strategies. | E |
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