Algebra 2 (Woods/Roth)
Coconino High School
Week of May 18-22: Learning Guide

Course	Algebra 2 (Woods/Roth)	Week Assigned	5/18-5/22
Lesson Title	Measuring Center of Quantitative Data (Mean Median and Mode)		
Teacher(s), Email, & Other Contact Information	Emily Woods and Eric Roth ewoods@fusd1.org; eroth@fusd1.org		
Target Standards	**6.SP.A.3** Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.		
Learning Goal	Students will be able to determine the measure of center and explain how it summarizes all values of a data set.		
Essential Questions	How does the measure of center summarize a data set? How do we know which measure of center best summarizes our data set?		
Learning Activity	Students login to Khan Academy and complete the assignments, which includes instructional videos, practice problems, and a quiz. Khan Academy Link: https://www.khanacademy.org/math/ap-statistics/summarizing-quantitative-data-ap		
Resources	Google Classroom: https://www.googleclassroom.com Khan Academy: https://www.khanacademy.org/math/ap-statistics/summarizing-quantitative-data-ap		

Links to Printable Materials	Blank Notes: https://drive.google.com/file/d/1-H1_iWOJwY2x30Mqiho_iHuaJBp63s6X/view?usp=sharing Completed Notes: https://drive.google.com/file/d/11AwpM2B-Vlkr36BR7T9p0Pb-y5GTgmUE/view?usp=sharing Practice: https://drive.google.com/file/d/1hHqmC1FLYv0XptBEeMRl6cbw0_c0iiTZ/view?usp=sharing
Extension & Enrichment	Students can further their practice by determining which type of study has been conducted. https://www.khanacademy.org/math/ap-statistics/summarizing-quantitative-data-ap/mean-median-more/v/impact-on-median-and-mean-when-removing-lowest-value-example?modal=1 https://drive.google.com/file/d/1DDNpgUSitjlDvei9Syb_WSIjVNGBTMYE/view?usp=sharing

Algebra 2 (Woods/Roth)
Coconino High School
Week of May 11-15: Learning Guide

Course	Algebra 2 (Woods/Roth)	Week Assigned	5/11-5/15
Lesson Title	Types of Studies (Experimental vs. Observational)		
Teacher(s), Email, & Other Contact Information	Emily Woods and Eric Roth ewoods@fusd1.org; eroth@fusd1.org		
Target Standards	**HSS-IC.B.3** Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each. **HSS-IC.B.6** Evaluate reports based on data.		
Learning Goal	Students will be able to describe the purposes of and differences among sample surveys, experiments, and observational studies.		
Essential Questions	How can we use the context of a study to determine if it is a survey, experiment, or observational study?		
Learning Activity	Students login to Khan Academy and complete the assignments, which includes instructional videos, practice problems, and a quiz. Khan Academy Link: https://www.khanacademy.org/math/ap-statistics/gathering-data-ap/types-of-studies-experimental-vs-observational/v/types-of-statistical-studies		
Resources	Google Classroom: https://www.googleclassroom.com Khan Academy: https://www.khanacademy.org/math/ap-statistics/gathering-data-ap/type		

	s-of-studies-experimental-vs-observational/v/types-of-statistical-studies
Links to Printable Materials	Blank Notes: https://drive.google.com/file/d/1-H1_iWOJwY2x30Mqiho_iHuaJBp63s6X/view?usp=sharing Completed Notes: https://drive.google.com/file/d/11AwpM2B-Vlkr36BR7T9p0Pb-y5GTgmUE/view?usp=sharing Practice: https://drive.google.com/file/d/1hHqmC1FLYv0XptBEeMRl6cbw0_c0iiTZ/view?usp=sharing
Extension & Enrichment	Students can further their practice by determining which type of study has been conducted. https://drive.google.com/file/d/1TtJ5-7WRnYwCUeMktB5fOuA9G-HXXGCm/view?usp=sharing

Algebra 2 (Woods/Roth)
Coconino High School
Week of May 4-8: Learning Guide

Course	Algebra 2 (Woods/Roth)	Week Assigned	5/4-5/8
Lesson Title	Graphing and Transformations of Sine and Cosine		
Teacher(s), Email, & Other Contact Information	Emily Woods & Eric Roth ewoods@fusd1.org; eroth@fusd1.org		
Target Standards	**HSF-BF.B.3** Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. **HSF-IF.C.7** Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.		
Learning Goal	Students will be able to identify the effects of transformations on trigonometric functions based on its midline, amplitude, and period of a sine or cosine function. Students will be able to graph sine and cosine functions using key features.		
Essential Questions	How can we identify the key features of a trigonometric function by looking at the function or graph? How do those key features transform the graph from its parent function?		
Learning Activity	Students login to Khan Academy and complete the assignments, which includes instructional videos, practice problems, and a quiz. Khan Academy Link: https://www.khanacademy.org/math/trigonometry/trig-function-graphs Lessons: 1) Transforming Sinusoidal Graphs		

	2) Graphing Sinusoidal Functions
Resources	Google Classroom: https://www.googleclassroom.com Khan Academy: https://www.khanacademy.org/math/trigonometry/trig-function-graphs
Links to Printable Materials	Week 3 Notes: https://drive.google.com/file/d/1WBXydqpHn1lPFloUPG9-IwIkEyKWk12O/view?usp=sharing Week 3 Practice Problems: https://docs.google.com/document/d/1c4egCaKBlgIfkAIM4mJjRcZzv_2uXQGFNVfcaFP52SA/edit?usp=sharing
Extension & Enrichment	Students can further their practice by modelling sinusoidal functions https://www.khanacademy.org/math/algebra2/x2ec2f6f830c9fb89:trig/x2ec2f6f830c9fb89:sinusoidal-models/v/modeling-with-shifted-trig-functions

Algebra 2 (Woods/Roth)
Coconino High School
Week of April 27-May 1: Learning Guide

Course	Algebra 2 (Woods/Roth)	Week Assigned	4/27-5/1
Lesson Title	Graphing Sine and Cosine		
Teacher(s), Email, & Other Contact Information	Emily Woods & Eric Roth ewoods@fusd1.org; eroth@fusd1.org		
Target Standards	**HSF-IF.C.7.e** Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude. **HSF-TF.B.5** Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.		
Learning Goal	Students will be able to identify the midline, amplitude, and period of a sine or cosine function. Students will be able to graph sine and cosine functions using key features.		
Essential Questions	How can we identify the key features of a trigonometric function by looking at the function or graph? How can we distinguish between a sine and cosine graph?		
Learning Activity	Students login to Khan Academy and complete the assignments, which includes instructional videos, practice problems, and a quiz. Khan Academy Link: https://www.khanacademy.org/math/trigonometry/trig-function-graphs Lessons: 3) Graphs of sin(x) and cos(x) 4) Amplitude, Midline, and Period		
Resources	Google Classroom: https://www.googleclassroom.com		

	Khan Academy: https://www.khanacademy.org/math/trigonometry/trig-function-graphs
Links to Printable Materials	Week 2 Notes: https://drive.google.com/file/d/1WBXydqpHn1lPFloUPG9-IwIkEyKWk12O/view?usp=sharing Week 2 Practice Problems: https://drive.google.com/file/d/1Y3XDrjxOzFEBa_3HAGw0LCLLb23aM9Tq/view?usp=sharing
Extension & Enrichment	Students can further their practice with graphing sine and cosine by completing these tasks https://drive.google.com/file/d/1QauyO6Hqz9Lphr61d9qw4Xdh3-AqH1_v/view?usp=sharing

Algebra 2 (Woods/Roth)
Coconino High School
Week of April 20-24: Learning Guide

Course	Algebra 2 (Woods/Roth)	Week Assigned	4/20-4/24
Lesson Title	Unit Circle		
Teacher(s), Email, & Other Contact Information	Emily Woods & Eric Roth ewoods@fusd1.org; eroth@fusd1.org		
Target Standards	**A2.F-TF.A2** Extend the domain of trigonometric functions using the unit circle. **A2.F-TF.A2.2** Explain how the unit circle in the coordinate plane enables the extension of sine and cosine functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.		
Learning Goal	Calculate the radian angle measurement a point on a wheel rotates through by relating it to the distance traveled by the wheel. Describe characteristics of points on a unit circle. Describe the structure of the coordinates associated with specific radian measurements on the unit circle.		
Essential Questions	What is the unit circle definition of the trigonometric functions? How can trigonometric ratios explain points on a unit circle?		
Learning Activity	Students login to Khan Academy and complete the assignments, which includes instructional videos, practice problems, and a quiz. Khan Academy Link: https://www.khanacademy.org/math/trigonometry/unit-circle-trig-func Lessons: 5) Intro to Radians 6) Unit Circle Definitions 7) Trigonometric Values of Special Angles		

Resources	Google Classroom: https://www.googleclassroom.com Khan Academy: https://www.khanacademy.org/math/trigonometry/unit-circle-trig-func
Extension & Enrichment	Practice with coterminal angles and reference angles: - PDF posted to Google Classroom or can be found with this link https://cdn.kutasoftware.com/Worksheets/Alg2/Coterminal%20Angles%20and%20Reference%20Angles.pdf

Algebra 2 (Woods/Roth)
Coconino High School
Week of April 13-17: Learning Guide

Course	Algebra 2	Week Assigned	April 13-17,2020
Lesson Title	Transformations Continued: Scaling and Putting it All Together		
Teacher(s), Email, & Other Contact Information	Emily Woods & Eric Roth ewoods@fusd1.org; eroth@fusd1.org		
Target Standards	HSF-BF.B.3 Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them. HSS-ID.B.6.a Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.		
Learning Goal	• Calculate the scale factor "k" needed to transform the output of a function to fit data. • Describe the effect of a scale factor on the output of a function.		
Essential Questions	• What is the scale factor needed to transform the output of a function to model data? • What is the effect of a scale factor on the input of a function? • What are the differences between scaling the outputs and scaling the inputs of a function?		
Learning Activity	The purpose of this activity is to introduce students to the effect of scale factors on the output/input to a function. They start by sketching the transformation of a graph from a description. Students then write an equation for the new function in terms of the original. Similar to how a graph translated left a certain amount of units and not right, students may find the relationship between compressing a graph horizontally and the corresponding equation are counter-intuitive. This activity is intended to address this common misconception directly using the familiar context of distance, time, and speed to help students make sense in their own words why multiplying the input by a scale factor greater than 1 means the graph is compressed instead of		

	stretched.
Resources	Students are able to access assignments through Khan Academy using their Google Account to login. Students will submit assignments as they finish them in Khan Academy so the instructors can see their progress. These assignments include: Scaling, Putting it Together and Quiz 2 in Khan Academy.
Links to Printable Materials	https://im.kendallhunt.com/HS/teachers/3/5/8/preparation.html https://im.kendallhunt.com/HS/teachers/3/5/9/preparation.html
Extension & Enrichment	Are you ready for more? If so, check out Combining Functions https://im.kendallhunt.com/HS/teachers/3/5/9/preparation.html

Algebra 2 (Woods/Roth)
Coconino High School
Week of April 6-10 - Learning Guide

Course	Algebra 2	Week Assigned	**April 6-10**
Lesson Title	Transformations of Functions		
Teacher(s), Email, & Other Contact Information	Emily Woods, Eric Roth ewoods@fusd1.org; eroth@fusd1.org		
Target Standards	HSF.BS.B: Shifting Functions, Reflecting Functions and Lines of Symmetry		
Learning Goal	Students will be able to identify various types of transformations including shifting up/down/left/right, reflecting, and identifying where lines of symmetry occur.		
Essential Questions	How do we get the parent function to move up/down/left/right and/or reflect over a line? Where is the line of symmetry in a graph, if there is one?		
Learning Activity	Students will access the Khan Academy Videos and Lessons Through Google Classroom. After students complete the lessons they will take a quiz on Khan Academy.		
Resources	• Khan Academy • Printed Material for students without internet access.		
Extension & Enrichment	Nearpod - Desmos Activity Translating Functions		