**Number In bold** are expectations to be met in all strands

|  |  |  |  |
| --- | --- | --- | --- |
| **Exceeding** | **Meeting** | **Approaching** | **Working Below** |
| * **Fluently uses precise mathematical language correctly**
* **Independently and consistently makes connections among concrete, pictorial and symbolic representations**
* **Independently considers and applies alternative strategies to solve a range of complex and unfamiliar problems**
* **Independently makes connections between and within the different strands of mathematics**
* Consistently represents, compares and orders a wide range of whole numbers, square roots, integers, decimals, and fractions accurately
* Makes connections between a wide range of fractions, ratios, decimals, whole numbers, squares, square roots, percent, and integers
* Consistently uses benchmarks and patterns effectively and efficiently
* Makes efficient, logical estimates to predict outcomes and check for reasonableness
* Uses strategies efficiently and effectively
* Consistently explains strategies and reasoning with clarity, precision, and thoroughness
* Few calculation errors or omissions, and are minor
 | * **Routinely uses mathematical language correctly**
* **Makes connections among concrete, pictorial and symbolic representations**
* **Routinely selects and applies appropriate strategies to solve problems**
* **Makes connections between and within the different strands of mathematics**
* Routinely represents, compares and orders whole numbers, square roots, integers, decimals, and fractions accurately
* Makes connections between fractions, ratios, decimals, whole numbers, squares, square roots, percent, and integers
* Routinely uses benchmarks and patterns effectively
* Routinely makes effective, logical estimates to predict outcomes and check for reasonableness
* Routinely uses strategies effectively
* Routinely explains strategies and reasoning with clarity
* Calculation errors or omissions are minor
 | * **Inconsistently uses correct mathematical language**
* **Sometimes makes connections among concrete, pictorial and symbolic representations**
* **Sometimes selects and applies appropriate strategies to solve problems**
* **Sometimes makes connections between and within the different strands of mathematics**
* Sometimes represents, compares and orders whole numbers, square roots, integers, decimals, and fractions accurately; may require pictorial or other representations
* Sometimes makes connections between fractions, ratios, decimals, whole numbers, squares, square roots, percent, and integers
* Occasionally uses benchmarks and patterns
* Sometimes or with prompting makes effective, logical estimates to predict outcomes and check for reasonableness
* Sometimes uses strategies effectively
* Sometimes (or with prompting) explains strategies and reasoning, or explanations may be incomplete
* Calculation errors or omissions may include some major
 | * **Rarely uses correct mathematical language**
* **Has difficulty making connections among concrete, pictorial and symbolic representations**
* **Rarely selects or applies appropriate strategies to solve problems**
* **Rarely makes connections between and within the different strands of mathematics**
* Has difficulty representing, comparing and ordering whole numbers, square roots, integers, decimals, and fractions accurately, even with concrete or pictorial representations
* Rarely makes connections between fractions, ratios, decimals, whole numbers, squares, square roots, percent, and integers
* Not able to use benchmarks and patterns
* Rarely makes logical estimates to predict outcomes or checks for reasonableness
* Has difficulty using strategies effectively
* Has difficulty explaining strategies and reasoning
* Calculation errors or omissions are major
 |

**Patterns and Relations** **In bold** are expectations to be met in all strands

|  |  |  |  |
| --- | --- | --- | --- |
| **Exceeding** | **Meeting** | **Approaching** | **Working Below** |
| * **Fluently uses precise mathematical language correctly**
* **Independently and consistently makes connections among concrete, pictorial and symbolic representations**
* **Independently considers and applies alternative strategies to solve a range of complex and unfamiliar problems**
* **Independently makes connections between and within the different strands of mathematics**
* Makes connections among a wide range of representations of patterns (equations, graphs, tables, written/oral)
* Includes precise labels and headings in tables, graphs and other representations
* Consistently explains relationships and reasoning with clarity, precision, and thoroughness
* Consistently represents a wide variety of situations and solves problems that involve linear relationships
* Few errors or omissions, and are minor
 | * **Routinely uses mathematical language correctly**
* **Makes connections among concrete, pictorial and symbolic representations**
* **Routinely selects and applies appropriate strategies to solve problems**
* **Makes connections between and within the different strands of mathematics**
* Makes connections among various representations of patterns (equations, graphs, tables, written/oral)
* Routinely includes appropriate labels and headings in tables, graphs and other representations
* Routinely explains relationships and reasoning with clarity
* Routinely represents situations and solves problems that involve linear relationships
* Errors or omissions are minor
 | * **Inconsistently uses correct mathematical language**
* **Sometimes makes connections among concrete, pictorial and symbolic representations**
* **Sometimes selects and applies appropriate strategies to solve problems**
* **Sometimes makes connections between and within the different strands of mathematics**
* Sometimes makes connections among various representations of patterns (equations, graphs, tables, written/oral)
* Sometimes includes appropriate labels and headings in tables, graphs and other representations
* Sometimes explains relationships and reasoning
* Sometimes or with prompting represents situations and solves problems that involve linear relationships
* Errors or omissions may include some major
 | * **Rarely uses correct mathematical language**
* **Has difficulty making connections among concrete, pictorial and symbolic representations**
* **Rarely selects or applies appropriate strategies to solve problems**
* **Rarely makes connections between and within the different strands of mathematics**
* Has difficulty making connections among various representations of patterns (equations, graphs, tables, written/oral)
* Rarely includes labels and headings in tables, graphs and other representations
* Has difficulty explaining relationships and reasoning
* Has difficulty representing situations and solving problems that involve linear relationships
* Errors or omissions are major
 |

**Shape and Space** **In bold** are expectations to be met in all strands

|  |  |  |  |
| --- | --- | --- | --- |
| **Exceeding** | **Meeting** | **Approaching** | **Working Below** |
| * **Fluently uses precise mathematical language correctly**
* **Independently and consistently makes connections among concrete, pictorial and symbolic representations**
* **Independently considers and applies alternative strategies to solve a range of complex and unfamiliar problems**
* **Independently makes connections between and within the different strands of mathematics**
* Consistently explains Pythagorean theorem and solves related problems
* Consistently identifies, explains and solves a wide range of problems involving surface area and volume
* Consistently draws views of, constructs and rotates a wide range of 3-D objects
* Independently and with ease estimates when appropriate to ensure reasonableness
* Consistently explains strategies and reasoning with clarity, precision, and thoroughness
* Consistently identifies, explains and creates a wide range of tessellations
* Uses precise labels (including units) in diagrams, drawings are proportional
* Few errors or omissions, and are minor
 | * **Routinely uses mathematical language correctly**
* **Makes connections among concrete, pictorial and symbolic representations**
* **Routinely selects and applies appropriate strategies to solve problems**
* **Makes connections between and within the different strands of mathematics**
* Routinely explains the Pythagorean theorem and solves related problems
* Routinely identifies, explains and solves problems involving surface area and volume
* Routinely draws views of, constructs and rotates 3-D objects
* Routinely estimates when appropriate to ensure reasonableness
* Routinely explains strategies and reasoning with clarity
* Routinely identifies, explains and creates tessellations
* Routinely uses appropriate labels (including units) in diagrams, drawings are proportional
* Errors or omissions are minor
 | * **Inconsistently uses correct mathematical language**
* **Sometimes makes connections among concrete, pictorial and symbolic representations**
* **Sometimes selects and applies appropriate strategies to solve problems**
* **Sometimes makes connections between and within the different strands of mathematics**
* Sometimes or with prompting explains the Pythagorean theorem and solves related problems
* Sometimes or with prompting identifies, explains and solves problems involving surface area and volume
* Sometimes draws views of, constructs and rotates 3-D objects
* Sometimes estimates when appropriate to ensure reasonableness
* Sometimes explains strategies and reasoning, or explanations may be incomplete
* Sometimes identifies, explains and creates tessellations
* Sometimes uses appropriate labels (including units) in diagrams, drawings may not be proportional
* Errors or omissions may include some major
 | * **Rarely uses correct mathematical language**
* **Has difficulty making connections among concrete, pictorial and symbolic representations**
* **Rarely selects or applies appropriate strategies to solve problems**
* **Rarely makes connections between and within the different strands of mathematics**
* Has difficulty explaining the Pythagorean theorem and solving related problems
* Has difficulty identifying, explaining and solving problems involving surface area and volume
* Has difficulty drawing views of, constructing and rotating 3-D objects
* Has difficulty estimating
* Has difficulty explaining strategies and reasoning
* Has difficulty identifying, explaining and creating tessellations
* Rarely uses appropriate labels (including units) in diagrams
* Errors or omissions are major
 |

**Statistics and Probability** **In bold** are expectations to be met in all strands

|  |  |  |  |
| --- | --- | --- | --- |
| **Exceeding** | **Meeting** | **Approaching** | **Working Below** |
| * **Fluently uses precise mathematical language correctly**
* **Independently and consistently makes connections among concrete, pictorial and symbolic representations**
* **Independently considers and applies alternative strategies to solve a range of complex and unfamiliar problems**
* **Independently makes connections between and within the different strands of mathematics**
* Consistently organizes data in a format appropriate to a wide range of purposes and compares and critiques data display formats
* Includes precise labels in charts, tables and graphs
* Interprets data in a wide range of graphs appropriately
* Explains and determines experimental and theoretical probability for a wide range of independent and dependent events
* Consistently explains strategies and reasoning with clarity, precision, and thoroughness
* Few errors or omissions, and are minor
 | * **Routinely uses mathematical language correctly**
* **Makes connections among concrete, pictorial and symbolic representations**
* **Routinely selects and applies appropriate strategies to solve problems**
* **Makes connections between and within the different strands of mathematics**
* Routinely organizes data in a format appropriate to purpose and compares and critiques data display formats
* Routinely includes appropriate labels in charts, tables and graphs
* Interprets data in graphs appropriately
* Explains and determines experimental and theoretical probability for independent and dependent events
* Routinely explains strategies and reasoning with clarity
* Errors or omissions are minor
 | * **Inconsistently uses correct mathematical language**
* **Sometimes makes connections among concrete, pictorial and symbolic representations**
* **Sometimes selects and applies appropriate strategies to solve problems**
* **Sometimes makes connections between and within the different strands of mathematics**
* Sometimes or with prompting organizes data in a format appropriate to purpose and compares and critiques data display formats
* Sometimes or with prompting includes appropriate labels in charts, tables and graphs
* Sometimes interprets data in graphs appropriately
* Sometimes explains and determines experimental and theoretical probability for independent and dependent events
* Sometimes explains strategies and reasoning, or explanations may be incomplete
* Errors or omissions may include some major
 | * **Rarely uses correct mathematical language**
* **Has difficulty making connections among concrete, pictorial and symbolic representations**
* **Rarely selects or applies appropriate strategies to solve problems**
* **Rarely makes connections between and within the different strands of mathematics**
* Has difficulty organizing data in a format appropriate to purpose and comparing and critiquing data display formats
* Rarely includes labels in charts, tables and graphs
* Has difficulty interpreting data in graphs appropriately
* Has difficulty explaining and determining experimental and theoretical probability for independent and dependent events
* Has difficulty explaining strategies and reasoning
* Errors or omissions are major
 |