

Mathematical Processes

COMMUNICATING - LOOK FORS

COMMUNICATING:

Students will communicate mathematical thinking orally, visually, and in writing, using mathematical vocabulary and a variety of appropriate representations, and observing mathematical conventions.

Respond to instructions orally, in writing, and visually, as appropriate (e.g., explain, demonstrate, justify, compare, prove, verify, evaluate, graph, solve algebraically, etc.)

Use correct and suitable mathematical language and vocabulary in explanations (e.g., root, zero, factor, function, family, secant, tangent, average rate of change, instantaneous rate of change, rational, polynomial, sinusoidal, exponential, logarithmic, inverse, composite, parameter, intervals, asymptote, increasing/decreasing, domain, range, period, etc.)

Present thinking and arguments in a logical and organized manner

Respond clearly with sufficient details so that thinking can be understood

Interpret and summarize information from charts and graphs, providing appropriate detail (e.g., describe similarities and differences, identify key features, etc.)

Use the symbolic language of mathematics correctly; for example:

- use = down the left side when simplifying expressions and in between two equal expressions when solving equations;
- use inequality symbols to represent intervals, or solutions to inequalities
- use $f(x)$ for function notation, $f^{-1}(x)$ for inverse function, $f \circ g(x)$ for composite function
- accurately and fully label graphs, asymptotes, key features required, etc.
- correctly express trigonometric functions with an associated angle
- correctly express logarithmic functions with an associated base
- proper use of brackets when required

Read and reread all of the given information and instructions to ensure understanding (e.g., identify key information needed to solve the problem)

Communicate mathematical learning by combining various representations; for example:

- words with diagrams
- charts or graphs with verbal descriptions
- algebraic representations with graphical representations