Vision - St. Louis Public Schools is the district of choice for families in the St. Louis region that provides a world-class education and is nationally recognized as a leader in student achievement and teacher quality.
Mission - We will provide a quality education for all students and enable them to realize their full intellectual potential.

Collegiate School of Medicine and Bioscience – Weekly Virtual Learning Planner

Teacher	Mr. Sabor	**Grade**	12	**Subject**	College Algebra
Week of	3/1/2021	**Topic/Title**	Unit 5: Systems of Equations and Inequalities		

Lesson/Topic	Lesson Target/Objective	Synchronous/Live Instruction	Asynchronous Playlist	Assessment/Performance Task	Due Date
Lesson 1 (3/1/2021)	Describe the solution set to a system of inequalities as the set of points that make all inequalities true simultaneously. Graph individual inequalities in two variables by separating the coordinate plane into regions and determining which region(s) contain solutions. Graph systems of inequalities in two variables.	Do Now: (Crowdsourcing) For each of the points that you are assigned, identify whether $x^2 + y^2 = 25$, $x^2 + y^2 > 25$, or $x^2 + y^2 < 25$. Plot all of the points from the Do Now on a coordinate plane. The **solution set** of a two-variable inequality is the set of ordered pairs that make it true. Functions and equations are represented on coordinate planes by curves. Those curves are the *boundaries* of two-variable inequalities. We use **solid curves** & **closed dots** to represent that the boundary points are in the solution set. $=$, $\leq$, and $\geq$ We use **dotted curves** & **open dots** to represent that the boundary points are not in the solution set. $\neq$, $<$, and $>$ **Graphing a Two-Variable Inequality:** 1. **Solid & closed** ($=$, $\leq$, $\geq$) or **dotted & open** ($\neq$, $<$, $>$). 2. Graph the **boundary**. 3. Determine which region(s) to shade. When determining which region(s) to shade, there are several patterns. However, you can always test an ordered pair in each region. Shortcuts: • Most boundaries split the coordinate plane into two regions. One region will represent $>$ and the other will	C5.e Homework	C5.e Homework	3/3/2021

		represent $<$. • If y is by itself, $y >$ means that the points above the curve ($+y$ direction) are solutions. Students write the inequality for the given graphs. Most are linear, but some boundaries are from other function families. To graph a system of two-variable inequalities, graph both inequalities on the same coordinate plane. I recommend using different-looking shading so that it is obvious where they overlap. Recall: the solution to a system of equations is the point on both lines. The same thing still holds. The solutions to the system of inequalities are the points in both regions. The overlap is called the **solution set** or the **feasible region**. Demonstrate graphing a system. Students practice graphing systems by hand, then check using Desmos.			
Lesson 2 (3/3/2021)	Write an objective function describing a quantity that must be minimized or maximized. Use inequalities to describe limitations in a real-world scenario. Use linear programming to determine the optimal solution to a real-world scenario.	Do Now: Select the system of (nonlinear) inequalities that gives the graph shown. Show a prompt for a linear programming problem, numbers included. **Linear Programming:** 1. Define the variables. 2. Identify the constraints. 3. Write a system of inequalities. 4. Find the vertices of the system of inequalities. 5. Write an objective function. 6. Evaluate the objective function for each vertex. 7. Identify the optimal point. Demonstrate using the original problem. Students practice linear programming word problems.	C5.f Homework	C5.f Homework	3/5/2021
Lesson 3 (3/5/2021)	Apply linear programming and systems of equations to real-world scenarios.	Do Now: Which point will maximize the objective function for the shown feasible region? Homework review. Practice writing equations from word problems for systems of equations and inequalities. Lots of variety – nonlinear, standard form, point-slope form, slope-intercept form, inequalities, and	C5 Pretest	C5 Pretest	3/8/2021

		equations. Solve a parametrically-based linear programming problem. Methods that you can use to reduce errors in calculation-heavy problems: • Use a calculator. • Check your work after each step. • Substitute your solution back into one or more statements. • Add the partial fractions. Conceptual errors: • Structuring equations/inequalities based on expectations. • Selecting the wrong (in)equality symbol. Maximizing instead of minimizing & vice versa.			