Farm to School

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> **Team 46 Dashboard**

> **Team 46 Presentation**

Team 46 - Data Analytics - Cohort 2

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Overview

Many schools do not have courses that effectively educate their students on agriculture and the importance of preserving and cultivating a garden. When it comes to health and wellness we can all agree that it is a necessary part of living. We want to take a deep dive on the effectiveness of "Agriculture and Farming" programs and truly see if schools should start incorporating these programs across the United States.

Ultimately, our goal will be to demonstrate the effectiveness of certain aspects of the School to Farm program (F2S). The data taken is from the USDA census in 2019 on farm to school programs and is utilized to represent the populations of all participating schools within the United States. Team 46 looks deeper into the demographics, socio economic status, and behavioral data to build discussion on the value of School to farm programs.

65.4% of SFAs reported participating in farm to school activities in SY 2018 – 2019

42.8M students attended SFAs that participated in farm to school activities in SY 2018 -2019

**67,369** schools are featuring local foods on the menu or educating students

First, we see the longevity of these programs and if schools in certain demographics play a role in retention. Based on regions of lower or higher income makes a critical difference on whether schools are able to hold farm to school programs effectively. Next, we break down census metrics based on student knowledge and healthy food choices. Lastly, we look into whether these students have incorporated healthier habits into their daily living.

Goals

1. We seek to explore the benefits of these after school programs and want to conclude that incorporating these programs will lead to a healthier lifestyle
2. Provide insight on the socioeconomic status across the United States
3. Calls to Action: With the information provided we encourage yourself to also make healthier dietary choices

Data Analysis

The first step for our data analysis was to explore the data. We pulled out data from the farm to school census from the U.S Department of Agriculture.
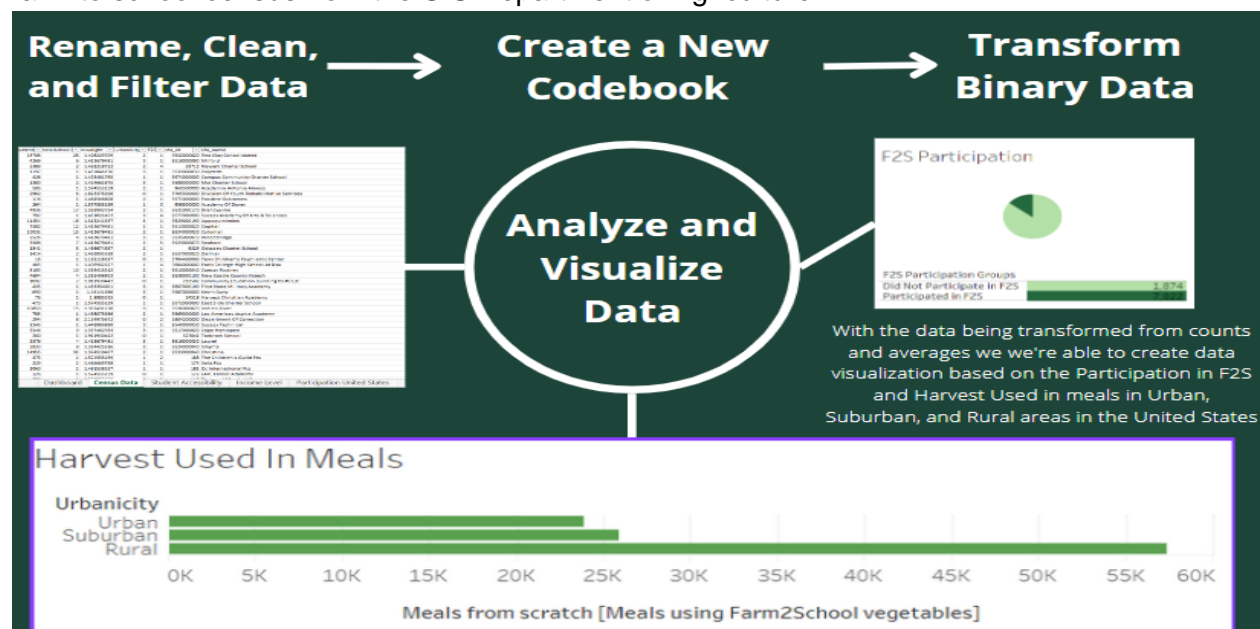
The survey was taken from 12,634 school food authorities (SFAs) across 50 states including Guam, American Samoa, Northern Mariana Islands, the U.S. Virgin Islands, Puerto Rico, and Washington DC. For census purposes SFA's are defined as the entities responsible for school food and food service operations but are not restricted to corresponding to a school district.

School Participation in Farm 2 School Program by State
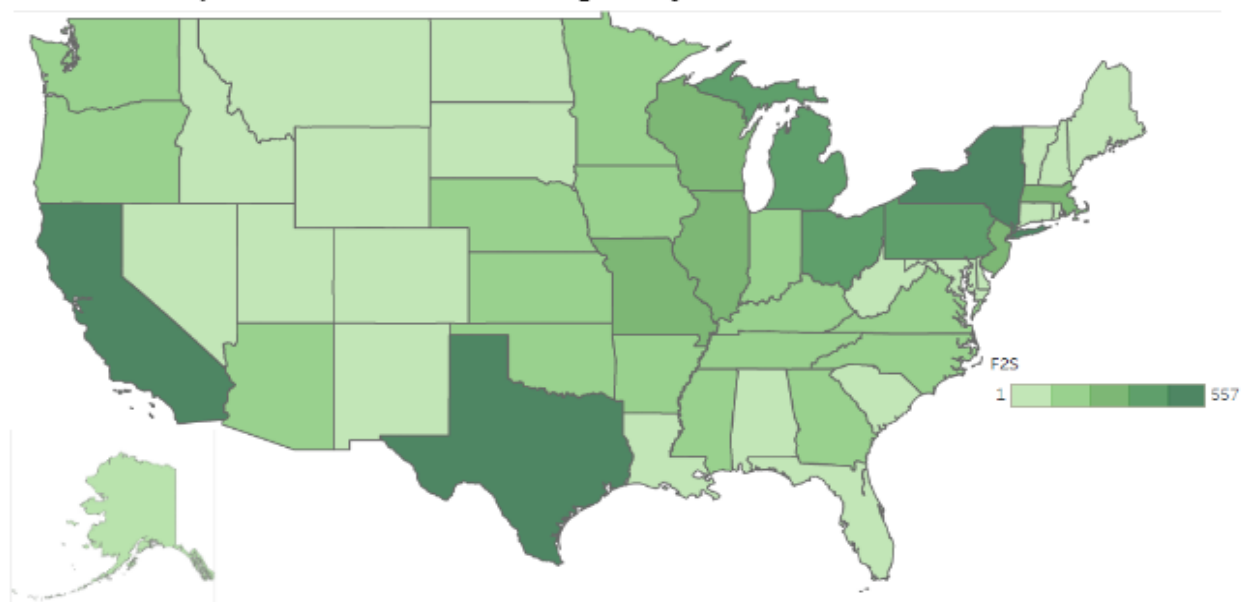
Wrangling and Cleaning

During the data wrangling process, we were met with a few challenges. While our data allowed us to address the measurable factors we were looking for, it included thousands of variables that were not relevant to our question. As a team we set out to dig through data and filter out the data that was relevant to our project. Once we identified the variables, we wanted to utilize we created a new excel table and transferred the data we were using to rule out any confusion. After this, we went ahead and created new labels for the columns containing our data since the data was labeled with codes instead of intuitive variable names.

Exploratory Data Analysis

Teaching students about healthy and local foods and how to grow them had the most significant impact on healthy food consumption among students. Schools observed an over 50% increase in healthy food consumption in students that were taught about healthy foods and how to grow them. Using the Harvest in meals and activities had a less profound but still notable effect on consumption. Urban, Suburban, and Rural schools all benefit significantly from F2S programs regardless of student poverty status
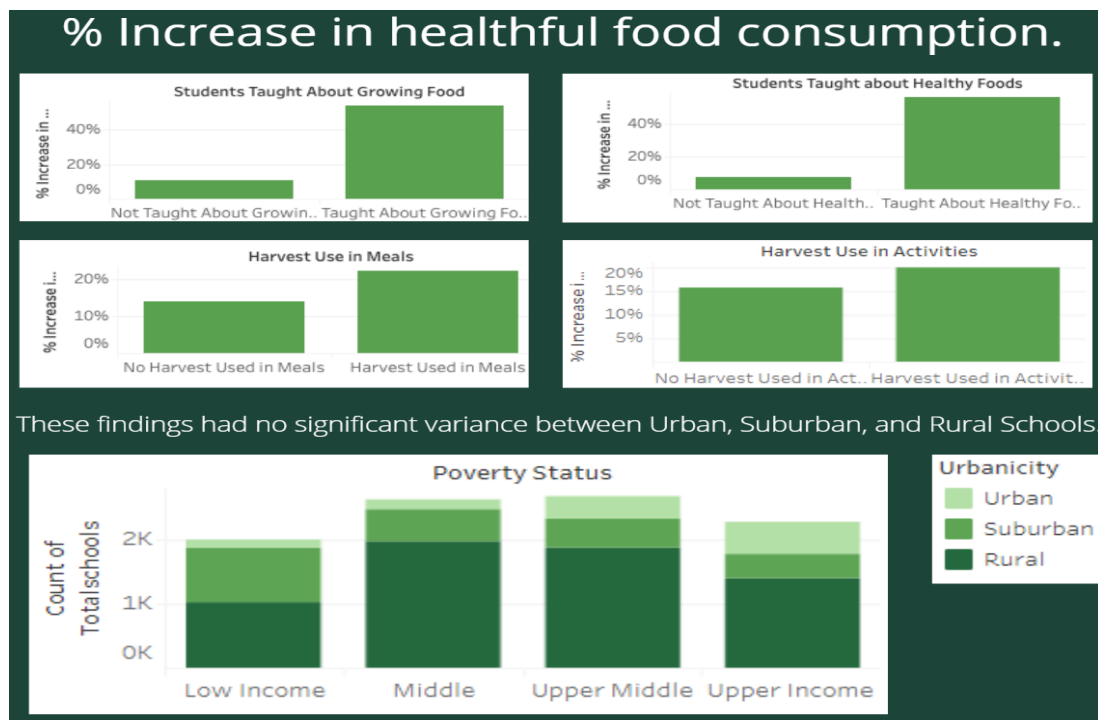
Although most of the schools were rural, the total number of students included within these schools were about the same across each category of urban city. A larger sample size of urban schools would help with the accuracy of the study, but we are confident that over a thousand urban schools from across the country is sufficient to provide accurate results for our analysis.

Description of Dashboard

The dashboard we made displays information about how many schools participated in the F2S program in the United States, how impactful certain aspect of it are on student healthy food consumption, and the socioeconomic status of the students in each school
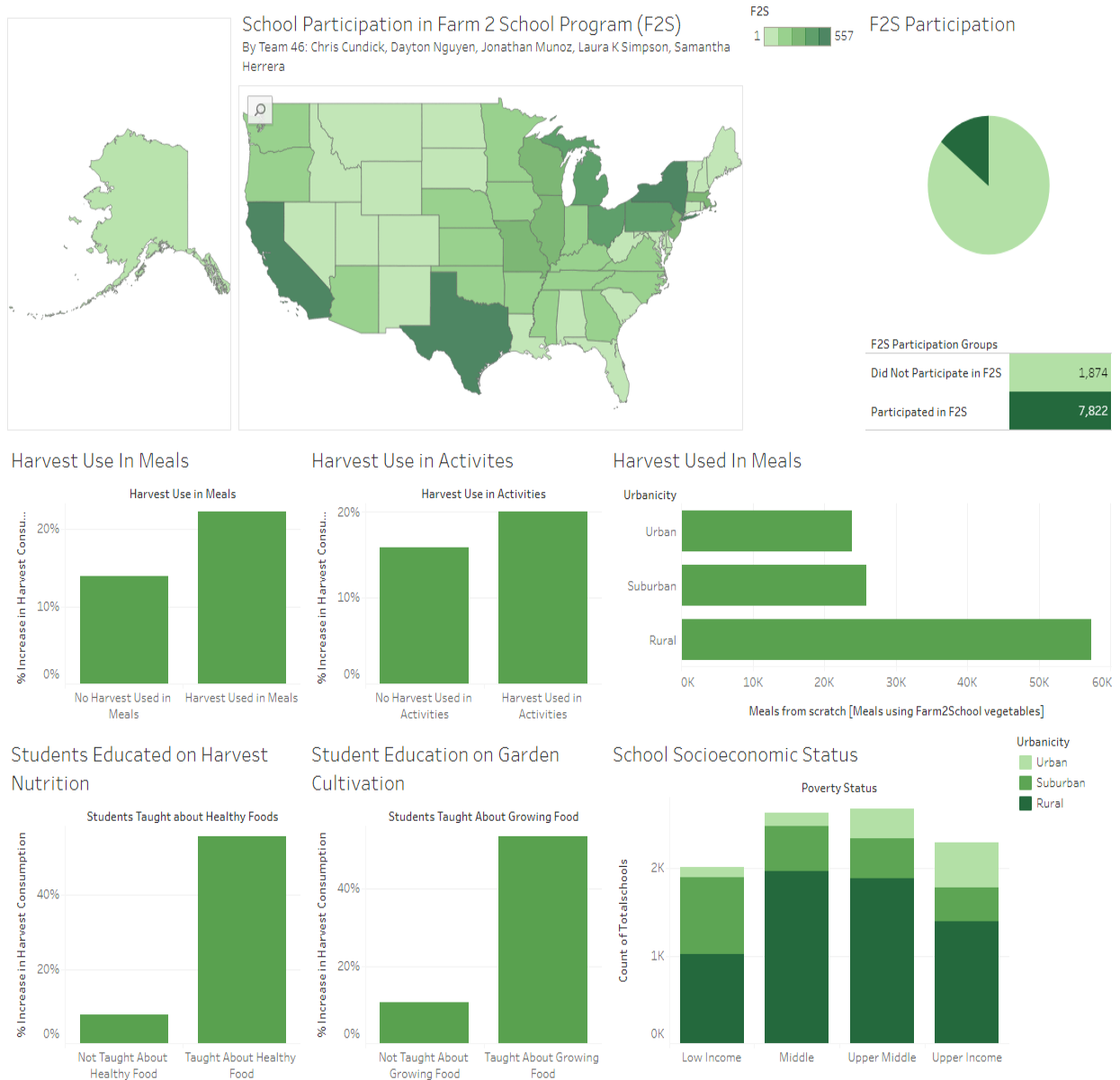

Our dashboard was designed to be highly interactable with each figure able to be used as a filter. For example, a user can apply filters to see how the F2S program compares in low income suburban schools and how many schools and students are included in this demographic.

Dashboard

The primary analysis of this dashboard salient to our question is the percentage increase in observed healthy food consumption among students in each school after the program was introduced. The charts presenting this information include how harvests were used and student education. These charts also depict how schools in F2S participating in a certain aspect of the program compare to those who are not.
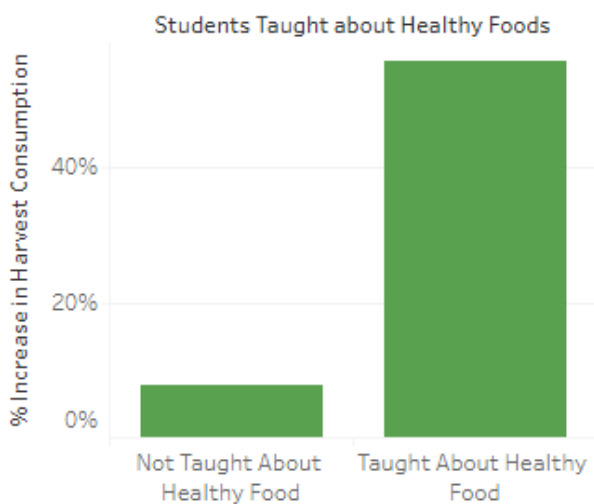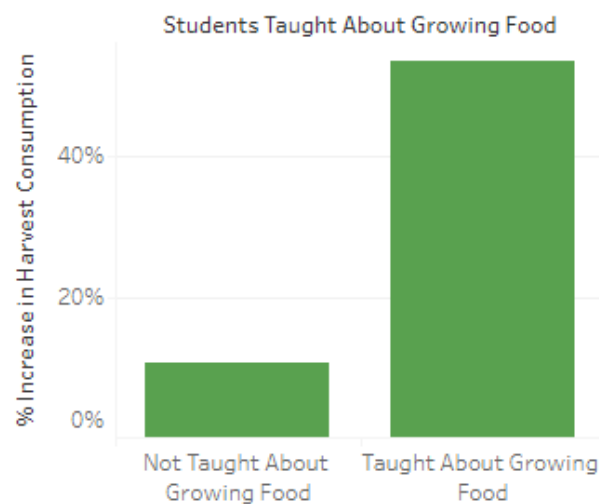
Harvest Use In Meals
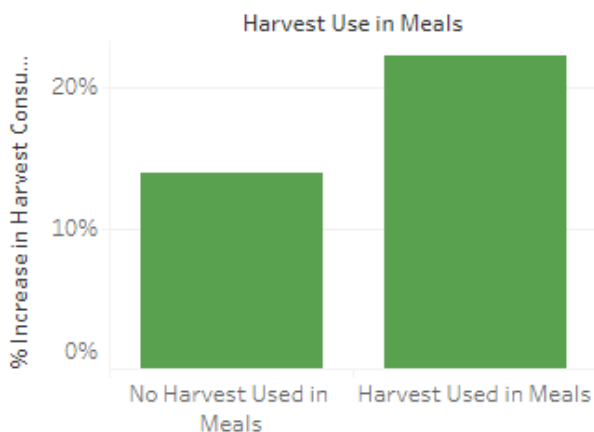
Harvest Use in Activites
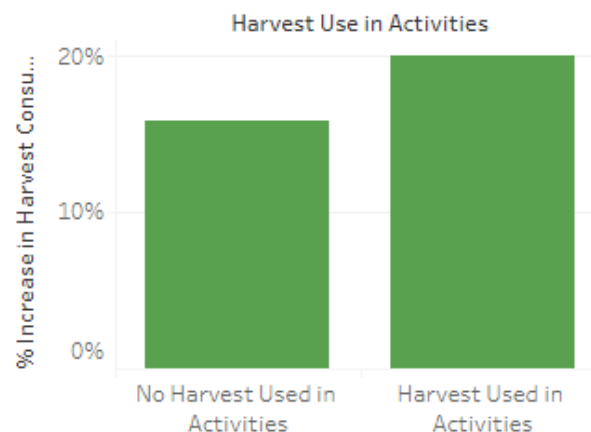
Students Educated on Harvest Nutrition

Student Education on Garden Cultivation

Conclusion and Future Work

We were able to answer the problem we have presented. Based on our analysis, Farm to School programs are significantly impactful on student health choices. Arming the youth with knowledge about local and healthful foods and how to grow them were aspects of the programs that had the greatest impact based on our analysis. Therefore, we recommend more schools focus on implementing methods to teach students about these topics. The use of local foods and healthy meals should be used as a means to enhance teachings about them. Learning about a certain healthful food and how to grow it, being given the opportunity how to grow it, then finally being able to enjoy said food item at after all this would be a good way to implement the items into learning.

Given more time and resources, we would have liked to create a story dashboard with multiple tabs exploring more of the thousands of variables available to us from the USDA dataset we pulled from. A story with tabs focused on specific questions that each relate to one another would have provided more insight into programs like Farm to School and how they compare. Although we are confident in our conclusions, having the time to work with as much data as possible would ensure the robustness of our results

References

Service, U. S. D. A. F. and N. (2021, July 10). *2019 Farm to School Census v2*. Ag Data Commons. Retrieved August 10, 2022, from https://data.nal.usda.gov/dataset/2019-farm-school-census-v2