UNIT OF STUDY

Title:"And the Kitchen Sink" (Unit 14) **Subject/Course**:Integrated Algebra B Part 1 **Length:**2 ½ weeks

Topic: Cum Freq Hist/ Seq/ Algebraic Expr/ Stem & Leaf Plots/ Quartiling/ Box & Whisker Plots/ Meas of Cent Tend/ Class & Solv Syst of Eq **Grade:**9 **Designer:**Foresee/Phipps

UNIT GOALS AND EXPECTATIONS

IMPORTANT CONCEPTS/UNDERSTANDINGS:

- The following bar in a cumulative frequency histogram is always either the same height as or taller than its preceding bar
- The final bar in a cumulative frequency histogram is the total of all data entries
- The minimum number of entries is not necessarily the first bar in a cumulative frequency histogram
- Stem & Leaf Plots and Box & Whisker Plots are different ways of visualizing data
- Data entries must be split evenly into four quartiles
- The solution to a system of equations is found where their graphs intersect
- A system of linear equations will have: one, infinitely many, or no solutions

ESSENTIAL QUESTIONS:

- How do you create a cumulative frequency histogram?
- How do you create a stem & leaf plot?
- How do you create a box & whisker plot?
- What is the starting number of a sequence?
- How do you tell if two lines are parallel, perpendicular, coinciding, or skew using the slopes and y-intercepts of the two lines?
- How do you solve a system of equations by: graphing, matrices, linear addition, and substitution?
- Using a matrix, how do you tell if a system of lines are parallel, perpendicular, or intersecting?
- What do we learn from a stem and leaf plot?
- What can we read from a given box and whisker plot?

STUDENT LEARNING EXPECTATIONS:

- DIP.5.AI.6 Construct and interpret a cumulative frequency *histogram* in real life situations
- DIP.5.AI.9 Recognize patterns using *explicitly* defined and *recursively* defined linear functions
- LA.1.AI.2 Translate word phrases and sentences into *expressions, equations*, and *inequalities*, and vice versa
- DIP.5.AI.5 Use two or more graphs (*box-and- whisker, histograms, scatter plots* to compare *data* sets
- DIP.5.AI.4 Determine the effects of changes in the data set on the measures of *central tendency*
- SEI.2.AI.2 Solve systems of two linear equations
  - numerically (from a table or guess and check)
  - algebraically (including the use of manipulatives)
  - graphically
  - technologically
- LF.3.AI.7 Determine by using slope whether a pair of lines are parallel, perpendicular, or neither
- DIP.5.AI.3 Construct simple matrices for real life situations

SPECIFIC DECLARATIVE KNOWLEDGE –

SPECIFIC PROCEDURAL KNOWLEDGE –

What I know	What I need to do
Vocabulary • Box & Whisker Plot • Intersecting Lines • Median • Mean • Mode • Range • Normal Curve • Ordered Pairs • Parallel Lines • Perpendicular Lines • Coincide Lines • Skew Lines • Quartiles & Percentiles • Stem & Leaf Plot • System of Equations • Matrices • Linear Addition • Substitution • Cumulative Frequency Tables • Cumulative Frequency Histograms • Sequences • Algebraic Expressions • h_1 • h_n • h_{n-1} • n	• Create Cumulative Frequency Histograms using given data • Use Cumulative Frequency Histograms to solve real world problems • Use sequence generators to create succeeding values • Write algebraic equations from real world situations • How to read, interpret, and create a Stem & Leaf Plot • How to read, interpret, and create a Box & Whisker Plot using quartiles • Determine whether a given ordered pair is a solution to a system of equations by either graphing or algebraically • Solve a system of equations by: graphing, matrices, linear addition, or substitution • Determine whether a pair of lines are parallel, perpendicular, coincide, or skew by comparing the slopes from their equations

UNIT ASSESSMENTS (Include tasks related to Dimensions 3 and 4 and Bloom's Taxonomy)	
• 1 Open Response prompt involving quartiles and box & whisker plots • 2 Open Response prompts requiring students to use & interpret measures of central tendency & draw scatter or stem & leaf plots • 1 Open Response prompt requiring students to determine the equation from data of a sequence and predict future values • "Measuring Up" Class Activity	
Traditional Assessments: • Multiple Choice Quizzes over: seq, cum freq hist, alg expr, stem & leaf, quartiles, box & whisker, graph lin sys, class lin sys, solv lin sys • Vocabulary Test • Warm-Up Quizzes • Unit Test	**Other Evidence of Learning:** • "Homelearning" • Classwork • Warm-up exercises • "Class Profile" Checklist

ACTIVITIES AND LEARNING EXPERIENCES	Resources
• Introduce Vocabulary using 4-Step Vocabulary Strategy	• http://www.mathsrevision.net/gcse/pages.php?page=21

• "The Great Potato Hunt" group activity (Cumulative Frequency Histogram) • "What's Next?" group activity (Number Sequences) • "Statistics Update" group activity • "Television Timetable" group activity (Central Tendency) • Use Mastery Math materials to practice concepts • "Measuring Up" class activity	• http://www.funmaths.com/worksheets/downloads/view.htm?ws0070_1.gif • http://www.funmaths.com/worksheets/downloads/view.htm?ws0070_2.gif • http://www.funmaths.com/worksheets/downloads/view.htm?ws0050_1.gif • http://www.mathsrevision.net/gcse/pages.php?page=9 • http://www.funmaths.com/worksheets/downloads/view.htm?ws0077_1.gif • http://www.funmaths.com/worksheets/downloads/view,htm?ws0018_1/gif • Mastery Math materials • Sewing Tape ("ruler") • Students • "Class Profile" Checklist
Career Connections	
Data Collection and Representation (statisticians), Business owner/ operator, Actuary, Insurance, Stock Broker, Consultant	