Newark Teacher Project
Social Justice Curriculum Unit (SJU)
Chelsea M. Fonseca
Fall 2022

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PART 1: PLANNING THE UNIT OVERVIEW

Part I: Unit Overview

Potential Grade level: Algebra I (8th Grade Honors/ 9th Grade)

Unit Title: Food for Thought

Topic: Food Deserts - Graphing and Solving Linear Inequalities in Two Variables

Topic Justification

Based on where we'll potentially be by November/ December, my lessons will be focused on Solving and Graphing Linear Inequalities in Two Variables. Food and nutrition became the main focus of this unit because Orange, NJ is one of the cities in Essex County that are considered a food desert. According to the U.S. Department of Agriculture (USDA) food deserts are sections of land with large proportions of households that are low income where people have limited access to a variety of healthy and affordable food due to inadequate access to transportation, and a limited number of food stores that provide fresh and healthy groceries at affordable prices (2012). While there are major food stores near Orange Preparatory Academy, like Costco, Whole Foods, Shoprite, etc, most people who live near the school would have to travel long distances just to be able to access them. On top of transportation, the cost of food has become outrageously overpriced. You would need to consider who can afford a membership to places like Costco, and who can afford to buy a can of Chicken Noodle soup at $3.39 per can. What if families can't afford these outrageous prices at supermarkets or to travel by car, bus, Lyft, Uber, or train everytime they need to access these places? In this unit, we would first look at what a food desert is and how we can accurately graph linear inequalities in two variables. Then we will spend time comparing the distance and cost food deserts have on families who need to adhere to a strict budget. According to the OPS curriculum on Illustrative Math/ Kendall Hunt this year, these lessons are expected to take 3 days total to complete. As I go about creating these lessons I will need to consider that my blocks are 80 minute periods. What happens if the lesson falls short on time or it takes the students longer than anticipated? What can I have them do to further their understanding of the food desert they currently live in?

The six elements of social justice are important for introducing both of my topic ideas. The elements, self-love and knowledge, respect for others, issues of social injustice, social movements and social change, raising awareness and social action, all incorporate many layers that help students learn, not only more about themselves, but also how they can make a change. With food and nutrition, we would be introducing food inequality. Elements 1, 2 and 4 would provide background information on current statistics and data for how food deserts impact communities and people all over the world. The students would also be introduced to supermarkets at varying distances from OPA, the cost of gas, and the time it takes to get to these supermarkets. Students will be asked to think about these variables and how they could all impact families that are on a budget and need to shop for their families. Would families need to sacrifice fresh produce and foods to save money, or would they have to make do with less groceries because of the cost of travel? Elements 3,5, and 6 would then be addressed through researching, analyzing, examining and interpreting data on food deserts, how they can have long lasting effects on the people in their communities and how they can go about advocating for change. Students will be able to work in groups to analyze different perspectives. They will also be able to

justify why it is or isn't "fair" for families in their community to suffer nutritionally due to the distances they need to travel for fresh food while other communities are left to thrive.

The social injustices of food and nutritional inequality also incorporate community cultural wealth and the Four I's of Oppression: ideological, institutional, interpersonal, and internalized. Nutritional inequality brings light to social capital, allowing students to see how the nutritional inequality in food deserts affects families across Orange through research and group work. Students will use the mathematics of computing inequalities in two variables to analyze how food deserts affect families in Orange financially to create an infographic for what a food desert is, how impacts their community and what their families can do to maintain good health, and providing resources for how families can overcome living in these food deserts (aspirational). While addressing these inequalities, students will also be drawing from the Four I's of oppression to address and understand the power food producers have over the people in low-income or more urbanized communities. Students will utilize mathematics to understand institutional, internalized and even interpersonal oppression, seeing first hand how huge food producing companies are price gouging some of their products, making it harder for people to buy healthy foods on their own in order for them to sustain healthy lifestyles. They'll be given opportunities to consider where internalized and interpersonal oppression have affected the way people view, speak about or approach the topic of food consumption and body image based on how much they actually know about the access to fresh and healthy food resources. Students will be able to notice where interpersonal oppression has altered their perspective of food resources and how it has altered the way they view conventional standards of beauty in themselves and in others. This will then allow students to also notice their internalized oppression; how these perspectives and lack of resources have taken over and altered our mental states so we ultimately see only our flaws, not how beautiful or unique we are as people.

Food and nutritional inequality influenced by food deserts is also a very relevant, very real issue in the city of Orange. Food, in general, has increased significantly in price to the point where a simple can of soup could cost a family over 3 dollars per can. While admittedly worse during the pandemic due to having to worry about feeding children full time with schools being virtual, families are still struggling to budget for groceries and the means of transportation that would allow them to access nutritionally adequate, healthy and sustainable groceries. Taking income inequality into consideration, the question then becomes, what is the smallest possible price a family could pay in order to enjoy a meal that is healthy without going over budget for groceries? What if the family has to travel a far distance to access these grocery stores. Do they need to budget for both transportation and groceries? These factors, left in the hands of the people, are what we can use to create, solve and graph linear inequalities in two variables while simultaneously making the content relevant for our students. These factors are also what can provide students the opportunity to take action and brainstorm ideas for lessening the amounts of food and nutritional inequalities in their neighborhoods due to living in a county of the state of New Jersey that is considered a food desert.

Themes (about 4-6 words or phrases)

- Inequalities
- Healthy and Sustainable Food Sources

- Distance and Time Constraints
- Inflation impact on Cost of Gas
- Opportunities for change
- Food Deserts

Section II: Enduring Understandings
What do you want students to remember 10 years from now?

1. Students will understand what a food desert is.
2. Students will understand how food deserts can impact the nutrition and health of communities.
3. Students will understand that they have the power to help others through research.
4. Students will understand why they shouldn't judge people based on what they do or do not have access to; every person and family has their own struggles, don't make it harder for someone by being a bully.
5. Students will understand how mathematics can help them make active changes to their environment through research, analysis and reflection.

Essential Questions:
What question provides a doorway into this topic?

1. What is a food desert?
2. How far is too far for families to have to travel to provide food for their households?
3. How can the cost of gas impact a family's budget?

Abstract
This unit will revolve around the concept of food deserts in Orange, NJ. Students will be given opportunities to analyze, graph, and solve for inequalities in two variables in the context of real world situations as well as distance and cost. Students will be using what they learn in day 1 for solving for and graphing inequalities in two variables using generic distance and cost scenarios to analyze the total cost a family of 4 on a strict budget, without a reliable means of transportation, would have to spend to ensure they can reach a reliable grocery store with fresh produce. Students will be taking on the role of an activist, using their knowledge of how to graph and solve for solutions to linear inequalities in two variables and food deserts to analyze and answer questions to help a family on a budget navigate the food desert where they live. Students will be creating an infographic using the information they gather to show the family where they can shop for fresh, healthy food, while also showing them how they can make a change in their environments

by getting involved. Students will see how food deserts affect the nutrition and health of communities, the budgets of families, and the power they have to help their communities through research.

Part 2: Planning With Standards

NJS Standards Addressed: Use the **2020 standards** for your subject area and find between 3-8 standards that cover the unit you are planning. Regardless of your subject area, also choose 3-7 social studies standards that cover your unit that you could use to justify why your topic is appropriate. http://www.state.nj.us/education/cccs/. Feel free to use any other content standards that fit your unit.

Standards for Mathematics
Cut and paste below the "Standard" and the related "Content Statement" that covers your unit. A-CED.A.2. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. A-CED.A.3. Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods. A-CED.A.4. Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law V = IR to highlight resistance R. A-REI.C.5. Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. A-REI.C.6. Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. A-REI.D.10. Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).
2020 Social Studies Standards
6.1.12.CivicsPD.2.a. Civic participation and deliberation are essential characteristics of individuals who support democracy and its principles. 6.1.12.CivicsPD.2.b. Civic deliberation requires civic dispositions, attentiveness to multiple perspectives, and understanding diverse perspectives.

6.2.12.GeographySVW.1.a. Maps, satellite images, photographs, and other representations can be used to explain relationships between the locations of places and regions, and changes in their environmental characteristics.
6.2.12.EconomicsEWT.1.a. Resources impact what is produced and employment opportunities.
6.2.12.EconomicsEWT.1.b. Societies make decisions about how to produce and distribute goods and services and these decisions are influenced by the control of the means of production.
6.2.12.EconomicsEM.2.c. Governments affect both public and private markets through regulation, taxation, budget allocations, subsidies, tariffs, price regulation, and policies that increase or reduce production possibilities.

Part 3: 3 Day Unit

Unit Title: Food for Thought	**Teacher: Chelsea M Fonseca**	**Grade: Algebra I**
Unit Description: According to the U.S. Department of Agriculture, Orange, NJ is classified as a food desert. Students will be taking on the role of an activist, using their knowledge of how to graph and solve for solutions to linear inequalities in two variables and food deserts to analyze and answer questions to help a family on a budget navigate the food desert where they live. Students will be creating an infographic using the information they gather to show the family where they can shop for fresh, healthy food, while also showing them how they can make a change in their environments by getting involved. Students will see how food deserts affect the nutrition and health of communities, the budgets of families, and the power they have to help their communities through research.		**Standards Addressed:** A-CED.A.2.; A-CED.A.3.; A-CED.A.4.; A-REI.C.5.; A-REI.C.6.; A-REI.D.10. 6.1.12.CivicsPD.2.a. 6.1.12.CivicsPD.2.b. 6.2.12.GeographySVW.1.a. 6.2.12.EconomicsEWT.1.a. 6.2.12.EconomicsEWT.1.b. 6.2.12.EconomicsEM.2.c.
Enduring Understandings 1. Students will understand what a food desert is. 2. Students will understand how food deserts can impact the nutrition and health of communities.		**Essential Questions** 1. What is a food desert? 2. How far is too far for families to have to travel to provide food for their households? 3. How can the cost of travel impact a family's budget?

3. Students will understand that they have the power to help others through research. 4. Students will understand why they shouldn't judge people based on what they do or do not have access to.	

List Individual Student Needs: Access to chromebooks, graphing paper and Ti-84 Graphing Calculators

Day	**Daily Mini-Lesson Summary** (Reading/Writing Workshop: Mini Lesson, Guided/Small Group/Independent Practice, Closure)	**Assessment:** Phrased as: "Students will demonstrate understanding of (CONTENT) as evidenced by (PRODUCT)"
Day 1	• **Turn and Talk**: IM Warm-Up - given an expression, students need to determine if the ordered pairs given make the expression less than, greater than, or equal to 12. • **Individual/ Group:** IM Lesson part 1 on graphing linear inequalities in two variables using generic distance and cost. • **Individual Desmos Cool-Down**	• Students will demonstrate an understanding of linear inequalities as evidenced by solving and graphing linear inequalities that have two variables. • Students will demonstrate understanding of solving and graphing linear inequalities as evidenced by submitting a completed cool down before the end of the period.
Day 2	• **Introduce food deserts** using a short animated video - what is a food desert and how do they affect communities? • **Individual to Groups:** Students have to analyze the distance and cost of gas from OPA to one of the four anonymous grocery stores, staying within constraints of different inequalities, and using what they have learned from the IM lessons about graphing linear inequalities. • **Peer Review:** Students will have to talk to and compare their information with at least 2 other groups to determine if their grocery store is "the best" option when	• Students will demonstrate an understanding of graphing linear inequalities in two variables as evidenced by analyzing and evaluating the information provided. • Students will demonstrate their understanding of peer review as evidenced by checking for errors in calculations while comparing their work to two other groups. • Students will demonstrate understanding of food deserts in relation to linear inequalities as evidenced by their responses to our class

	it comes to meeting the distance, and cost for a family on a budget. ● **Class Discussion:** Determining which groups met the needs of the family on a budget, which didn't, and which contain better, healthier produce. ● **Individual Cool Down/ Exit Ticket:** Based on what we know now, is the community of Orange a food desert?	discussion. ● Students will demonstrate understanding of graphing linear inequalities in relation to food deserts as evidenced by submitting a completed cool down before the end of the period.
Day 3	● **Model an infographic** with research, findings and resources (sea turtles endangerment; housing market) ● **Individual Work**: Students will complete individual Brainstorm Web graphic organizers with at least 3 reasons for why they believe Orange is a food desert using the information analyzed and gathered on Day 2. ● **Partner Work:** Students will be placed in pairs to brainstorm and answer the following prompts using their individual graphic organizers: ○ Use your grocery stores from yesterday to explain in a 2-3 paragraph response why you believe Orange is a food desert: ■ What makes the community of Orange a food desert? Use information and evidence you have from the previous day to validate your thinking. ■ Answered after Research: In what ways can the family suggest the community get involved to lessen the impact of the food desert in Orange? ● **Research:** Students will take on the role of an activist and will be given starter links to websites that discuss	● Students will demonstrate individual understanding of food deserts and linear inequalities as evidenced by the graphic organizer they create with at least 3 reasons they believe Orange is a food desert. ● Students will demonstrate understanding of food deserts and linear inequalities as evidenced by a short 2-3 paragraph response to why they and their partner believe Orange is a food desert. ● Students will demonstrate understanding of research and analysis as evidenced by using the starter links to find ways the family can use to get the community involved to lessen the impact of a food desert. ● Students will demonstrate understanding of infographics as evidenced by creating a collaborative visual tool about the food desert in Orange that is easy to read and understand. ● Students will demonstrate understanding of accountability as evidenced by completing a Partner Check to ensure both partners are doing equal amounts of work.

	food deserts and what resources communities can use to overcome them. • **Collaborative Infographic Maker using Canva:** Collaboratively create an infographic using their data from the previous day (at least 2 grocery stores) and their research on resources. • **Homework:** Students will be responsible for completing their infographic together, and uploading their graphic organizer, reasoning and finished infographic to Google Classroom. • **Partner Check:** Students will be asked to complete a virtual Partner Check response form so that they can let me know who did what parts of the project (ex: who did what parts of the written response, the research, the infographic, etc).	

Part 4: Lesson Plan

Name : Chelsea M. Fonseca	**Topic/Title: Food For Thought/ Solving & Graphing Linear Inequalities in Two Variables**	**Grade Level/CT: Algebra I**
1a. STANDARD: NJ Common Core Standards Mathematics: A-CED.A.2.; A-CED.A.3.; A-CED.A.4.; A-REI.C.5.; A-REI.C.6.; A-REI.D.10. Social Studies: 6.1.12.CivicsPD.2.a.; 6.1.12.CivicsPD.2.b.; 6.2.12.GeographySVW.1.a.; 6.2.12.EconomicsEWT.1.a.; 6.2.12.EconomicsEWT.1.b.; 6.2.12.EconomicsEM.2.c.	**1b. ENDURING UNDERSTANDINGS** Students will understand what a food desert is. Students will understand how food deserts can impact the nutrition and health of communities. Students will understand that they have the power to help others through research.	

	Students will understand why they shouldn't judge people based on what they do or do not have access to.
2a. STUDENT LEARNING OBJECTIVES (Tiered) ● Students will learn how to graph linear inequalities that have two variables and varying constraints. ● Students will learn that the solutions to inequalities in two variables also involve pairs of values. ● Students will show the pairs of values as a region bounded by a line, not as points on a single line. ● Students who may have difficulty writing and solving for linear inequalities in two variables will see different ways of solving based on context from multiple real world problems. ● Students who may not have experienced shading a specific part of a graph (below or above the boundary line) will learn how to do this as well.	**2b. TEACHER CONTENT KNOWLEDGE *(necessary prior knowledge)*** Teacher has an understanding of: ● How to graph and shade the regions bounded by inequalities on a coordinate plane. ● The meaning of inequality and boundary line. ● The difference between at most (less than equal to), and at least (greater than equal to). ● How to use graphing technology. ● Proper syntax: "<=" means less than equal to, ">=" means greater than equal to, ">" greater than, "<" less than. ● How linear inequalities represent and symbolize real world scenarios.

3. ASSESSMENT -

Day 1: Students will be assessed based on their participation in the class activities for learning how to graph linear inequalities in two variables and their desmos cool down which is 2 questions that ask them to choose which graph represents a given inequality and why they chose that graph. This will help us see where students may still be struggling with the initial material as we move into Day 2. Students will also be assessed based on their practice problems at the end of the lesson for homework.

Day 2: Students will use their previous knowledge from Day 1 to do a quick do now on graphing linear inequalities in two variables. Students will be assessed throughout in-class activities and discussions on food deserts, the peer review they complete when comparing at least two other groups grocery stores with their own and through our class discussion about all of the grocery stores discussed in the surrounding vicinity of OPA. Students will then be assessed through a virtual exit ticket that will evaluate what they learned about food deserts through inequalities and if they believe Orange is a food desert from this information.

Day 3: Students will be assessed based on their graphic organizers, and their 2-3 paragraph response. This will help students gather their own individual thoughts before talking with their partner to agree on at least 3 reasons why they believe Orange is a food desert based on previous information and knowledge. Students will also be assessed on their completed infographic and their partner check. This will help me see that students did the research they were supposed to and created something from it that was both informational and easy to read. The partner check allows me to see who worked on what parts of the assignment (i.e: Partner A wrote out the response for the 3 reasons while Partner B wrote out the response for the resources; etc.). This holds each student accountable for their work and understanding while also providing a small boost to their overall project grade.

4. INDIVIDUALIZED STUDENT NEEDS

Handouts will be printed for the class since the questions on Day 2 we will be discussing are not in their workbooks. Our students are always in groups, so I made sure they were still able to work both individually and together in groups.

Colored pencils and extra graph paper will be placed within the boxes on each of the individual tables.

PROCEDURE AND PRACTICE - DAY 1		
TEACHER'S ROLE **Questions to Ask**	**WHAT ARE STUDENTS DOING?**	**MATERIALS**
LAUNCH/STARTER/ANTICIPATORY SET		
21.1 WARM-UP (10 min.) Teacher will set the expectation by reading out the expression 2x+3y and asking students to quietly decide if the following ordered pair (x,y)makes the expression less than, greater than, or equal to 12. Teacher will then ask students to volunteer their response and explanations. Teachers will ask guiding questions to promote productive struggle for students. Teacher will also ask other students to restate a student's response in a different way. Vocabulary and context will be reinforced. Teacher will have a student read out the objectives for the class while transitioning into Activity 1 of the lesson.	Students will individually think about the ordered pairs as they relate to the expression and volunteer their answers.	IM Powerpoint Slide Deck for Unit 2 Lesson 21 IM Units 1-2 Workbooks

LEARNING ACTIVITIES		
21.2 SOLUTIONS AND NOT SOLUTIONS (30 minutes) Teacher will display the inequality 2x + 3y <= 12 with a blank coordinate grid. Teacher will ask students to remind her what ordered pairs from the warm up were and were not solutions to this inequality. Teacher will mark the coordinates on the coordinate grid in different colors and label ordered pairs that work as points and ones that don't as X. Teacher will ask students to come up with 3 other ordered pairs that are/ are not solutions and encourage students to use negative numbers. Teachers will also encourage students to find pairs that are different from those chosen within their groups. Teacher will ask for one coordinate pair from each student and will mark them on the coordinate grid accordingly. Teacher will have students volunteer what they notice about the plotted points. Teacher will assign 2 groups inequality x >= y and -2y >= -4 and 2 groups 3x < 0 and x + y > 10. Teacher will instruct students to work with their groups to find at least 3 ordered pairs that do and do not make the inequality true. Teachers will provide students with colored pencils so they can properly identify which points work and which do not. Teacher will display the sample graphs on the powerpoint and ask each group if their points followed the same patterns. If they didn't, students will be encouraged to explain what they did and why they think their graph may have been off.	Students will analyze the given inequality to find ordered pairs that are and are not solutions to the given expression. Students will volunteer what they notice about the different colored plotted points for the expression. Students will collaborate with their groups to plot points for the two sets of inequalities they were given. Students will use colored pencils to identify which ordered pairs they plot are and are not solutions. Students will analyze and discuss their graphs when compared to the graph answer key. Students will be encouraged to ask questions when they don't understand. Students will understand that we used points to symbolize where a graph will be shaded in a solid	Colored Pencils IM Powerpoint Slide Deck for Unit 2 Lesson 21 IM Units 1-2 Workbook

Teacher will introduce the concept of shading the region of the graph with the dots/ solutions a solid color and crosshatching the region of the graph that has X/ no solutions.	color (solutions) and X to symbolize where graphs will be shaded in a crosshatch (no solutions).	
21.3 SKETCHING SOLUTIONS TO INEQUALITIES (30 minutes) Teacher will display the inequalities x >= y and x > y and ask students to consider whether specific coordinate pairs are solutions to the inequalities or not. Teacher will display two graphs and poll the students by asking graphs to represent the respective inequalities, A or B. Teacher will explain that the solid line in graph B is the boundary line and means that all points on that line are solutions, while a dashed boundary line in graph A means all points below or above, but not on, that line are solutions. Teacher will give students an equation and 4 inequalities that go with that equation. Students will be asked to individually graph the inequalities. Once graphed, the groups may discuss what they came up with for images. The teacher will also give students 4 graphs and ask them to write the inequalities they think go with them. Where applicable, students may use graphing software and colored pencils. Teachers will ask students “Once you know where the boundary line is, how did you decide which side of the line represents the solution region?” to get students to explain their strategies in mathematical terminology. Teacher will emphasize that we cannot just assume < or <= means that we have to shade the points below the boundary line. It is essential to test points to make sure they are solutions for the given equation, expression or inequality.	Students will analyze the given ordered pairs to see if they are solutions to the inequalities x > y and x >= y. Students will raise their hand for which graph they think goes with which inequality. Students who are wrong will be asked to explain why they chose the graph they chose. Students will be introduced to dashed and solid boundary lines and their meanings, Students will analyze and draw out the graphs for 4 inequalities. Students will also write out inequalities based on given graphs. Students will be encouraged to express their reasonings in mathematical terminology while	Colored Pencils (where applicable) Graphing technology (where applicable) IM Powerpoint Slide Deck for Unit 2 Lesson 21 IM Units 1-2 Workbook

	also emphasizing the strategies they used to get their answers. Students will start to understand that we cannot assume < or <= means that we have to shade the region below the boundary line or that > or >= means that we have to shade the region above it, they need to test points to make sure where they are shading has solutions to the inequalities.	
INTRODUCING FOOD DESERTS (5 minutes) Teacher will start the conversation by asking students how far they currently travel to buy groceries. Teachers will ask students what they, or their parents would do if that grocery store shut down and they now had to travel to one that was further away. What if their parents had to budget to make sure they could buy healthy, sustainable food for the family, but now had to factor in this additional travel cost? Teacher will ask students if they have ever heard of a food desert and ask students to think about what a food desert is for the following class.	Students will volunteer their responses for how far they need to travel for groceries. Students will volunteer their responses and opinions to the questions. Students will be encouraged to be creative but realistic.	Lesson Powerpoint
CLOSURE: 21.4 PICK A GRAPH COOL DOWN - (5 minute) Teacher will open the cool down on desmos. The cool down will consist of 2 questions: - The line in each graph represents y = 2x. Which graph represents 2x > y? - Explain your reasons for choosing that specific graph.	Students will answer the questions and submit their answers to the cool down in desmos.	Chromebooks

HOMEWORK - Lesson 21 Practice Problems

PROCEDURE AND PRACTICE -- DAY 2		
TEACHER'S ROLE **Questions to Ask**	**WHAT ARE STUDENTS DOING?**	**MATERIALS**
LAUNCH/STARTER/ANTICIPATORY SET		
BRIEF REVIEW OF FOOD DESERTS (3 minutes) Teachers will ask students what they think a food desert is and encourage them to give their ideas. Teacher will show students a short 3 minute animated video on what a food desert is and ask students how this topic can relate to inequalities in math.	Students will provide opinions and ideas of what the term food desert means. Students will watch a short 3 minute video on food deserts and will be asked to consider how this topic can relate to inequalities in mathematics.	Short Animated Food Desert Video Lesson Powerpoint
LEARNING ACTIVITIES		
FOOD FOR THOUGHT (40 minutes) Teacher will place students in 4 groups of 5. Teacher will give each group their own map of the area and a grocery store information sheet that is different for each group. The information sheets will vary and have data from 1 grocery store (like produce delivery and rotation, average amount spent by a family of 4, etc.) near "Home" or OPA and the set budget the family has set aside for groceries and travel. The map will show the distance it	Students will be placed in groups of 5 and will be tasked with reading and reviewing the information about their given grocery store. Students will understand that our class is taking on the role of a family of 4 on a budget who do	Information Packet/Guide Graphing technology (where applicable) Lesson Powerpoint Slide w/ Timer

would take us to get from “Home” to the store, while also noting all the fast food stores along the way. Teacher will set the expectation by stating that we are a family of four with a specified budget: We are trying to find a grocery store that is near our “Home” that we can take public transportation to since we do not have a car. Each member of the family is trying to help find a store that we can shop at while staying within our budget for food and travel. Teacher will explain that each “member” (aka group) of the family needs to answer the following questions: (1) Create an inequality that represents the distance and cost the family would need to spend to get to the specified grocery store via bus and home via taxi if they budgeted at most $30 for travel and want to spend at most $250 dollars on food for the month. (2) Graph the inequality from 1. (3) Suppose there is road construction and both the bus and the taxi need to detour an extra z miles to avoid it. (3a) What would be the new cost for traveling to and from your grocery store? (3b) Would this detour to and from your grocery store have an impact on your family’s food budget? Why or why not? (4) Food that is circulated, delivered, and rotated out regularly at a grocery store determines whether or not a family will be buying fresh, healthy food with longer shelf life or semi-rotting, less healthy food with a shorter shelf life. (4a) How often is the food rotated out and replaced with fresh food in your specific grocery store? (4b) Taking into consideration how often the food at your store is circulated, is your family able to purchase food that is both healthy and longer lasting or would they be purchasing food that is less healthy with a shorter shelf life? Explain your reasoning. - Additional questions could potentially include: The family travels to the grocery store that is __ miles away only to find out the store has expired *insert food preference here; ex: milk.* Due to this, they now need to go to a new store before heading home. Which grocery store could they travel to	not have reliable transportation and need to go grocery shopping. Students will analyze their grocery store information, map, transportation rates and questions to create and graph inequalities related to distance and cost for travel. Students will use the data that they find to answer questions related to their specific grocery store and how	

in order to retrieve the remainder of their groceries without breaking the constraints of their budget? Teachers will have students answer the questions on Part I of their individual information guides. Teachers will walk around to track student progress, answer questions, and ask questions that will help students productively struggle.		
PEER REVIEW (25 minutes) Teachers will place students in 5 groups of 4, ensuring one person from each grocery store group is in the new group, so that students can discuss, compare and evaluate each other's findings. Teacher will display questions on the board for the groups to answer based on the data they found: (1) Which grocery store was the closest? The furthest? (2) After discussing the other opinions for grocery stores, which do you think the family should use to meet their travel and food budget constraints? Explain. (3) How many fast food restaurants were on your route to and from your grocery store? How many are there on the route to the store you chose in #2? (4) Take into consideration how the cost of travel was impacted for the grocery store you chose for #2 when there was traffic. (4a) Did the detours impact the family's budget for food at all? (5) Considering both the budgeting constraints, and how often the food is rotated out and replaced: (5a) Is the grocery store you chose in #2 the store with the best and healthiest food options or do these constraints place the family at a nutritional disadvantage? (5b) Is there another store that would be a better choice for the family to use when taking into account travel, detours, and food rotation or would you keep your choice from #2? Explain your reasoning.	Students will take their individual information guides to their new group. Students will be responsible for presenting the data from their grocery store to the new group Students will collaboratively make judgements and conjectures to answer the group questions.	Completed Information Packet/Guide Graphing technology (where applicable) Lesson Powerpoint Slide w/ Timer

Teachers will have students answer the questions on Part II of their individual information guides. Teachers will walk around to track student progress, answer questions, and ask questions that will help students productively struggle.		
CLASS DISCUSSION (10 minutes) Teacher will use call and response to bring the students back to the class as a whole. Teacher will ask students to volunteer a summary of their answers to the group questions. There will be at least 4 volunteers necessary for this (1 volunteer from each group). Teachers will encourage groups who may have the same answer to expand and come up with an additional reason on why they chose their option. This will get students thinking about what strategies they used to make their decisions while also avoiding "We said the same thing" responses. Teacher will record the students' responses on the board so that everyone can visually see each group's decisions, and reasonings. Teacher will ask students to give feedback for each of the options on the board. By doing this, we will address misconceptions or confusion any students may have. Teachers will poll students for the overall final recommendation for what grocery store the family should use.	Students will volunteer summaries of what their group answered for each question. Students will analyze the information given by each group and determine if they agree or disagree. Students will give their feedback to the choices and ask questions. Students will contribute to the poll for the final recommendation of the grocery store the family should use.	Completed Information Packet/Guide Lesson Powerpoint Slide Smart Board pen for writing on the slide
CLOSURE: COOL DOWN VIRTUAL EXIT TICKET - (2 minute) Students will complete a virtual exit ticket: Based on what we know now about the grocery stores in our area, do you think the community of Orange is a food desert?	Students will give a 1-2 sentence response answering the exit ticket question and submit online.	Chromebook or Phone

HOMEWORK - Complete 3 ALEK's and iReady Lessons on Solving and Graphing Inequalities

PROCEDURE AND PRACTICE -- DAY 3		
TEACHER'S ROLE **Questions to Ask**	**WHAT ARE STUDENTS DOING?**	**MATERIALS**
LAUNCH/STARTER/ANTICIPATORY SET		
INTRODUCING AND MODELING INFOGRAPHICS (10 minutes) Teacher will display an infographic on sea turtle endangerment and ask students what they notice and wonder about it. Teachers will ask students if they have ever heard of the word "infographic." Teacher will define what an infographic is and what purpose it serves to provide information on real world concepts. Teacher will also discuss the flow of an infographic. Teacher will ask a student to summarize what a food desert is. If a student is unsure or their summary derails, the student may phone a friend. Teachers will set the expectation by telling students they will be using their information from Day 2 to create an infographic for the community about why Orange is a food desert.	Students will analyze the presented infographic and give feedback about what they notice and what they wonder. Students will state whether they have or have not heard the term infographic before. Students will learn what an infographic is and how they can use it to graphically display information in an easy concise way. Students will provide an oral summary of what they remember about food deserts from the video and discussion on Day 2.	Powerpoint Sea Turtle Endangerment Infographic

LEARNING ACTIVITIES		
INDIVIDUAL WORK - GRAPHIC ORGANIZERS (5 minutes) Teacher will hand out Brainstorm Web graphic organizers to students. Teacher will set the expectation by instructing students to individually come up with at least 3 reasons why Orange is a food desert using the map, graph, inequality, and additional data they gathered from Day 2. The data gathered in Day 2, such as cost, detours, food rotation, noting the amount of fast food places along their route, and recalling the short video we watched on food deserts, will help students explain why Orange is considered a food desert in their infographic. Teacher will walk around the room and gauge the student's understanding of food deserts.	Students will fill out their Brainstorm Web with at least 3 reasons why Orange is a food desert using the information from Day 2.	Powerpoint w/ Timer Brainstorm Web Graphic Organizer
PARTNER WORK - DRAFTING A RESPONSE (20 minutes) Teachers will place students in designated pairs. Teacher will instruct students to compare their Brainstorm Webs, agree on at least 3 reasons they can use to explain why Orange is a food desert. Teachers will encourage students to use their information from Day 2 to collaboratively construct a short 1-2 paragraph response to question (1) What makes the community of Orange a food desert? Use information and evidence you have from the previous day to validate your thinking. Teacher will walk around and listen to the conversations happening in pairs, ask guiding questions, and answer any questions students may have.	Students will move about the room to sit with their new partner. Students will compare their Brainstorm Webs to discuss and agree on at least 3 reasons they can use to explain why Orange is a food desert. Students will start to collaboratively construct a 1-2 paragraph response to question (1) on the board. Students will be expected to use the data collected	Powerpoint w/ Timer Completed Brainstorm Web Graphic Organizer Chromebooks - Google Docs

	from Day 2 as evidence in their responses.	
PARTNER WORK - RESEARCHING (20 minutes) Teacher will introduce question (2) In what ways can the family suggest the community get involved to lessen the impact of the food desert in Orange? Teachers will provide students with starter links to websites that discuss what communities like Orange have done to overcome food deserts. Teachers will set the expectation by showing students how to analyze a website for relevant data. Teachers will instruct students to find at most 5 ways, at least 2 ways, communities have worked together to overcome food deserts. Teachers will have students use the information they find to collaboratively write a short 1 paragraph response to question (2). Teachers will remind students how to cite their sources. Teacher will walk around and listen to the conversations happening in pairs, ask guiding questions, and answer any questions students may have.	Students will start to think about how communities can overcome food deserts. Students will use their Chromebooks to access starter links to websites that provide multiple ways communities have tried to overcome food deserts. Students will choose at most 5 ways, at least 2 ways, the community of Orange can overcome living in a food desert. Students will start to collaboratively construct a 1 paragraph response to question (2) on the board. Students will be expected to use the data from their research and cite their sources.	Powerpoint w/ Timer Completed Brainstorm Web Graphic Organizer Chromebooks - Google Docs6 Chromebooks - Starter Links
PARTNER WORK - COLLABORATIVE INFOGRAPHIC (23 minutes) Teacher will have students open Canva and show them how to access an infographic template.	Students will open Canva on their chromebooks and follow the	Powerpoint w/ Timer

Teacher will set the expectation by instructing students to collaboratively create an infographic using the information they have chosen from both Day 2 and the research activity. Teachers will show students how to share the infographic with their partners so they can work on the infographic at the same time. If students want to use the graphs created on Day 2, the teacher can show them how to either create the graph in Canva or how to upload a screen grab of the graph from desmos. Teacher will re-display the infographic along with the labels for flow of data for sea turtle endangerment for students to use as reference. Teacher will also post the infographic layout to Google Classroom.	teachers steps for getting to the infographic templates. (1) Students will share the template with their partner. (2) Students can learn how to import images of their graphs or how to recreate their graphs in Canva. Students will work with their partners to create an infographic using the data they have gathered throughout Days 2 and 3.	Completed Brainstorm Web Graphic Organizer Google Doc Paragraphs Chromebooks - Canva
CLOSURE: VIRTUAL EXIT TICKET - (2 minutes) Students will complete a virtual exit ticket: (3) Things they learned about inequalities and food deserts, (2) Places they can still improve or need help on, and (1) Fun fact or comment they want to share with the teacher about anything they want.	Students will provide answers to the questions on the exit ticket and submit virtually.	Chromebook or Phone
HOMEWORK - Students will be responsible for completing their infographic together. Students will have to upload their graphic organizer, reasoning and finished infographic to Google Classroom. Students will also need to complete a virtual Partner Check once everything is submitted.		