Math 4 Honors

**Unit 2 Learning Goals**

***Matrices***

*Lesson 2-1: Introduction to Matrices*

* I can construct and use a matrix to organize, display, and analyze information.
* I can interpret and operate on a matrix to help understand and analyze data.
* I can determine the dimensions of a matrix.
* I can add and subtract matrices.
* I can perform scalar multiplication.

*Lesson 2-2: Matrix Multiplication and Properties of Matrices*

* I can determine if matrix multiplication is possible and determine the dimensions of the resulting matrix.
* I can multiply two matrices by hand.
* I can multiply two matrices using the graphing calculator.
* I can use matrix multiplication to solve real-life scenario problems.
* I can identify the following properties of matrices and compare them to those of the real numbers.
  + Commutativity of matrix addition
  + Additive identity (zero matrix)
  + Additive inverse matrix
  + Noncommutativity of matrix multiplication
  + Identity matrix (multiplicative identity)
  + Inverse matrix (multiplicative inverse)

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*Lesson 2-3: Applications of Matrices*

* I can use determinants to find whether a matrix is invertible.
* I can use matrices to solve systems of linear equations.
* I can use matrices to encode and decode messages.

*Lesson 2-4: Constructing Polynomial Function Models*

* I can fit polynomial function models to data and graph patterns using problem conditions, statistical regression, and the method of undetermined coefficients (which is an application of matrices).