Algebra Ladder

Identify, create, extend and transfer patterns from one representation to another

Build number patterns using various concrete representations

Represent and interpret quantities and relationships using mathematical expressions and symbols (=, <, >)

Describe and explain a quantitative relationship represented by a formula
Use a symbol to represent an unknown and find its value in a number sentence

Understand and apply patterns and rules to describe relationships and solve problems
Represent unknowns using symbols, such as _ and Δ
Write and evaluate mathematical expressions using symbols and different values

Use variables, such as n or x, for unknown quantities in algebraic expressions
Investigate simple algebraic expressions by substituting numbers for the unknown

Analyze and describe relationships between varying quantities
Solve simple equations

Understand relationships between two variables

Gather data that can be modeled with a linear function
Estimate and determine a line of best fit from a scatter plot

Explore and interpret the characteristics of functions, using graphs, tables, and simple algebraic techniques.

Investigate step and piecewise functions
Explore exponential functions.
Analyze quadratic functions.

Analyze graphs of polynomial functions of higher degree
Explore logarithmic functions as inverses of exponential functions

Explore rational functions
Use the circle to define the trigonometric functions.
Students will investigate and use the graphs of trigonometric functions
Investigate different types of functions; transformations of functions