Curriculum: Ginger Lathrop

Learning-Focused Toolbox

Date: August 30, 2011 ET

Teacher / Team Name: Mrs. Lathrop

Topic: Pre-Calculus Functions and Their Graphs

Days: 17

Subject(s):

Grade(s):

Key Learning: **Understand the concept of a function and use function notation.**

Unit Essential Question(s): **How do you identify the eight most commonly used functions in algebra and represent simple transformations of these functions?**

Concept: **Rectangular Coordinates**	**Concept:** **Graphs of Equations** F.IF.7, F.IF.4	**Concept:** **Linear Equations in Two Variables** F.IF.6
Lesson Essential Question(s): How do you locate points and find the distance and midpoint between two points on the Cartesian plane? (A)	**Lesson Essential Question(s):** How do you identify intercepts and symmetry in order to sketch graphs of equations? (A)	**Lesson Essential Question(s):** How do you find the slope of a line and use it to write an equation for the line? (A)
Vocabulary: rectangular coordinate system, Cartesian plane, x-axis, y-axis, origin, quadrants, ordered pair, coordinates, x-coordinate, y-coordinate, distance formula, midpoint, midpoint formula	**Vocabulary:** equation in two variables, solution, solution point, graph of an equation, point-plotting method, intercepts, symmetry, standard form of the equation of a circle	**Vocabulary:** linear equation in two variables, slope, slope-intercept form, point-slope form, parallel, perpendicular, ratio, rate, rate of change

Concept: **Functions** F.LQE.1	**Concept:** **Analyzing Graphs of Functions** F.BF.3, F.IF.6, F.IF.7a, F.IF.7c	**Concept:** **A Library of Parent Functions** F.IF.7b
Lesson Essential Question(s): What are the important defining characteristics and representations of a function? (A)	**Lesson Essential Question(s):** How is the graph of a function used to determine the key elements of that function? (A)	**Lesson Essential Question(s):** What are the characteristics of the most commonly used functions in algebra? (A)
Vocabulary: relation, function, range, domain, independent variable, dependent variable, function notation, piecewise-defined function, implied domain, difference quotient	**Vocabulary:** graph of a function, vertical line test, zeros of a function, increasing, decreasing, constant, relative minimum, relative maximum, average rate of change, secant line, even function, odd function	**Vocabulary:** linear function, constant function, identity function, squaring function, cubic function, square root, reciprocal function, step function, greatest integer function

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Concept:

Transformations of Functions

F.BF.3

Lesson Essential Question(s):

How do you combine two parent functions to form a new function? (A)

Vocabulary:

vertical shift, horizontal shift, reflection

Additional Information:

Attached Document(s):

Vocab Report for Topic: Pre-Calculus Functions and Their Graphs
Days: 17
Subject(s):
Grade(s):

Concept: Rectangular Coordinates

rectangular coordinate system -
Cartesian plane -
x-axis -
y-axis -
origin -
quadrants -
ordered pair -
coordinates -
x-coordinate -
y-coordinate -
distance formula -
midpoint -
midpoint formula -

Concept: Graphs of Equations

equation in two variables -
solution -
solution point -
graph of an equation -
point-plotting method -
intercepts -
symmetry -
standard form of the equation of a circle -

Concept: Linear Equations in Two Variables

linear equation in two variables -
slope -
slope-intercept form -
point-slope form -
parallel -
perpendicular -
ratio -
rate -
rate of change -

Concept: Functions

relation -
function -
range -
domain -
independent variable -
dependent variable -
function notation -
piecewise-defined function -
implied domain -
difference quotient -

Vocab Report for Topic: Pre-Calculus Functions and Their Graphs

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Concept: Analyzing Graphs of Functions

graph of a function -
vertical line test -
zeros of a function -
increasing -
decreasing -
constant -
relative minimum -
relative maximum -
average rate of change -
secant line -
even function -
odd function -

Concept: A Library of Parent Functions

linear function -
constant function -
identity function -
squaring function -
cubic function -
square root -
reciprocal function -
step function -
greatest integer function -

Concept: Transformations of Functions

vertical shift -
horizontal shift -
reflection -