Advanced Algebra Two: **Semester Two** 2024

Standard	Date	Topic	Notes/Linked Activities	Assignment
*** Start ACT Daily AND Prepare ACT Lesson for NTI Day One (use IXL)	1/3	Professional Learning Day for Staff		
HSN.RN.A1	1/4 A 1/5 B	5.1 nth roots, radicals, and rational exponents	Envision Examples: 1, 2, 3, 4, 5, 6 Power Chart Desmos Exploration Partner Problems KEY – Partner Problems	Math XL: 18, 25, 26, 31, 32, 35, 36, 37, 40, 48
HAS.SSE.A1	1/8 A 1/9 B	5.2 Properties of Exponents and Radicals	Envision Examples: 1, 2, 3 Intro to Properties of Exponents Warm up after 5.1 (Desmos)	Math XL: 13, 18, 19, 22, 23, 24, 27, 28, 30
HAS.SSE.A1	1/10 A 1/11 B	Cont. 5.2 Properties of Exponents and Radicals	Envision Examples: 4, 5, 6 Properties of Exponents Digital Maze	Math XL: 38, 39, 40, 41, 42, 44, 45, 46, 49, 51

HSF.IF.C.7B	1/12 A 1/15 B	5.3 Graphing Radical Functions	Envision Examples: 1, 2, 3, 4, 5 *Change the problems for example 3 to simplify nicer Ex: $\sqrt{9x - 45} + 3$ Or $\sqrt{4x + 16} - 2$ Radical Function Card Sort Desmos	Math XL: 11, 14, 15, 17, 18, 19, 20, 24, 25, 27 Assign Quiz Review
	1/16 A 1/17 B	Quiz 5.1 - 5.3 AND Start 5.4		Review Questions Here Quiz Here
HAS.REI.A1	1/18 A 1/19 B	5.4 Solving Radical Equations	Envision Examples: 1, 2, 3, 4, 5 FAL – Radical** Required for Sem.2 Leftovers WS 5.1-5.4 Pixel Art	Math XL: 21, 22, 23, 24, 28, 30, 31, 33, 36, 37,
HSF.BF.A.1B	1/23 A 1/24 B	5.5 Function Operations	Envision Examples: 1, 2, 3, 4, 5, 6	Math XL: 12, 14, 17, 20, 23, 24, 25, 26, 31, 34

			Composite Function Matching Composition of Functions Graphically Function Operation Person Puzzle Composition of Function Memes ABC Sum Race	
HSF.BF.B.4A	1/25 A 1/26 B	5.6 Inverse Relations and Functions	Envision Examples: 1, 2, 4, 5, 6 *Example 3 if time Inverse Relation Tattoos Turnover Cards Inverse Hole Punch	Math XL: 13, 16, 17, 19, 22, 23, 27, 29, 30, 31 3 ACT Math Task Recording Sheet
	1/29 A 1/30 B	Review	Introduction today is the 3 ACT Math Task THEN Clue Review	Topic 5 Test Review shared on MILC for students to complete for Homework.

	1/31 B	REVIEW Day 2 OR Optional Snow Day		
	2/1 A 2/2 B	TEST		
KY.HS.SP.10 Decide if a specified model is consistent with the results from a simulation. **KY.HS.SP.14** Describe events as subsets of a sample space. Use characteristics (or categories) of the outcomes, such as unions, "A or B," that are mutually exclusive events, unions, "A or B," that are non-mutually exclusive events, and as intersections, "A and B," and as complements of other events, "not A." to calculate basic probabilities. **KY.HS.SP.15** Understand the concept of independence. a. Understand that two events, A and B, are independent if the probability of A and B occurring together is the product of their individual probabilities, P(A) x P(B) c. Recognize and explain the concept of independence in everyday language and everyday situations.	2/5 A 2/6 B	12.1 General Probability	Ex 1, 2, 3, 4 Desmos Stats Medic - Mutually Exclusive Demos Stats Medic - Independence Breakout Room Note Taker ACT Review Slides	12.1 Math XL: #12, 13, 14, 17-19, 24, 26, 20

KY.HS.SP.15 **KY.HS.SP.16** Understand the concept of conditional probability. a. Understand the conditional probability of A given B as P(A and B)/P(B).	2/7 A 2/8 B	12.2 Conditional Probability	12.2 : Ex 1, 2, 3 Examples to glue into workbook Desmos Stats Medic -	12.2 Math XL #14, 15, 16, 18, 21, 20, 24, 27

c. Recognize and explain the concept of conditional probability in everyday language and everyday situations. d. Find the conditional probability of A given B as the fraction of B's outcomes belonging to A and interpret the answer in terms of the model. **KY.HS.SP.17 (+)** Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide whether events are independent and to approximate conditional probabilities. **KY.HS.SP.18 (+)** Apply the General Multiplication Rule, P(A and B) = P(A)P(B | A) = P(B)P(A | B), in a uniform probability model, and interpret the answer in terms of the model			Conditional Prob	
KY.HS.SP.19 Use permutations and combinations to compute probabilities. a. Distinguish between situations that can be modeled using counting techniques, including the Fundamental Counting Principle, permutations, and combinations. b. Perform calculations using the appropriate counting technique, including simple probabilities. MP.1, MP.8	2/9 A 2/12 B	12.3 Permutations and Combinations	Ex 1, 2, 3, 4 ACT Review Slides	12.3 Math XL #17,20, 22, 23, 24,25 27, 30, 32,35
KY.HS.SP.20 (+) Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same appropriate graphical displays as for data distributions. **KY.HS.SP.22 (+)** Develop a probability distribution for a random variable. a. Find an expected value based on a sample space	2/13 A 2/14 B	12.4 Probability Distributions		

in which theoretical probabilities can be calculated. b. Find an expected value based on a sample space in which empirical probabilities can be calculated.				
KY.HS.SP.21 (+) Calculate the expected value of a random variable; interpret it as the mean of the probability distribution and use the value in analyzing decisions. **KY.HS.SP.22 (+**) **KY.HS.SP.23 (+)** Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. a. Find the expected payoff for a game of chance. b. Evaluate and compare strategies based on expected values. c. Use calculated expected values to make fair decisions and formulate strategies.	2/15 A 2/16 B	12.5 Expected Value		
KY.HS.SP.6 Represent data on two quantitative variables on a scatter plot and describe how the explanatory and response variables are related. a. Calculate an appropriate mathematical model, or use a given mathematical model, for data to solve problems in context. b. Informally assess the fit of a model (through calculating correlation for linear data, plotting, calculating and/or analyzing residuals) **KY.HS.SP.7** Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. **KY.HS.SP.8** Understand the role and purpose of correlation in linear regression.	2/20 A 2/21 B	**Stats:** Review Linear Regression	Desmos Activity: Rideshare Scatterplot Desmos Activity: Alligator Investigation Notes Word doc Notes PDF	

a. Use technology to compute correlation coefficient of a linear fit. b. Interpret the meaning of the correlation within the context of the data. c. Describe the limitations of correlation when establishing causation.				
KY.HS.SP.9 Understand statistics as a process for making inferences and justifying conclusions about population parameters based on a random sample from that population. **KY.HS.SP.12** Use data from a sample survey to estimate a population mean or proportion and explain how bias may be involved in the process	2/22 A 2/23 B	11.1 Statistical Questions & variables 11.2 Statistical Studies & Sampling Methods	11.1 Ex. 1-4 11.1 Images for workbook 11.2 Ex. 1-4 11.2 Images for workbook 11-2 Desmos Activity: Sampling Strategies	Math XL: 11.1 Q's: 9, 11, 12, 15, 18, 19, AP-2 11.2 Q's: 7, AP-9, AP-5, AP-3, RE-1, 21, 19,
	2/26 A 2/27 B	11.3 Data Distributions & ~~*11.4 Normal Distributions (maybe)*~~	11.3 Ex. 1-4 ● Show standard deviation on Desmos Desmos: Polygraph: Describing Distributions	Math XL: 12-21, 26, 28
	2/28 A 2/29 B	10.1 Matrix Operations Workbook pdf 10.2 Matrix Multiplication Workbook pdf	Envision Ex: 1-4 Envision Ex: 1-3 Type of Matrix	12, 19, 21, 22, 23, 24, 35, 10.1-RE-1, 10.1-RE-2, 10.1.RE-3, 10.1.AP-2, 10.1.AP-7 9, 10, 11, 21. 22. RE-

			Problems on ACT	1.RE-2. RE-3, AP-4
KY.HS.G.12 Understand properties of right triangles. a. Understand that by similarity, side ratios in right triangles are c. Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems. ★	3/1 A 3/4 B* *ACT Pre-Admin	7.1 Right Triangle Trig Review And 9.2 Circles Review	Right Triangles Review Notes	MathXL: 7.1.18, 7.1.22, 7.1.29, 7.1.30, 7.1.31, 7.1.34, 7.1.36,
	3/5 A 3/6 B	Prob & Stats Review/Take-Home Quiz		Prob & Stats Take home Quiz
	3/7 A 3/8 B	Prob & Stats Review/Take-Home Quiz		
	3/11 A 3/12 B	FLEX DAY for NTI Or Snow Day		
	3/13 A	**ACT**		
	3/14 B	**ADAM** ASSESSMENT, **Pi Day** Activities, Catch up…		
	3/15 A	Current NO School Day		
KY.HS.A.13 Create equations in two or more	3/18 A	4.1 Inverse Variation	Ex. #1, 2, 3, 4, 5	Math XL:

variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. KY.HS.F.8 Understand the effects of transformations on the graph of a rational function. MP.3, MP.5 KY.HS.A.15 Rearrange formulas to solve a literal equation, highlighting a quantity of interest, using the same reasoning as in solving equations.	3/19 B	& Reciprocal Functions	*Practice factoring here too (in class) Inverse Variation - Choose your Own Adventure	AP-10, 9, 16, 18, AP-7, AP-8, AP-9
KY.HS.F.4 Graph functions expressed symbolically and show key features of the graph, with and without using technology (computer, graphing calculator). ★ g.(+) Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available and showing end behavior.	3/20 A 3/21 B	4.2 Graphing Rational Functions	Ex. #2, 3, 5 Graphing Rational Functions Puzzle	Math XL: 17, 18, 19, 20, 23, 24, 28, 33, 34,
KY.HS.A.10 (+) Rewrite simple rational expressions in different forms. KY.HS.A.11 (+) Add, subtract, multiply and divide rational algebraic expressions.	3/22 A 3/25 B	4.3 Mult./Dividing Rational Expressions	Ex. #1, 2, 3, 4, 5, 6	Math XL: 14, 15, 16, 17, 19, 23, 25, 27
KY.HS.A.11 (+) Add, subtract, multiply and divide rational algebraic expressions.	3/26 A 3/27 B	4.4 Adding/ Subtracting Rational Expressions (Day 1 of 2)	Ex. #1, 2, 3, 4, 5 Operations with Rational Expressions Math LIb	Math XL: 15, 18, 19, 21, 22, 23, 34 Quiz Review
	3/28 A 3/20 B	**Quiz Over 4.1-4.4(Day One)** Some sophomores will be pulled for PSAT for Gov Scholars		Quiz Questions

SPRING BREAK 4/1 - 4/5				
	4/8 A 4/9 B	Continue with 4.4 (day 2) Compound Fractions	Ex. #6	Math XL: 26, 27, 28, 29, 31, AP-5, AP-7, AP-8
KY.HS.A.12 Create equations and inequalities in one variable and use them to solve problems. KY.HS.A.17 Solve and justify equations in one variable. Justify the solutions and give examples showing how extraneous solutions may arise. a. Solve rational equations written as proportions in one variable. KY.HS.A.24 Justify that the solutions of the equations f(x) = g(x) are the x-coordinates of the points where the graphs of y = f(x) and y = g(x) intersect. Find the approximate solutions graphically, using technology or tables	4/10 A 4/11 B	4.5 Solving Rational Equations	Ex # 1, 3, 4 Punchline Worksheet Practice Rational Equations Scavenger Hunt	Math XL: 10,15, 21, 22, 24, AP 4-7
	4/12 A 4/15 B	4.5 (Day 2) Solving Rational Equations (Work Rate Problems)	Ex #2, 5 4-5 Work Rate Extra Examples	Math XL Work Rate: 8, 9, 19, 20, 26 AP 8-10
	4/16 A 4/17 B	Topic 4 Review		Review & Test Questions
	4/18 A 4/19 B	Topic 4 Test		
	4/22 A 4/23 B	6.1 Key Features of Exponential Functions	Ex # 1, 2, 3, 4	Math XL: 6.1: 14, 16, 23, 28, 29, 19, 21, 26

		6.4 Key Features of Logarithmic Function	Ex # 1, 2	6.4: 7, 12, 14, 8, 29
	4/24 A 4/25 B	6.2 Exponential Models	6.2 Ex # 1, 2, 3, 4	Math XL: 6.2: 27, 16, 17, 20
	4/26 A 4/29 B	6.3 Logarithms	Ex # 1, 2, 3, 4, 5	Math XL: 23, 24, 25, 27, 28, 31, 32, 33, 36, 37, 45, 46, 47, 48,
	4/30 A 5/1 B	6.5 Properties of Logarithms	Ex # 1, 2, 3, 4, 5	Math XL: 14, 15, 17, 18, 20, 22, 24, 30, 31, 32
	5/2 A 5/3 B	6.6 Exponential & Logarithmic Equations	Ex # 1, 2, 3, 4, 5	Math XL: 16, 17, 18, 19, 22, 24, 29, 30, 37, 38
	5/6 A 5/7 B	6.7 Geometric Sequences		
	5/8 5/9 5/10 5/13 *KSA Testing	Topic 6 Review and start Final exam Review		Topic 6 Review and Test Questions
	5/14 5/15	Final Exam Review		
	5/16 5/17	Final Exam Review		

	5/20	FINALS A1 A3		
	5/22	FINALS B1 B3		
	5/23	FINALS A2 A4		
	5/25	FINALS B2 B4		