8.14 The student will make connections between any two representations (tables, graphs, words, and rules) of a given relationship.

UNDERSTANDING THE STANDARD (Background Information for Instructor Use Only)	ESSENTIAL UNDERSTANDINGS	ESSENTIAL KNOWLEDGE AND SKILLS
• A relation is any set of ordered pairs. For each first member, there may be many second members. • A function is a relation in which there is one and only one second member for each first member. • As a table of values, a function has a unique value assigned to the second variable for each value of the first variable. • As a graph, a function is any curve (including straight lines) such that any vertical line would pass through the curve only once. • Some relations are functions; all functions are relations. • Graphs of functions can be discrete or continuous. • In a discrete function graph there are separate, distinct points. You would not use a line to connect these points on a graph. The points between the plotted points have no meaning and cannot be interpreted. • In a graph of continuous function every point in the domain can be interpreted therefore it is possible to connect the points on the graph with a continuous line as every point on the line answers the original question being asked. • Functions can be represented as tables, graphs, equations, physical models, or in words.	• What is the relationship among tables, graphs, words, and rules in modeling a given situation? Any given relationship can be represented by all four.	**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to** • Graph in a coordinate plane ordered pairs that represent a relation. • Describe and represent relations and functions, using tables, graphs, words, and rules. Given one representation, students will be able to represent the relation in another form. • Relate and compare different representations for the same relation.