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BAYFRONT CHARTER HIGH SCHOOL
830 Bay Blvd., Chula Vista CA 91910

Our Students Will Change the World

BAYFRONT CHARTER HIGH SCHOOL
Integrated Math I Course Syllabus

PART I. CONTACT INFORMATION

Teacher: Cara Hetrick	Phone: 619-974-4000	Email: cara.hetrick@bayfrontcharter.com	
Class Website: http://hetrickcara.wix.com/integrated-math-i		Period: 3	Location: Room 13

PART II. OVERVIEW

A-G: This course meets a portion of the math subject requirement for the University of California
This course fulfills the graduation requirements for Bayfront Charter High School

Course Description

This course is the first of an integrated and investigative mathematics program designed to use patterns, modeling, and conjectures to build student understanding and competency in mathematics. The majority of this course will focus on building algebra I, geometry, and statistics skills. However, the overarching goal of this course is to teach students how to learn math differently than they may have historically. Since this is the first year of an integrated program, students will be trained on methods of learning as well as content. The students will be expected to learn through collaboration, collection of data, experimentation, and conjectures. Technology tools will also play an important role in learning. This course aligns perfectly with the five goals of the UC Mathematics requirement. The students will learn mathematical sense making, make and test conjectures and justify conclusions, use mathematical models to represent real-world data, be able to provide clear and concise answers, and have computational and symbolic fluency.

Course Purpose

The fundamental purpose of Integrated Mathematics I is to formalize and extend the mathematics that students learned in the middle grades. The critical areas are to deepen and extend understanding of linear relationships by contrasting them with exponential phenomena and by applying linear models to data that exhibit a linear trend. Integrated Mathematics I uses properties and theorems involving congruent figures to extend understanding of geometric knowledge from prior grades. Students' work in Integrated Math I is continually built upon as they progress through the Integrated Math pathway. The Mathematical Practice Standards apply throughout each course and, with the content standards, prescribe that students experience math as a coherent and logical subject that makes use of their ability to problem solve. The Mathematical Practice Standards can be found in the Common Core State Standards for Mathematics for California.

Course Objectives

By the end of this course, students will be able to:

- Know that there are numbers that are not rational, and approximate them by rational numbers.
- Extend the properties of exponents to rational exponents.
- Interpret the structure of expressions.
- Create equations that describe numbers or relationships.
- Understand solving equations as a process or reasoning and be able to explain the reasoning.
- Solve equations and inequalities in one variable.
- Solve systems of equations.
- Represent and solve equations and inequalities graphically.
- Understand the concept of a function and use function notation.
- Interpret functions that arise in applications in terms of the context.
- Analyze functions using different representations.
- Build a function that models a relationship between two quantities.
- Build new functions from existing functions.
- Construct and compare linear, quadratic, and exponential models and solve problems.
- Interpret expressions for functions in terms of the situation they model.
- Experiment with transformations in the plane.
- Understand congruence in terms of rigid motions.
- Make geometric constructions.
- Use coordinates to prove simple geometric theorems algebraically.
- Summarize, represent, and interpret data on a single count or measurement variable.
- Summarize, represent, and interpret data on two categorical and quantitative variables.
- Interpret linear models.

PART III. ASSIGNMENTS

Course Assignments and Projects

Unit 1: Understanding Functions

- Skills Test 1 – Can I find the pattern of a linear sequence?
- Skills Test 2 – Can I use function notation, find the rate of change of a function, identify how a function is applied?
- Project – Pattern Project
- Unit Test 1

Unit 2: Linear and Exponential Equations

- Skills Test 3 – What are the characteristics of linear and exponential functions? Which are the same and which are different?
- Skills Test 4 – Can I find the rate of change from a table, graph, or equation? Can I graph both linear and exponential functions from their equations?
- Project – What's the better deal?
- Unit Test 2

Unit 3: Solving Systems of Equations

- Skills Test 5 – What does the solution tell me? Can I find the solution for a system graphically?
- Skills Test 6 – Can I write equations from real world scenarios and us it to solve problems?

Can I find solutions to a system of equations algebraically?

- Project – What's the better deal … and when?
- Unit Test 3

Unit 4: Statistics in the Real World

- Skills Test 7 – Can I use graphical representations and knowledge of the context to make judgments about the appropriateness of linear models? What does the correlation coefficient tell me?
- Unit Test 4

Unit 5: Congruence, Proof and Constructions

- Skills Test 8 – Can I perform transformation on geometric figures in a plane?
- Skills Test 9 – Can I prove that two figures are congruent based on the concept of rigid motions?
- Unit Test 5

*Please note that this is not an exhaustive list of assignments and this listing is subject to change.

Assessment	% of Grade
• Skills Tests: Skills tests will be given approximately bi-weekly and are aligned to the California Framework for Integrated Course I (Common Core State Standards). If a student decides to take a skills test over, their highest grade will be recorded. Students may retake skills tests during tutoring block, during lunch, or at another time arranged with the teacher until their reach mastery during the two weeks following the original test date.	30
• Exams/ Projects: Each unit will end with a culminating exam based on the skills tests, classwork, notes, and homework during that unit. Some tests will be group tests where students can work together as a team. Other tests may afford students the use of their notebook. Most exams will be given on an individual basis and will not allow for the use of notes or other tools. Make-up exams will be given only if a student is absent and will be taken the day the student returns. If the exam was a group test, the student who was absent will take the test individually. Projects will be assigned throughout the semester and must be completed by the due date.	60
• Homework/ Notebook/ Classwork: Homework will be assigned frequently, but not every night. Homework must be completed by the following day. No late work is accepted for these assignments unless the student has made arrangements with the teacher prior to the due date.	10

Instructional Strategies & Methods

Instruction in Integrated Math I will be presented through multiple instructional strategies which include direct instruction, whole class and group dialogue (both verbal and written), exploratory math with an emphasis on discovery and connections, and differentiated lessons created to support students in their mathematical development on the "Big Ideas" in math.

Successful students will:

- Demonstrate understanding of major algebra and geometry concepts
- Use cognitive skills such as critical thinking, problem solving, and collaboration daily
- Use tools appropriately for learning (including online tools and more concrete tools like calculators)

PART IV. GRADING POLICY

97 - 100	A+	73 – 76	C
93 – 96	A	70 – 72	C-
90 – 92	A –	67 – 69	D+
87 – 89	B+	63 – 66	D
83 – 86	B	60 – 62	D-
80 – 82	B-	0 – 59	F
77 – 79	C+		

Absences, Late and Make Up Work

All work is due by the due date for that assignment. However, students that have difficulty meeting these due dates may talk to the teacher about an alternate due date. These conversations need to happen before the original due date for the assignment. If a student is absent, their work is due the day that the student returns. If this is not possible, the student must make arrangements with the teacher. This is the student's responsibility.

The attendance policy of Bayfront Charter High School is as follows: During each quarter, students shall not receive credit for a class in which they have missed 4 or more days (3 tardies of more than thirty minutes is equivalent to 1 absence). A student who misses 4 or more days can make up each absence by attending Saturday School.

Extra Credit

No extra credit will be offered in this course.

Cheating

Cheating on a test in this course will result in disciplinary action. Depending on circumstances, a student may be asked to take an alternative assessment for reduced credit, may not receive credit for the particular problem that the student cheated on, or may not receive credit at all for the test, resulting in a 0 for the test.

PART V. BEHAVIOR EXPECTATIONS

School-wide Behavior Standards

- Students must be in their seat, on time, and ready to learn every day
- Students must demonstrate respect for other people
- Students must demonstrate respect for the property of others
- Students must demonstrate respect for our culture of learning

Classroom Policies

- Cell Phones: Cell phones must be off or set to silent mode and put away (out of sight). Headphones should also be put away and out of sight.
- Food and drinks: Food and drinks should be consumed outside of the building and never in class.
- Tardies: Excessive tardies will result in a disciplinary action. Please see the handbook for school wide consequences for tardies.
- Hats/ Hoods: Hats will be allowed in class as long as they do not cover your ears. Hoods are never allowed in class.

Digital Use Policy

The **Bayfront Charter High School Digital Use Policy** is available in the Parent Handbook, the school website, and in the main office.

ISTE STANDARDS

As we increase the amount of technology in our world, it is our responsibility to make sure that our students understand the responsibility of using these tools and are able to compete with others in their chosen career path. The ISTE standards give guidance to incorporating technology in meaningful ways into the classroom. In Integrated Math I, we will focus on ways to use technology that will enhance our understanding of complex mathematical concepts (Empowered Learner), and use our laptops and graphing calculators to find efficient ways to solve problems (Computational Thinker).

21st CENTURY SKILLS

"We find when we talk about 21st century skills, people often reduce them to skills for the workplace and skills involving technology. And we're really talking about skills for creativity, for civic engagement, for social life–the full range of experiences that young people will be involved in in the future." -Henry Jenkins, Provost's Professor of Communications

Students in Integrated Math I will be involved in the critical review of mathematics as a discipline that has no right answers, but one of many pathways and creative solutions. Communicating the myriad of ways to solve a problem will be at the heart of this course. Teamwork and collaboration will be key to success in this course. Students will be challenged to seek alternative solutions and to evaluate the validity of another person's solution with a focus on clarity in explanation and use of academic language. When engaging in problems involving real world issues, experts/ expert sources will be consulted and communicated with in order to confirm or refute the proposed solutions to a problem.

PART VI. RESOURCES FOR PARENTS

- Bayfront Charter High School Website: www.bayfrontcharter.com
- Bayfront Charter High School Handbook: http://bayfrontcharter.com/handbook.html
- Classroom website: http://hetrickcara.wix.com/integrated-math-i
- Jupiter Grades: www.jupiterEd.com
- California Department of Education (CDE): http://www.cde.ca.gov/index.asp
- Career Technical Education (CTE): http://www.cde.ca.gov/ci/ct/
- California Common Core State Standards for Mathematics: http://www.cde.ca.gov/be/st/ss/documents/ccssmathstandardaug2013.pdf

Important Dates

1/3 – School Begins
1/16 – NO SCHOOL
2/3 – 5-week Progress Reports

2/17-2/20 – NO SCHOOL
3/10 – Third Quarter Grades
3/20-3/24 – Student Led Conferences
3/27-4/3 – NO SCHOOL
4/21 – 15-week Progress Reports
5/29 – NO SCHOOL
5/30-6/2 – Finals Week
6/2– Fourth Quarter Grades

Week	Unit	Goals
1/3-6	Unit 1 Intro	What is a function? What is function notation and how is it applied? What vocabulary can describe a function? Can I find the pattern of a linear sequence and write these patterns as functions? Can I find the rate of change of a function? Common Core Critical Area: Relationships Between Quantities
1/9-13	Unit 1	
1/17-20	Unit 1	
1/23-27	Unit 1	
1/30-2/3	Unit 1	
2/6-10	Unit 2	What are the characteristics of linear and exponential functions? What characteristics of linear and exponential functions are the same? Which are different? Can I find the rate of change from a table graph or equation? Can I graph a linear function and an exponential function from its equation? Common Core Critical Area: Linear and Exponential Relationships
2/13-16	Unit 2	
2/21-24	Unit 2	
2/27-3/3	Unit 2	
3/6-10	Unit 3	What does it mean to "solve" a systems of equations? Can I write equations from real-world scenarios and use it to solve problems? Can I interpret the solutions of a system of equations from a graph? Can I find solutions to a system of equations algebraically? Common Core Critical Area: Reasoning With Equations
3/20-24	Unit 3	
4/4-7	Unit 3	
4/10-14	Unit 3	
4/17-21	Unit 3	
4/24-28	Unit 4	Can I describe approximately linear relationships between quantities using data? Can I use graphical representations and knowledge of the context to make judgments about the appropriateness of linear models? Can I use the correlation coefficient to measure how well the data fit the relationship? Common Core Critical Area: Descriptive Statistics
5/1-5	Unit 4	
5/8-12	Unit 4	
5/15-19	Unit 5	Can I perform transformations on geometric figures in a plane? Can I prove that two figures are congruent based on the concept of rigid motions? Can I create geometric construction with a variety of tools and methods? Common Core Critical Area: Congruence, Proof, and Constructions
5/22-26	Unit 5	
5/30-6/2		FINALS WEEK