|  |  |
| --- | --- |
| Australian Curriculum Year 8 Mathematics Sample assessment | Task-specific standards — matrix  Pete’s Paving | Name |
| © The State of Queensland (Queensland Studies Authority) and its licensors 2013. All web links correct at time of publication. | |

**Purpose of assessment:** To use algebraic equations and graphs to simplify paving quotes, and to apply and evaluate the methods used.

|  | |  | A | B | C | D | E |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Understanding and Skills dimensions | Understanding & Fluency | Mathematical understandings  Writing equations to connect the length of the design of the paved areas to the numbers of pavers and lengths of timber (Q1, 2). Expanding and simplifying algebraic expressions to develop a linear equation (Q3). | Writing equations to connect the length of the design of the paved areas to the numbers of pavers and lengths of timber. Development of a linear equation to calculate the cost (c) of the work from the length (l) of the straight path. | Identification of the number of pavers and lengths of timber for Design 1 and Design 2. Description of a method for finding the number of pavers or lengths of timber. | Identification of the number of pavers and lengths of timber for Design 1 and Design 2. Recognition of a pattern for finding the number of pavers or lengths of timber. | Identification of the number of pavers or lengths of timber for Design 1 or Design 2. | Statement about the number of pavers or lengths of timber for Design 1 or Design 2. |
| Recall and use of facts, definitions, technologies and procedures  Plotting a linear relationship and reading from a graph (Q4, 5, 6). | Accurate and efficient use of a linear equation to plot a line graph and find the correct cost of a 15 m path. | Accurate use of a linear equation to plot a line graph and read from the graph. | Use of procedures to plot a line graph and read from the graph. | Some use of procedures to plot a graph and attempt to read from the graph. | Attempted to use of procedures to plot a graph. |
| Use of mathematical language, conventions and symbols  Using mathematical language, symbols and conventions when writing and using equations, plotting graphs and writing explanations (Q1–9). | Consistent use of appropriate conventions and symbols when writing equations and plotting a graph. Consistent use of appropriate mathematical language in explanations. | Use of appropriate conventions and symbols when writing equations and plotting a graph. Appropriate use of mathematical language in explanations. | Use of conventions and symbols when writing equations and plotting a graph. Use of mathematical language in explanations. | Use of some conventions and symbols and mathematical language. | Use of everyday language. |
| Problem solving & Reasoning | Application of problem-solving strategies  Applying a strategy to justify the cost of the 15 m path (Q7) and to prepare a paving quote (Q9). | Successful application of a strategy to mathematically justify the cost of the 15 m path and prepare an accurate paving quote. | Successful application of a strategy to prepare an accurate paving quote. | Some justification of the cost of the 15 m path, Application of a strategy to prepare a paving quote. | Partial preparation of a paving quote. | Attempted preparation of a paving quote. |
| Discussion of mathematical thinking, choices and strategies  Justifying and evaluating the choice of a preferred costing method (Q8).  Describing modifications to the method in a particular application (Q10). | Clear justification for a choice of costing method and a clear explanation of practical disadvantages.  Clear explanation of modifications to the method. | Justification for a choice of costing method and an explanation of possible disadvantages.  Explanation of modifications to the method. | Discussion of a choice of costing method and statement of a possible disadvantage.  Description of a modification to the method. | Statements about the costing method and possible disadvantages. | Isolated statements about the costing method. |