REDLANDS UNIFIED SCHOOL DISTRICT
HIGH SCHOOL COURSE APPROVAL REQUEST FORM
GRADES 9-12

THIS SECTION IS TO BE COMPLETED BY A SCHOOL DISTRICT REPRESENTATIVE:

School Submitting Information

School: All RUSD High Schools   Department Secondary Education - Math
(course offerings will be made available for all schools)

Contact Information

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Course Information

Course Title: SAI Integrated Math I   Transcript Name (15 Max): SAI Math I

Length of course: one year   Amount of Units: 10
(one semester, two semesters, or one-year course)

Area of Credit: Math
(How will this course satisfy graduation requirements? Math, English, Elective, etc Will it roll to a secondary credit if any?)

Teacher Requirements

Credential Required: Special Ed and/or Math   Additional Training: _____

Department Review Date: March 20, 2024   Dept. Signature: _____

Site Administrator Signature: _____

THIS SECTION IS RESERVED FOR DISTRICT USE:

Assigned Reviewer Section

Reviewed by: Julie Swan   Date reviewed: March 20, 2024

- ■ District section of this form is appropriately completed
- ■ All required attachments are affixed and appropriate
- ■ Site signatures current and appropriate

Recommendation: ■ Approve ☐ Do Not Approve Signature: _____

Course Approval Curriculum Committee

Approved by: Unanimous Decision   Date approved: 04/17/24

Date approval/disapproval notification letter sent: 04/19/24

Signature: _____

Board Submission Date: May 1, 2024   Board Approved Date: _____

SAI Math I Course

COURSE OUTLINE

The purpose of this course is to provide all students access to the Integrated Math I CCSSM during their 9th grade year. Integrated Math I is a foundational course designed to develop students' mathematical thinking skills and provide a solid understanding of key mathematical concepts. Through problem-solving, inquiry-based learning, and real-world applications, students will explore topics including algebra, geometry, statistics, and functions. This course also aims to promote equity and inclusion by providing all students with opportunities to engage meaningful with the grade-level content and develop their mathematical identities.

Teacher Credential
Single Subject Special Education Credential

PREREQUISITES & CO-REQUISITES & TARGETED STUDENT POPULATION
No prerequisites.
Target population: Incoming SAI 9th graders

COURSE CONTENT
This course aligns with the Integrated Math I Common Core Standards for Mathematics. These standards include:
- Expressions and Equations (CCSS.MATH.HSA.REI)
- Functions (CCSS.MATH.HSA.CED)
- Geometry (CCSS.MATH.HSA.G)
- Statistics and Probability (CCSS.MATH.HSS.ID)

Unit 1: Solving Linear Equations and Inequalities
Description: Students will learn techniques for solving linear equations and inequalities, including one-step, two-step, and multi-step equations. They will apply critical thinking skills to choose appropriate strategies and justify their solutions. Problem-solving tasks will involve analyzing real-world scenarios and translating them into mathematical equations.
Student Learning Task: There will be a wide-range of activities and assignments, both summative and formative, throughout the unit for the students to engage in and showcase their learning progression on the topics. One of the assignments can be used by integrating technology in the classroom and using a Desmos lessons for students to work through with their teachers guiding the lesson/learning objective. In one of the lessons the students will focus on how they can appropriately solve inequalities without using the "flip rule" and instead visually able to see why the inequalities sign change when dividing or multiplying by a negative sign on both sides of the inequality.

Unit 2: Linear Equations
Description: In this unit, students will deepen their understanding of linear equations by exploring their graphical representations and slope-intercept form. They will engage in higher0order thinking by analyzing the relationship between variables and interpreting the meaning of slope and y-intercept in context. Problem-solving activities will requite students to identify patterns, making connections, and formulate generalizations about linear equations.
Student Learning Task: There will be a wide-range of activities and assignments, both summative and formative, throughout the unit for the students to engage in and showcase their learning progression on the topics. A main learning objective throughout this unit is for students to take a real-world complex problem and solve through mathematical reasoning based on prior and current math knowledge to solve the problem. A key takeaway will have students build off their knowledge of proportional relationships from 7th and 8th grade and use different word problems to find the key definition of a proportional relationship and apply it into these problems. The tasks will start with a word problem activity and see what a student can work through and then bring back to a quick whole class instructional lesson on these key points, which should allow students to reflect on what they solved and how to use this information to solve future problems.

Unit 3: Exponential Equations

Description: Students will investigate exponential equations and their properties, including growth and decay. They will apply critical thinking skills to analyze exponential growth models and make predictions about real-world phenomena. Problem-solving tasks will involve reasoning about rates of change, interpreting graphs, and making connections between exponential functions and their applications.

Student Learning Task: There will be a wide-range of activities and assignments, both summative and formative, throughout the unit for the students to engage in and showcase their learning progression on the topics. This will be the first-time students are introduced to this function family and having the students fully understand what exponential growth and decay looks like. Using Desmos we have students practice previous grade level standards of converting numbers from percentages to decimals, which allows them build on that knowledge with understanding how exponential growth and decay formulas are created. They are then able to use the embedded graphs to see how they adjust formulas and what the graphs look like using different growth/decay word problems, including population models, TV streaming services, bacteria samples, stock prices, and car models.

Unit 4: Linear and Exponential Functions

Description: In this unit, students will compare and contrast linear and exponential functions, focusing on their key characteristics and behaviors. They will develop higher order thinking skills by analyzing graphs, tables, and equations to identify patterns and make conjectures about function behavior. Problem-solving activities will require students to apply mathematical models to solve problems related to growth, decay, and linear relationship.

Student Learning Task: There will be a wide-range of activities and assignments, both summative and formative, throughout the unit for the students to engage in and showcase their learning progression on the topics. In these tasks, students main learning objective is to show that they can take both linear and exponential functions and compare their average rate of change and their y-intercepts. This needs to be showcased in graphs, tables, word problems, and equations and for students to move fluently from one manipulative to another.

Unit 4B: Systems of Linear Equations

Description: Students will explore systems of linear equations and their solutions, including graphical, algebraic, and numerical methods. They will engage in critical thinking by analyzing systems of equations in real-world contexts and determining the most efficient solution method. Problem-solving tasks will involve reasoning about the intersection points of linear equations and interpreting the meaning of solutions within the context of the problem.

Student Learning Task: There will be a wide-range of activities and assignments, both summative and formative, throughout the unit for the students to engage in and showcase their learning progression on the topics. Throughout this unit students will need to show their knowledge of solving two linear equations and inequalities, using graphing and algebraic techniques. There are a wide array of performance based tasks that students can work through based on different scenarios that have students build their own systems of equations and prove their answers with either graphs or algebra techniques.

Unit 5: Descriptive Statistics

Description: In this unit, students will learn basic concepts of descriptive statistics, including measures of central tendency and variability. They will apply critical thinking skills to analyze data sets, interpret statistical measures and draw conclusions based on data. Problem-solving activities will involve designing experiments, collecting data, and analyzing distributions to make informed decisions and predictions.

Student Learning Task: There will be a wide-range of activities and assignments, both summative and formative, throughout the unit for the students to engage in and showcase their learning progression on the topics. For the first time in student's math career they will be able to see a lot of mathematics displayed as big ideas using different statistic models. Throughout this unit students will be given different tasks to test challenges and then building off their knowledge of linear functions they will be able to graph results, estimate the line of best fit, and then calculate the correlation coefficient to decide if their model is a good or poor model.

Unit 6: Congruence and Proof

Description: Students will explore congruent geometric figures and develop techniques for proving geometric relationships. They will engage in higher order thinking by constructing logical arguments, using deductive reasoning, and applying geometric concepts to solve problems. Problem-solving tasks will involve constructing proofs, identifying geometric patterns, and generalizing geometric properties to solve complex problems.

Student Learning Task: There will be a wide-range of activities and assignments, both summative and formative, throughout the unit for the students to engage in and showcase their learning progression on the topics. In this geometry unit students can use a lot of hands-on manipulative strategies to visually see and prove different geometry topics. Using GeoGebra is a good technology tool that students can use to visually see the transformations of different shapes on the coordinate grid and utilize the correct transformation rules to confirm that their image and pre-image are congruent to each other.

COURSE MATERIALS
- Walch Integrated Math Textbook and Student Workbooks (6 Units)
- Integrated Math I Scope and Sequence (Mathematics Shared Google Drive)