## *PERFORMANCE BANDS*

### MATHEMATICS

*The typical performance in this band:*

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| ***Band 6*** | * Exhibits extensive knowledge and skills appropriate to the Mathematics course * Uses sophisticated multi-step reasoning * Integrates ideas of calculus with strong algebraic, deductive and modelling skills to successfully solve difficult problems * Exhibits excellent problem solving skills * Communicates effectively using appropriate mathematical language, notation, diagrams and graphs |
| ***Band 5*** | * Exhibits sound knowledge and skills appropriate to the Mathematics course * Uses multi-step logical reasoning in both numerical and theoretical contexts such as problems in calculus, geometry and probability * Combines ideas of calculus with algebraic, deductive and modelling skills to successfully solve many difficult problems * Exhibits a wide range of problem solving skills such as applications of series * Communicates effectively using mathematical language, notation, diagrams, and graphs |
| ***Band 4*** | * Exhibits the manipulative skills and knowledge base appropriate to the Mathematics course * Uses logical reasoning in both numerical and theoretical contexts such as problems in calculus and geometry * Identifies appropriate approaches to the solution of difficult problems * Uses calculus and other methods to determine the features of, and to graph, a wide range of functions * Successfully applies calculus and other appropriate ideas to model practical problems * Communicates using mathematical language, notation, diagrams and graphs |
| ***Band 3*** | * Consistently applies arithmetic and algebraic procedures correctly * Applies geometrical reasoning in a numerical context * Graphs functions such as 3sin 2*x*, log *x* and e*x* * Consistently applies rules of differentiation and basic integration correctly * Uses calculus to determine the features of, and to graph, functions such as cubic polynomials * Solves simple problems involving series |
| ***Band 2*** | * Correctly applies arithmetic and basic algebraic procedures * Recalls many of the formulae and algorithms appropriate to the Mathematics course, such as Simpson’s rule, the sine rule, and the cosine rule * Graphs simple functions such as linear functions, quadratics, sin *x* and cos *x* * Finds derivatives of basic functions such as polynomials, sin *x* and e*x* * Uses the rules of differentiation such as the product rule * Solves numerical problems involving the geometry of triangles |
| ***Band 1*** |  |