Conceptual Curriculum Map (CCM)

Content Area: Mathematics **Course: Integrated Math 1**
Grade Level: 9/10
Version 2: Curriculum Mapping in conjunction with Long-Term Outcomes

<table>
<tr><td rowspan="2">Unit 1
Problem solving with Real Numbers with a focus on integer operations.</td><td colspan="3">Long-Term Outcomes/Transfer Goals:
● MTG3: Construct viable arguments, critique the reasoning of others, and communicate ideas. precisely using the language of mathematics.
● MTG4: Reflect and revise throughout the problem solving process.
● GCTG1: Students will be able to analyze and evaluate evidence, arguments, claims and beliefs to draw conclusions, make informed decisions, and solve problems.
● GCTG2: Students will be able to reflect on their own thinking when presented with alternative points of view, and revise and/or reconsider their thinking.</td></tr>
<tr><td>Standards</td><td>Conceptual Overview</td><td>Rationale</td></tr>
<tr><td>Focus & Timeframe

6 Weeks</td><td>● 7.NS.A.1
● 7.NS.A.3
● HSN.Q.A.1

MP1
MP2
MP3</td><td>Students will...

● apply properties of real numbers to perform numeric operations

● evaluate expressions using order of operations

● use a variety of problem strategies to solve problems and estimate solutions

● model solutions numerically, algebraically and graphically

● explain their reasoning and articulate their solution

Progress Monitoring: Iowa Algebra Aptitude Test (Version A) Part I</td><td>Students need a strong foundation in qualitative, and quantitative reasoning and problem solving strategies in order to make sense of problems and persevere in solving them.

Students need to be able to communicate solutions and interpret mathematical representations in different formats.</td></tr>
<tr><td rowspan="2">Unit 2
Problem Solving with Fractions and Decimals</td><td colspan="3">Long-Term Outcomes/Transfer Goals:
● MTG1: Analyze and model mathematical relationships in authentic and varied contexts, make informed decisions, and draw conclusions.
● MTG2: Persevere, think strategically and flexibly, and solve complex problems.
● GCTG1: Students will be able to analyze and evaluate evidence, arguments, claims and beliefs to draw conclusions, make informed decisions, and solve problems.
● GCTG2: Students will be able to reflect on their own thinking when presented with alternative points of view, and revise and/or reconsider their thinking.</td></tr>
<tr><td>Standards</td><td>Conceptual Overview</td><td>Rationale</td></tr>
<tr><td>Focus & Timeframe

6 Weeks</td><td>● 6.NS.A.1
● 6.NS.B.3
● 7.EE.B.3
● 7.NS.A.2
● 7.NS.A.2

MP1
MP7</td><td>Students will …

● apply rules of fractions in order to evaluate expressions.

● apply problem solving strategies to solve problems that include fractions and decimals.</td><td>Students need to be fluent in fraction operations in order to solve real world problems that involve quantities that are not whole numbers.

Students need to make the connection between fractions and decimals and understand that they are both part to whole ratios.</td></tr>
<tr><td>Unit 3
Comparisons and Proportional</td><td colspan="3">Long-Term Outcomes/Transfer Goals:
● MTG1: Analyze and model mathematical relationships in authentic and varied contexts, make informed decisions, and draw conclusions.</td></tr>
</table>

Reasoning	● MTG3: Construct viable arguments, critique the reasoning of others, and communicate ideas. precisely using the language of mathematics. ● GCTG1: Students will be able to analyze and evaluate evidence, arguments, claims and beliefs to draw conclusions, make informed decisions, and solve problems. ● GCTG2: Students will be able to reflect on their own thinking when presented with alternative points of view, and revise and/or reconsider their thinking.		
	Standards	**Conceptual Overview**	**Rationale**
Focus & Timeframe **6 Weeks** …	● 7.RP.1 ● 7.RP.2 ● 7.RP2a ● 7.RP.3 ● HSA.SSE.A.11 ● F-IF 6. ● HSG.SRT.A.3 ● HSG.SRT.A.2 MP4 MP6 MP7	**Relative Measure:** Students will distinguish between absolute and relative and measure. **Proportions:** Students will be able to use part/whole ratios to calculate proportions in a variety of real world contexts. **Slope:** *Students will…* ● apply properties of proportions to analyze slope of a line ● use unit analysis to convert units ● use proportional reasoning to determine whether or not two figures are similar **Progress Monitoring: Iowa Algebra Aptitude Test (Version A) Part II**	*Students need to...* ● understand the pros and cons of using absolute vs relative measurements ● to interpret the rate of change (slope) in a linear model ● be able to accurately convert unfamiliar quantities to known units of measure.
Unit 4 Multiple Representations of Functions	**Long-Term Outcomes/Transfer Goals:** ● MTG2: Persevere, think strategically and flexibly, and solve complex problems. ● MTG3: Construct viable arguments, critique the reasoning of others, and communicate ideas. precisely using the language of mathematics. ● GCTG1: Students will be able to analyze and evaluate evidence, arguments, claims and beliefs to draw conclusions, make informed decisions, and solve problems. ● GCTG2: Students will be able to reflect on their own thinking when presented with alternative points of view, and revise and/or reconsider their thinking.		
	Standards	**Conceptual Overview**	**Rationale**
Focus & Timeframe **6 Weeks**	● 8.F.2 ● 8.F.3 ● 8.F.4 ● 8.F.5 ● F.IF.4. MP2 MP4 MP7	*Students will be able to…* ● identify and interpret the relationship between inputs and outputs from a graph, table and equation ● create the other representations when given one representation of a function (equation, graph, table, or description)	*Students need to be able to …* ● communicate their solutions and reasoning numerically, algebraically, and graphically ● use the most effective representation of a function for the solution and audience.
Unit 5 Solving Equations	**Long-Term Outcomes/Transfer Goals:** ● MTG1: Analyze and model mathematical relationships in authentic and varied contexts, make informed decisions, and draw conclusions. ● MTG4: Reflect and revise throughout the problem solving process. ● GCTG1: Students will be able to analyze and evaluate evidence, arguments, claims and beliefs to draw conclusions, make informed decisions, and solve problems.		

	● GCTG2: Students will be able to reflect on their own thinking when presented with alternative points of view, and revise and/or reconsider their thinking.		
	Standards	**Conceptual Overview**	**Rationale**
Focus & Timeframe **6 Weeks**	● HSA.CED.A.1 ● HSA.REI.A.1 ● HSG.SRT.A.3 ● A.CED.4 MP1 MP4 MP6	*Students will be able to…* ● identify the balance relationship in an equation ● inverse operations can be used to manipulate an equation, solve an equation, or isolate a variable ● apply equation solving techniques to problems involving perimeter, area and volume.	Students need to understand that there is a balanced relationship between the two sides of an equation. That relationship can be used to solve an equation/inequality in multiple ways. Students should be able to think flexibly when solving equations and inequalities.
Unit 6 **Solving equations using GCF, Distributing, Combine Like Terms**	**Long-Term Outcomes/Transfer Goals:** ● MTG1: Analyze and model mathematical relationships in authentic and varied contexts, make informed decisions, and draw conclusions. ● MTG4: Reflect and revise throughout the problem solving process. ● GCTG1: Students will be able to analyze and evaluate evidence, arguments, claims and beliefs to draw conclusions, make informed decisions, and solve problems. ● GCTG2: Students will be able to reflect on their own thinking when presented with alternative points of view, and revise and/or reconsider their thinking.		
	Standards	**Conceptual Overview**	**Rationale**
Focus & Timeframe **6 Weeks**	● A.CED.1 ● A.CED.2 ● A.CED.4 ● A.REI.1 ● A.SSE.A.1.A MP3 MP7	*Students will be able to…* ● identify the balance relationship in an equation ● inverse operations can be used to manipulate an equation, solve an equation, or isolate a variable.	Students need to understand that there is a balanced relationship between the two sides of an equation. That relationship can be used to solve an equation/inequality in multiple ways. Students should be able to think flexibly when solving equations and inequalities.
Unit 7 **Introduction to Linear Systems**	**Long-Term Outcomes/Transfer Goals:** ● MTG1: Analyze and model mathematical relationships in authentic and varied contexts, make informed decisions, and draw conclusions. ● MTG4: Reflect and revise throughout the problem solving process. ● GCTG1: Students will be able to analyze and evaluate evidence, arguments, claims and beliefs to draw conclusions, make informed decisions, and solve problems. ● GCTG2: Students will be able to reflect on their own thinking when presented with alternative points of view, and revise and/or reconsider their thinking.		
	Standards	**Conceptual Overview**	**Rationale**
Focus & Timeframe **6 Weeks**	● HSA.CED.A.1 ● HSA.CED.A.2 ● HSF-IF.6. ● HSF-IF 9. MP1 MP4 MP7	Students will graph systems of linear equations in slope intercept form The solution to a system of equations is an ordered pair that makes all equations balanced or "true." **Progress Monitoring:** **Iowa Algebra Aptitude Test (Version B)**	*Students need to …* ● understand that when two lines intersect it represents when the variables are the equivalent. ● make the connection between a graphical representation and an algebraic statement.

Progress Monitoring

September - About Week 3 (During one class period)
Iowa Algebra Aptitude Test (Version A) Part I
If a student scores higher than 75%, the student should be strongly considered for movement into Algebra I.

Midterm - (During first half of midterm)
Iowa Algebra Aptitude Test (Version A) Part II
If a student scores above 75%, the student should be strongly considered to be recommended for Algebra I, if not, the student will be recommended for Integrated Math II.

End of Year - (Over two class periods in May)
Iowa Algebra Aptitude Test (Version B)
If a student scores above 75%, the student should be strongly considered to be recommended for Algebra I, if not, the student will be recommended for Integrated Math II.

Math Transfer Goals

- **MTG1:** Analyze and model mathematical relationships in authentic and varied contexts, make informed decisions, and draw conclusions.
- **MTG2:** Persevere, think strategically and flexibly, and solve complex problems.
- **MTG3:** Construct viable arguments, critique the reasoning of others, and communicate ideas. precisely using the language of mathematics.
- **MTG4:** Reflect and revise throughout the problem solving process.

Mathematical Practices
MP1 Make sense of problems and persevere in solving them
MP2 Reason abstractly and quantitatively
MP3 Construct viable arguments and critique the reasoning of others
MP4 Model with mathematics
MP5 Use appropriate tools strategically
MP6 Attend to precision
MP7 Look for and make use of structure
MP8 Look for and express regularity in repeated reasoning