Lance Kruse

Curriculum Design Project

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Sub-Unit Outcomes

1. **Sub-Unit 1: Define Functions**
   1. Students will be able to understand that a function is a rule that assigns to each input exactly one output (Understanding).
   2. Students will be able to identify functions as a rule that assigns to each input exactly one output in real-world scenarios (Applying).
   3. Students will be able to understand the graph of a function as a set of ordered pairs consisting of an input and the corresponding output (Understanding).
   4. Students will be able to identify the graph of a function as a set of ordered pairs consisting of an input and the corresponding output of real-world scenarios (Applying).
2. **Sub-Unit 2: Compare Functions**
   1. Students will be able to identify properties of functions represented algebraically in relation to real-world scenarios (Applying).
   2. Students will be able to identify properties of functions represented graphically in relation to real-world scenarios (Applying).
   3. Students will be able to identify properties of functions represented, numerically in tables in relation to real-world scenarios (Applying).
   4. Students will be able to identify properties of functions represented by verbal descriptions in relation to real-world scenarios (Applying).
   5. Students will be able to compare properties of two functions each represented in different ways (algebraically, graphically, numerically in tables, or by verbal descriptors) in relation to real-world scenarios (Analyzing).
3. **Sub-Unit 3: Evaluate Functions**
   1. Students will be able to understand that the equation *y=mx+b* defines a linear function (Understanding).
   2. Students will be able to represent real-life situations with linear equations in the form of *y=mx+b* (Applying).
   3. Students will be able to identify properties of linear functions in relation to real-world scenarios (Applying).
   4. Students will be able to compare linear and non-linear functions (Analyzing).
   5. Students will be able to evaluate functions as either linear or non-linear in relation to real-world scenarios (Evaluating).
4. **Sub-Unit 4: Model with Functions**
   1. Students will be able to construct a linear function to model a real-world scenario (Applying).
   2. Students will be able to identify properties of the linear function and analyze them in context of the model (Analyzing).
   3. Students will be able to evaluate the accuracy of a linear function as a model to a real-world scenario by using properties of the function as justification (Evaluating).
   4. Students will be able to qualitatively evaluate the functional relationship between two quantities by analyzing a graph (Evaluating).
   5. Students will be able to sketch a graph that exhibits the qualitative features of a function that has been described qualitatively (Creating).
   6. Students will be able to create their own function (algebraically, graphically, and numerically in tables) to model a real-world scenario and apply the model to answer questions about the scenario (Creating).