



San Antonio Math Include

Provide Greater Access to STEM Education to All Students

2021-2022 Free Online Courses Syllabi

Website: mathinclude.org | Email: sanantoniomathinclude@gmail.com

Math Classes

Semester	Week	Date	Tadpoles (K-1)	Whirlpool (2-3)	Andromeda (4-5)	Triangulum (6-8)	MAA Pre-AMC (5-7)	Calculus AB (9-12)
Fall 2021	1	9/25-26	Addition	Time	Pattern	Tricks in +/-	Algebra	Functions and Graphs
	2	10/2-3	Subtraction	Intervals	Story of Gauss	Tricks in */	Algebra	A Preview Of Calculus and The Limit of a Function
	3	10/9-10	Skip Counting	Addition	Using Models	Logic	Algebra	The Limit Laws and Continuity
	4	10/17-18	Time	Comparison & Replacement	Intervals	Speed: Catching Up	Algebra	Defining the Derivative, The Derivative as a Function, and the Derivative Formula Sheet
	5	10/24-25	Even and Odd	Age	Comparison & Replacement	Speed: Encountering	Number Theory	The Chain Rule and Implicit Differentiation
	6	10/31-11/1	Rounding	Division	Counting	Age	Number Theory	Maxima and Minima and Derivatives and the Shape of a Graph
	7	11/7-8	Fact Families	Chicken and Rabbit	Tricks in Addition and Subtraction	Solving Using Models	Number Theory	The Mean Value Theorem and L'Hopital's Rule
	8	11/14-15	Patterns	Patterns	Tricks in Multiplication	Comparison & Replacement	Number Theory	Related Rates
Spring 2022	9	1/9-10	Number Lines	Counting	Working Backward	Excess-and-Shortage	Counting and Probability	Applied Optimization Problems
	10	1/16-17	Money	Logic	Chicken and Rabbit	Finding Cubes	Counting and Probability	Antiderivatives
	11	1/23-24	Integers	Make a List	Logic	IQ Problems	Counting and Probability	Approximating Areas
	12	1/30-31	Place Value	Using Models	List	Interesting Reminders	Counting and Probability	The Definite Integral and the Fundamental Theorem of Calculus
	13	2/6-7	Factions	Search of Series	Excess-and-Shortage	Finding Perimeter	Geometry	Integration Formulas and the Net Change Theorem
	14	2/13-14	Geometry	What Comes next	Math IQ	The Page-Number Problem	Geometry	Substitution
	15	2/10-21	Multiplication	Math IQ	Catching Up	Counting	Geometry	Areas Between Curves

Computer Science Classes

Semester	Week	Date	Python for Kids (3-5)	Java (6-12)	C++ (6-12)
Fall 2021	1	9/25-26	Not All Snakes Slither	Hello World	Start C++
	2	10/2-3	Calculations and Variables	Input and Output	Statements
	3	10/9-10	Strings, Lists, Tuples, and Maps	Functions and for Loops	Use Array
	4	10/16-17	Drawing with Turtles	Operations	String
	5	10/23-24	Asking Questions with if and else	Largest Number	Class and Object
	6	10/30-31	Going Loopy	Fibonacci Series	Pointer and Reference
	7	11/6-7	Functions and Modules	Areas	File Operation
	8	11/13-14	Classes and Objects	for and while Loops	Static Exception Vector
Spring 2021	9	1/8-9	Python's Built-in Functions	1-D and 2-D Arrays	Loops
	10	1/15-16	Useful Python Modules	Converting to Binary	Perfect Numbers
	11	1/22-23	More Turtle Graphics	File I/O	Prime Numbers
	12	1/29-30	Using tkinter for Better Graphics	System Date and Time	Factorials
	13	2/5-6	Bounce! – 1	File Operations	Class
	14	2/12-13	Bounce! -2	Factorials	Power
	15	2/19-20	Creating Graphics for the Mr. Stick Man Game	Search	Roman Number