# Universal Themes in Mathematics

**Change**
*Change is necessary for growth*
*Change generates new change*
- Integers (+/-)
- Graphs (Growth over time)

**Conflict**
*Conflict creates change*
*Conflict is composed of opposing forces*
- Decisions on how to approach problems
- Problem solving
- Errors/mistakes

**Order**
*Order has a purpose*
*Order may allow for prediction*
*Order may have repeated patterns*
*Order is everywhere*
*Order is a form of communication*
- Signs/symbols
- Mathematical Laws
- Order of operations
- Number sets
- Number lines
- Place Value
- Compare/order decimals, etc
- Division
- Chance/statistics
- Problem solving
- Mean/median/mode

**Patterns**
*Patterns have segments that are repeated*
*Patterns allow for prediction*
*Patterns are enablers*
*Patterns can be ordered internally or externally*
- Multiplication/division
- Factoring algebra (x+1)(x+2)
- Equals added to equals/ multiplied by equals
- Exponents/ Power of 10
- Symmetry
- Pythagorean theorem

**Power**
*Power is the ability to influence*
- Decision Making
- Statistics/ data Analysis
- Graphs/data collection & representation

**Structure**
*Structure have parts that interrelate*
*Parts of structures support & are supported by other parts*
*Smaller structures may be combined to form larger structures*
- Prime/composite numbers
- Factors
- Fractions/ decimals
- Geometry/measurement
- Area and perimeter
- Symmetry
- Coordinate grid
- Graphs/data analysis

**Systems**
*Systems have parts that work together*
*Systems are composed of subsystems*
*A system may be influenced by other systems*
*Systems follow rules*
*Systems interact*
- Number systems
- Number line
- Factors
- Decimals/fractions
- Coordinate grids
- Statistics/ Data analysis
- Measurement
- Time
- Money

**Relationships**
*Relationships serve a purpose*
*Everything is related in some way*
*Relationships can be chosen or imposed*
- Signs/symbols
- Geometry /Measurement
- Positive/negative numbers
- Absolute value
- Fractions/decimals
- Ratios
- Graphs
- Decimals/percents/degrees
- Equals added to equals/equals multiplied by equals
- Order/compare (whole #, decimals, fractions, etc)
- Place value (word, standard, expanded forms)
- Perimeter and area
- Linear relationships
- Real life applications