FOOD EXPLORERS: FAMILY EDITION
A THEORY-BASED TEXT MESSAGE AND SOCIAL MEDIA PILOT INTERVENTION FOR
FAMILIES TO ADDRESS CHILD DIET

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ABSTRACT

A Theory-Based Text Message and Social Media Pilot Intervention for Families to Address Child Diet
(Under the direction of Alice Ammerman)

Health disparities persist in the United States despite numerous policies, interventions, and programs to address the issue. Rural children are at a higher risk for poor health outcomes because of their geographic location, household income, and/or parent education. Incidence of childhood obesity and Type 2 diabetes are directly related to food access and eating behaviors, including vegetable and sugary beverage consumption. In North Carolina in 2011, 74% of children age 0-17 did not consume the recommended daily serving of vegetables, and at least 67.7% of all NC children age 0-17 consumed one or more sugary beverages per day.

Families and school nutrition services (SNS) are key to shaping elementary school children’s eating behaviors, but few published studies have successfully leveraged the strengths of both entities in a coordinated fashion to meaningfully impact child eating behavior. A few interventions have tried to improve urban child eating behavior with mixed success, but barriers in rural settings, which include limited time, transportation, parent education, and funding, make replication of other interventions in rural settings difficult.

To overcome these barriers, we developed a theory- and technology-based nutrition intervention delivered by SNS that targets parents of 4th and 5th grade children. Our objective was to improve child and parent self-efficacy for vegetable consumption by engaging families through a blend of new technologies (text messages and social media).
We employed a mixed-methods community-engagement approach to iteratively develop the program with families from a public charter school serving primarily low-income rural NC children. Program development included in-depth interviews, focus groups, surveys, and a two-week test. The resulting product was tested in a twelve-week randomized delayed intervention control pilot to determine whether the technology program enhanced the impact of the original school-based intervention. Change in child self-efficacy for vegetable consumption was not statistically significant between groups (p=0.407, CI[-12.2,5.20]), but intervention parents increased self-efficacy for vegetable consumption (p=0.000, CI[4.64,14.1]) and proxy efficacy for vegetable consumption (p=0.069, CI[-0.10,2.64]) compared to parents randomized to the control. Parents, children and school staff were enthusiastic about the program; a larger trial should be conducted to better understand FE2 effects.
To D, for everything

To my parents, who shaped my path with incredible experiences, education, love and support

To Alice, for supporting wild, crazy ideas

To Lyra, part of the next generation of Super Women
ACKNOWLEDGEMENTS

This work would not have been possible without the incredible support, enthusiasm, and leap of faith of the staff, students and families at Henderson Collegiate Charter School. These are the individuals who said “Yes!” to a Crazy Lunch Lady. None of my dreams of understanding school nutrition from the inside out, to build truly community-based, practice-based solutions to some of our most frustrating public health challenges, could have been possible if I was not offered the opportunity to experiment and build a 21st Century school nutrition program in Henderson.

Along the way, families and students opened their minds to new ideas, participated in our technology-based research, and laid the foundation for an incredible future of food at Henderson Collegiate, in North Carolina, and beyond. I will treasure the lessons, easy and hard, from my experiences there, and will move everything I have learned forward to build equitable, sustainable, and delicious advances in school nutrition and public health.

And special thanks to JRM – my editor, and so much more.
Food, and access to good food, is a human right. My passion is working at the intersection of child health, schools, and resilient food systems to make access to good food a reality for all children, regardless of race/ethnicity, family income or education, geography, or other characteristics associated with health disparities and disparities in access to fundamental rights.

Food is transdisciplinary, and so the solutions to our food challenges must be transdisciplinary, creative, and out-of-the-(packaged and processed)-box.
TABLE OF CONTENTS

LIST OF TABLES ............................................................................................................xii
LIST OF FIGURES .........................................................................................................xiii
LIST OF ABBREVIATIONS ............................................................................................xiv

CHAPTER I: INTRODUCTION .........................................................................................1
   A. Overview .........................................................................................................................1
   B. Specific Aims .....................................................................................................................3

CHAPTER II: BACKGROUND AND SIGNIFICANCE ......................................................5
   A. Current child eating behaviors ..........................................................................................5
   B. Intervention design .........................................................................................................5
   C. Evidence-based behaviors to improve rural child health ..................................................7
   D. Where to intervene to improve child health .................................................................9
   E. Advantages of social media and new health communication technologies ..................12
   F. Elevating the status of School Nutrition Services .....................................................14
   G. Significance ....................................................................................................................15

CHAPTER III: FOOD EXPLORERS: A SOCIAL MARKETING PROGRAM TO INCREASE STUDENT FRUIT AND VEGETABLE CONSUMPTION ........................................ 16
   A. Overview .........................................................................................................................16
   B. Introduction .....................................................................................................................16
   C. Methods ..........................................................................................................................18
   D. Results ............................................................................................................................24
   E. Discussion .......................................................................................................................29
CHAPTER IV: FOOD EXPLORERS: FAMILY EDITION - DEVELOPMENT OF A THEORY-BASED TEXT MESSAGE AND SOCIAL MEDIA INTERVENTION FOR FAMILIES TO ADDRESS CHILD DIET

A. Overview
B. Introduction
C. Methods
D. Results
E. Discussion

CHAPTER V: FOOD EXPLORERS: FAMILY EDITION - RESULTS OF A RANDOMIZED TEXT MESSAGE AND SOCIAL MEDIA INTERVENTION FOR FAMILIES TO ADDRESS CHILD DIET

A. Introduction
B. Methods
C. Results
D. Discussion

CHAPTER VI: SUMMARY AND RECOMMENDATIONS

A. Summary of Findings
B. On Being a Lunch Lady
C. Recommendations
D. Future Directions

APPENDIX 1: FOOD EXPLORERS

1.1 FOOD EXPLORERS LOGO
1.2 FE PASSPORT, TRADING CARDS, CERTIFICATE, BANNER, POINT-OF-SALE SIGNS
1.3 CHILD INTERVIEWER-ADMINISTERED SURVEY (PRE/POST)
1.4 CHILD IN-DEPTH INTERVIEW (POST)
1.5 PARENT IN-DEPTH INTERVIEW (POST)
1.6 TEACHER/ADMINISTRATOR IN-DEPTH INTERVIEW (POST)
1.7 SCHOOL NUTRITION SERVICES STAFF IN-DEPTH INTERVIEW (POST)……..90
1.8 TEACHER TRAINING GUIDE (SHORT)..........................................................92
1.9 TEACHER TRACKING FORM.......................................................................95
1.10 PROCESS EVALUATION FORM................................................................96

APPENDIX 2: FOOD EXPLORERS: FAMILY EDITION (FE2) DEVELOPMENT
MATERIALS..............................................................................................................98
2.1 FORMATIVE IN-DEPTH INTERVIEW GUIDE (PARENT)..............................98
2.2 FORMATIVE IN-DEPTH INTERVIEW GUIDE (TEACHER).......................101
2.3 FOCUS GROUP GUIDE (PARENT)...............................................................104
2.4 FOCUS GROUP GUIDE (CHILD).................................................................108
2.5 PARENT SURVEY (PRE/POST).................................................................111
2.6 CODEBOOK FOR IN-DEPTH INTERVIEW ANALYSIS............................115

APPENDIX 3: FOOD EXPLORERS: FAMILY EDITION (FE2) INTERVENTION
MATERIALS.............................................................................................................116
3.1 CHILD SURVEY (PRE/POST).....................................................................116
3.2 PARENT SURVEY (PRE/POST).................................................................120
3.3 FULKERSON ET AL. HOME FOOD INVENTORY (HFI) (2008)............125
3.4 POST-STUDY IN-DEPTH INTERVIEW GUIDE (PARENT).....................134
3.5 POST-STUDY IN-DEPTH INTERVIEW GUIDE (CHILD).........................137
3.6 POST-STUDY IN-DEPTH INTERVIEW GUIDE (TEACHER)...................139
3.7 POST-STUDY IN-DEPTH INTERVIEW GUIDE (SCHOOL
NUTRITION SERVICES STAFF)...........................................................................141
3.8 FE2 REMIND TEXT MESSAGE SERVICE ILLUSTRATION.................143
3.9 FE2 FACEBOOK IMAGES.........................................................................145
3.10 FE2 WEBSITE IMAGES..........................................................................148
3.11 FE2 EMAIL NEWSLETTER IMAGES.......................................................152
3.12 TEXT MESSAGE LIBRARY.......................................................................153
3.13 FACEBOOK MESSAGE LIBRARY.................................................................158
3.14 GOAL TRACKING SHEET ........................................................................170
3.15 FE2 PARENT NUTRITION EDUCATION BINDER (INTERVENTION EXAMPLE) .................................................................................................................................171
3.16 CONTROL PARENT NUTRITION EDUCATION BINDER...................182
REFERENCES..................................................................................................190
LIST OF TABLES

Table 3.1 Descriptive Statistics of Rural Elementary School Children .................................................. 19
Table 3.2 Plate Waste Analysis – Descriptive Statistics ........................................................................ 28
Table 4.1 School Demographics ........................................................................................................... 35
Table 4.2 FE2 Program Development Participants ................................................................................. 39
Table 4.3 Parent Formative Survey Demographics .................................................................................. 41
Table 5.1 FE2 Pilot Study Demographics .............................................................................................. 54
Table 5.2 FE2 Pilot Study Results .......................................................................................................... 55
Table 5.3 Sample Text Messages/Facebook Posts .................................................................................... 60
Table 5.4 Mapping Text Messages to Theoretical Constructs ............................................................... 61
Table 5.5 Parent Process Evaluation Data ............................................................................................. 62
LIST OF FIGURES

Figure 1.1 Conceptual Model of the School Nutrition Program Text Message 
& Social Media Family Intervention.................................................................7

Figure 3.1 Food Explorers Conceptual Model....................................................22

Figure 3.2 Food Explorers Study Design............................................................24

Figure 3.3 Mean Change in FV Consumption....................................................26

Figure 4.1 Food Explorers and Food Explorers: Family Edition Components............45

Figure 5.1 FE2 Pilot Study Design......................................................................53
# LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FE</td>
<td>Food Explorers</td>
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<tr>
<td>FE2</td>
<td>Food Explorers: Family Edition</td>
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<tr>
<td>FG</td>
<td>Focus group</td>
</tr>
<tr>
<td>FV</td>
<td>Fruits and vegetables</td>
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<td>FVJ</td>
<td>Fruits, vegetables, and juice</td>
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<td>HFI</td>
<td>Home Food Inventory</td>
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<td>IDI</td>
<td>In-depth interview</td>
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<td>NC</td>
<td>North Carolina</td>
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<tr>
<td>SCT</td>
<td>Social Cognitive Theory</td>
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<td>SES</td>
<td>Socio-economic status</td>
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<td>SNS</td>
<td>School Nutrition Services</td>
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<td>USDA</td>
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CHAPTER I. INTRODUCTION

A. Overview

Health disparities persist for rural children in the United States, who are at elevated risk for poor health outcomes like obesity and Type 2 diabetes because of their geographic location, household income, and/or parent education.\textsuperscript{1-3} Childhood obesity prevention is linked to four key behaviors, and two of those behaviors are diet-related: consuming three or more cups of fruits and vegetables per day, and replacing sugary beverages with sugar-free options.\textsuperscript{4} Many studies have tried to address these eating behaviors to reduce the rates of childhood obesity, but almost none of the research has occurred in rural communities, where poor child health outcomes are higher compared to urban peers.\textsuperscript{5,6}

In North Carolina in 2011, 63% of children age 0-17 did not consume the recommended daily serving of fruits and vegetables, and 74% of children did not consume the recommended daily serving of vegetables. In addition, at least 67.7% of all NC children age 0 - 17 consumed one or more sugary beverages per day.\textsuperscript{7} Fruit/vegetable (FV) and sugary beverage consumption are two important eating behaviors associated with children’s poor health outcomes (including obesity and Type 2 diabetes), and a variety of mostly urban-focused interventions have tried to improve elementary child eating behavior -- in the classroom, the cafeteria, or at home -- with mixed success.\textsuperscript{4,8-12} Children’s poor eating behaviors and determinants of poor eating behaviors, including self-efficacy for FV consumption, persist, especially in rural, low wealth communities, despite growing awareness of the importance of healthy eating.\textsuperscript{13} And there is a paucity of intervention research addressing these issues in rural communities. Innovative strategies are needed to produce sustainable behavior change in young children living in non-urban environments.
Families and school nutrition services (SNS) are two key groups that shape elementary school children’s eating behaviors and child health. Families and SNS have each been the target of policies and interventions to improve child eating behavior, but few published studies have successfully leveraged the strengths of both entities in a coordinated fashion to impact child eating behavior in a meaningful and sustained way. Recent changes to USDA guidelines that govern national school meal programs have improved the variety and quantity of fruits and vegetables, as well as overall meal patterns, available to urban children through school meal programs. But outdated negative perceptions of school meals persist among children and parents alike; families continue to blame school food, and SNS continue to blame families, for children’s poor eating behaviors and health outcomes.

Limited research has only demonstrated that these changes have not made student diets worse in urban settings; no data are available to understand their impact of the guidelines (positive or negative) in rural communities. The home environment, as well as attitudes toward and actual consumption of school meals, temper the effects of federal policy changes. One recent study in rural North Carolina (NC) schools (Food Explorers, “FE”) did have some positive and protective effects on child exposure to FV during school lunch (Thayer, submitted). A greater effect on child FV preference, and self-efficacy to consume FV and low-sugar beverages, might be achieved with the addition of a family component.

The United States Department of Agriculture (USDA), through the 2010 Healthy Hunger-Free Kids Act, has charged SNS with nutrition education for students and families, but local staff in rural schools often do not have the time or training to create or deliver evidence-based nutrition programming. A technology-based nutrition intervention, targeting families and marketed as a product of SNS, is a unique approach that could be accessed by most NC families, and it provides an opportunity to circumvent some of the barriers commonly associated with nutrition interventions in low SES and/or rural communities (e.g. transportation, limited time, limited local nutrition knowledge). A SNS technology-based intervention for families may
enhance the modest effects of FE, and it may also position NC SNS as a leader in family nutrition education to fulfill the USDA’s education mandate.

What follows in Chapter I are the specific aims of this research, to develop a technology-based nutrition intervention (FE2) to increase the effects of a previously developed social marketing nutrition intervention implemented in rural elementary schools. Chapter II includes background information that builds the case for a need for, and potential significance of, such programs in rural North Carolina. Chapter III reports on the outcomes from the initial FE school-based study, Chapter IV describes the community-based approach to developing the FE2 technology-based program, and Chapter V reports on the outcomes from the initial twelve-week trial of the FE2 intervention. Chapter VI includes a summary of findings, recommendations, and future directions for research.

B. Specific Aims

OVERALL AIM: Determine whether a theory-informed, technology-based nutrition intervention, targeting families with messages “from” SNS designed for 4th and 5th grade students/families (FE2), will enhance the impact of a streamlined school-based Food Explorers intervention (FE) by increasing child self-efficacy for vegetable consumption (primary outcome), and child self-efficacy for low-sugar beverage consumption (secondary outcome).

AIM 1. Formative Research: Determine through focus groups, in-depth interviews, and surveys: (1) the community context (including local and regional culture and preferences) that can inform and improve targeting of messages and materials; (2) the community’s reactions to the original Food Explorers program (style, design, content), and how the original FE project should be adapted and streamlined for this community context; (3) the message source(s) families prefer to receive child eating and nutrition information from SNS (e.g. the voice of the SNS director, the voice of the local SNS manager, an independent nutrition expert, a USDA-affiliated nutrition expert, etc.); (4) what social media channels of communication (text message; Twitter; Facebook; website; etc.) families prefer, and preferred
communication frequency; (5) what specific nutrition and parenting knowledge/skills families want from a SNS technology-based program; (6) what nutrition/parenting knowledge content experts (including nutrition experts, parenting experts, state-level SNS staff, and others) believe families could benefit from in this kind of intervention.

AIM 2. Intervention Development: Develop a 12-week theory- and technology-based family nutrition intervention delivered “from SNS” (FE2) that improves child self-efficacy for vegetable (and low-sugar beverage) consumption, as well as parent self-efficacy (and parent proxy efficacy for their child) for vegetable (and low-sugar beverage) consumption.

Subaim 2a. Message Testing/Pilot: Assess acceptability, perceived effectiveness, feasibility, and cultural relevance of FE2 intervention components, communication tools, and proposed measures with a sample of the target population in a two-week trial.

AIM 3. Intervention Impact: Determine whether a 12-week theory-informed and technology-based family nutrition intervention delivered “from SNS” (FE2) to 4th and 5th grade students/families results in the following, as compared to 4th and 5th grade students/families randomized to a delayed FE2 intervention control:

Primary outcome: Increased child self-efficacy for vegetable consumption.

Secondary outcomes: Increased child self-efficacy for low-sugar beverages; increased child preferences for vegetables; improved parent self-efficacy for vegetable/low-sugar beverage consumption.

Hypothesis: Relative to the standard FE program, students randomized to the FE2 intervention will increase self-efficacy for vegetable consumption, and parents will increase self-efficacy for vegetable consumption.
CHAPTER II. BACKGROUND AND SIGNIFICANCE

A. Current child eating behavior

In North Carolina in 2011, 63% of children age 0 – 17 did not consume the recommended daily serving of fruits and vegetables (74% of children did not consume the recommended daily serving of vegetables). In addition, at least 67.7% of all NC children age 0 - 17 consumed one or more sugary beverages per day.\(^7\) Nationally, 78.4% of males and 80.6% of females age 9 - 13 did not meet minimum fruit recommendation; 96.2% males and 94.6% females did not meet minimum recommended vegetable intake (2001-2004).\(^1\) As children age, fruit and vegetable consumption tends to decrease, not increase.\(^8\)

In addition, 86.0% of males and 92.0% of females age 9 - 13 exceeded added sugar guidelines.\(^1\) Overall, soda consumption is decreasing in the US, but as children age they increase sugary beverage consumption, and sports/energy drink consumption has tripled among adolescents between 2000 and 2008.\(^18\) Children in lower income/lower education/racial minority households are also more likely to consume sugary beverages.\(^18\)

B. Intervention Design

B1. Community-based research

Community-based research should originate from needs demonstrated by the community. In our work with parents, teachers, SNS, and students in several Tier 1 rural counties in NC, adults have continually raised concerns about the health of the children in their community. North Carolina residents are looking for help, but currently available resources and tools are not meeting the needs of low-income rural communities. North Carolina SNS and families want to support and promote child health across the state through cost-effective, replicable, and evidence-based programs – this research is a response to that challenge. The
formative phase of development for both Food Explorers and Food Explorers: Family Edition included iterative work with stakeholders to build a community-responsive program, similar to other community-supported health intervention development and research.\textsuperscript{19}

\textbf{B2. Conceptual Model – Theory Base}

Intervention development was guided by a conceptual model grounded in Social Cognitive Theory (SCT), plus two additional behavior change constructs (Figure 1). The intervention capitalized on social media and text messaging tools to bolster families’ observational learning, facilitation, self-efficacy, awareness, and social support. Nutrition interventions are more effective when intervention development is guided by theoretical and conceptual models.\textsuperscript{20}

\textit{Reciprocal determinism}: Behavior is the result of interactions between individuals and their environment. FE2’s text message and social media components included a variety of messages and tools that empower participants to understand and/or make changes to personal characteristics, behavior, and environment.

\textit{Facilitation}: Text message and social media tools facilitated both learning and practice related to key behavior change strategies.

\textit{Observational Learning}: The social media component included a variety of tools to help parents learn from peers and content experts, such as sharing photos and short stories with other participants (e.g. Facebook wall) and prompts via text message to participants to view brief video clips (e.g. a YouTube cooking demonstration).

\textit{Goal setting/self-regulation}: Participants practiced goal setting and techniques to maintain accountability. Participants were prompted to report on their goals once per week, via text and social media.

\textit{Self-efficacy}: Messages and program content were designed to increase self-efficacy for child healthy eating, parent/family healthy eating, and parent nutrition knowledge.

\textit{Consciousness Raising}: Emphasis was placed on the most current evidence-based nutrition science.

\textit{Social Support}: Parents shared stories, recipes, and more via social media with other participants; the program encourages families to interact to increase social support online. The study also included messages about how parents could build successful social support networks offline.

These theoretical constructs guided initial program planning, and were revisited at each step in program development.
C. Evidence-based behaviors to improve rural child health

C1. Eating behaviors

Higher fruit and vegetable (FV) consumption is associated with reduced risk of chronic disease, including cardiovascular disease and some cancers, in addition to healthy weight management.\textsuperscript{9,10,21,22} Fruit/vegetable consumption and sugary beverage consumption are two key child diet behaviors associated with immediate health outcomes in children, and future health outcomes when children become adults. The American Medical Association identified four key behaviors associated with prevention and treatment of child and adult obesity: (1) 60 minutes of physical activity per day; (2) eating 3 or more cups of fruit and vegetables per day; (3) replacing sugary beverages with sugar-free beverages; and (4) limiting screen time (computer, television, etc.) to a maximum of 2 hours per day.\textsuperscript{4}

Two of four key behaviors are diet-related, and current child diet trends suggest these are behaviors ripe for intervention to improve child health outcomes, especially in rural settings. For example, recent research from Cook et al suggests increased non-starchy FV consumption is associated with better immediate health outcomes in youth (reduced liver adiposity and
increased insulin sensitivity)\textsuperscript{11}, in addition to long-term associations with reduced overweight/obesity and related diseases. And there is ample evidence that sugary beverage consumption is associated with increased obesity risk and decreased micronutrient intake in children.\textsuperscript{12, 23, 24} Intervening on these two diet behaviors is even more important in rural areas because, to date, relatively few studies have been conducted in these communities, even though children living in rural areas are more likely to be overweight and obese and more likely to engage in poor diet behaviors, when compared to their urban and suburban peers.\textsuperscript{2, 3, 13}

The newly-announced Dietary Guidelines for Americans (DGA) 2015 draws on some of this literature and also emphasizes the need for increased vegetable, fruit, and low-sugar beverage consumption.\textsuperscript{25} These new guidelines govern SNS programs and the dietary behavior and nutrition education of millions of Americans, so it is timely to address some of these concerns now in a technology-based intervention for families. The DGA suggest several ways to address child dietary behavior at the individual, family, school, and community levels. At the school/community-level, the DGA calls for the design and implementation of healthier environments, healthier social norms, greater focus on prevention, and dissemination of evidence-based nutrition information over pop-science and outdated standards. All of these concepts can be addressed in the program outlined below.

**C2. Self-efficacy for FV/low-sugar beverages**

Actual behavior change is the ultimate goal of nutrition interventions; certain determinants of behavior change highlight trends suggesting positive impact on diet change without actually measuring diet change directly. Eating behaviors are preceded and predicted by several factors, including self-efficacy (SE) for FV consumption (and low-sugar beverage consumption) and preference for FV consumption (and low-sugar beverage consumption). Recent research indicates that self-efficacy and outcomes expectations are two constructs from social cognitive theory most closely associated with diet behavior change.\textsuperscript{26} Self-efficacy has been proposed as a mediator of diet behavior change, although directionality of effect is less
clear. Self-efficacy has successfully been targeted in a variety of school and technology-based internet interventions for children. For example, a 2008 internet-based intervention for 8 - 10 year old female African-American children showed a positive impact on SE for fruit, vegetable, and juice (FVJ) consumption, as well as actual FVJ consumption.

Self-efficacy for fruit and vegetable consumption are related but separate constructs, and while historically they were measured in tandem, recent research suggests there are enough differences that a program's impact may be greater for one over the other. Self-efficacy for non-starchy vegetable consumption may be more difficult to increase than SE for fruit consumption among rural, low-SES students and their families; actual consumption of non-starchy vegetables is considerably lower for these groups as compared to fruit consumption. As such, the pilot study described below addresses both fruit and vegetable consumption, but the primary outcome of interest is SE for vegetable consumption.

D. Where to intervene to improve child health

D1. Why school meal programs are important

Schools are a common site to intervene to improve child eating behavior, in part because most children are accessible through schools and schools offer an existing structure through which to deliver interventions. In 2014, over 30 million students (roughly 67% of the total school-age population) participated in national school lunch programs, and almost 900,000 (more than 50% of total NC school-age population) participated in NC school meal programs. Experts have identified schools as important intervention areas, and recent changes to federal school meal programs were made specifically to improve child dietary behaviors. While some evidence exists for positive effects of these federal changes on fruit selection and vegetable consumption in urban schools, there remains a paucity of evidence for improvements in rural communities. Limited published evidence, and the author’s own experience with NC SNS, does suggest that school meal programs provide more nutritious meals than lunches sent
from home in rural NC, but students’ school meal consumption is not enough to improve child
diet behaviors and child health overall.\textsuperscript{16}

In an effort to extend SNS’s positive effects on child health beyond the cafeteria, federal
nutrition policy mandates that school meal programs engage in nutrition education for students
and families, but the majority of school meal programs have limited tools, time, knowledge, and
resources to actively engage these groups in meaningful, evidence-based programming.\textsuperscript{35} For
example, NC’s Department of Public Instruction (DPI) School Nutrition website has a page for
“Nutrition Education Resources for Schools” with limited and static information, including links
for fruit and vegetable fact sheets, local wellness policy information, basic classroom nutrition
education curricula, school gardens information, and guides for staff wellness.\textsuperscript{36} Although many
of the resources are designed to be delivered through classrooms, most NC school meal
programs do little more than put up posters and link to this resource page from their own
webpages. Classroom teachers are often overwhelmed with other state and federal
requirements and have limited interaction with SNS that might otherwise foster collaborative
efforts. NC DPI and federal policy do not make much effort to describe how to implement
nutrition education through schools, which is a lost opportunity to engage students and families
in important learning and behavior change.

D2. Why families are important

Schools are one important place of influence on child diet behavior; families are another.
A review of experimental trials and correlative studies with children and families found the
following from family interventions had positive effects on child diet behavior for children age 8 -
12: \textit{reward/positive reinforcement} (a parental strategy); \textit{parent involvement} (in prevention
programs); \textit{parental monitoring of child diet}; \textit{lack of restrictive control over food choices}; \textit{parent’s
and sibling’s increased intake of healthy foods and reduced intake of unhealthy foods}; and \textit{low
pressure to consume foods}.\textsuperscript{37} Other reviews suggest that parent obesity status is also
correlated with child obesity status, and parent-supported healthy eating and physical activity is
associated with positive diet and physical activity behaviors in young children.\textsuperscript{38,39} And another recent study suggests that family and home environment account for more than 50\% of effects of an online intervention to improve child diet in 4\textsuperscript{th} and 5\textsuperscript{th} grade students.\textsuperscript{5} Clearly, families are an important player in child healthy diet behavior. Families need effective, engaging, evidenced-based tools to help promote child health.

D3. Combining family and school meal programs

Previous interventions tended to work with schools OR families; a few combined programs were implemented in urban settings, but they presented some barriers to implementation in more rural communities.\textsuperscript{6,14} In a review of 15 combination school and family intervention programs, authors cited seven behavior change techniques characteristic of effective interventions.\textsuperscript{14} These include:

\textit{Behavior Change Techniques (*indicates most common):}

1. Prompt intention formation
2. Provide general information on behavior-health links*
3. Provide instruction
4. Model/demonstrate the behavior
5. Prompt self-monitoring of behavior
6. Prompt practice*
7. Plan social support/social change*

In addition to targeting these behavior change techniques, theory-based programs tended to have greater effects than non-theory-based interventions. Social cognitive theory was the most commonly cited theory in the review, with combination school/family programs most focused on the construct reciprocal determinism (the interaction between behavior, environments, and personal factors).\textsuperscript{14} The majority of combination school/family interventions targeted urban/suburban students, but long distances from homes to schools are a major barrier to engaging rural families in similar nutrition and behavior change programming. So the question remained: how to reach families through schools in rural environments?
E. Advantages of social media and new health communication technologies

The widespread use of new technologies, including texting and social media, is a relatively recent phenomenon, and it is unclear how these technologies could improve access to and engagement with important nutrition information and behavior change education. New research is needed to understand how rural families might engage with and learn from diet behavior change programs that use such new technologies and tools. The reasons in support of using these new technologies are three-fold: (1) they allow for *near-universal access* to programs and information, regardless of transportation, financial, and time-related barriers in rural communities; (2) they allow for *fast, easy, and wide-spread dissemination* of information; and (3) they tap into *current trends in the general population’s use of such technologies*, meeting families and students where they are comfortable (online/on their phones).

E1. Mobile phone and text message use

Mobile phones are fast becoming ubiquitous in American households. As of January 2014, Pew Internet Research studies indicated at least 90% of American adults, regardless of race/ethnicity, have a cell phone and 58% of American adults have a smartphone. 84% of households earning less than $30,000 per year and 88% of individuals living in rural communities own a cell phone, suggesting most families in rural NC have access to mobile phone technology. Although smartphone ownership is less than total mobile phone ownership, the rate of increase in smartphone ownership far outpaces the rate of increase in general mobile phone ownership. Black and Latino adults are more likely than Whites to own a smartphone (59%, 61%, and 53% respectively); only 47% of households earning less than $30,000 per year have smartphones; and 43% of rural adults own smartphones as of January 2014.

In 2011, at least 73% of adults with mobile phones texted at least once a week, and the average text message user sent or received an average of 41.5 messages per day (mean 41.5 messages; median 10 messages per day). Trends in mobile phone texting suggest that text message use has only increased since 2011. Actual mobile phone use in the research
community was assessed during formative research; previous interactions in this community suggested mobile phone ownership and use was on par with national trends.

E2. Social media use

Social media is yet another way to access families where they are, namely online. Social media programs offer the potential to engage families directly with evidenced-based programming and allow for social support and observational learning regardless of individuals’ actual location. As of September 2014, Pew Internet Research data indicated 81% of American adults use the internet. Of those online adults, 71% use Facebook; 28% use LinkedIn; 28% use Pinterest; 26% use Instagram; and 23% use Twitter.42

Where are people accessing social media sites? As of May 2013, 63% of mobile phone users access the internet from their phone. As of September 2013, at least 70% of Americans had broadband internet at home, but that access is not equal across groups: 74% of Whites, 62% of Blacks, and 56% of Hispanics have internet access at home; 52% of households earning less than $30,000 per year have broadband internet at home, and 60% of rural residents have broadband at home.43 What does this mean for a text message and social media intervention in rural NC? Formative research determined what the internet access and social media use looks like in the target community; anecdotal evidence suggested internet access was not a barrier to participation for this community. Trends in mobile internet and broadband internet use suggest more and more of the U.S. population gains access each year, so the development of an effective text message and social media program now will position the program for widespread dissemination as more rural families gain easy access to home and mobile internet.

E3. Advantages of new health communication technologies

Although behavior change techniques listed above are known to increase adoption of the desired diet behaviors, many traditional school and/or family interventions to date have not shown meaningful change in child diet attitudes/beliefs/behavior. Studies are just beginning to
take advantage of mobile phone technologies to improve eating behaviors and health outcomes for children and families, and the research and pilot study described in Chapters IV and V add to a growing body of evidence and best practices for family nutrition interventions.\textsuperscript{44, 45} Several systematic reviews of text message (SMS) programs aimed at behavior change suggest that this technology offers several advantages for behavior change interventions. According to Bauer et al, text messaging’s advantages include: “(1) SMS is accessible at almost any time and everywhere, (2) SMS is a fast and interactive medium, (3) SMS can be used with little effort, and (4) communication via SMS is inexpensive”.\textsuperscript{46} Text message and social media technologies offer the opportunity to bring nutrition interventions to families in real time, wherever they are, instead of having to attend in-person intervention sessions that may be precluded by limited transportation, time, and/or resources in rural NC.

A text message and social media intervention is one innovative method to overcome barriers to traditional diet intervention delivery and success because text messages can also be a “push technology” that demands user engagement and attention, and social media can be a place for comfortable and sustained observational learning and social support beyond the limits of traditional text message programs.

**F. Elevating the status of School Nutrition Services**

The importance of child participation in school meal programs (as opposed to packing lunch from home), in order to improve diet during the school day in rural communities, is described above; one way to increase child participation in SNS programs is to elevate the status of SNS in the eyes of students, families and the community. If SNS programs are seen as a trusted source of nutrition and health information, as well as a provider of nutritious and appealing foods, more students and families will participate in the programs. This will simultaneously improve children’s diet and increase revenue for SNS programs, which can be fed back into school meal programs to make even more positive changes.
For that reason, this pilot study, using text message and social media to improve student and family diet attitudes/beliefs/behaviors, was delivered using the “voice” and personae of someone from SNS (the details of the messaging and channel will be determined during formative research). This provides the opportunity to combat the negative impressions SNS and recent changes to federal meal programs have left on students and families in rural NC, and fulfills SNS’s mandate to provide families with nutrition and diet behavior education.

G. Significance

North Carolina’s rural children are at higher risk for poor eating behaviors and poor health outcomes when compared to their urban peers. Few studies have successfully leveraged the influential power of schools and families to address child eating behaviors comprehensively, and new mobile technologies may be part of the solution to successful nutrition behavior intervention work in rural North Carolina. I developed school- and family-focused interventions, guided by community-informed program design, to address child eating behavior in rural elementary school children. Development and implementation of a successful nutrition intervention program could result in improved rural child health, engender greater family and school appreciation of and support for SNS programs, and serve as a model for future intervention work with rural families and schools.
CHAPTER III. FOOD EXPLORERS: A SOCIAL MARKETING PROGRAM TO INCREASE STUDENT FRUIT AND VEGETABLE CONSUMPTION IN SCHOOLS

A. Overview

In Chapter III, I review the outcomes from the initial Food Explorers study, which was a BlueCross BlueShield Foundation of North Carolina-funded project designed to increase elementary school student consumption of fruits and vegetables during lunch at school. I served as the project manager coordinating efforts between UNC-Chapel Hill's Center for Health Promotion and Disease Prevention, UNC-Chapel Hill’s School of Media and Journalism, and Rockingham County Schools to develop a social marketing program that engaged students, teachers, and school nutrition services to promote child healthy eating behaviors. The research team included Jayne Jeffries, Heidi Hennink-Kaminski, Seth Noar, and Alice Ammerman.

B. Introduction

Childhood obesity, and subsequent adult obesity and associated medical complications, remain challenges for our national fiscal, social, and physical health. Healthy eating behaviors are associated with better health outcomes, but children living in rural communities are more likely to have poor eating behaviors and are at greater risk for obesity compared to their urban peers. In North Carolina (NC), rural children are 50% more likely to be obese compared to their urban peers. Fruit and vegetable (FV) consumption is one healthy eating behavior associated with better health outcomes for children, but in NC 63% of children (<18) do not consume the recommended daily servings of FV.

Schools are a common site for interventions to improve child eating behavior, in part because most children attend schools and schools offer existing infrastructure for delivering interventions. In 2014, over 30 million students (roughly 67% of the total school-age population)
participated in national school lunch programs, and almost 900,000 (more than 50% of total NC school age population) participated in NC school meal programs. Schools are important individual and environmental intervention areas, and recent changes to federal school meal programs were made specifically to improve child dietary behaviors. While some evidence exists for positive effects of these federal changes on fruit selection and vegetable consumption in urban schools, there remains a paucity of evidence for improvements in rural communities. In addition, there is continued concern that current guidelines are difficult for some schools to implement, and the guidelines are sometimes blamed for declining meal participation because students perceive the new foods as unappealing.

To improve child eating behaviors in schools, we developed Food Explorers (FE). FE is a social marketing intervention that combines feasible, evidence-based intervention strategies at the individual level with health-promoting behavioral economic-based modifications in the cafeteria environment. Formative research guided by the socio-ecological model (SEM) and the integrated behavioral model was conducted to develop the program (Hennink-Kaminski, in process).

Previously tested individual-level interventions have used classroom curricula to teach students about health-promoting behaviors, employed token reinforcement to increase FV consumption, and promoted teacher modeling of daily fruit consumption. FE included similar individual-level strategies to increase FV consumption by offering free tastes of menu items, having nutrition staff verbally encourage students to try FV, and incentivizing students to try FV using intra- and inter-individual competition, games, and rewards (e.g. classroom celebrations).

Successful environmental changes in prior studies have included increasing healthy food availability, point-of-purchase promotional strategies, and training and technical assistance for school food service professionals. School-level environmental changes in FE include promoting FV in the cafeteria, increasing FV variety, making FV easier to eat (e.g. slicing
apples), and preparing visually appealing and delicious FV. Feasible and practical changes based on previously successful interventions include placing point of sale (POS) promotional signs above foods to make them more exciting to children, teaching school nutrition staff to create and prepare new foods, and making FV easier to eat through alternative serving methods.

The purpose of this research was to develop and test a school-based food and social marketing intervention to increase child consumption of FV during lunch in four rural elementary schools. We wanted a program that addressed actual consumption behavior, not just FV selection on the lunch line. NC’s Department of Public Instruction, along with a state and a local foundation, pooled resources and support around this project to facilitate implementation of new USDA guidelines. The primary research question was, “To what extent was the Food Explorers intervention positively associated with increasing FV consumption among students in the intervention (vs. control) elementary schools during lunch?” We predicted that a school-based intervention, informed by behavioral and organizational theory and requested by key stakeholders in rural NC communities, would increase elementary school child FV consumption during school lunch.

C. Methods

In order to increase child consumption of FV during school lunch, we used community-informed intervention design, with stakeholder and expert interviews, to develop this school-based intervention to increase child consumption of FV during lunch. We used a mixed-methods, quasi-experimental design to measure and evaluate the reach, impact, efficacy, and feasibility of a one year pilot trial of the intervention program in four rural North Carolina elementary schools. The research was conducted between April 2013 and May 2014.

Participants: The research was conducted in a high-poverty rural county in NC, with 29% of children living in poverty, an unemployment rate of 9.4%, and 60% of students k-12 eligible for free and reduced lunch (as of 2012, when this project was initiated). In this
county, more than 50% of children ages 2-18 years are overweight or obese. Prior to researcher involvement with the study, an advisory group, which included the county’s school nutrition director, superintendent, and representatives from the funding agencies, selected four (of 16) rural elementary schools (grade k-5) to participate in the intervention development and testing. Schools were selected to reflect the diversity of schools in the county: two buildings with new (post-2010) kitchen facilities and two buildings with old (pre-1990) kitchen facilities; one new and one old building were located in more rural areas, and the others were located in small towns. The research team matched four control schools to the four intervention schools based on school size, family socioeconomic status, age of school facilities, and student racial/ethnic makeup (Table 3.1). After baseline data collection in April 2013, one control school merged with one intervention school; consequently, all subsequent data analyses were conducted using four intervention and three control schools.

Table 3.1 Descriptive Statistics of Rural Elementary School Children

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Baseline (n=300)</th>
<th>Midpoint (n=198)</th>
<th>Follow-up (n=171)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Food Explorers Program</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>142 (47%)</td>
<td>108 (55%)</td>
<td>93 (54%)</td>
</tr>
<tr>
<td>Control</td>
<td>158 (53%)</td>
<td>90 (45%)</td>
<td>78 (46%)</td>
</tr>
<tr>
<td><strong>Frequency of School Lunch</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>17 (6%)</td>
<td>22 (12%)</td>
<td>17 (10%)</td>
</tr>
<tr>
<td>Once a month</td>
<td>7 (3%)</td>
<td>5 (3%)</td>
<td>7 (4%)</td>
</tr>
<tr>
<td>2-3 times per month</td>
<td>10 (4%)</td>
<td>7 (4%)</td>
<td>3 (2%)</td>
</tr>
<tr>
<td>Once a week</td>
<td>11 (4%)</td>
<td>10 (6%)</td>
<td>5 (3%)</td>
</tr>
<tr>
<td>2-3 times per week</td>
<td>30 (11%)</td>
<td>19 (12%)</td>
<td>14 (9%)</td>
</tr>
<tr>
<td>4-5 times per week</td>
<td>206 (73%)</td>
<td>113 (64%)</td>
<td>118 (72%)</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>198 (66%)</td>
<td>136 (70%)</td>
<td>123 (72%)</td>
</tr>
<tr>
<td>Black</td>
<td>84 (28%)</td>
<td>43 (22%)</td>
<td>43 (25%)</td>
</tr>
<tr>
<td>Other</td>
<td>16 (5%)</td>
<td>14 (8%)</td>
<td>5 (3%)</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>157 (53%)</td>
<td>106 (55%)</td>
<td>93 (54%)</td>
</tr>
<tr>
<td>Female</td>
<td>141 (47%)</td>
<td>87 (45%)</td>
<td>78 (46%)</td>
</tr>
<tr>
<td><strong>Grade</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st</td>
<td>69 (23%)</td>
<td>2 (1%)</td>
<td>6 (3.5%)</td>
</tr>
<tr>
<td>2nd</td>
<td>86 (29%)</td>
<td>46 (23%)</td>
<td>38 (22%)</td>
</tr>
<tr>
<td>3rd</td>
<td>44 (15%)</td>
<td>64 (33%)</td>
<td>56 (32.7%)</td>
</tr>
<tr>
<td>4th</td>
<td>71 (24%)</td>
<td>27 (14%)</td>
<td>28 (16.37%)</td>
</tr>
<tr>
<td>5th</td>
<td>--</td>
<td>54 (28%)</td>
<td>43 (25%)</td>
</tr>
</tbody>
</table>
Participants were recruited via a letter sent home to families of grades k-4 in participating schools. 376 families returned the parental consent form, 325 students completed verbal assent and baseline assessments, and 300 were included in baseline analyses (impossible diet recalls were dropped, e.g. six or more side dishes were reportedly consumed by one student during one lunch period). Twelve percent of the total student body participated in intervention schools; 12.5% participated in control schools.

After baseline data collection and formative research the scope of the classroom program was narrowed to 3rd and 4th grade for two reasons: (1) budget limitations, and (2) age appropriateness (students needed to be old enough to understand and young enough to be excited about program features). However, all students in the intervention schools ate the improved school lunch and were exposed to FE materials in the cafeteria. Also, five teacher “ambassadors” (two in one intervention school, one in each of the three other intervention schools) were recruited for the program before its launch in August 2013 to gain teacher investment in the program and facilitate program implementation.

**Instruments:** All surveys were orally administered by trained research staff, and data were recorded in a secure digital collection form; responses were recorded using participant ID and no identifying information was included with responses.

**School Lunch Recall.** We used a validated school lunch recall, with added visual scales (e.g. picture of a whole apple indicated “ate none of it”, while a half-eaten apple indicated “ate half of it”) to measure reported student consumption during school lunch. The recall included all possible menu items on a given day, as well as amount consumed, level of enjoyment, and preference for future consumption of the item; additional questions captured any foods consumed not on the school menu (including foods brought from home).

**Mediators/Psychosocial Metrics.** After the school lunch recall, students answered questions designed to illuminate mediators of FV consumption during school lunch. Four items measured attitudes toward FV using a five-point scale; eight items measured outcome
expectations for FV; ten items measured descriptive norms for FV using a five-point scale; six items measured injunctive norms for FV using a five-point scale; and six items measured self-efficacy to consume FV using a five-point scale.

Demographics. All student demographics were self-reported by the students except for race, which was interviewer-determined.

Process Evaluation. Process evaluation instruments included monthly researcher-recorded cafeteria reports, monthly FE passport and trading card reports, monthly FE Ambassador school-level reports, and in-depth, semi-structured interviews with students, teachers, administrators, school nutrition staff, and parents at follow-up.

Procedure: Food Explorers was developed using a social marketing approach (January to July 2013) that focused on key stakeholder input to develop a cafeteria-based campaign to inspire elementary school students to eat more fruits and vegetables; students, school nutrition staff, and educators reacted to three different campaign prototypes, and the best components of each were combined into what became Food Explorers (Hennink-Kaminski, in process). The program includes cafeteria components and classroom components.

Cafeteria. With foundation support, the county school system hired an expert chef-consultant who worked closely with the nutrition director to develop new FV recipes and trained SNS staff on best-practices for recipe execution and service. The local foundation also funded purchase and installation of small equipment in intervention schools (valued at $3600.00) to facilitate new recipe creation (e.g. immersion blender; sectionizer; knives; cutting boards). All equipment was installed prior to the study launch in August 2013. Elements of the social marketing campaign were created to promote and enhance the changes made to the cafeteria and classroom. These included banners, point of sale signs, Food Explorer-themed monthly menus, new recipe names, and a Master Explorer Challenge (see Appendix 1).

Classroom. In July 2013, research staff trained Teacher Ambassadors on program components, and separate trainings for teachers and SNS staff were conducted in each school.
in August 2013. Research staff delivered materials (passports, trading cards, stamps, stamp ink, FE manuals, data collection forms, pouches, and containers to hold all materials) to teachers at the training events. They also held promotional events for families and students at Back to School Events in August 2013 to build support and excitement for the program. The chef-consultant attended these events and provided samples of new FV recipes for families. Ambassadors met bi-monthly with research staff to report on progress, address challenges, and maintain connections between the community and research team. To complete the Master Explorer Challenge, students had to collect at least 12 stamps in their passports (earned by trying FV in the cafeteria) and effectively collect/trade cards over the course of a semester in one of four “tracks”; successful students were awarded a certificate, the designation of Master Explorer, their name and photo on a cafeteria wall, and participation in a frozen yogurt celebration at the end of the school year. For a conceptual model of the FE program, see Figure 3.1.

![Food Explorers Conceptual Model](image)

**Figure 3.1 Food Explorers Conceptual Model**

Data Collection. Data was collected at baseline (April 2013), midpoint (October 2013), and follow-up (April 2014). These included researcher-administered school lunch recalls; surveys, process evaluation, plate waste photos, and aggregate data from the district level about school meal participation and program costs.
**Data Analysis:** School Lunch Recall/Surveys/Demographics: Latent growth curve analysis was used to explore distinct and mean trajectories of individual and group FV consumption over time because it can better identify intra-and inter-individual change in a behavior as compared to other regression analyses; trajectory types were limited because there were only three waves of data collected during the FE trial. A preliminary unconditional latent growth curve model for FV consumption provides individual specific trajectories—with a slope and intercept for every individual in the analysis—and provides the overtime trajectory for the entire group. We assessed the intervention effects of the FE program by constructing two latent growth curve models (LGMs) using Mplus version 7. Separate models were constructed for the intervention and control groups; both models had three time points of FV consumption during school lunch. Growth curve models have several advantages over traditional methods of assessing change: for this analysis, a LGM is particularly useful because it allows for multiple outcome measures to be combined in a single analysis.

**Plate Waste:** Plate waste data from the first 50 students (grades k-5) to enter the lunchroom were collected at each school visit, following procedures adapted from Martin and Williamson (students could not be randomly selected because of the need to collect post-lunch surveys from students immediately following the first lunch period; limited research staff had to facilitate plate waste data collection and student surveys). Research assistants tagged lunch trays with ID stickers as students exited the lunch line, a photo of the lunch tray was snapped, and then trays with ID tags were left on the cafeteria tables for research staff to collect and photograph at the end of the lunch period. Students were instructed not to throw anything away, and in most cases trash cans were removed from the cafeteria floor prior to data collection to ensure items did not go missing. Before and after photos were analyzed using the same six-point scale ("ate none of it" to "ate all of it") students used to report the amount of items consumed during the school lunch recall. Trained research staff were blinded to school condition and data collection time point, photos were double coded, and staff met to discuss
each photo and came to consensus on quantities consumed for each plate waste photo. We report descriptive statistics analyzed in Microsoft Excel (2016).

*School Meal Participation/Costs:* Program and meal participation data were compiled by the school nutrition director and reported.

*Process Evaluation:* Details of the process evaluation component can be found elsewhere (Jeffries, *in process*).

**D. Results**

Recruitment flow and participation is shown in Figure 3.2. A total of 300 participants completed baseline data collection from both intervention (n=142) and control schools (n=158). Thirty-three participants were excluded from analysis: 28 were excluded based on their status as kindergarteners, which yielded questionable self-report information, and five participants were excluded based on duplicate identification numbers (n=2) or information missing on grade level (n=3). Therefore, the total analysis sample at baseline was 267.

![Figure 3.2 Food Explorers Study Design](image)

At midpoint, 212 of those students were retained (79.4%), and at follow-up 171 had completed all three data collection waves (64.0%). Compared to participants that were lost to
follow-up between baseline and midpoint, those who were retained were more likely to identify
as white, to eat school lunch 4-5 times per week, and to be in the 2nd or 3rd grade (Table 3.1).
Participants lost to follow-up (midpoint/follow-up) did not statistically differ from those retained
with respect to their grade, sex, school they attended, intervention group, or how often they ate
school lunch.

Ninety-six of the 267 children were missing data from either midpoint or follow-up on the
main outcome variable (36%). To accommodate these missing data without dropping cases, full
information maximum likelihood estimation was used (which makes use of all available data to
maximize the information available for data analyses), yielding optimal parameter estimates and
standard errors. Under most conditions, this approach produces less biased parameter
estimates than alternatives in the presence of missing data.

School Lunch Recall: Latent growth curve analysis predicting a child’s FV consumption
is estimated in two models using the robust maximum likelihood estimator (MLR) in Mplus. A
MLR takes into account possible non-normality in the distribution of the errors in the model. The
MLR standard errors are computed using a sandwich estimator, which is necessary as the
sample is clustered within schools.

To evaluate model fit, we conducted several tests of baseline fit indices and descriptive
indices. The intervention and control data fit the model, which demonstrates the LGM is
reasonably consistent with the data (data available upon request). The signs of the intercept
coefficients are as predicted: all have positive and statistically significant effects on FV
consumption. The intercept coefficients demonstrate that there are individual differences in the
starting point of FV consumption for both the control and intervention groups. The mean initial
level of fruit consumption in the intervention group was 4.84 (p<0.001); while the mean initial
level of fruit consumption in the control group was 5.72 (p<0.001). The mean intercept level for
vegetable consumption among both groups was also statistically significant, with the
intervention group starting with an initial level of 2.44 (p<0.001) and the control group starting
with 1.00 (p<0.001). The slope estimates for the intervention group were not statistically significant, which suggests there are no group trajectories in regards to FV consumption. The slope estimates for control group demonstrates there is not a significant difference for vegetable consumption; however, there is a negative and statistically significant slope for fruit consumption (β= -0.657, p<0.05). The significant negative slope suggests a downward trend in the entire group fruit consumption among the control schools.

Illustrated in Figure 3.3 is the mean change in consumption of FV between the intervention and control schools across three time points. These data include relatively few (n=55) recalls with students who brought lunches from home, but the trends show packed lunches contained far fewer FV compared to school meal lunches.

**Figure 3.3 Mean Change in FV Consumption**

![Figure 3.3](image)

**Surveys:** The data collected did not indicate significant differences by condition (intervention vs. control) between attitudes, outcome expectations, descriptive norms, or injunctive norms and student FV consumption at lunch (data not shown). **Self-efficacy** to consume FV was measured using a composite score based on six discrete self-efficacy questions. Paired t-tests (baseline vs. follow up) were not significant, but they did trend toward
increased self-efficacy for FV consumption in intervention students, when compared to control students at follow-up.

*Plate Waste Analysis:* Intervention and control students were likely to select a fruit at lunch (93%) at baseline; intervention students were more likely to eat “most of one full serving” at midpoint and follow-up compared to controls. At baseline, intervention and control students were equally likely to select a vegetable serving. Control students were more likely to consume at least “half of one full vegetable serving” at baseline. At midpoint intervention, students were almost two times as likely to select a vegetable serving compared to controls; both intervention and controls were most likely to consume “some of one full serving”. At follow-up, intervention students were almost three times as likely to select a vegetable compared to controls. Although control students only selected a vegetable 22.0% of the time, they were most likely to consume at least “half of one full serving” as compared to intervention students, who consumed only “some of one full serving” (Table 3.2).
Table 3.2 Plate Waste Analysis – Descriptive Statistics

<table>
<thead>
<tr>
<th>% students who took at least 1 fruit...</th>
<th>BASELINE</th>
<th>MIDPOINT</th>
<th>FOLLOW-UP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>97.6% (n=210)</td>
<td>95.8% (n=215)</td>
<td>93.3% (n=223)</td>
</tr>
<tr>
<td>Control</td>
<td>95.6% (n=204)</td>
<td>95.7% (n=163)</td>
<td>97.2% (n=177)</td>
</tr>
</tbody>
</table>

Of those, average servings consumed (mean/mode)...

<table>
<thead>
<tr>
<th>% students who took at least 1 vegetable...</th>
<th>BASELINE</th>
<th>MIDPOINT</th>
<th>FOLLOW-UP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>43.8% (n=210)</td>
<td>71.2% (n=215)</td>
<td>65.9% (n=223)</td>
</tr>
<tr>
<td>Control</td>
<td>39.7% (n=204)</td>
<td>37.4% (n=163)</td>
<td>22.0% (n=177)</td>
</tr>
</tbody>
</table>

Of those, average servings consumed (mean/mode)...

<table>
<thead>
<tr>
<th>% students with packed lunch with...</th>
<th>FRUIT</th>
<th>VEG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>43.6% (n=55)</td>
<td>5.45% (n=55)</td>
</tr>
<tr>
<td>Control</td>
<td>42.6% (n=54)</td>
<td>9.26%</td>
</tr>
</tbody>
</table>

% students with packed lunch that ate at least half...

<table>
<thead>
<tr>
<th>% students with packed lunch that ate at least half...</th>
<th>FRUIT</th>
<th>VEG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>38.2%</td>
<td>5.45%</td>
</tr>
<tr>
<td>Control</td>
<td>42.6%</td>
<td>7.41%</td>
</tr>
</tbody>
</table>

In brief, fruit selection and consumption did not vary significantly between control and intervention students over time; however, vegetable selection (i.e. exposure) trended toward significance, with almost two to three times greater vegetable selection on intervention school lunch trays compared to controls during the pilot intervention period.

Student school meals participation/costs: Schools often express concern that school meal participation will decrease as a result of changes (particularly those perceived as “healthy changes”) to the lunch menu. Average daily school lunch participation did not change
significantly in any school baseline to follow-up in the intervention schools (84.4% vs. 83.7%) or control schools (74.4% vs. 68.8%).

The average cost of a FV serving in the intervention schools was $0.25 per serving, compared to $0.24 per serving in control schools. There is no significant difference between the FV costs, and the school nutrition director reported the FV costs were within her target range. On average, about $3600 worth of equipment was installed in each school to facilitate new recipe production (knives, cutting boards, etc.); about $2700 was needed to implement the classroom components and signage/marketing materials in each school.

E. Discussion

This was a pilot trial of a novel social marketing study in rural, high-poverty schools. Trends in student surveys and plate waste photos hint at the potential for the program to increase student exposure to FV, increase student self-efficacy to consume FV, and even protect against further reductions in fruit consumption, as compared to students in schools without FE. And observation of lunches brought from home suggests packed lunches contained far fewer FV as compared to school meals, limiting pack-lunch students’ exposure to healthy options. The limited data, in addition to post-pilot qualitative feedback31, suggest that a large and rigorous study be conducted to understand the potential effects and feasibility of the Food Explorers Program on a broader scale.

The 2012 Healthy Hunger Free Kids Act (HHFKA)33, 78 requires schools to serve more FV, but provides limited guidance on serving kid-friendly options to encourage consumption. Given that rural communities are at higher risk for child obesity and food insecurity compared to urban peers, we especially need strategies to encourage FV consumption in rural school lunch settings. Schools can be a powerful proponent of health, but only if we equip schools with tools to serve fun, healthy foods. The FE pilot trial was one attempt to do so.

Social marketing, plus recipe changes and SNS training, is a novel approach to address child health. Some lessons learned that can inform future work with school nutrition
interventions: (1) schools should celebrate Master Explorers each semester (not just at end of year) to maintain student engagement and excitement; (2) passports can be smaller (fewer, more generic food items) to reduce costs without compromising student appeal; (3) SNS need to designate one person to maintain and update daily signage; (4) the program should target 4th and 5th instead of 3rd grade (to reach similarly-aged students without placing undue burden on 3rd grade teachers tasked with heavy testing requirements); (5) FE staff should train teachers and school nutrition staff on FE program together for greater support between the classroom and cafeteria; (6) trim survey instruments to focus on a narrow range of mediators to relieve student survey fatigue.

FE program costs are reasonable; daily operational costs did not increase as a result of the program, and onetime equipment costs ($3600 per school) could be covered by USDA small equipment grants. Program material costs ($2700 per school) can be modified with scaled down passports, the reuse of trading cards, and potential sponsorship by local organizations.

Limitations: These data are limited by recruitment procedures (parents had to opt children into the study, so these families may be different than families that did not opt in); limited sample size due to study capacity and burden of collecting parent consent via printed letter; and the possible non-equivalence of intervention and control schools. These factors limit the application of findings, but qualitative post-pilot feedback was incredibly positive and suggested this program did have an impact on student exposure and consumption of vegetables and fruits; combined with suggestive study trends, this program warrants further research (Jeffries, in process).

Conclusions: FE is a social marketing program that encourages elementary students’ FV consumption. This study did not definitively demonstrate that FE increased FV consumption among elementary school students, but trends and qualitative feedback suggest FE has a protective effect against decline in fruit consumption and FE increases student vegetable
exposure. A well-powered study could illuminate these trends and identify key program elements.

The FE program was well received at every level of the school: classroom teachers noted a brief learning curve but reported the program was not burdensome, students reported positive experiences, principals were open to the program because it involved no additional burden to the administration, SNS staff were generally positive about the program, and the school nutrition director indicated the program was cost-neutral (Jeffries, in process). Future programs should consider targeting vegetable consumption specifically (as this is generally lower than fruit consumption) and ask how FE can be paired with additional components (parent/family- or community-level, technology, etc.) to address students’ whole food environment. Child obesity and health continue to be major public health challenges, and we need to better understand how novel programs like FE can improve health outcomes.
A. Overview

The school-based Food Explorers social marketing program was not enough to affect measurable change in child eating behaviors, but post-intervention interviews and other community interactions suggested that a school-plus-parent intervention might have greater effects on individual children and the community more broadly. This led to the development and pilot testing of additional family components to complement and enhance the school-based social marketing program.

B. Introduction

Health disparities persist in the United States despite numerous policies, interventions, and programs to address the issue. Many children are at a higher risk for poor health outcomes because of their geographic location, household income, or parent education. Incidence of childhood obesity and Type 2 diabetes are directly related to food access and eating behaviors, including vegetable and sugary beverage consumption. In North Carolina in 2011, 74% of children age 0-17 did not consume the recommended daily serving of vegetables, and at least 67.7% of all NC children age 0-17 consumed one or more sugary beverages per day. Families and school nutrition services (SNS) are two key groups that shape elementary school children’s eating behaviors, but few published studies have successfully leveraged the strengths of both entities in a coordinated fashion to meaningfully impact child eating behavior. A few interventions have tried to improve child eating behavior in urban environments, with mixed success, but barriers common in rural settings makes adoption of these initiatives more challenging. Barriers to eating behavior change interventions in rural communities
include limited time (parents work long/atypical hours; greater travel distances in sparsely populated areas increase travel time between work/school/home), lack of transportation, parent education level, funding, and access to nutrition experts.2,6

To overcome these barriers, we developed a theory- and technology-based nutrition intervention delivered by SNS (Food Explorers: Family Edition, “FE2”) that targets parents of 4th and 5th grade children. Our objective was to build a program that can improve child and parent self-efficacy for vegetable consumption (a determinant of actual consumption), as well as parent proxy efficacy for child vegetable consumption. (Proxy efficacy refers to parents’ perception of their ability to help their children consume vegetables.) The parent component was designed to complement a previously developed school-based program (Food Explorers “FE”; Hennink-Kaminski, in draft) to address child eating behavior through families and schools. Using this program, rural families engage in eating behavior change through a blend of new technologies (text messages and social media on mobile phones).

This article reports findings from formative research in a rural community that informed development of a program (FE2) that was both feasible and culturally relevant; a separate pilot will assess the impact of the FE2 program on child and family health.

C. Methods

Overview: We employed a mixed-methods approach to iteratively develop FE2. Formative research included focus groups with 4th and 5th grade children and parents; in-depth interviews with teachers, parents, and a content expert; and a parent survey. Emergent themes from these qualitative interviews informed targeting of the program to the community and local culture. This formative work, a conceptual framework, and the current literature informed intervention development; this prototype was assessed in a two-week test with six parent-child dyads. Post-test in-depth interviews and process evaluation data further informed FE2 development and refinement.
Conceptual Framework: Intervention development was guided by a conceptual model grounded in Social Cognitive Theory (SCT), with two additional behavior change constructs (Figure 1.1). The intervention capitalizes on social media and text messaging tools to bolster reciprocal determinism, facilitation, observational learning, goal setting/self-regulation, and self-efficacy from SCT, plus consciousness raising and social support. Each construct’s role in the model is described below:

Reciprocal determinism: Behavior is the result of interactions between individuals and their environment. FE2’s text message and social media components included a variety of messages and tools that empowered participants to understand and/or make changes to personal characteristics, behavior, and environment.

Facilitation: Text message and social media tools facilitated learning and practice related to key behavior change strategies.

Observational Learning: The social media component included a variety of tools to help parents learn from peers and content experts, such as sharing photos and short stories with other participants (e.g. Facebook wall) and sending prompts via text message to participants to view brief video clips (e.g. a YouTube cooking demonstration).

Goal setting/self-regulation: Participants practiced goal setting and techniques to maintain accountability. Participants were prompted to report on their goals once per week (twice during the two-week test), via text and social media.

Self-efficacy: Messages and program content were designed to increase self-efficacy for child healthy eating, parent/family healthy eating, and parent nutrition knowledge.

Consciousness Raising: Emphasis was placed on the most current evidence-based nutrition science.

Social Support: Parents shared stories, recipes, etc. via social media with other participants; the program encouraged families to interact to increase social support online. The
study also included messages about how parents could build successful social support networks offline.

These theoretical constructs guided initial program planning and were revisited at each step in program development.

*Population:* The program was developed at a public charter school, serving predominantly children of color in a high poverty, rural county in North Carolina. As of September 2014, the school had 104 4th grade and 96 5th grade students, and a total of 492 children grades 4-9. The school participated in USDA school meal programs and all children participated in school meals free of charge (Table 4.1). The county in which the school was located had twice the statewide childhood obesity rate (32% vs. 16.5%), and about 28% of the county’s families lived below the poverty level, compared to 17.5% statewide (2009-2013). 81, 82

<table>
<thead>
<tr>
<th>Table 4.1 School Demographics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>School X</strong></td>
</tr>
<tr>
<td><strong>Student Population (n)</strong></td>
</tr>
<tr>
<td><strong>Grades</strong></td>
</tr>
<tr>
<td><strong>% Female</strong></td>
</tr>
<tr>
<td><strong>% Free and Reduced Lunch</strong></td>
</tr>
<tr>
<td><strong>Race:</strong></td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>Black</td>
</tr>
<tr>
<td>Mixed</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td><strong>Identify as Hispanic?</strong></td>
</tr>
</tbody>
</table>

*Formative Research - Understanding Community Context*

*Parent focus groups/interviews:* One focus group (four participants) and two in-depth interviews were conducted with parents of 4th and 5th graders. The focus group was conducted by a facilitator (PI) and observer (trained research assistant) using an IRB-approved focus group guide. The observer recorded non-verbal communication and general notes during the discussions, and two audio recorders recorded the thirty to forty-five minute sessions. The PI
conducted the in-depth interviews using an IRB-approved interview guide, and two audio
recorders recorded the twenty to forty-five minute sessions. Basic demographic data were
collected from parents via written surveys at the end of the focus group session and through in-
depth interviews. Trained research staff transcribed audio recordings verbatim; transcripts were
reviewed for themes by PI and research assistant, and these themes guided intervention
development.

Parent survey: A one-page survey was distributed through child backpacks to 490
families at the participating school (grades 4-9) in order to enhance findings from the focus
group and in-depth interviews. The survey assessed social media use, text
message/smartphone use, preferred communication mode/frequency/message-source, nutrition
subjects of interest, and basic demographic information. The survey was anonymous and
designed to take no more than ten minutes; it was paper-based to mitigate skewed sampling of
parents comfortable with computer/phone technology. Participating parents could enter a
drawing to win one of two $20 Walmart gift cards. Survey data were analyzed using descriptive
statistics to inform FE2 development.

Children: Six 4th grade and six 5th grade children participated in two grade-specific focus
groups. The focus group was conducted by a facilitator and observer. The facilitator followed an
IRB-approved focus group guide; the observer recorded non-verbal communication and general
notes during the discussion; and two audio recorders recorded the thirty to forty-five minute
sessions. Research staff identified child gender and race. Transcripts were analyzed using the
same methods described above for the parent focus group.

Key Informants-Teachers/Expert: Using interview methods described above, we
conducted in-depth interviews with two 4th grade teachers, one 5th grade teacher, and one child
psychology/family engagement expert.

Formative research recruitment: Parent and child focus group/in-depth interview
participants were recruited through announcements via the school’s automated call system, the
school Facebook page, and print flyers sent home in 4th and 5th grade children’s backpacks. Parents who responded to the recruitment message were screened by the PI via phone; parents had to have at least one 4th or 5th grade child currently enrolled in the school, speak English, and be available for a forty-five minute focus group or interview. Eligible children had to be enrolled in 4th or 5th grade, speak English, and have their parent complete and return a consent form. Teachers and the content expert were recruited through convenience sample (PI contacts). All participant contact information was stored on a password protected system and maintained separately from the data.

Adult consent/child assent to participate in a focus group or interview was reviewed and collected at the time of the session. All focus groups/interviews were conducted in private rooms at the participating school. Parent participants received a $20 Walmart gift card; children received small incentives (e.g. stickers). Light healthy snacks and beverages were provided during focus groups.

*Intervention development and test:* The development of the FE2 program was based on previous studies, the conceptual framework described above, and the formative findings described below. Acceptability, feasibility, and the cultural relevance of FE2 intervention components, technologies, and proposed measures were assessed with a sample of the target population in a two-week trial (“test”). This test included six parent-child dyads (children enrolled in 5th grade at the participating school). Program components included daily text messages, a Facebook group, and one weekly email newsletter; measures included pre/post-surveys for parents/children and one home food inventory.83

*Two-week test recruitment:* Six parent-child dyads were recruited during the formative phase in four ways: through letters sent home via child backpacks, grade-specific automated calls, the school Facebook page, and/or personal recommendations by administrators. Interested participants contacted the PI via phone and were screened for eligibility. Eligible families had at least one parent/guardian with a child in 5th grade, completed parent consent
and child assent, had parents and children who spoke and read English, and had parents with access to a mobile phone who would accept text messages from FE2 for the duration of the test. Families met with the PI in a semi-private room at a time convenient for everyone; families completed consent/assent forms and baseline measures, and simulated the planned “kick-off event” at the start of the full twelve-week program.

Participating adults received a $10 gift card for completing baseline measures and a $20 gift card for completing a post-test interview and survey. Participating children received small incentives (e.g. themed-stickers, pencils, temporary tattoos).

Two-week test administration and data analysis: Participating adult-child dyads completed a post-test, in-depth interview with the PI and/or trained research assistant so researchers could understand how the FE2 program should be further modified for this community. All interviews followed a semi-structured interview guide, were audio-recorded, and transcribed verbatim. The study PI and trained research staff developed a codebook, double coded, and analyzed each interview in Dedoose qualitative analysis software (version 4.7, SocioCultural Research Consultants, Los Angeles, CA). For quality control, one transcript was double coded and analyzed and the Cohens kappa coefficient was calculated to measure inter-rater reliability. The Cohens kappa coefficient had to be 0.8 or greater prior to analysis of the remainder of the transcripts. Group-specific and general themes, which are reported below, were combined with process evaluation data including text message, Facebook, email use and engagement, to inform further development of the intervention and implementation of the school-based components.

D. Results

We present results in order of discovery – first formative research findings and then findings from the two-week test. Table 4.2 provides demographic characteristics of the formative research participants.
<table>
<thead>
<tr>
<th>Formative Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 parent focus group participants (3 black female 30-40 y; 1 white Hispanic female 30-40 y)</td>
</tr>
<tr>
<td>2 parent in-depth interview participants (1 white male &gt;65 y; 1 white female 30-40 y)</td>
</tr>
<tr>
<td>12 children focus group participants (4th grade: 3 black female, 3 black male; 5th grade: 4 black female, 1 black male, 1 white Hispanic male)</td>
</tr>
<tr>
<td>100 Parent survey participants</td>
</tr>
<tr>
<td>3 teachers (4th and 5th grade; 2 white female, 1 black female 21-30 y)</td>
</tr>
<tr>
<td>1 child psychology/family engagement expert</td>
</tr>
<tr>
<td>Test</td>
</tr>
<tr>
<td>6 parent-child dyads (12 total) (4 black adult females 30-45; 1 white female 30-40; 1 white male &gt;65)</td>
</tr>
<tr>
<td>TOTAL: 131 independent participants (3 parents participated in in-depth interviews and test trial)</td>
</tr>
</tbody>
</table>

**Formative Research – Understanding Community Context**

**Parent Focus Group/Interviews:** Themes from the parent formative data were consolidated to inform development of the FE2 program. Themes to guide intervention development fell into two categories: support for the program concept and suggestions for program design.

Program Support: Parents were eager for nutrition and eating behavior change support to help them raise healthy children, and they believed their children needed more exposure to healthy foods. Parents also understood that they were important role models for their children.

“And I’ve thought a lot about that because when I grew up, I spent my summers with my grandmother and aunt and uncle on farms…and we just ate I mean it was wonderful! Every day I mean you had just [LAUGHS]…The table was full of fresh vegetables and stuff. And, and I still eat you know at home I, I fix cucumber and onions and um vinegar water and put a little salt in there and I’m the only one in the house who will eat it…I cannot get my kids. So what I’m hoping then even though they are older…I’m hoping that we will get some ideas [from FE2]” – Parent, male, white, >50 y

Frustration that children were not already eating well was evident throughout parent interviews and focus groups, regardless of whether parents perceived this poor diet to be the result of external forces (food environments full of processed food options) or internal forces (child taste preferences, family eating habits).
Program Design: Participants were clear that the program should address parents’ limited time and money in order to be culturally relevant to this low income, rural community; this included addressing parents from a variety of education levels and work schedules. These findings led to the development of texts and materials that did not require many resources or much participation during the typical nine-to-five work day. As one participant noted,

“… you know the typical American family mom and dad work first shift, they’re home with the kids at night and they’re all sitting there eating dinner at the table [laughs]…but you have some families that you know work second and third, they’re not able to cook for their kids you know, they might have to send them to a babysitter uh or grandma’s”
- Parent, female, white, 30-40 y

In addition, parents mentioned planning and goal setting as key issues that should be addressed in the program. And they requested nutrition education information be delivered in the voice of a child nutrition expert to earn participants’ trust. Text messages and social media posts were created to reflect parent suggestions (as well as conceptual model components), in order to increase cultural relevancy and success of the FE2 program.

Parent Survey: One hundred parents (response rate 20.3%) completed a paper survey distributed to all children in the school (Table 4.3). The survey confirmed the community has a high rate of mobile phone ownership and use (95.0% own a mobile phone; 92.6% of mobile phone owners have an unlimited texting plan; 89.5% of mobile phone owners send or receive at least one text message per day). Eighty-three percent of respondents use social media; 80.0% of those who use social media access Facebook at least once per week. Ninety-five percent of social media users access social media on their mobile phone. Finally, when asked: “Would you consider participating in a program that provides healthy eating information and support that required you and your child to work together reading text messages and posting on social media?”, 47.5% responded “yes”, 34.3% responded “unsure”, and only 18.2% said “no”. This suggested that about half the community was interested in participating in the intervention.
Table 4.3 Parent Formative Survey Demographics

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Respondents - % (n)</th>
<th>Demographics</th>
<th>Respondents - % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td>Female</td>
<td></td>
</tr>
<tr>
<td>18 to 35</td>
<td>37.0% (37)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36 to 55</td>
<td>50.0% (50)</td>
<td>Average number of</td>
<td>2.39</td>
</tr>
<tr>
<td>More than 55</td>
<td>9.00% (9)</td>
<td>Highest level of</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>4.00% (4)</td>
<td>Less than high school</td>
<td>6.00% (6)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td>GED/high school</td>
<td>16.0% (16)</td>
</tr>
<tr>
<td>Black</td>
<td>75.0% (75)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>10.0% (10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>1.00% (1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>8.00% (8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prefer not to say</td>
<td>4.00% (4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify as</td>
<td></td>
<td>Some college</td>
<td>44.0% (44)</td>
</tr>
<tr>
<td>Yes</td>
<td>11.0% (11)</td>
<td>4 year college degree</td>
<td>20.0% (20)</td>
</tr>
<tr>
<td>No</td>
<td>63.0% (63)</td>
<td>Master's degree</td>
<td>7.00% (7)</td>
</tr>
<tr>
<td>Prefer not to say</td>
<td>3.00% (3)</td>
<td>Doctorate or terminal</td>
<td>3.00% (3)</td>
</tr>
<tr>
<td>Missing</td>
<td>21.0% (21)</td>
<td>Missing data</td>
<td>4.00% (4)</td>
</tr>
<tr>
<td>Identify as</td>
<td></td>
<td>Annual household</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>Less than $20,000</td>
<td>24.0% (24)</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>$20,000-$30,000</td>
<td>21.0% (21)</td>
</tr>
<tr>
<td>Prefer not to say</td>
<td></td>
<td>$30,001-$45,000</td>
<td>13.0% (13)</td>
</tr>
<tr>
<td>Missing</td>
<td></td>
<td>$45,001-$60,000</td>
<td>18.0% (18)</td>
</tr>
<tr>
<td>Identify as</td>
<td></td>
<td>More than $60,000</td>
<td>18.0% (18)</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>Missing data</td>
<td>6.00% (6)</td>
</tr>
</tbody>
</table>

*Children*: Two focus groups with 4th and 5th grade children revealed high levels of enthusiasm for the proposed classroom and cafeteria components of the program (the original FE program). They did not report any hesitations about participating in the school- or family-based portions of the program. When asked about barriers to and facilitators of healthy eating for children, children consistently named family/parents as major influences.

“When my mom tries to eat healthy, I try to eat healthy” - 5th grade child

“Um something else is like when your mom, dad, or cousin or anybody that cooks like it’s something that they’re, they cooking is so unhealthy but it’s good. But it’s the only thing on the plate that’s on the table so you eat it” - 5th grade child
These comments underscored the importance of parent influence on child eating behavior, and strengthened the case for the FE2 program.

**Key Informants**

*Teachers:* Teachers offered their perspectives on how the FE2 program could fit within the existing school structure, and whether school personnel perceived such a program to be relevant for their community. Teachers were enthusiastic about the idea of the classroom/cafeteria program as long as it did not interfere with academics. All three teachers emphasized the need for child eating behavior change, highlighting poor eating behaviors they routinely noticed among students, such as:

“Yes. I have a huge concern about breakfast. Cuz there’s Fanta soda and chips. I mean hot fries. Kids come in dropped off with that stuff. Um and nothing else...[and] I’m usually concerned that kids aren’t getting regular meals by the way they scarf when they’re at our school.” - Teacher, female, white, 21-30 y

When asked about the importance of nutrition education for their students, one teacher responded,

“I think when I first started teaching, I didn’t have any um it just wasn’t on my radar. I was planning day to day and so I don’t have that foresight. But now that I’ve been in teaching for a few different years, I can just see the effects of food and how it plays out in a kid’s life and their access to quality food.” - Teacher, female, black, 21-30 y

Teacher interviews confirmed a desire for this kind of program and provided additional insight into how to implement the program in this particular community.

*Expert:* The interview with the child psychology/family engagement expert helped frame the program in a way that was accessible and appealing to a variety of parent audiences, but especially to families in high-need communities. Advice included emphasizing parents’ own strengths and ability to parent well, providing strategies for parents to try (no required components), suggesting alternatives (e.g. fresh or frozen fruit), providing brief audio and/or visual nuggets of information, and adapting the program to the particular community context.

Two-Week Test: Formative research with parents, children, teachers, and experts informed the development of a two-week test of the FE2 program. The purpose of the test was
to understand the acceptability and cultural relevance of the FE2 program. Formal qualitative analysis of post-test interviews with five of six original parent-child dyads revealed additional themes that guided refinement and expansion of the FE2 program. Two trained staff created a codebook and double coded all post-test transcripts (IRR: 0.838); disagreements were resolved by discussion and consultation with the PI.

**Test Results**: Six parent-child dyads participated in the 14-day test. One family was lost to follow up when they became unresponsive to phone and social media communication, so five families completed baseline and follow-up data collection. The program was well received, with some suggestions for improvement ahead of a larger pilot study.

**Positive Response**: Participants were overwhelmingly excited about the program content, approach, and convenience. All five parent-child dyads confirmed that the research team was on the right track with the program prototype.

“I like that y’all are persistent. You know that y’all are um love what you’re doing and I can feel it you know and we can I feel like you’re passing it on to the kids and I can do the same thing. Like so far as the eating healthy wise.” – Parent, female, black 30-40

“I actually think it’s very helpful because it helps parents and kids to be more involved and more active in their dietary choices.” – Parent, female, black, 30-40

**Suggested Improvements**: Parent participants wanted more opportunities to interact with other participants. Social support components needed to be strengthened to better serve participants.

“I think to set a broader set of communication and interaction. I think that was what at least something that I’d like to see. We didn’t, I didn’t really as far as talk to much to other participants…and I want to talk to them… You know… kinda like an accountability” – Parent, female, black, 40-50

A number of parents commented that ‘cooking on a budget’ was a missing topic area that should be included in the larger program. And parents said text messages should focus more overtly on cost-effective strategies in this particular community.

“It is, one of the ladies at the, the other meetings mentioned the, the cost. It certainly is more expensive to eat fresh than, than it is to get things out of a can. But you can do
Parents told us that the program needed more visuals, including a visual way to track progress towards participant goals. Digital dissemination of information worked well, but physical reminders could help families track and achieve their health-related goals.

“But I think the charting would be helpful for kids to be able to see that they’re making their progress [toward their goal]…so a physical chart would be helpful like in the house, maybe on the fridge…”– Parent, female, black 30-40

Additional suggestions included clarifying the pre/post-survey content, breaking down Facebook posts into smaller soundbites, maintaining a pattern of daily text messages (as opposed to texts a few times per week), adding a website to house FE2 information, improving the goal setting lesson at the start of the program, and addressing technology challenges. Suggested technology improvements included streamlining access to secure text message and Facebook components, and using a different email newsletter platform that is not spammed by participant email servers.

A summary of the final Food Explorers: Family Edition (FE2) program, developed based on the formative research and test study described above, can be found in Figure 4.1.
### Summary of Food Explorers and Food Explorers: Family Edition Components

**Food Explorers (School-Based Social Marketing Program) All 4th and 5th grade students**

1. New fruit and veggie recipes & fun recipe names.
2. New equipment/SNS staff training.
3. New cafeteria signage.
4. Master Explorer Challenge: 12 stamps in FE passport (earned by trying FV in café), plus successful trading card play over the semester earns the student “Master Explorer Status”

**Why?**

1. Improve quality, excitement
2. Improve quality/expand capacity
3. Marketing/excitement
4. Engage and challenge kids to try new foods in a low-stakes, fun way

**Food Explorers: Family Edition (FE2) 4th and 5th grade parent-child dyads**

1. Kick-off event (enroll in text message service, Facebook group, set Family Healthy Eating Goal).
2. Daily text messages for 12 weeks (REMIND program).
3. Daily private Facebook group posts for 12 weeks.
4. Printed goal tracking calendar and stickers.
5. Warm-line to ask nutrition expert questions via text/email.
7. Website regularly updated with additional nutrition/program information.
8. Bi-weekly email newsletter with nutrition/program information.
9. Up to three optional in-person events (e.g. pot luck, cooking challenge) to engage participants together.

**Why?**

1. Goal setting, facilitation, build excitement
2. Address all constructs in the FE2 conceptual model.
3. Address all constructs in the FE2 conceptual model.
4. Self-regulation
5. Facilitation/two-way communication
6. Self-regulation, observational learning
7. Facilitation, consciousness raising
8. Facilitation, consciousness raising
9. Social support, observational learning

### E. Discussion

Food Explorers: Family Edition (FE2) development was directed by key insights from parents, children, teachers, and an expert. The final product was strengthened by important community-derived understandings, such as the need to accommodate second and third shift workers and to address healthy eating on limited budgets. Our survey confirmed that national trends applied to this particular community, including high use of mobile technologies (95.0% mobile phone ownership, 89.5% mobile phone users’ daily use of text messages, and 80.0% weekly use of Facebook by parent respondents).\(^40\)\(^42\) The test allowed researchers to address technology and program flaws, hone the focus of the text messages, and refine the program
components to best serve the needs and interests of the community. Test participants felt the FE2 program was acceptable, feasible, and culturally relevant for families living in a low-wealth, rural county in North Carolina. The program could later be adapted to other communities (rural or urban) using a similar community-based approach.

FE2 is a novel theory- and technology-based nutrition intervention that targets child and parent self-efficacy for healthy eating behaviors through families and schools. FE2 overcomes traditional barriers to nutrition interventions in low-wealth, rural communities to improve child eating behavior outcomes and, ultimately, to improve child health. Parents can access text messages and a Facebook group anywhere on a mobile device, and text messages are a “push” technology that forces information out to parents instead of requiring effort from parents to seek out the information themselves. Social media platforms are a way to engage parents in behavior change education through a familiar medium that can facilitate social support for learning and maintaining behavior change. And given that mobile technology programs can be implemented from a central location by a nutrition expert, schools can implement the program without on-the-ground nutrition expertise.

Limitations: FE2 development was not without limitations. The PI was also the SNS manager at the intervention school, which aided in developing community-relevant programing and access to participants; as such, the program should be tested elsewhere to understand how it works outside of this unique context. Formative research occurred in one school/county and findings from this community may or may not reflect the needs and experiences of other communities. The sample size of the focus groups, interviews, and two-week test were small, thus limiting the generalizability of results. In addition, the school-wide survey reflected only a minority (20.3%) of families’ experiences with technology and social media; it is possible that the majority of non-responders have different mobile phone ownership, text message usage, and/or social media use rates compared to responders. Most participating families identified as Black, and the majority of adult participants were female; we do not know how this program addresses
the needs of other genders and racial/ethnic groups. The sizable Hispanic minority present in the school was mostly absent from the development of this program because the study lacked the resources to translate materials into Spanish. If effective, this program should be adapted and tested for a Spanish-speaking population.

Conclusions: FE2 is a community-informed program designed to counter documented health disparities between rich and poor, urban and rural. This mobile nutrition education and eating behavior change program is one piece of what must be a larger, coordinated strategy to improve health outcomes for all children, regardless of class, race, or geography. FE2’s advantages include the ability to present a clarifying voice for families among a melee of media hype and pop-science, especially for families that may not have access to sound nutrition science and eating behavior change support.

FE2 brings nutrition and behavior change interventions solidly into the 21st century by incorporating mobile and social media technologies. The next steps are to test this program in a pilot trial to understand feasibility and effectiveness. An effective FE2 program will contribute to family- and school-based efforts designed to change the next generation’s cultural norms around food, eating, and health.
CHAPTER V. FOOD EXPLORERS: FAMILY EDITION - RESULTS OF A RANDOMIZED TEXT MESSAGE AND SOCIAL MEDIA PILOT INTERVENTION FOR FAMILIES TO ADDRESS CHILD DIET

A. Introduction

Children living in the rural United States are at higher risk of poor health outcomes compared to their urban peers.\(^1\textsuperscript{−}^3\) Childhood obesity and Type 2 diabetes are directly related to food access and eating behaviors, including vegetable and sugary beverage consumption.\(^4\textsuperscript{,}^8\textsuperscript{,}^9\)\(^11\textsuperscript{−}^13\) In North Carolina in 2011, 74% of children age 0-17 did not consume the recommended daily serving of vegetables, and at least 67.7% of all NC children age 0-17 consumed one or more sugary beverages per day.\(^7\) Rural children are at an elevated risk for poor health behaviors, yet few studies have addressed the particular needs of families in rural communities.\(^6\textsuperscript{,}^13\textsuperscript{,}^34\)

Schools and families are two key influencers of child behaviors, and while a few interventions have tried to leverage work with both groups to improve child eating behavior in urban environments, they have had mixed success. Barriers common to rural settings make adoption of these initiatives more challenging.\(^2\textsuperscript{,}^6\textsuperscript{,}^14\) These include limited time (parents work long/atypical hours; greater distances in sparsely populated areas between school/work/home), lack of transportation, parent education level, funding, and access to nutrition experts.\(^2\textsuperscript{,}^6\)

To overcome these barriers, we developed a text message and social media intervention delivered by school nutrition services (SNS) (Food Explorers: Family Edition, “FE2”) that targets parents of 4\textsuperscript{th} and 5\textsuperscript{th} grade children. FE2 was designed to complement a previously developed school-based program (Food Explorers “FE”; Hennink-Kaminski, \textit{in draft}) to address child eating behavior through families \textit{and} schools. Rising rates of smartphone ownership and mobile internet access suggest technology-based interventions that deliver content through novel
communication channels could reach an increasingly tech-savvy population of families with elementary aged children.\textsuperscript{40}

We conducted a twelve-week pilot to understand the effects of the family (FE2) plus school (FE) components, versus the school program (FE) alone, on child self-efficacy for vegetable consumption. We expected that FE2 plus FE would increase child self-efficacy for vegetable consumption more than FE alone. Secondary outcomes included parent self-efficacy for vegetable consumption, parent proxy efficacy for vegetable consumption (parents’ belief that they can help their children eat vegetables), and parent and child self-efficacy for low-sugar beverage consumption. Our methods, results, and interpretation follow.

\textbf{B. Methods}

We developed a social-cognitive theory-informed, technology-based intervention to improve child and family eating behaviors in the rural United States (\textit{Thayer, submitted}). The school component (Food Explorers, “FE”) is a social marketing program that challenges elementary age children to try new fruits and vegetables (FV) through a passport and trading card game. FE trains school nutrition services (SNS) staff to prepare new FV dishes and to highlight these dishes in the cafeteria. Children receive stamps in passports when they try new FV, and teachers distribute trading cards to children at least once a week. If children collect twelve stamps and successfully trade cards, they earn ‘Master Explorer’ status, which includes their name and picture on the cafeteria wall, a certificate of achievement, and a celebration with other Master Explorers and SNS staff at the end of each semester.

The family component (Food Explorers: Family Edition, “FE2”) was built to extend the program’s reach into the home (\textit{Thayer, submitted}). FE2 was developed in an iterative process with parents, children, and teachers from the study community and guided by a theory-based conceptual model (\textit{Thayer, submitted}). FE2 includes a kickoff event for families to learn about the program and how to set S.M.A.R.T. (specific, measurable, achievable, realistic, timely) goals; twelve weeks of daily text messages focused on building families’ capacity to eat well on
a budget in rural North Carolina; twelve weeks of Facebook group posts to expand on text message content; weekly text message check-ins about families’ healthy eating goal (each family establishes one goal for the duration of the program); a website with study details, a blog, recipes, and online resources; bi-weekly email newsletters; and two optional in-person family events (a potluck, Family Cook Challenge).

*Implementation:* A twelve-week randomized delayed intervention control pilot study was conducted at one public charter school in a low-wealth, high-minority, rural community in North Carolina, USA (*Thayer, submitted*). The study ran from September to December 2015.

*FE (school) Implementation:* FE FV recipes were introduced to the cafeteria menu at the start of the study, along with point-of-sale signs and Master Explorer banners. All 4th and 5th grade students participated in the classroom FE program; the classroom portion launched two weeks after the family study began. All 4th and 5th grade students were equally exposed to the school-based FE program; only students enrolled in the study participated in data collection and evaluation.

*FE2 (family) Implementation:* Participants were recruited in three ways: printed flyers sent home in 4th and 5th grade students’ backpacks within the first three weeks of the school year, an announcement made during an assembly, and a robocall to parents. Families were screened by telephone, and eligible families had to have at least one child enrolled in 4th or 5th grade at the participating school, with one parent or guardian who could speak and read English. Participating families had to agree to group randomization, to accept text messages from the program for the duration of the pilot, and to complete all data collection.

Eligible families were invited to an evening kickoff event at school to learn about the program. At the event, families were randomized to either intervention or delayed intervention control using a random number generator. They then shared a meal, completed consent forms and surveys, and enrolled in the no-cost, anonymous text message service. Parents received a packet of printed nutrition information and $10 gift cards for completing baseline measures,
and children received FV-themed trinkets. Parents received $20 gift cards for completing all follow-up measures.

Text, Facebook, and newsletter messages promoted and supported parents’ efforts to instill healthy eating habits in their children. Intervention families all received daily text messages, and they could opt-in to the private FE2 Facebook group page and/or bi-weekly email newsletters. Families could participate in weekly challenges (e.g. “Post a picture of your shopping list (packed with veggies of course)” to earn small kitchen-themed prizes and promote greater program engagement. Families assigned to the control received weekly texts thanking them for participating in the pilot; control families were invited to participate in a second round of the twelve-week program once the first intervention period was complete. The PI managed all text messages, Facebook posts, email newsletters, and website content.

Measures and Analysis: Child outcomes were measured through written surveys, collected during the kickoff (baseline) and during a single lunch period at follow-up. Self-efficacy for vegetable consumption (primary outcome) is an important mediator used as a proxy for actual consumption. Additional measures included social support, social norms, nutrition knowledge, eating behavior, attitudes, food preferences, and demographics (Appendix 3.1). Parent outcomes were measured through written surveys collected at the kickoff event (baseline), and during individual meetings with the PI at follow-up. Measures included parent self-efficacy for vegetable consumption, parent proxy efficacy for child vegetable consumption, social support, social norms, eating behaviors, nutrition knowledge, food preferences, attitudes, and demographics (Appendix 3.2).

Parents also completed Home Food Inventories (HFI) (validated for use in the home by parents from similar demographic groups) at baseline and follow-up for a snapshot of the home food environment (Appendix 3.3). The HFI measures what foods are available in the home and what foods are visible/easily accessible. Quantitative analyses of the difference in change
in participant responses baseline to follow-up were conducted in Stata version 14.0 (linear regressions) and Excel version 14.0 (descriptive statistics).

In-depth, semi-structured interviews were conducted during lunch (children) and during individual follow-up sessions (parents, teachers, SNS staff). All interviews were audio recorded and transcribed verbatim by trained research staff. Transcripts were reviewed by at least two researchers for themes; themes were established by consensus.

_Process Evaluation:_ In addition to process evaluation during in-depth interviews, we tracked implementation of the program to better understand how the program operated day-to-day. We measured family components including text messages, Facebook, printed materials, email newsletters, and in-person event activity and participation. We tracked school components, including implementation of FE recipes, banners, and point-of-sale signage in the cafeteria weekly, and classroom implementation of passport and trading card components monthly. Descriptive statistics were analyzed in Excel version 14.0.

_C. Results_

Forty-six families were randomized after being screened for eligibility, and forty-two (twenty-two intervention and twenty control families) completed baseline measures (Figure 5.1). Of those, twenty intervention and nineteen control families completed follow-up measures. One family lost to follow-up could not be reached by phone, email, or two letters sent home through student backpack; two additional families were contacted but declined to complete follow-up survey measures. Incomplete or improbable responses resulted in thirty-four parents (seventeen in each group) and thirty-five children (sixteen children in the intervention group, nineteen in the control group) included for analyses. One parent assigned to the control group did not complete process evaluation questions on the follow-up survey.
Most children were nine or ten years old (85.7%), 60.0% were in the 4th grade, and about 60% of the children were female (Table 5.1). Parents were mostly Black women between thirty-one and forty years old (79.4% Black, 94.1% female; 58.8% age 31-40). These data are similar to the parents we surveyed in Aim 1 (formative research) (100 parents: 75% Black, 89% female, 46% age 31-40) (see Table 4.3). We present results for child surveys, parent surveys, home food inventories, qualitative interviews, and process evaluation measures below.
Table 5.1 FE2 Pilot Study Demographics

<table>
<thead>
<tr>
<th></th>
<th>Total Sample</th>
<th>FE2 Intervention n (%)</th>
<th>Control n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents</td>
<td>34 (100%)</td>
<td>17 (50%)</td>
<td>17 (50%)</td>
</tr>
<tr>
<td>Parent Gender (Female)</td>
<td>32 (94.1%)</td>
<td>15 (88.2%)</td>
<td>17(100%)</td>
</tr>
<tr>
<td>Parent Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-30 years old</td>
<td>5 (14.7%)</td>
<td>2 (11.8%)</td>
<td>2 (11.8%)</td>
</tr>
<tr>
<td>31-40 years old</td>
<td>20 (58.8%)</td>
<td>9 (52.9%)</td>
<td>11 (64.7%)</td>
</tr>
<tr>
<td>41-50 years old</td>
<td>4 (11.8%)</td>
<td>2 (11.8%)</td>
<td>2 (11.8%)</td>
</tr>
<tr>
<td>51+ years old</td>
<td>3 (8.82%)</td>
<td>3 (17.6%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Unreported</td>
<td>2 (5.88%)</td>
<td>1 (5.88%)</td>
<td>1 (5.88%)</td>
</tr>
<tr>
<td>Parent Race</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>25 (79.4%)</td>
<td>13 (85.3%)</td>
<td>12 (70.6%)</td>
</tr>
<tr>
<td>White</td>
<td>8 (23.5%)</td>
<td>3 (17.6%)</td>
<td>5 (29.4%)</td>
</tr>
<tr>
<td>Asian</td>
<td>1 (2.94%)</td>
<td>1 (5.88%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Parent Hispanic (Yes)</td>
<td>2 (5.88%)</td>
<td>2 (11.8%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Children</td>
<td>35 (100%)</td>
<td>16 (45.7%)</td>
<td>19 (54.3%)</td>
</tr>
<tr>
<td>Child Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>16 (45.7%)</td>
<td>8 (50%)</td>
<td>8 (42.1%)</td>
</tr>
<tr>
<td>10</td>
<td>14 (40.0%)</td>
<td>6 (37.5%)</td>
<td>8 (42.1%)</td>
</tr>
<tr>
<td>11</td>
<td>3 (8.57%)</td>
<td>1 (6.25%)</td>
<td>2 (10.5%)</td>
</tr>
<tr>
<td>12</td>
<td>2 (5.7%)</td>
<td>1 (6.25%)</td>
<td>1 (5.26%)</td>
</tr>
<tr>
<td>Child Grade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>21 (60%)</td>
<td>10 (62.5%)</td>
<td>11 (57.9%)</td>
</tr>
<tr>
<td>5</td>
<td>14 (40%)</td>
<td>6 (37.5%)</td>
<td>8 (42.1%)</td>
</tr>
<tr>
<td>Child Gender (Female)</td>
<td>21 (60%)</td>
<td>9 (56.3%)</td>
<td>12 (63.2%)</td>
</tr>
</tbody>
</table>

*Child Effects*: Our primary outcome, change in child self-efficacy for vegetable consumption baseline to follow-up, was assessed using a ten-item composite variable. The Cronbach’s alpha for these ten items was 0.8713, suggesting good internal consistency of these measures. Only nineteen of thirty-five children had complete data for all ten items, and no significant differences were observed between intervention and control children, after controlling for baseline scores (p=0.407, CI[-12.2,5.20]) (Table 5.2). We looked individually at each of the ten items that contributed to the composite variable and no significant group effects were observed.
Table 5.2 FE2 Pilot Study Results

<table>
<thead>
<tr>
<th>Outcome(n)</th>
<th>Result</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Child self-efficacy for vegetable consumption (19)</td>
<td>-3.50 (p=0.407, CI[-12.20,5.20])</td>
<td>Ten item (50 unit) composite variable</td>
</tr>
<tr>
<td>#Child self-efficacy for low-sugar beverage consumption (30)</td>
<td>-0.406 (p=0.792, CI[-3.54, 2.73])</td>
<td>Ten item (50 unit) composite variable</td>
</tr>
<tr>
<td>Child normalization of vegetable consumption with peers (27)</td>
<td>+2.83 (p=0.014, CI[0.637,5.01])</td>
<td>Single item (5 unit) variable</td>
</tr>
<tr>
<td>#Parent proxy efficacy for child vegetable consumption (34)</td>
<td>+1.268 (p=0.069, CI[-0.104,2.64])</td>
<td>Single item (5 unit) variable</td>
</tr>
<tr>
<td>#Parent self-efficacy for vegetable consumption (34)</td>
<td>+9.37 (p=0.000, CI[4.64,14.1])</td>
<td>Twelve item (60 unit) composite variable</td>
</tr>
<tr>
<td>#Parent self-efficacy for low-sugar beverage consumption (31)</td>
<td>+0.148 (p=0.799, CI[-1.03, 1.32])</td>
<td>Nine item (45 unit) variable</td>
</tr>
<tr>
<td>Parent sugary beverage change (31)</td>
<td>-0.73 (p=0.015, CI[-1.31,-0.15])</td>
<td>Single item (4 unit) variable</td>
</tr>
<tr>
<td>HFI: Vegetable varieties in the home (25)</td>
<td>+2.63 (p=0.045, CI[0.062, 5.21])</td>
<td>Single item (20 unit) variable</td>
</tr>
<tr>
<td>HFI: Fruit varieties in the home (25)</td>
<td>+2.64 (p=0.033, CI[0.236, 5.04])</td>
<td>Single item (27 unit) variable</td>
</tr>
<tr>
<td>HFI: Sugary beverage varieties in the home (25)</td>
<td>-1.00 (p=0.056,CI[-2.03, 0.026])</td>
<td>Single item (6 unit) variable</td>
</tr>
</tbody>
</table>

*Primary outcome; # Secondary outcome; all figures represent linear regression analyses showing the difference between FE2 intervention and control groups in change baseline to follow-up

After controlling for baseline values, FE2 intervention children were twice as likely as children assigned to the control to report increased acceptance of the idea that vegetable consumption with peers is normal (p=0.014, CI[0.64,5.01]). All other child measures were not significant after controlling for baseline values.

**Parent Effects**: Parent self-efficacy for vegetable consumption was measured with a twelve-item composite variable. After controlling for baseline values, FE2 intervention parents greatly increased self-efficacy for their own vegetable consumption compared to control parents (p=0.000, CI[4.64,14.1]). The Cronbach’s alpha for these ten items was 0.7893, suggesting reasonable internal consistency of these measures. And, after controlling for baseline, FE2 parents increased parent proxy efficacy for child vegetable consumption compared to control parents (p=0.069, CI[-0.10,2.64]). Although these data are not significant, the small sample size may mask a positive trend. Compared to control parents, FE2 parents were more likely to report...
decreased sugary beverage consumption after controlling for baseline values; intervention parents reported a decrease by about three-quarters of a sugary beverage per day (p=0.015, CI[-1.31,-0.15]).

*Home Food Inventory:* Twenty-five parents (thirteen intervention, twelve control) completed baseline and follow-up HFI. After controlling for baseline values, FE2 participants had an average of 2.63 more vegetables varieties (p=0.045, CI[0.06,5.21]) and 2.64 more fruit varieties (p=0.033, CI[0.236,5.04]) available in the home compared to controls, baseline to follow-up. And although not quite significant, FE2 participants appeared more likely to report a decrease, by one type, in variety of sugary beverages available in the home compared to controls (p=0.056, CI[-2.03,0.03]).

*Qualitative Parent Interviews:* Ten of seventeen intervention parents and thirteen of seventeen control parents completed post-study in-depth interviews. Control and intervention parents had similar *motivations for joining the FE2 study*. Intervention parents spent most of the interview describing their *positive FE2 experience*, with a few moments spent on *challenges to success* in the program and requests for program *improvements*. Interviews also highlighted *unanticipated effects* reported by both intervention and control parents.

**Motivations for joining FE2:** Parents (randomized to the intervention and control groups) were motivated to join the study by a desire to encourage healthy eating for their family, an interest in participating in school activities, and wanting to support their child’s desire to participate.

“I was hoping to get my kids to eat more vegetables…To make it more enjoyable for them, especially my baby girl [LAUGHS]” – Parent, female, Black 31-40 y, Control

“My son dragged me. [LAUGHS] And he been telling me, “Mom, you gotta come to school! This is going on! That’s going on!” and then when I found out what it was gonna be about, I would take part in it just to you know pick up something.” – Parent, female, Black, 41-50 y, Control

Positive FE2 Experience: All ten intervention parent interviews described a positive experience with the program and a desire to continue participation. The most commonly
mentioned program benefits included text message “nudges,” healthy food exposure, goal setting and tracking, and engaging with children/the whole family to achieve the goal.

“I found [FE2] really awesome and it actually introduced us to different types of fruits and vegetables… the kids are also enjoying being a part of meal planning” – Parent, female, White, 21-30 y, FE2 participant

Many parents also expressed pride in what they achieved during the study.

“And I know she’s been my child for ten years…even as a baby she didn’t like greens baby food but like now I mean she’s doing better and I’m proud of her.” – Parent, female, Black, 31-40 y, FE2 participant

Text messages were easy to understand, presented no burden to parents, and most often were seen as important ‘nudges’ to prompt parents to work toward healthy behaviors generally and their healthy eating goal specifically. Parents also liked the vegetable of the week (e.g. collards) as a way to challenge families to try new things and increase children’s exposure to new foods.

“...[text messages] just kept me on track” – Parent, female, Black, 41-50 y, FE2 participant

“I really enjoyed when you give a fruit or vegetable for the week and then challenge us to cook something. That was so cool.” – Parent, female, Black, 31-40 y, FE2 participant

Most families reported the goal setting exercise was fun and rewarding; parents were proud of their perceived success in achieving their goal most, if not all, of the time.

“I did like the fact that every week I was asked if I was on track. So it kinda made us accountable for you know what we said we were gonna try to do” – Parent, female, Black, 31-40 y, FE2

“Setting a goal for the family. You never really think about it. You know in general you know I want to eat better, healthier but to actually sit down and think about what is our goal. So that helped a lot” – Parent, female, Black, 31-40 y, FE2

Many parents reported engaging the whole family in the program (not just the parent-child dyad) as a way to improve family health and maintain accountability. Children who were invested in the program also nudged parents to achieve their goal.

“We have explored food, more importantly, vegetables. I had never tried beets. And I like beets now. I never tried the purple carrots. Now my family loves purple carrots and we
went to Costco, they want to get one of the same bags that you had.” – Parent, female, Black, 31-40 y, FE2 participant

“Actually it has helped because to be honest with you, it’s pretty interesting how focused the kids are on making sure we get vegetables and fruit…You know [NAME] I would say was the even the most impactful because he would not go a day without us getting a vegetable because he keep reminding us of the goal” – Parent, female, Black 31-40 y, FE2 participant

Challenges: Limited time was cited as the greatest barrier to participation, especially in the weekly challenges that required posting pictures or messages to the Facebook page. Parents reported trying or wanting to try the challenge (e.g. “Take a picture of your family eating their favorite veggie and post it to the Facebook page for your chance to win a prize!”), but never taking the steps of posting online. Meal planning was a challenge for some parents, but necessary to achieve their goal on a consistent basis.

“…at first we were able to be very participative but when I had my work so I couldn’t really engage in it that much as much as we used to” – Parent, male, Asian, 31-40 y, FE2

“So it was a little difficult in the beginning but then what I did is I planned ahead and so when I went to the store, I knew I had to get at least you at least five to six fruits and vegetables …it became more and more easier as time went on” – Parent, female, Black, 31-40 y, FE2

Suggested Improvements: The most commonly recommended improvement was for the school to incorporate more physical activity into the school day, and by extension, incorporate physical activity tips into FE2. Parents also requested more recipes, from the program and from other parents, for child-friendly ways to serve vegetables, and parents expressed a desire for the program to continue beyond the study.

“[The school needs]…more exercise classes. Definitely. Get them moving, get them outside. [LAUGHS]” – Parent, female, Black, 41-50 y, FE2

“Oh getting some more of the other parents recipes would be great” – Parent, female, Black, 31-40 y, FE2

Unanticipated Effects: FE2 was designed to impact child eating behaviors, but parent interviews revealed FE2 had an impact beyond the families enrolled in the intervention. At least four parents assigned to the control group reported improvements in eating behavior after
participating in the kickoff event, where families were exposed to new foods and the general FE2 program.

“Oh I was very excited about it because I have always tried to find better ways to eat healthy for the kids and I. Most of the time we eat snackies cookies and all that...now we don’t eat the cookies. Its celery and carrots are my favorite now...We had to change a lot.” – Parent, female, Black, 41-50 y, Control

One intervention participant owned a daycare and was inspired to improve the quality of foods served there, suggesting FE2 could have a greater impact in the community than just the parent-child dyads participating directly in the program.

“I have a daycare so I’m already with the food program so to see the, the resemblance and the different patterns at home as well as at the center cuz I did it at my center too. And it was just amazing. My [daycare] parents was like “Oh you’re trying different recipes.” It, it was very interesting to see…” – Parent, female, Black, 21-30 y, FE2

And finally, the school-based portion of the program included implementation of new vegetable recipes. Parents knew little about the classroom portion of the program, but they did have positive impressions (a marked change from prior years) of school food as a result of the schools’ participation in FE/FE2.

“I mean to come from last year when my kids said they didn’t enjoy anything about the food to now they don’t even want me to pack a lunch...You know they get excited about it and that’s a blessing because a lot of times it was stressful last year because they didn’t enjoy the food so much. And now it’s really cool.” – Parent, female, Black, 31-40 y, FE2

Process Evaluation: Family Components

Text Messages: Eighty texts were sent to intervention participants over twelve weeks (average of 6.67 texts/week; one text/day every day except Sunday). Participants sent 110 text messages (average nine/week across all participants), usually responses to prompts (e.g. “GOAL CHECK: REPLY and let us know if you're on track to achieve your FAMILY goal! 1 - YES, 2 - NO. If you'd like help with your goal, send us a text!”). An outline of weekly intervention text messages is found in Table 5.3; messages during the twelve-week program focused on content requested by the community during program development, including “health on a budget” and easily digestible nutrition information (Thayer, submitted). Control group
participants received fourteen texts over twelve weeks (average one/week) to maintain contact ("Weekly Check In from FE2 - text YES so we know you received this message! If you have any questions please let us know!").

Table 5.3 Sample Text Messages/Facebook Posts

<table>
<thead>
<tr>
<th>Day</th>
<th>Topic</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>Veggie of the Week/Recipe</td>
<td>&quot;Veggie of the Week: Jicama! What in the world? So many nutrients, so low in calories - crunchy and delicious. Find it at Compare Foods!&quot;</td>
</tr>
<tr>
<td>Tuesday</td>
<td>Nutrition 101</td>
<td>&quot;Hidden Sugar: Sugar has a lot of names. Click here for a list to help you identify sugar in the things you buy! <a href="http://goo.gl/sSNo8G">http://goo.gl/sSNo8G</a>&quot;</td>
</tr>
<tr>
<td>Wednesday</td>
<td>Health on a Budget</td>
<td>&quot;Health on a Budget: In winter many veggies are expensive because they're out of season. Try frozen instead for wallet friendly options.&quot;</td>
</tr>
<tr>
<td>Thursday</td>
<td>Challenge (post a picture/message); additional Nutrition Topic</td>
<td>&quot;YOUR Turn to SHARE: What's one dish you're grateful for? Take a picture of the kids eating Thanksgiving veggies and post it to FB or text!&quot;</td>
</tr>
<tr>
<td>Friday</td>
<td>Weekly Quiz</td>
<td>&quot;FE2 Quiz 5 - complete the 3 question survey to test your knowledge and earn a chance at a prize! <a href="https://goo.gl/rF5jXo">https://goo.gl/rF5jXo</a>&quot;</td>
</tr>
<tr>
<td>Saturday</td>
<td>Goal Check</td>
<td>&quot;GOAL CHECK: REPLY and let us know if you're on track to achieve your FAMILY goal! 1 - YES, 2 - NO. If you'd like help goal, send us a text!&quot;</td>
</tr>
</tbody>
</table>

Our analysis of intervention message content confirms that facilitation, self-efficacy, observational learning, and goal setting/self-regulation were the most common constructs addressed through intervention text messages, as we originally intended ([Thayer, submitted](#)). (Table 5.4). Post-intervention surveys of parents suggested the text messages were informative and accessible to intervention participants (Table 5.5).
Table 5.4 Mapping Text Messages to Theoretical Constructs (*n*=117, *some texts double coded*)

<table>
<thead>
<tr>
<th>Conceptual Model Construct</th>
<th>Frequency % (n)</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Facilitation</strong></td>
<td>28.2% (33)</td>
<td>“Veggie of the Week: Turnip! Try it, try it Sam, I am! Taste a Turnip - try slicing and dunking it raw into your favorite dip for snack. For more recipe ideas, click here: <a href="http://goo.gl/cZuDyv">http://goo.gl/cZuDyv</a>”</td>
</tr>
<tr>
<td><strong>Self-efficacy</strong></td>
<td>17.9% (21)</td>
<td>“YOUR Turn to SHARE: Trying Sweet ‘Taters? Take a picture of your kids eating ruby red roots and share for a chance to win prize!”</td>
</tr>
<tr>
<td><strong>Observational Learning</strong></td>
<td>16.2% (19)</td>
<td>“What’s the weirdest way to eat a sweet potato? Click here for some deliciously creative ideas! <a href="http://goo.gl/sXLIv">http://goo.gl/sXLIv</a>”</td>
</tr>
<tr>
<td><strong>Goal setting/self-regulation</strong></td>
<td>13.7% (16)</td>
<td>“Happy Halloween! REPLY and let us know if you’re on track to achieve your FAMILY goal! 1-YES, 2-NO. If you’d like help goal, send us a text!”</td>
</tr>
<tr>
<td><strong>Consciousness Raising</strong></td>
<td>12.8% (15)</td>
<td>“Eat good fat. Not too much. For your brain, heart, and general health! Click the link to learn more about good fats! <a href="http://goo.gl/Qnis3G">http://goo.gl/Qnis3G</a>”</td>
</tr>
<tr>
<td><strong>Social Support</strong></td>
<td>11.1% (13)</td>
<td>“Challenge: Make a meal (with veggies!) for your family for $5 or less/person. Share a picture/text to let us know what you made!”</td>
</tr>
</tbody>
</table>
Table 5.5 Parent Process Evaluation Data

<table>
<thead>
<tr>
<th>Question</th>
<th>Agree % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Text Messages (n=16)</strong></td>
<td></td>
</tr>
<tr>
<td>Did you read the FE2 program text messages?</td>
<td>100% (16)</td>
</tr>
<tr>
<td>Of those who responded “Yes”…</td>
<td></td>
</tr>
<tr>
<td>The information in the messages was helpful to me.</td>
<td>100% (16)</td>
</tr>
<tr>
<td>The text messages were easy to read.</td>
<td>100% (16)</td>
</tr>
<tr>
<td>The text messages were easy to understand.</td>
<td>100% (16)</td>
</tr>
<tr>
<td>The text messages helped me eat healthy.</td>
<td>93.8% (15)</td>
</tr>
<tr>
<td>The text messages helped my family eat healthy.</td>
<td>87.5% (14)</td>
</tr>
<tr>
<td><strong>Facebook (n=16)</strong></td>
<td></td>
</tr>
<tr>
<td>Did you look at the FE2 Facebook page?</td>
<td>62.5% (10)</td>
</tr>
<tr>
<td>Of those who responded “Yes”…</td>
<td></td>
</tr>
<tr>
<td>The information on the Facebook page was helpful to me.</td>
<td>100% (10)</td>
</tr>
<tr>
<td>The information on the Facebook page was easy to read.</td>
<td>100% (10)</td>
</tr>
<tr>
<td>The information on the Facebook page was easy to understand.</td>
<td>100% (10)</td>
</tr>
<tr>
<td>The information on the Facebook page helped me eat healthy.</td>
<td>100% (10)</td>
</tr>
<tr>
<td>The information on the Facebook page helped my family eat healthy.</td>
<td>100% (10)</td>
</tr>
<tr>
<td><strong>Printed Materials (n=33)</strong></td>
<td></td>
</tr>
<tr>
<td>Did you look at the printed FE2 packet?</td>
<td>84.8% (28)</td>
</tr>
<tr>
<td>Of those who responded “Yes”…</td>
<td></td>
</tr>
<tr>
<td>The information in the packet was helpful to me.</td>
<td>92.9% (26)</td>
</tr>
<tr>
<td>The information in the packet was easy to read.</td>
<td>100% (28)</td>
</tr>
<tr>
<td>The information in the packet was easy to understand.</td>
<td>100% (28)</td>
</tr>
<tr>
<td>The information in the packet helped me eat healthy.</td>
<td>82.1% (23)</td>
</tr>
<tr>
<td>The information in the packet helped my family eat healthy.</td>
<td>82.1% (23)</td>
</tr>
</tbody>
</table>

Facebook: Ninety Facebook posts were made to the group page (average 7.5/week; one/day) for the intervention program. Participants wrote a total of twenty-two posts or responses to posts (average 1.8/week), and sixty-one “Likes” (average 5.1/week). Facebook posts mirrored text message content with additional recipes and visuals to reinforce message content. Participant responses indicate Facebook posts were helpful and accessible to participants who chose to engage with FE2 on Facebook (ten of sixteen surveyed participants reported participating in the Facebook group, the same number registered with the Facebook site) (Table 5.5).
Printed Materials: Both intervention and control group members received printed materials with basic healthy lifestyle information. Almost 85% of participants reported reading the printed materials and the majority found the printed materials informative and accessible (Table 5.5).

Email Newsletter: Five email newsletters were sent over twelve weeks. Newsletters summarized text and Facebook messages and highlighted special activities, such as the FE2 potluck. An average of twenty-three newsletters were delivered each time (one participant registered for the newsletter after the first was delivered), and an average of fourteen (60.9%) newsletters were opened per delivery. Parent interviews suggest newsletters, when read, were positively received, and one student and one parent (different families) expressed pride because they were featured in emails.

In-person Events: Participants in the formative development of this program requested in-person events to better connect with other participants. A potluck and Family Cooking Challenge (similar to popular TV cooking shows with secret ingredients and limited preparation time) were held to accommodate those requests. Two families participated in each event. The families that did participate were enthusiastic about the experience; many others expressed regret at being unable to participate because of prior commitments or other time constraints.

"[The Family Cook Challenge] was fun. They, they had a it was impressionable for [my children] and I don’t think they’ll ever forget it." – Parent, female, Black, 31-40 y, FE2

Process Evaluation: School Components

Students: FE classroom components were implemented two weeks after the FE2 program launched because teacher availability delayed training. Fourth grade students completed passport components daily and traded cards weekly, while 5th grade students completed both passport and trading card components weekly. FE foods were highlighted on signs in the cafeteria and on point-of-sale signs on the lunch line daily, and the Master Explorer banners were visible every day during the twelve-week study. Thirteen 4th graders and five 5th
graders achieved Master Explorer status, although fifth graders did not know their Master Explorer status until after the twelve-week study was over because of delays in teacher passport review.

*Teachers*: One 4th and one 5th grade teacher informally reported on program implementation to the lead author throughout the study. These teachers agreed the program placed little burden on classroom teachers after an initial learning curve, and both observed students were exposed to and tried new foods as a result of the classroom program.

“When they talk about it they’re more like and then a kid might say, well this is really good have you tried it? A kid could be like no, I didn’t try it yet. And they’re more apt to try it the next time maybe they see it. So it’s cool they get to interact with each other”—Teacher, female, White, 21-30 y, 5th grade

The teachers also felt more signage was needed outside of the lunch line to bring FE into the consciousness of all students while they are eating.

*Child Program Feedback*: Four student interviews were conducted with children randomized to the FE2 intervention (academic testing, weather events, and researcher availability limited the number of interviews). All four students liked the classroom portion of the program and the new foods in the cafeteria, and all four wanted the program to continue. In follow-up surveys, eighteen of twenty-three children (78.3%) who completed process evaluation measures agreed with the statements: “FE passport and trading card game got me to try new veggies and fruits” and “FE passport and trading card game helped me eat healthy.” These data are consistent with an earlier study, involving only the FE classroom components, suggesting the classroom components have a positive impact on child exposure to and engagement with FV.

*SNS Services Staff Interviews*: All seven SNS staff (four Black females, one Black male, one White Hispanic male, one White female) were interviewed to understand feasibility and acceptability of the program from the food service perspective. All seven staff agreed FE added no extra burden to their schedules; no one described additional time required to prepare FE
foods, and only one person reported an additional task (putting up point-of-sale signs). All seven staff liked serving fresh FV to children and wanted to continue the program.

“All because it’s, it’s more nutritional. It’s not a lot of you know the preservatives…And added things that’s in, in those already ready-made food…So a lot of the like I said the fresh meats it’s more, it’s better for the kids” – SNS staff, female, Black, 41-50 y

“What different from anything I’m used to…very good for the kids. They love it.” – SNS staff, male, White, Hispanic, 31-40 y

One unexpected outcome of the school-based FE was that some SNS staff felt they were also exposed to new foods and healthier preparation methods.

“It’s fascinating…Just learning about new foods I haven’t tried and trying them for the first time” – SNS staff, male, Black, 18-20 y

D. Discussion

Food Explorers: Family Edition (FE2) was created to complement the original school-based FE program to increase child self-efficacy for vegetable consumption and healthy eating behaviors. FE2 was also intended as a way to engage rural families in school-sponsored nutrition education. While this pilot, conducted with thirty-four families, did not show an impact on the primary outcome, quantitative and qualitative data suggest positive trends that should be explored in a larger trial. A larger trial will add to a small but growing body of evidence for programs specifically targeting rural families to improve child eating behaviors.

Child participation in the FE2 program, in addition to the school-based FE, may increase children’s perception of peer vegetable consumption as a normal behavior. This suggests that a home-plus-school healthy eating intervention may normalize important eating behaviors like vegetable consumption. FE2 may have additional positive effects on child eating behaviors, but the sample size was too small to detect these effects.

Positive change was more evident among parents and in the home environment. Compared to parents randomized to the control group, intervention parents increased self-efficacy and proxy efficacy for vegetable consumption, increased FV variety in the home, and
decreased sugary beverage consumption and availability in the home, from baseline to follow-up. The increase in variety of FV for intervention families is particularly significant given the change in seasons (September to December), when FV variety tends to decrease. In addition, parent and child effects may have been harder to detect because some of the control participants reported behavior changes made between baseline and follow-up as a result of simply registering for the program. Nonetheless, these data suggest FE2 increases child and family exposure to healthy foods, beyond the exposure afforded by the school-based components alone. Repeated exposure to healthy foods is an important step on the path to increasing healthy eating behaviors for children.

Parents and children were excited about the program and eager for it to continue; future studies should use this model of community-derived intervention development to create programs that are theory-based and responsive to community needs. The program was easy for participants to use, and text messages and Facebook were the most important pieces of the family intervention. Although we offered prizes to families each week to encourage participation, only one parent mentioned prizes at follow-up; future studies may be able to limit program costs through fewer physical incentives.

Time remains a barrier to full participation for many families, so we should consider ways to streamline participation even more. Families requested more recipes, suggesting FE2 is a trusted source families look to for inspiration and curation of the myriad recipes available on the Internet; families want pre-screened recipes that suit child and family tastes, nutritional goals, cooking skills, and budgets. The community also requested in-person events, but these were poorly attended. Future studies should test models with and without these events to gauge variation in family engagement and goal achievement (the program is more scalable without in-person events).
The school-based components of the FE2 study were well received by children, teachers, and SNS staff and posed no extra burden to SNS staff, which is particularly important for dissemination of school and cafeteria program components.

Limitations: This study was limited in scope and can speak only to trends in the data because it was conducted with a small sample in a single rural community. The majority of parent participants were Black women age thirty-one to forty, so we do not know how these findings translate to other populations. The lead author (White, female) was also the SNS manager at the study school, which facilitated program implementation, but also limited the generalizability of these findings because it represents a unique situation of a researcher embedded in the community. The study was only conducted in English, leaving out a large minority of families in the community whose primary language is Spanish; future studies should adapt the program for non-English-language families.

In the future, social desirability scales should be included in the measures to better understand what participants’ responses really meant, and how participants differed (or not) from the general population. And pre/post 24-hour dietary recalls should be conducted in the future to understand dietary intake in addition to self-efficacy for specific dietary behaviors (for children and adults). Observational methods, including review of lunch line behaviors and plate waste analyses (as conducted during FE1) would also deepen our understanding of what can and cannot be achieved with FE1 and FE2.

Conclusion: Although this small pilot showed no measurable change in child self-efficacy for vegetable consumption between the intervention and control groups (baseline to follow-up), there were several positive changes measured in home environments and parent behaviors for families that participated in FE2 intervention study, as compared to families assigned to the delayed intervention control. Parents, children, teachers, and SNS staff believe FE and FE2 increased child exposure to healthy foods and behaviors, which is an important precursor to increasing children’s consumption of healthy foods.
Schools can and should serve as one place where students, regardless of socioeconomic status, geography, or race/ethnicity, can experience healthy foods and eating behaviors. A technology-based intervention like FE2 can expand schools’ impact on child exposure to healthy eating environments, especially in rural communities. Ultimately, FE2 could improve child health and address health disparities in ways as yet unattained in other nutrition interventions.
CHAPTER VI. SUMMARY AND RECOMMENDATIONS

A. Summary and Synthesis of Findings

Rural child health outcomes continue to lag behind those of their urban peers, and relatively little research has focused specifically on improving rural children’s nutrition behaviors. Nutrition interventions for rural children need to directly address geography-specific barriers to participation, and these interventions need to reflect the specific needs of the intervention community. We developed Food Explorers (FE) and Food Explorers: Family Edition (FE2) to specifically target rural children, and to improve mediators of eating behavior (self-efficacy for vegetable consumption and sugary beverage consumption) to improve child health outcomes in these communities.

FE and FE2 were tested in small study populations that showed no measurable change in child self-efficacy for or actual change in vegetable consumption between the intervention and control groups, baseline to follow-up. However, there were positive changes measured in home environments and parent behaviors that suggest an overall positive trend for participating families. Parents in the FE2 study increased self-efficacy for vegetable consumption, decreased sugary beverage consumption and availability, and increased vegetable and fruit variety available in the home. And parents, children, teachers, and SNS staff say FE and FE2 were engaging programs that increased child exposure to healthy foods and behaviors, important steps on the path to increasing children’s consumption of healthy foods.

The use of mobile technology helped to overcome traditional barriers to rural and low-income families’ participation in nutrition education programs. Families did not have to drive long distances to meetings or forgo participation because of lengthy or non-traditional work hours. The program itself was inexpensive (the text message and Facebook components cost the pilot
study nothing to implement), and the community had access to a nutrition expert through the text messages, Facebook page, email newsletters, and website, regardless of where participants and the nutrition expert actually resided. Finally, the nature of text message and social media posting required the program to distill sometimes complicated nutrition information into short, easily digested soundbites and visuals accessible to a wide range of education and literacy levels.

Overall, these programs were acceptable, feasible, and adaptable to local community needs and preferences. Parents, children, teachers, and SNS staff were included in program development, and this community-based approach was partly responsible for the high levels of support and enthusiasm for the FE/FE2. Program components reflected the reality and needs of the community, and the community responded.

B. On Being a Lunch Lady

As I write this section, I feel it is too early to distill and understand all that I have learned as the nutrition manager at a public charter school serving low income, high-need students in rural North Carolina. Many people are interested in how my work as a lunch lady shaped my approach, deepened my understanding of community-engaged work, and ultimately how it affected my results, in school and at home, in these studies. The truth is I do not yet have these answers. But here are some thoughts.

Working as the nutrition manager in a school afforded the opportunity to make mistakes and learn what it feels like to be a lunch lady, on the front lines of child health every day. My original intent was to learn what is, and is not, possible in federally-funded school nutrition programs. So much in the media focuses on the challenges, the shortcomings, and impossibility of achieving success in school nutrition, and I just could not believe all the negatives were true. Almost two years in, what have I learned?

I have learned that a great deal is possible in school nutrition, and even more is possible in the future if I and others continue this work, research, and advocacy. Schools can prepare
and serve beautiful, fun, tasty, and healthy food to students, and there need to be more support at the district, state, and federal level to make that happen. In order to successfully implement what we have achieved, so far, at this one public charter school in schools across the state, we need: upgrades to facilities (often just the addition of knives and cutting boards); better training and better pay for school nutrition staff; dedication at the state level to disseminating and testing a variety of recipes, social marketing tools, and student engagement approaches (e.g. student committees that work with school nutrition staff to create and update school menus, while simultaneously creating student support for and pride in school meal programs); low-cost, easy tools, lessons, and games for students across all grade levels that can tie healthy eating and healthy living into all aspects of curriculum; and, finally, a bank of (ever-expanding) recipes, resources, menus, and other materials to support individual schools’ and districts’ creation of new nutrition programs that are adapted to specific community contexts.

Some of these concepts require financial and expert resources, and some do not. Some of these ideas could be developed once and then made publically available for the benefit of all students and nutrition programs in North Carolina, and others will require recurring sources of funding and support. Some of this work, increased SNS staff training for example, is already being rolled-out at the state level in North Carolina as a direct result of our initial Food Explorers work, and some of these ideas need to be proven successful in larger trials before districts or states will adopt these concepts. I am not naïve to the fact that limited funding and limited expertise make these calls to action difficult. But I am convinced, through my work as Lunch Lady PhD, that we can move the needle on these issues in creative ways.

Finally, many important voices in school nutrition are not being heard – politicians take up air-time every five years when a new School Nutrition bill has to be reauthorized at the federal level, and major corporations dominate the supply chain and sales. But we need to find a way to amplify other voices that really matter in these discussions, including the lunch ladies and men working in the cafeterias every day, who have great insights and can make
good food happen; the **students** who are the ultimate customer and primary beneficiary of school meals; the **teachers** in schools who could benefit from better school meals (through better behavior and academic success from their students, and better health for teachers themselves if they chose to participate in great school meals); and **families/the larger communities** that surround schools and can both support better meals and benefit from community-oriented school-based nutrition outreach (e.g. local farms connecting with school meal programs to provide better food and support for local economies; local schools providing FE2-type programs to engage the wider community in better eating and living).

Great school meals, great school-community nutrition education programs, and a reduction in health disparities between rural and urban, minority and White, poor and wealthy children can begin when a single school, school district, or state consciously and conscientiously takes one step toward one of these concepts or goals outlined above. My hope is that more resources and support becomes available to help schools make these changes. I, for one, plan to be one of those supports. And I hope others will follow.

**C. Recommendations**

Several stakeholders could benefit from a program like FE2. Federal policy requires SNS to provide nutrition education for students and families, but the majority of schools and school districts can do little more than hang nutrition-themed posters on the wall because of limited staff time, tools, and nutrition knowledge. FE/FE2 offers low-cost, low-effort ways for schools to deliver theory-based nutrition education to families that need it most; local schools, districts, or whole states could easily disseminate the program to families should future studies find FE2 effective. Schools can and should serve as one place where students, regardless of socioeconomic status, geography, or race/ethnicity, can experience healthy foods and healthy eating behaviors. A technology-based intervention like FE2, that expands rural child exposure to healthy eating environments beyond the school building into the home, may improve child health and address health disparities in ways as yet unattained in other interventions.
In addition, the Robert Wood Johnson Foundation recently recommitted its support for child health with $500 million invested in health promotion efforts over the next 10 years. Three of five proposed areas of focus announced in February 2015 by this national health equity research foundation are directly and indirectly addressed by the study described above: (1) Make a healthy school environment the norm and not the exception across the United States; (2) Make healthy foods and beverages the affordable, available, and desired choice in all neighborhoods and communities; (3) Eliminate the consumption of sugar-sweetened beverages among 0 - 5 year olds.\textsuperscript{88} FE and FE2 engage children, schools, and families to promote healthy foods and eating behaviors \textit{as the norm and not the exception} in school and at home; FE brings healthy foods into schools through new vegetable and fruit recipes and increases desirability through various marketing strategies; and FE2 promotes low-sugar beverage consumption to parents and children through consistent theory-based messaging.

\textbf{D. Future Directions}

The immediate steps following this pilot are to invest in a larger research trial with greater power to elucidate FE/FE2 efficacy and impact. Future studies should include more schools, more participants, and more geographic locations. If successful, FE/FE2 should also expand to include other minority communities through Spanish-language (and other language) versions of the program.

If proven effective in larger trials, FE and FE2 could easily be disseminated by individual schools, school districts, or states through a centralized program coordinator that manages trainings; the mobile technology intervention could be directed/overseen from anywhere in the world with internet and mobile phone access. A dedicated coordinator or coordinating group could manage a large number of programs simultaneously, increasing program reach and decreasing program costs. Dissemination will ultimately be streamlined by investment in a single technology platform that encompasses all pieces of the program, instead of relying on free programs and applications patched together for the initial FE2 study.
Online train-the-trainer modules could train one on-site contact at each school to manage FE/FE2 program registration, field questions, and report back to the program coordinator, in order to facilitate ongoing community input and feedback and to enhance FE/FE2’s relevancy to particular families and schools. Additional online and/or in-person trainings and resources could guide classroom and cafeteria implementation of the FE program components. As we learned during the original FE study, one on-site champion at each school is critical to program implementation and success. There are many opportunities and ways to organize and recognize these school-based coordinators’ efforts to implement FE and FE2 in individual communities.

Parent, child and school enthusiasm for the FE2 was so high in this pilot in part because the program was designed with input from the community. Future work to improve child health through schools and families should strongly consider this iterative community-engaged development process to create and adapt programs for particular communities to maximize program effects. A successful program would eventually create a demand for higher quality foods and food environments in individual communities, which could result in improvements to the built environment (e.g. the type and quality of foods offered in grocery and retail settings). Ultimately, this community-engaged approach could help to address health disparities more broadly, across age, race/ethnicity, and socioeconomic status, in underserved and high-need rural communities.
APPENDIX 1.2: FE PASSPORT, TRADING CARDS, CERTIFICATE, BANNER, POINT-OF-SALE SIGNS

Passport Cover/Table of Contents
Passport Stamp Pages

**Baja Corn**

*Includes:* Corn, Green Pepper, Onions

**How did it taste?** (You may circle more than one.)
- Sweet
- Salty
- Bitter
- Spicy
- Sour
- Savory
- Hot
- Cold

**Describe its texture:** (You may circle more than one.)
- Creamy
- Crunchy
- Rough
- Smooth
- Dry
- Juicy
- Slimy

**How did you like it?** (Circle one.)
- Happy
- Neutral
- Sad

**Do you want to eat it again?** (Circle one.)
- Yes!
- Maybe
- No way!

**Write a few sentences about this dish:**

---

**Top Secret Cole Slaw**

*Includes:* Cabbage, Carrots

**How did it taste?** (You may circle more than one.)
- Sweet
- Salty
- Bitter
- Spicy
- Sour
- Savory
- Hot
- Cold

**Describe its texture:** (You may circle more than one.)
- Creamy
- Crunchy
- Rough
- Smooth
- Dry
- Juicy
- Slimy

**How did you like it?** (Circle one.)
- Happy
- Neutral
- Sad

**Do you want to eat it again?** (Circle one.)
- Yes!
- Maybe
- No way!

**Write a few sentences about this dish:**

---

Trading Cards

[Image of Trading Cards]
Master Explorer Certificate

Congrats!

Susan

for completing the Master Explorer Challenge:

Super Specialist

Master Explorer Banner (cafeteria)

BECOME

Master Explorers!
Apple Dunkers
APPENDIX 1.3: CHILD INTERVIEWER-ADMINISTERED SURVEY (PRE/POST)

School Lunch
The school lunch recall asks about each food item on the NSLP menu for the day on which the school lunch recall is completed. The school lunch recall consists of four questions for each item, with response options shown in quotation marks:

“First I am going to ask you some questions about what you eat for lunch at school. Are you ready to begin?”

1. Did you eat school lunch today? “yes,” “no”
   a. If “yes”:
      i. Did you choose the [insert menu item]? “yes,” “no”
      ii. How much of the [insert menu item] did you eat? “I didn’t eat any of it,” “I tasted it,” “I ate a little bit,” “I ate half of it,” “I ate most of it,” “I ate all of it”
      iii. How much did you like [insert menu item]? “I loved it,” “I liked it,” “I didn’t like it,” “I didn’t taste it”
   b. If “no”:
      i. Why did you not eat school food today?
      ii. Did you bring food from home? “yes,” “no”
      iii. If brought food from home, conduct brief multi-pass diet recall assessment
         1. Please describe what you brought from home
         2. How much did you eat? “I didn’t eat any of it,” “I tasted it,” “I ate a little bit,” “I ate half of it,” “I ate most of it,” “I ate all of it”
         3. So you ate [insert response here]: did you eat anything else (any fruits? any vegetables?)
         4. What did you have to drink?
         5. Is there anything else you ate (include trading food with other students)?
         6. How much did you like [insert response here]? “I loved it,” “I liked it,” “I didn’t like it,” “I didn’t taste it”

2. How often do you eat school lunch? Pick the best answer: “Never”, “Once per month”, “2-3 times per month”, “Once a week”, “2-3 times per week”, “4-5 times per week”

“Next, I am going to read some statements about fruits and vegetables, and I am going to ask you how much you agree or disagree with them. There are no right or wrong answers to these questions – only your opinion. The way you answer these questions is on this scale (show visual chart). A 1 means you disagree a lot, a 2 means you disagree a little, a 3 means you’re not sure, a 4 means you agree a little, and a 5 means you agree a lot. You can answer a 1,2,3,4, or 5 for each statement – just say the number or point to it on this chart. Do you have any questions about this? OK, let’s begin!”

Attitudes – (Source: Adapted from Cooking Matters/Food Alienation Scales)
1. I like fruit.
2. I like vegetables.
3. I won’t try a fruit if it looks odd.
4. I won’t try a vegetable if it looks odd.
Outcome Expectations (Source: Baranowski’s GIMME 5 Atlanta)
If I eat fruit or vegetables at lunch…
1. My friends will make fun of me.
2. It will keep me from getting fat.
3. My family will be proud of me.
4. I will be healthier.
5. I will have more energy.
6. I will have stronger eyes.
7. I will become stronger.
8. I will think better in class.

Descriptive Norms (Source: 4 items from Cullen et al. (2001) scale)
My friends like to eat fruit at lunch.
My friends like to eat vegetables at lunch.
Most kids eat fruit at lunch.
Most kids eat vegetables at lunch.

Descriptive Norms – (Source: adapted from Cullen et al. (2001) scales)
Most kids my age think that eating 1 fruit at lunch is…
Most kids my age think that eating 1 vegetable at lunch is…
Most people in my family think that eating 1 fruit at lunch is…
Most people in my family think that eating 1 vegetable at lunch is…
Most teachers think that eating 1 fruit at lunch is…
Most teachers think that eating 1 vegetable at lunch is…

Injunctive Norms - items from Cullen et al. (2001) scales
How much do your friends encourage you to eat fruit at lunch?
How much do your friends encourage you to eat vegetables at lunch?
How much do your parents encourage you to eat fruit at lunch?
How much do your parents encourage you to eat vegetables at lunch?
How much do your teachers encourage you to eat fruit at lunch?
How much do your teachers encourage you to eat vegetables at lunch?
Response scale: Encourages a lot, encourages a little, neither encourages nor discourages, discourages a little, discourages a lot

**Self-efficacy** – (Source: adapted from Baranowski et al. Boy Scout project)

“Now I am going to ask you some questions about how sure you are that you could eat an entire piece of fruit or a vegetable at lunch. In life, some things are harder to do than others because of how you feel about doing them. Like if you’re shy about singing by yourself in front of other people and I ask you to tell me whether you disagree or agree with the following statement: “I am sure that I can stand up and sing by myself in front of my class.” You might say you disagree a little or a lot.
For the next questions, you’re going to answer on this response scale again (show chart). OK?”

- I am sure I can eat a fruit that’s served at lunch.
- I am sure I can eat a vegetable that’s served at lunch.
- I am sure I can eat fruit for lunch even when my friends are not eating fruit.
- I am sure I can eat vegetables for lunch even when my friends are not eating vegetables.
- I am sure I can eat fruit for lunch even if my friend says something bad about fruit.
- I am sure I can eat vegetables for lunch even if my friend says something bad about vegetables.

Response scale: Disagree a lot, Disagree a little, Not sure, Agree a little, Agree a lot

**Demographics**
Age: ____________
Grade: __________
Sex: Female / Male
Race (interviewer determined):
- White
- Black
- Asian
- American Indian/Pacific Islander
- Other (please specify): ____________

Do you identify as Hispanic? □ Yes □ No
Good morning/afternoon and thank you for taking time out of your day to share your thoughts and opinions regarding the Food Explorers program. My name is __________ and I will be interviewing you today.

I am conducting this interview for UNC Chapel Hill. You were selected to be interviewed because you are a student in the Rockingham County School District that participated in the Food Explorers program. Your opinion and input are invaluable. Your opinions will be combined with those of other interviewees and no names will be included in any reports.

I’m going to ask you a series of questions and this should take us about 30 minutes. We are grateful for your participation in this interview and I look forward to sharing the findings from our research.

I don’t want to miss anything you say, so if it’s ok with you, I am going to tape record today’s session. Can I record our conversation? Please keep in mind that there are no right or wrong answers, we are just looking for your opinion and your experiences with the program, and your name will never be published in connection with the information you provide. So, feel free to be candid in your responses.

Now let’s begin.

School Food Questions
Let’s start our discussion with some general questions about the school food – specifically, the fruit and vegetable dishes.

1. What did you think about school lunch this past year (SY2013-2014)?
2. What did you think about the fruit and vegetable dishes in school lunch this past year?
3. What were some of your experiences with the school lunch?
4. How do you think the school lunch food this year compared to past years?

Food Explorers: Implementation
1. What did you think about the FE classroom program?
2. Did you feel like you were motivated to do the program? Why or why not?
3. Now think about the cafeteria. What are your thoughts about the cafeteria changes this past year, such as the banner, pictures on the wall, and labels for the F&V dishes?
4. Do you feel that your school really embraced FE? Why or why not?
5. Overall, what would you say worked well with FE? What didn’t work well and how could we fix it?
6. If we do Food Explorers again at this school or another school, what changes would you recommend?
Food Explorers: Effects
1. Did your teachers change their eating habits as a result of the program?
2. Did you hear any stories from your friends about the FE program changing their eating habits?
3. Did the Food Explorers program change your eating habits at all?

Do you have any other comments about the FE program you want to tell me about?

Demographics
Gender:
Age:
School:

Thanks again for your time and responses – your experiences are invaluable.
Appendix 1.5: Parent In-Depth Interview (Post)

Good morning/afternoon and thank you for taking time out of your day to share your thoughts and opinions regarding the Food Explorers program. My name is ______________ and I will be interviewing you today.

I am conducting this interview for UNC Chapel Hill. You were selected to be interviewed because you are a parent in a Rockingham County school that participated in the Food Explorers program. Your opinion and input are invaluable. Your opinions will be combined with those of other interviewees and no names will be included in any reports.

I'm going to ask you a series of questions and this should take us about 30 minutes. We are grateful for your participation in this interview and I look forward to sharing the findings from our research.

I don't want to miss anything you say, so if it's ok with you, I am going to tape record today's session. Can I record our conversation? Please keep in mind that there are no right or wrong answers, we are just looking for your opinion and your experiences with the program, and your name will never be published in connection with the information you provide. So, feel free to be candid in your responses.

Now let's begin.

School Food Questions
Let's start our discussion with some general questions about the school food – specifically, the fruit and vegetable dishes.

1. What grade(s) was your child in this past school year (SY2013-2014)?
2. How often did your child (children) participate in school lunch this past year (SY2013-2014)? Why?
3. How often did you participate in school lunch this past year? Why?
4. What did you think about school lunch this past year (SY2013-2014)?
5. What did you think about the fruit and vegetable dishes in school lunch this past year?
6. What were some of your experiences with the school lunch?
7. How do you think the school lunch food this year compared to past years?

Food Explorers: Implementation
7. What did you think about the FE classroom program?
   a. Passports?
   b. Trading cards?
   c. Certificates?
8. Were teachers motivated to do the program? Why or why not?
9. Were CNS staff motivated to do the program? Why or why not?
10. How did you implement FEs in your classroom?
11. Now think about the cafeteria. What are your thoughts about the cafeteria changes this past year, such as the banner, pictures on the wall, and labels for the F&V dishes?
12. How was working with your FE ambassador?
13. Do you feel that your school really embraced FEs? Why or why not?
14. Overall, what would you say worked well with FEs? What didn’t work well and how could we fix it?
15. If we do Food Explorers again at this school or another school, what changes would you recommend?

Food Explorers: Students
1. Now let’s talk about your child (children). How did she/he/they react to the FE program?
   a. Positive experiences?
   b. Negative experiences?

Food Explorers: Effects
4. Did you observe any changes in your child’s (children’s) eating habits as a result of the program?
5. Did you hear any stories about the FE program changing student or teacher eating habits?
6. Did the Food Explorers program change your eating habits at all?

Do you have any other comments about the FE program you want to tell me about?

Demographics
Gender:
Age:
School:
How many children do you (personally) have?

Thanks again for your time and responses – your experiences are invaluable.
Good morning/afternoon and thank you for taking time out of your day to share your thoughts and opinions regarding the Food Explorers program. My name is _______________ and I will be interviewing you today.

I am conducting this interview for UNC Chapel Hill. You were selected to be interviewed because you are a teacher in the Rockingham County School District that participated in the Food Explorers program. Your opinion and input are invaluable. Your opinions will be combined with those of other interviewees and no names will be included in any reports.

I’m going to ask you a series of questions and this should take us about 30 minutes. We are grateful for your participation in this interview and I look forward to sharing the findings from our research.

I don’t want to miss anything you say, so if it’s ok with you, I am going to tape record today’s session. Can I record our conversation? Please keep in mind that there are no right or wrong answers, we are just looking for your opinion and your experiences with the program, and your name will never be published in connection with the information you provide. So, feel free to be candid in your responses.

Now let’s begin.

School Food Questions
Let’s start our discussion with some general questions about the school food – specifically, the fruit and vegetable dishes.

1. What did you think about school lunch this past year (SY2013-2014)?
2. What did you think about the fruit and vegetable dishes in school lunch this past year?
3. What were some of your experiences with the school lunch?
4. How do you think the school lunch food this year compared to past years?

Food Explorers: Implementation
1. What did you think about the FE classroom program?
2. Did you feel like you were motivated to do the program? Why or why not?
3. Were other teachers motivated to do the program? Why or why not?
4. Did you think people noticed whether you or other teachers did what you were asked to do? (i.e., the FE classroom program). Why?
5. Do you feel like you got what you needed to implement FEs successfully?
6. How did you implement FEs in your classroom?
   a. Passports?
   b. Trading cards?
   c. Certificates?
7. Now think about the cafeteria. What are your thoughts about the cafeteria changes this past year, such as the banner, pictures on the wall, and labels for the F&V dishes?
8. How was working with your ambassador?
9. Do you feel that your school really embraced FEs? Why or why not?
10. Overall, what would you say worked well with FEs? What didn’t work well and how could we fix it?
11. If we do Food Explorers again at this school or another school, what changes would you recommend?

Food Explorers: Students
1. Now let’s talk about your students. How did they react to the FE program?
   a. Positive experiences?
   b. Negative experiences?

Food Explorers: Effects
1. Did you observe any changes in student eating habits as a result of the program?
2. Did you hear any stories from students about the FE program changing eating habits?
3. Did the Food Explorers program change your eating habits at all?

Do you have any other comments about the FE program you want to tell me about?

Demographics
Gender:
Age:
School:
How many children do you (personally) have?
What grade do you teach?

Thanks again for your time and responses – your experiences are invaluable.
APPENDIX 1.7: SCHOOL NUTRITION SERVICES STAFF IN-DEPTH INTERVIEW (POST)

Good morning/afternoon and thank you for taking time out of your day to share your thoughts and opinions regarding the Food Explorers program. My name is _______________ and I will be interviewing you today.

I am conducting this interview for UNC Chapel Hill. You were selected to be interviewed because you are a child nutrition staff person in the Rockingham County School District that participated in the Food Explorers program. Your opinion and input are invaluable. Your opinions will be combined with those of other interviewees and no names will be included in any reports.

I’m going to ask you a series of questions and this should take us about 30 minutes. We are grateful for your participation in this interview and I look forward to sharing the findings from our research.

I don’t want to miss anything you say, so if it’s ok with you, I am going to tape record today’s session. Can I record our conversation? Please keep in mind that there are no right or wrong answers, we are just looking for your opinion and your experiences with the program, and your name will never be published in connection with the information you provide. So, feel free to be candid in your responses.

Now let’s begin.

School Food Questions
Let’s start our discussion with some general questions about the school food – specifically, the fruit and vegetable dishes.

1. What did you think about school lunch this past year (SY2013-2014)?
2. What did you think about the fruit and vegetable dishes in school lunch this past year?
3. What were some of your experiences with the school lunch?
4. How do you think the school lunch food this year compared to past years?

Food Explorers: Implementation
1. What do you know about the FE classroom program?
   a. Were teachers motivated to do the program? Why or why not?
2. Do you feel like you got what you needed to implement FEs successfully?
3. Now think about the cafeteria. What are your thoughts about the cafeteria changes this past year, such as the banner, pictures on the wall, and labels for the F&V dishes?
   a. Were CNS staff motivated to do the program? Why or why not?
4. How was working with your ambassador?
5. Do you feel that your school really embraced FEs? Why or why not?
6. Overall, what would you say worked well with FEs? What didn’t work well and how could we fix it?
7. If we do Food Explorers again at this school or another school, what changes would you recommend?
Food Explorers: Students
   1. Now let’s talk about your students. How did they react to the FE program?
      a. Positive experiences?
      b. Negative experiences?

Food Explorers: Effects
   1. Did you observe any changes in student eating habits as a result of the program?
   2. Did you hear any stories from students about the FE program changing eating habits?
   3. Did the Food Explorers program change your eating habits at all?

Do you have any other comments about the FE program you want to tell me about?

Demographics
Gender:
Age:
School:
How many children do you (personally) have?

Thanks again for your time and responses – your experiences are invaluable.
Food Explorers  
Teacher's Quick Reference Guide

Materials
Each student will receive (1) pouch with (1) passport in it at the beginning of the year. We highly recommend that students’ names be written on each pouch and passport. The bins hold students’ pouches containing their passports and trading cards. Passports and trading cards stay at school and under the control of the teacher, who decides when pouches are handed out to students and collected.

- **Storage Bin**
  - Food Explorer Pouches (1 per student)
  - Food Explorer Passports (1 per student)
  - Food Explorer Trading Cards (2 per student each week)
  - (1) Food Explorer Stamp and (2) ink pads
- **Binder**
  - Teacher’s Quick Reference Guide
  - Monthly Tracking Sheets
  - Master Explorer certificates (for students to take home)
  - Master Explorer nameplates (for cafeteria wall)

Passports
**Part 1: Fact Pages** for each of the 38 fruits and vegetables on the new menu:
- Identify which dishes include each fruit or vegetable
- Present how many **health points** the fruit or vegetable has
- Allow students to track the number of cards they collect of that fruit/vegetable
- Allow students to track health points when they consume that fruit or vegetable

**Part 2: Stamp Pages** for each of the new dishes in the school lunch program:
- Allow students to provide feedback once they’ve tried a fruit or a vegetable
- Allow students to receive a stamp from the teacher once they’ve completed a stamp page

*Please use 1 color per semester so in the spring you can easily identify when pages where stamped.*

Each passport also includes a reference page for tracking overall points toward Master Explorer status, as well as a handy index to cross reference between fact pages and stamp pages.

Trading Cards
There are 39 trading cards – one for each of the 38 fruits and vegetables featured in the new menu, plus one Wildcard ("Mystery Food"). Each classroom will be provided with enough trading cards to distribute 2 to each student for the 18 weeks of each semester. **Each fruit or vegetable trading card:**
- Features a **Color:** Red, Orange, Yellow, Green or Purple.
- Identifies with one of **4 Food Types:** Fruit Forager, Green Machine, Agent Red, or Fiber Force.
Features one or more Health Perks: Immunity Shield, Super Strength, Energy Boost, Vibrant Vision and Brain Power.  

Represented a Health Point Value (HP): +10, +20, +40 or +60.  

The Wildcard, “Mystery Food”: This card can be given the properties of any card a student chooses. For example, a student could choose to make her wildcard the Collards card, which has 60 health points, is the Green Machine type, and has Energy Boost and Vibrant Vision perks. (There are no rules about when a student has to decide how to use their wildcard.)

Becoming a Master Explorer!  
There are several ways that students can become Master Explorers, and they can keep track of their progress toward their goals on special pages at the back of the passports. As a starting point, each student must have 12 stamped passport pages, but from there they have four ways to achieve Master Explorer status:

- "Color Wizard": Collect 5 trading cards from each of the 5 colors (25 cards total).
- "Big Collector": Collect 6 cards from each of the 4 types (24 cards total).
- "Super Specialist": Collect all cards from two perks of your choice (Varies depending on the two perks a student selects)
- "High Scorer": Earn 2,000 HP points from trading card HP + Passport HP points.

An Example: Super Specialist  
Requirements: 1) Collect 12 stamped passport pages; and (2) Collect all cards from two perks of your choice.  
Susie chooses Brain Power and Immunity Shield perks to pursue. At the end of the semester, she has 21 cards out of the 36 that apply to this challenge. There are a total of 12 Brain Power cards in play and 10 Immunity Shield cards.  
12 + 10 = 22, but one card, “Cabbage”, has both perks!

Implementation Expectations  
Basic Requirements of each Teacher
1. Distribute pouches/passports to each student the first week of school and ensure that students keep trading cards and passports in pouches and at school.  
2. Encourage students to fill out their passports, preferably after lunchtime for best recall.  
3. Stamp (1) passport page per student per week.  
4. Randomly distribute (2) trading cards to each student once each week.  
5. Verify students who say they have reached Master Explorer objective.  
6. Write the student’s name on a certificate to go home.  
7. Write the student’s name on a paper plaque and give to the cafeteria staff to post on the cafeteria wall.  
8. Complete the tracking sheet once per month and give to your school’s Ambassador.

Suggestions for Passports
- Allow students to complete their passports as time allows. For example: during quiet time, as a reward for finishing work early, during recess, etc.  
- Choose a day for passports to be “due”. Collect them, and stamp completed pages.
Set aside a specific time every week to stamp passports. You could decide to only stamp one page a week, so students would have to choose which pages they want stamped. Have students line up at your desk with the page they want to be stamped. Delegate passport stamping to a “star” student during group work.

Suggestions for Trading Cards
- Choose a day to distribute cards and deal 2 cards per student.
- Distribute 1 card per student, two days per week.
- Allow students to bring their cards to recess so they can trade during regular free time.
- Have “Trading Tuesdays” (or Thursdays!), where time is set aside for students to compare and trade cards. Part of the fun of collecting is the ability to trade with friends.

Food Explorer Ambassadors
Should you have any questions, please contact your school’s dedicated Food Explorer Ambassador.
- NAME (school)
APPENDIX 1.9: TEACHER TRACKING FORM

Food Explorers
Tracking Form: Revised

Name: 
Grade Taught: Third | Fourth  School Name: 
Month: OCTOBER 2013

Weekly Checklist
Please circle ‘Yes’ or ‘No’ if the action was taken during the specific week. Your honesty is appreciated!

<table>
<thead>
<tr>
<th>Week of the Month</th>
<th>Gave Each Student 2 Cards</th>
<th>Gave Students Time to Trade Cards</th>
<th>Gave Students Time to Fill Out Passports</th>
<th>Stamped Passports at Least Once</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Week 2</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Week 3</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Week 4</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Feedback:

Food Explorer Completion
Fill out the form below if a student in your classroom has reached ‘Food Explorer’ Status.

<table>
<thead>
<tr>
<th>Date Verified</th>
<th>Student’s Name</th>
<th>Challenge Completed (circle one)</th>
<th>Filled Out Take-Home Certificate</th>
<th>Gave Certificate for Posting in Cafeteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Color Wizard</td>
<td>Super Specialist</td>
<td>Big Collector</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Color Wizard</td>
<td>Super Specialist</td>
<td>Big Collector</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Color Wizard</td>
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<td>Big Collector</td>
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<tr>
<td></td>
<td></td>
<td>Color Wizard</td>
<td>Super Specialist</td>
<td>Big Collector</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Color Wizard</td>
<td>Super Specialist</td>
<td>Big Collector</td>
</tr>
</tbody>
</table>

Feedback:

Please turn into Food Explorer Ambassador at the end of the month for your chance to become the food explorer MVP!
**APPENDIX 1.10: PROCESS EVALUATION FORM**

**Process Evaluation Form**

Date: ____/____/__________

Time: __________ AM / PM (circle one)

Data Collector: __________________

School: □ Moss Street  □ Williamsburg  □ Douglass  □ Stoneville

1. School Intervention Food List: *Are fruits & veggies available and labeled on menu?*

**Instructions:** If the product is visibly available you do not need to ask food nutrition staff about it (just circle ‘yes’). However, if you cannot see the product, ask the FNS if it is available and include any additional comments in box provided (such as “Yes, but we are running low”).

<table>
<thead>
<tr>
<th>Product on Take-Home Menu</th>
<th>Product on Serving Line</th>
<th>Product Listed on Posted Menu (MyPlate)</th>
<th>Product Labeled with POS Sign</th>
<th>Additional Comments (if any)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit 1:</td>
<td>Fruit 1:</td>
<td>Yes No</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Fruit 2:</td>
<td>Fruit 2:</td>
<td>Yes No</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Fruit 3:</td>
<td>Fruit 3:</td>
<td>Yes No</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Veggie 1:</td>
<td>Veggie 1:</td>
<td>Yes No</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Veggie 2:</td>
<td>Veggie 2:</td>
<td>Yes No</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Veggie 3:</td>
<td>Veggie 3:</td>
<td>Yes No</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td>Other:</td>
<td>Yes No</td>
<td>Yes No</td>
<td></td>
</tr>
</tbody>
</table>
### 2. Stakeholder Involvement & Fidelity

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Tasks</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Nutrition Staff</td>
<td>At your visit – did you hear any verbal encouragement to try F&amp;V</td>
<td>Yes</td>
</tr>
<tr>
<td>Food Nutrition Staff</td>
<td>Are the fruit cut up, as intended?</td>
<td>Yes</td>
</tr>
<tr>
<td>Food Nutrition Staff</td>
<td>Are the veggies cut up, as intended?</td>
<td>Yes</td>
</tr>
<tr>
<td>Food Nutrition Staff</td>
<td>Are the fruits served with dip, as intended?</td>
<td>Yes</td>
</tr>
<tr>
<td>Food Nutrition Staff</td>
<td>Are the veggies served with dip, as intended?</td>
<td>Yes</td>
</tr>
<tr>
<td>Food Nutrition Staff</td>
<td>The recipes appear to be followed</td>
<td>Yes</td>
</tr>
</tbody>
</table>

2a. Additional Comments:

____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________

### 3. Cafeteria Observation

<table>
<thead>
<tr>
<th>Observations</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Be a Food Explorer’ Banner is hanging</td>
<td>Yes</td>
</tr>
<tr>
<td>‘Master Explorers’ are posted</td>
<td>Yes</td>
</tr>
<tr>
<td>How many Master Explorers are there posted?</td>
<td>_________ (#)</td>
</tr>
</tbody>
</table>
Thank you for agreeing to participate in our research study aimed at developing a fun and easy text message and social media program that helps parents raise healthy kids. You have been asked to participate because you are the PARENT/GUARDIAN of a 5th grader at Henderson Collegiate Charter School.

I will start by reviewing the consent form with you. Then we’ll move on to the questions. Remember there are no right or wrong answers, and you are an expert when it comes to parents and families at Henderson Collegiate. This interview will take on average 45 minutes.

[Review Consent Documents]

DEMOGRAPHICS
1. Age: ___
2. Race: White, Black, Asian, Pacific Islander, Native American, Mixed, Other, Prefer Not to Say
3. Ethnicity: Hispanic Y/N, Prefer Not to Say
4. Gender: Female/Male/Prefer Not to Say
5. Number of 4th or 5th grade children: ___
6. Number of children total: ___
7. Highest level of education: less than high school, GED, high school diploma, some college, 4 year college degree, master’s degree, doctorate or terminal degree
8. Occupation: __________
9. Household income level: less than $20,000; $20,001 - $30,000; $30,001 - $45,000; $45,001 - $60,000; more than $60,000

Do you have any questions? Just a reminder that this interview is recorded but your name and identifying information will never be linked to the information you provide – you will remain anonymous.

Let’s begin.
1. As a warm up, let’s start by going around and sharing one of our favorite foods when we were in grade school.

Community Context
1. How would you describe a healthy child? Tell me more about that.
2. On a scale of 1 to 5, 1 being not at all and 5 being all the time, how much do you think about your child’s diet and eating habits? Please explain your response.
   a. What are the barriers to children eating well?
   b. What helps children eat well?

Preferred Message Sources: Now we’re going to talk about where you get health information
3. Where do you currently get information about health for you and/or your child? Tell me more about that.
4. Who do you trust to give you accurate information about healthy eating and nutrition? Tell me more about that.
   a. Prompts (if needed): doctor, nutritionist, family, friend, school, student, government (state or federal), TV personalities, celebrities, journalists, etc.

5. Thinking about school food for a second: what are the “lunch ladies” (and “lunch guys”!) responsibilities each day?
   a. How much do you think school nutrition staff (“the lunch ladies”) know about healthy eating and nutrition? Please explain.
   b. How much do you think school nutrition managers/directors know about healthy eating and nutrition? Please explain.
   c. How much do you think the director of North Carolina’s School Nutrition Programs knows about healthy eating and nutrition? Please explain.

“Alright. We’re going to switch gears for a moment and talk about how you communicate.”

Communication Channels
1. Do you own a mobile phone? [IF NO, SKIP TO Q5]
2. If so, do you own a Smartphone (one that connects to the internet)?
3. How often do you send or receive text messages?
   a. Do you have an unlimited text message plan?
4. Do you use social media sites?
   a. [For those who do use social media] Which social media sites do you prefer? Tell me more about your preferences.
   b. How do you access social media sites? E.g.
      i. On a home computer using broadband internet?
      ii. On a home computer using dial-up?
      iii. On a mobile phone?
      iv. Other (please explain)?

5. Whether you own a mobile phone/engage with social media or not…
   a. How do you prefer to communicate with family? Friends? The School? (e.g. in person, phone, email, text, social media, other)? Please explain.

“Raising healthy children is hard; we can all use outside support and resources to help us do our best with our kids.”

Specific Nutrition/Parenting Knowledge Sought (*refer to list below for prompts as needed)
1. What does it mean to be a “good eater”? 
   a. How can you tell a child is getting enough of the right stuff to eat?
2. Thinking about raising healthy children, what meal times cause you the most stress? Tell me more about that.
3. Please describe the nutrition/healthy eating questions you would like to ask “the experts” and get real answers about. To help us later on, please write one question down on your notecard for us to use later.
   [E.g. if needed: “Should my child eat low fat foods, and if so what are some tasty low fat vegetable recipes?”; “Is it true that whole wheat bread is better for you? Why?” “How do I get my family to turn off the TV and sit around the table together? “How can we eat healthy as a family when I work 3 jobs?!”]
“The new project launching in September for families is an extension of an earlier project we conducted in elementary schools. That project, called Food Explorers, had three parts: (1) create new kid-friendly vegetable and fruit recipes and train the cafeteria staff to make those new recipes; (2) put up lots of fun signage [see examples] on the line and in the cafeteria to promote these new items; (3) a passport and trading card game for students to complete in class – if they tried 12 new foods, and got stamps to prove it, and collected the right trading cards [see examples] they could become Master Explorers and get their name, certificate, and picture up in the cafeteria under the Food Explorers banner PLUS celebrate with our team and the cafeteria staff with a frozen yogurt party at the end of the year. The primary mission of that project was to get kids to eat more fruits and vegetables at lunch.”

“I’ll stop there for your reactions to the original project.”

1. What are your initial reactions to this first project? What do you like about the design/the program? What do you not like about the design/the program?

“Now remember your questions for the ‘experts’ about healthy eating earlier? The new piece of the program we would like to add is this: in addition to all the fun activities at school, we’re proposing a FAMILY COMPONENT including a text message program that sends information to you, the parent, up to once per day, with information, tips, links to video clips, etc. that help you answer some of these healthy eating questions and support you to raise healthy kids. We’d ask you to share the texts and other program pieces with your student (and family too) to engage them in the learning process.

There would also be a social media site where you could ask questions of the ‘experts’, post pictures and phrases in response to challenges sent by text (e.g. “Share a picture of your family eating their favorite vegetable”), compete for small prizes each week by answering quiz questions about information shared by text that week, and get support from other parents who understand exactly where you’re coming from.

The text message and social media program would be managed by school food experts, perhaps someday at the district or state level.”

“I’ll stop there for your reactions to the family addition to the original Food Explorer project.”

1. What are your initial reactions to this piece? What do you like about the design of the family component? What do you not like about the proposed family component?
   a. Probes: frequency of text messages; content of text messages; accessing/using social media for healthy eating support; specific ‘expert’ behind the program; the idea of such a program coming from school food staff (at any level); incentives to participate; if phones and internet aren’t feasible delivery modes, alternatives?

ADDITIONAL QUESTION: How can school nutrition staff support families to raise healthy children? Thank you so much for your time. [BLANK] and I will help you sign out your gift card. Have a great day. Have a great day.
APPENDIX 2.2: FORMATIVE IN-DEPTH INTERVIEW GUIDE (TEACHER)

Thank you for agreeing to participate in our research study aimed at developing a fun and easy text message and social media program that helps parents raise healthy kids. You have been asked to participate because you are a TEACHER/ADMINISTRATOR at Henderson Collegiate Charter School, and our program will target 4th and 5th grade families at this school next year. I will start by reviewing the consent form with you. Then we'll move on to the questions. Remember there are no right or wrong answers, and you are an expert when it comes to parents and families at Henderson Collegiate. This interview will take on average 45 minutes.

[Review Verbal Consent]

Do you have any questions? Just a reminder that this interview is recorded but your name and identifying information will never be linked to the information you provide – you will remain anonymous.
Let's begin.

DEMOGRAPHICS
1. Age: ____
2. Race: White, Black, Asian, Pacific Islander, Native American, Mixed, Other, Prefer Not to Say
3. Ethnicity: Hispanic Y/N, Prefer Not to Say
4. Gender: Female/Male/Prefer Not to Say
5. Number of children (your own, not students): ______
6. School Role: __________
7. Highest level of education: less than high school, GED, high school diploma, some college, 4 year college degree, master’s degree, doctorate or terminal degree
8. Household income level: less than $20,000; $20,0001-$30,000; $30,001-$45,000; $45,001-$60,000; more than $60,000

Community Context
1. How would you describe a healthy child? Tell me more about that.
2. What are the greatest health concerns for 4th and 5th grade students in general in Henderson, NC? Please explain.
3. On a scale of 1 to 5, 1 being not at all and 5 being very important, how important is healthy eating and child diet to you as a teacher/administrator (not as a parent yourself)? Please explain your response.
   a. What are the barriers to your students eating well?
   b. What helps your students eat well?

Preferred Message Sources
1. Where do you get information about health for you? Tell me more about that.
2. Who do you trust to give you accurate information about healthy eating and nutrition? Tell me more about that.
a. Prompts (if needed): doctor, nutritionist, family, friend, school, student, government (state or federal), TV personalities, celebrities, journalists, etc.

3. How much do you think HC parents and families know about healthy eating and nutrition? Please explain.

4. How much do you think school nutrition staff know about healthy eating and nutrition? Please explain.

5. How much do you think school nutrition managers/directors know about healthy eating and nutrition? Please explain.

6. How much do you think the director of North Carolina’s School Nutrition Programs knows about healthy eating and nutrition? Please explain.

“Alright. We’re going to switch gears for a moment and talk about technology.”

Communication Channels

6. How do you currently communicate with families? What do you like/not like about each of these communication channels?

7. What communication channels [e.g. phone, text, email, in person, social media, other] elicit the fastest responses from families? Please explain.

8. What do you believe is the preferred communication channel for families (or channels)? Please explain.

9. How do you think school nutrition programs should communicate with families? Please explain.

Specific Nutrition/Parenting Knowledge Sought (*refer to list below for prompts as needed)

1. What does it mean to be a “good eater”?

2. Do you have concerns about what your students are eating? Please share more.
   a. What are your goals for your students re: these concerns?

3. Do you have concerns about how much food your students are eating? Please share more.
   a. What are your goals for your students re: these concerns?

4. As a teacher/administrator, what student meal times give you the most stress and why?

5. What nutrition/healthy eating education do you think families need to raise healthy students here in Henderson NC? Tell me more about that.

6. What parenting skills education do you believe families need to raise healthy students here in Henderson NC? Tell me more about that.

Now we’re going to talk about the program we’re developing and see what you think about it.

[SHOW FE SIGNAGE, STAMPS, TATTOOS, PASSPORT AND TRADING CARD EXAMPLES; SHOW TEXT MESSAGE AND SOCIAL MEDIA EXAMPLES]

“The new project launching in September for families is an extension of an earlier project we conducted in elementary schools. That project, called Food Explorers, had three parts: (1) create new kid-friendly vegetable and fruit recipes and train the cafeteria staff to make those new recipes; (2) put up lots of fun signage [see examples] on the line and in the cafeteria to promote these new items; (3) a passport and trading card game for students to complete in
class – if they tried 12 new foods, and got stamps to prove it, and collected the right trading
cards [see examples] they could become Master Explorers and get their name, certificate, and
picture up in the cafeteria under the Food Explorers banner PLUS celebrate with our team and
the cafeteria staff with a frozen yogurt party at the end of the year. The primary mission of that
project was to get kids to eat more fruits and vegetables at lunch.”

“I’ll stop there for your reactions to the original project.”

7. What are your initial reactions to this first project? What do you like about the design/the
program? What do you not like about the design/the program?

“Now remember your questions for the ‘experts’ about healthy eating earlier? The new piece of
the program we would like to add is this: in addition to all the fun activities at school, we’re
proposing a FAMILY COMPONENT including a text message program that sends information to
you, the parent, up to once per day, with information, tips, links to video clips, etc. that help you
answer some of these healthy eating questions and support you to raise healthy kids. We’d ask
you to share the texts and other program pieces with your student (and family too) to engage
them in the learning process.

There would also be a social media site where you could ask questions of the ‘experts’, post
pictures and phrases in response to challenges sent by text (e.g. “Share a picture of your family
eating their favorite vegetable”), compete for small prizes each week by answering quiz
questions about information shared by text that week, and get support from other parents who
understand exactly where you’re coming from.

The text message and social media program would be managed by school food experts,
perhaps someday at the district or state level.”

“I’ll stop there for your reactions to the family addition to the original Food Explorer project.”

8. What are your initial reactions to this piece? What do you like about the design of the
family component? What do you not like about the proposed family component?
   b. Probes: frequency of text messages; content of text messages; accessing/using
      social media for healthy eating support; specific ‘expert’ behind the program; the
      idea of such a program coming from school food staff (at any level); incentives to
      participate; if phones and internet aren’t feasible delivery modes, alternatives?

ADDITIONAL QUESTION: How can school nutrition staff support families to raise healthy
children?

Thank you so much for your time. Have a great day.
APPENDIX 2.3: FOCUS GROUP GUIDE (PARENT)

Welcome. My name is LINDEN THAYER and I am leading the Food Explorers: Family Edition project; this is [BLANK] our research assistant. Thank you for agreeing to share your thoughts and opinions about nutrition, food, child health, health communication technologies, and how schools and families can work together to improve child health. You were invited to participate because you have a child in the 5th grade at Henderson Collegiate. Your ideas will help us build a program that helps families like yours raise healthy kids using fun and easy technology. Today I will ask a series of questions, and ask you to share your thoughts and opinions. There are no right or wrong answers, and whatever you share today is confidential. I'm asking you to agree not to share what is discussed here outside this room. [BLANK] will take notes in case the recording doesn’t work, but [SHE/HE] won’t write down any names or identifying information. At the end of the hour you will receive your [VALUE] gift card for participating in our focus group session. Please help yourself to light refreshments at any time during this session. If you want to participate, I’ll need you to sign the consent form, but it is your choice to participate or not.

[FG CONSENT PROCESS]

COMPLETE WRITTEN DEMOGRAPHIC SURVEY JUST AFTER CONSENT PROCESS.

DEMOGRAPHICS
1. Age: ___
2. Race: White, Black, Asian, Pacific Islander, Native American, Mixed, Other, Prefer Not to Say
3. Ethnicity: Hispanic Y/N, Prefer Not to Say
4. Gender: Female/Male/Prefer Not to Say
5. Number of 4th or 5th grade children: ___
6. Number of children total: ___
7. Highest level of education: less than high school, GED, high school diploma, some college, 4 year college degree, master’s degree, doctorate or terminal degree
8. Occupation: __________
9. Household income level: less than $20,000; $20,0001 - $30,000; $30,001 - $45,000; $45,001 - $60,000; more than $60,000

Any questions?
Let’s begin

10. As a warm up, let’s start by going around and sharing one of our favorite foods when we were in grade school.

Global Questions
11. One the card in front of you, jot down a few words that describe a healthy child. Let’s share a few ideas.
12. What are some of the barriers to children eating well?
   c. What helps children eat well?
Preferred Message Sources: Now we’re going to talk about where you get health information.

13. Where do you currently get information about health for you and/or your child? Tell me more about that.

14. Who do you trust to give you accurate information about healthy eating and nutrition? Tell me more about that.
   a. Prompts (if needed): doctor, nutritionist, family, friend, school, student, government (state or federal), TV personalities, celebrities, journalists, etc.

15. Thinking about school food for a second: what are the “lunch ladies” (and “lunch guys”!) responsibilities each day?
   b. How much do you think school nutrition staff (“the lunch ladies”) know about healthy eating and nutrition? Please explain.
   c. How much do you think school nutrition managers/directors know about healthy eating and nutrition? Please explain.
   d. How much do you think the director of North Carolina’s School Nutrition Programs knows about healthy eating and nutrition? Please explain.

“Alright. We’re going to switch gears for a moment and talk about how you communicate.”

Communication Channels
16. How many of you own a mobile phone? [Hands - count]
   a. How many of you own a Smartphone (i.e. a phone that can connect to the internet)? [Hands - count]

17. For those who do own a mobile phone, do you send and receive text messages?

18. How many of you use social media sites? [Hands - count]
   b. For those who do use social media, what do you use social media for?
      i. Which social media sites do you prefer? Tell me more about your preferences.
   c. For those who do use social media, how do you access social media sites?
      [Hands – count] (E.g. On a home computer using broadband internet? On a home computer using dial-up? On a mobile phone? Other (please explain)?)

19. Whether you own a mobile phone/use social media or not…
   d. How do you prefer to communicate with family/friends/the school (e.g. in person, phone, email, text, social media, other)? Please explain.

“Raising healthy children is hard; we can all use outside support and resources to help us do our best with our kids.”

Specific Nutrition/Parenting Knowledge Sought (*refer to list below for prompts as needed)

9. What does it mean to be a “good eater”?
   a. How can you tell a child is getting enough of the right stuff to eat?

10. Thinking about raising healthy children, what meal times cause you the most stress? Tell me more about that.

11. Please describe the nutrition/healthy eating questions you would like to ask “the experts” and get real answers about. To help us later on, please write one question down on your notecard for us to use later.
   [E.g. if needed: “Should my child eat low fat foods, and if so what are some tasty low fat vegetable recipes?”; “Is it true that whole wheat bread is better for you? Why?”

105
“How do I get my family to turn off the TV and sit around the table together? “How can we eat healthy as a family when I work 3 jobs?!"

Now we’re going to talk about the program we’re developing and see what you think about it. [SHOW FE SIGNAGE, STAMPS, TATTOOS, PASSPORT AND TRADING CARD EXAMPLES; SHOW TEXT MESSAGE AND SOCIAL MEDIA EXAMPLES]

“The new project launching in September for families is an extension of an earlier project we conducted in elementary schools. That project, called Food Explorers, had three parts: (1) create new kid-friendly vegetable and fruit recipes and train the cafeteria staff to make those new recipes; (2) put up lots of fun signage [see examples] on the line and in the cafeteria to promote these new items; (3) a passport and trading card game for students to complete in class – if they tried 12 new foods, and got stamps to prove it, and collected the right trading cards [see examples] they could become Master Explorers and get their name, certificate, and picture up in the cafeteria under the Food Explorers banner PLUS celebrate with our team and the cafeteria staff with a frozen yogurt party at the end of the year. The primary mission of that project was to get kids to eat more fruits and vegetables at lunch.”

“I’ll stop there for your reactions to the original project.”

12. What are your initial reactions to this first project? What do you like about the design/the program? What do you not like about the design/the program?

“Now remember your questions for the ‘experts’ about healthy eating earlier? The new piece of the program we would like to add is this: in addition to all the fun activities at school, we’re proposing a FAMILY COMPONENT including a text message program that sends information to you, the parent, up to once per day, with information, tips, links to video clips, etc. that help you answer some of these healthy eating questions and support you to raise healthy kids. We’d ask you to share the texts and other program pieces with your student (and family too) to engage them in the learning process.

There would also be a social media site where you could ask questions of the ‘experts’, post pictures and phrases in response to challenges sent by text (e.g. “Share a picture of your family eating their favorite vegetable”), compete for small prizes each week by answering quiz questions about information shared by text that week, and get support from other parents who understand exactly where you’re coming from.

The text message and social media program would be managed by school food experts, perhaps someday at the district or state level.”

“I’ll stop there for your reactions to the family addition to the original Food Explorer project.”

13. What are your initial reactions to this piece? What do you like about the design of the family component? What do you not like about the proposed family component?

   c. Probes: frequency of text messages; content of text messages; accessing/using social media for healthy eating support; specific ‘expert’ behind the program; the idea of such a program coming from school food staff (at any level); incentives to participate; if phones and internet aren’t feasible delivery modes, alternatives?
ADDITIONAL QUESTION: How can school nutrition staff support families to raise healthy children?
Thank you so much for your time. [BLANK] and I will help you sign out your gift card. Have a great day.

*Potential Nutrition Topics
Whole Grains
Fats
Sugars
Fruits
Vegetables
Healthy Cooking
Eating well on a budget
Eating well when no one has time to cook
Healthy Drinks
What’s the deal with milk?
Are processed foods so bad?
What’s the deal with salt/sodium?
Weight loss/weight maintenance

*Potential Parenting Topics
Teaching kids to enjoy healthy cooking/eating
Reducing fights with kids about food
Teaching kids to make healthy decisions on their own
Getting kids to try new foods
APPENDIX 2.4: FOCUS GROUP GUIDE (CHILD)

Welcome. My name is [NAME] and I am leading the Food Explorers: Family Edition project; this is [BLANK] our research assistant. Thank you for agreeing to share your thoughts and opinions about nutrition, food, child health, communication technologies, and how schools and families can work together to improve child health. You were invited to participate because you are a student in the 5th grade at Henderson Collegiate. Your ideas will help us build a program that helps families just like yours raise healthy kids using fun and easy digital communication tools.

Today I will ask some questions, and you will share your thoughts and opinions. Remember, there are no right or wrong answers, and whatever you share today is confidential and you and your fellow participants agree not to share what was discussed here outside this room. [BLANK] will take notes in case the recording doesn’t work, but [SHE/HE] won’t write down any names or identifying information. At the end of the hour, you will receive [STICKERS/STAMPS/ETC] for participating in our focus group session. Please help yourself to light refreshments and drinks at any time during this session.

I first need to review the assent forms in front of you; you must sign the assent form to participate and your parents had to have signed the consent form, but you do not have to participate if you do not want to. There are no penalties if you choose not to participate today.

[FG ASSENT PROCESS] [COLLECT PARENT CONSENT FORMS IF NOT DONE SO ALREADY]

WRITTEN DEMOGRAPHIC SURVEY

DEMOGRAPHICS
1. Age: ___
2. Race: White, Black, Asian, Pacific Islander, Native American, Mixed, Other, Prefer Not to Say
3. Ethnicity: Hispanic Y/N, Prefer Not to Say
4. Gender: Female/Male/Prefer Not to Say
5. Grade: ______

Any questions?
Let’s begin.
6. As a warm up, let’s start by going around and sharing one of our favorite foods .

Community Context
7. One the card in front of you, jot down a few words that describe a healthy kid. Let’s share a few ideas.
8. What are some of the barriers to you eating well?
   d. What helps you eat well?

Preferred Message Sources
9. Where do you currently get information about health? Tell me more about that.
10. Who do you trust to give you accurate information about healthy eating and nutrition? Tell me more about that.
   e. Prompts (if needed): doctor, nutritionist, family, friend, school, student, government (state or federal), TV personalities, celebrities, journalists, etc.
11. Thinking about school food for a second: what are the “lunch ladies” (and “lunch guys”!) responsibilities each day?
   f. How much do you think school nutrition staff (“the lunch ladies”) know about healthy eating and nutrition? Please explain.
   g. How much do you think school nutrition managers/directors know about healthy eating and nutrition? Please explain.
   h. How much do you think the director of North Carolina’s School Nutrition Programs knows about healthy eating and nutrition? Please explain.

“Alright. We’re going to switch gears for a moment and talk about technology.”
Communication Channels
12. How many of your parents own a mobile phone? [Hands - count]
   e. How many of your parents own a Smartphone that connects to the internet? [Hands - count]
13. How many of your parents use social media sites (e.g. Facebook, Twitter, Instagram, etc.)? [Hands - count]
14. Whether your family owns a mobile phone/engage with social media or not…
   f. How do you prefer to communicate with family/friends/the school (e.g. in person, phone, email, text, social media, other)? Please explain.

Healthy Eating and Family
14. What does it mean to be a “good eater”?
15. What are the most stressful meal times for you, and why?
16. Please describe the nutrition/healthy eating questions you would like to ask “the experts” and get real answers about.
   a. To help us later on, please write one question down on your notecard for us to use later.

[SHOW FE SIGNAGE, STAMPS, TATTOOS, PASSPORT AND TRADING CARD EXAMPLES; SHOW TEXT MESSAGE AND SOCIAL MEDIA EXAMPLES]

“The new project launching in September for families is an extension of an earlier project we conducted in elementary schools. That project, called Food Explorers, had three parts: (1) create new kid-friendly vegetable and fruit recipes and train the cafeteria staff to make those new recipes; (2) put up lots of fun signage [see examples] on the line and in the cafeteria to promote these new items; (3) a passport and trading card game for students to complete in class – if they tried 12 new foods, and got stamps to prove it, and collected the right trading cards [see examples] they could become Master Explorers and get their name, certificate, and picture up in the cafeteria under the Food Explorers banner PLUS celebrate with our team and the cafeteria staff with a frozen yogurt party at the end of the year. The primary mission of that project was to get kids to eat more fruits and vegetables at lunch.”
“I’ll stop there for your reactions to the original project.”

17. What are your initial reactions to this first project? What do you like about the design/the program? What do you not like about the design/the program?

“Now remember your questions for the ‘experts’ about healthy eating earlier? The new piece of the program we would like to add is this: in addition to all the fun activities at school, we’re proposing a FAMILY COMPONENT including a text message program that sends information to your parent, up to once per day, with information, tips, links to video clips, etc. that help you answer some of these healthy eating questions and help your family eat well. We’d ask your parent to share the information with you from their phone.

There would also be a social media site where your family could ask questions of the ‘experts’, post pictures and phrases in response to challenges sent by text (e.g. “Share a picture of your family eating their favorite vegetable”), compete for small prizes each week by answering quiz questions about information shared by text that week, and get support from other families who understand exactly where you’re coming from.

The text message and social media program would be managed by school food experts, perhaps someday at the district or state level.”

“I’ll stop there for your reactions to the family addition to the original Food Explorer project.”

18. What are your initial reactions to this piece? What do you like about the design of the family component? What do you not like about the proposed family component?

d. Probes: frequency of text messages; content of text messages; accessing/using social media for healthy eating support; specific ‘expert’ behind the program; the idea of such a program coming from school food staff (at any level); incentives to participate; if phones and internet aren’t feasible delivery modes, alternatives; reaction to sharing information on mobile phones with family?

ADDITIONAL QUESTION: How can school nutrition staff support families to raise healthy children?

Thank you so much for your time. Please pick up your small thank you gift on your way out!
APPENDIX 2.5: PARENT SURVEY (PRE/POST)

Food Explorers: Family Edition
Please complete and return this survey and attached raffle form to Henderson Collegiate by TUESDAY JUNE 2, 2015.

1. Do you own a mobile phone? Circle one: YES
   NO
   IF NO, SKIP TO Question 3
   g. If yes, how often do you send or receive text messages?
      □ Less than 1 text message per day
      □ 1-5 text messages per day
      □ 5-20 text messages per day
      □ More than 20 text messages per day
   h. Do you have an unlimited text message plan? Circle one: YES
      NO UNSURE

2. Do you own a Smartphone (a phone that can access the internet)? Circle one: YES
   NO

3. Do you use any SOCIAL MEDIA SITES? Circle one: YES
   NO
   i. IF NO, SKIP TO QUESTION 4
   j. If yes, how often do you use each site? Please CIRCLE your responses below.

<table>
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<th>Social Media Site</th>
<th>Use it?</th>
<th>Less than 1 time per week</th>
<th>1-5 times per week</th>
<th>More than 1 time per day</th>
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k. For those who do use social media, how do you access social media sites?
   Check all that apply.
   □ On a home computer using broadband internet
   □ On a home computer using dial-up
   □ On a work computer
   □ On a mobile phone
   □ Other (please explain) ___________________________
4. Where do you CURRENTLY get information about health and nutrition? Check all that apply.

- Doctor
- Nutritionist
- Nurse
- Family
- Friend
- School
- Your child
- Government (state or federal)
- TV personalities
- Celebrities
- TV news
- Printed news
- Magazines
- Social Media
- Other: ______________________

5. Do you have concerns about WHAT your child is eating (at school, at home AND in the community)? Circle one: YES NO
   
   I. Please explain:
   ____________________________________________
   ____________________________________________
   ____________________________________________

6. Do you have concerns about HOW MUCH your child is eating (at school, at home AND in the community)?
   
   m. YES, too much.
   n. YES, too little.
   o. NO

7. What is ONE nutrition/healthy eating question you have?
   ____________________________________________
   ____________________________________________
   ____________________________________________

8. Would you consider participating in a program that provides healthy eating information and support that required you and your child to work together reading text messages and posting on social media?

   Circle one: YES NO UNSURE
DEMOGRAPHICS

9. Age: _________

10. Race (Circle all that apply):
   - White
   - Black
   - Asian
   - Pacific Islander
   - Native American
   - Other
   - Prefer Not to Say

11. Ethnicity (circle one):
   - Hispanic: Yes
   - No
   - Prefer Not to Say

12. Gender: Female
   - Male
   - Prefer Not to Say

13. Pride(s) my child(children) belong to (circle all that apply):
   - 2019
   - 2020
   - 2021
   - 2022
   - 2023
   - 2024
   - N/A

14. Number of children total: ________________

15. Highest level of education (check one):
   - Less than high school
   - GED
   - High school diploma
   - Some college
   - 4 year college degree
   - Master’s degree
   - Doctorate or terminal degree

16. Occupation: ___________________________________

17. Household income level (check one):
   - Less than $20,000
   - $20,000 - $30,000
   - $30,001 - $45,000
   - $45,001 - $60,000
   - More than $60,000

Thank you for sharing your time and opinions. If you would like to be entered in a drawing for one of two $20 Walmart Gift Cards, please enter your NAME and PHONE NUMBER and/or EMAIL on the following page. Your information will never be linked to the survey you submit; all surveys will be combined and analyzed together without identifying information.

If you have any questions, please contact the study coordinator. Linden Thayer; (m) 301-461-7838; (e) lmelder@email.unc.edu.
Yes, I want to be entered in a raffle for one of two $20 Walmart Gift Cards.
NAME: ___________________________________
PHONE: ___________________________________
EMAIL: ___________________________________

Gift card recipients will be selected using an automated random number generator; recipients will be contacted by the study coordinator within 7 days after surveys are due. Three attempts will be made to reach recipients over one week; if no one responds during that time, a new name will be drawn and the process repeated.
## APPENDIX 2.6: CODEBOOK FOR IN-DEPTH INTERVIEW ANALYSIS

<table>
<thead>
<tr>
<th>Parent Code</th>
<th>Sub-Code</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>program perception</td>
<td>program perception <strong>positive</strong></td>
<td>Participant references positive <strong>perception</strong> of pilot program</td>
</tr>
<tr>
<td></td>
<td>program perception <strong>negative</strong></td>
<td>Participant references negative <strong>perception</strong> of pilot program</td>
</tr>
<tr>
<td>program logistics</td>
<td>text message logistics</td>
<td>Participant describes how they used (or did not use) text messages/how text messages functioned</td>
</tr>
<tr>
<td></td>
<td>Facebook logistics</td>
<td>Participant describes how they used (or did not use) FB/how FB functioned</td>
</tr>
<tr>
<td></td>
<td>email logistics</td>
<td>Participant describes how they used (or did not use) email/how email functioned</td>
</tr>
<tr>
<td>program components</td>
<td>text messages</td>
<td>Participant describes text messages in some way</td>
</tr>
<tr>
<td></td>
<td>Facebook</td>
<td>Participant describes FB in some way</td>
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<tr>
<td></td>
<td>email newsletter</td>
<td>Participant describes email newsletter in some way</td>
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<tr>
<td></td>
<td><strong>additional components</strong></td>
<td><em>this refers to program components participants would like to see added</em></td>
</tr>
<tr>
<td>program impact</td>
<td>Student impact - positive</td>
<td>Positive program effects on student</td>
</tr>
<tr>
<td></td>
<td>Student impact - negative</td>
<td>Negative program effects on student</td>
</tr>
<tr>
<td></td>
<td>Student impact - neutral</td>
<td>Neutral program effects on student</td>
</tr>
<tr>
<td></td>
<td>Family impact - positive</td>
<td>Positive program effects on families</td>
</tr>
<tr>
<td></td>
<td>Family impact - negative</td>
<td>Negative program effects on families</td>
</tr>
<tr>
<td></td>
<td>Family impact - neutral</td>
<td>Neutral program effects on families</td>
</tr>
<tr>
<td></td>
<td>Parent impact - positive</td>
<td>Positive program effects on parent</td>
</tr>
<tr>
<td></td>
<td>Parent impact - negative</td>
<td>Negative program effects on parent</td>
</tr>
<tr>
<td></td>
<td>Parent impact - neutral</td>
<td>Neutral program effects on parent</td>
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<td></td>
<td>Suggested improvements for program</td>
</tr>
<tr>
<td>program content</td>
<td><strong>additional content</strong></td>
<td>Participant refers to additional educational content they would like to see</td>
</tr>
<tr>
<td>motivation to participate</td>
<td></td>
<td>Participant motivation to participate</td>
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<tr>
<td>inspirational quote</td>
<td></td>
<td><em>If you see any, just highlight for later use!</em></td>
</tr>
</tbody>
</table>
APPENDIX 3: FOOD EXPLORERS: FAMILY EDITION (FE2) INTERVENTION MATERIALS
APPENDIX 3.1: CHILD SURVEY (PRE/POST)

STUDENT SURVEY

First, we’re going to ask you some questions about veggies and fruit. Do NOT include potatoes or French fries in your responses. Tell us how likely or unlikely it is that you do the following things (Very Unlikely, Unlikely, Not Sure, Likely, Very Likely, Does Not Apply):

**Self-Efficacy (Sharma et al 2014; *internal consistency validated in similar population)**
1. How likely are you to eat at least one serving of raw vegetables weekly?
2. How likely are you to ask your parent to put vegetables in your lunch?
3. How likely are you to eat vegetables in your school lunch?
4. How likely are you to bring vegetables from home to eat every time you bring your lunch?
5. How likely are you to eat vegetables at school at least twice a week?
6. How likely are you to eat vegetables at home at least twice a week?
7. How likely are you to eat vegetables when you eat out?
8. How likely are you to eat vegetables every day at school?
9. How likely are you to eat vegetables every day at home?
10. How likely are you to ask that vegetables be served with dinner?
11. How likely are you to eat vegetables when you are at school with your friends?
12. How likely are you to eat vegetables when you are at home with your family?
13. How likely are you to eat vegetables when you are at a friend’s house?
14. How likely are you to eat raw vegetables as snacks when at home?
15. How likely are you to eat raw vegetables as snacks when with friends?
16. How likely are you to bring vegetables from home to eat even if your friends are not?
17. How likely are you to finish eating your vegetables, even if your friend says something bad about them?
18. How likely are you to eat cooked vegetables even if your friends are not eating them?
19. How likely are you to eat a serving of raw vegetables, even if your friends are not eating them?
20. How likely are you to eat vegetables when you eat at a fast food restaurant with your friends?

More questions about eating veggies and fruit...tell us how much you agree or disagree with the following statements (Disagree a lot, Disagree a little, Neutral/ “Eh”, Agree a little, Agree a lot, Does not apply):

**Attitudes (adapted from Cooking Matters/Food Alienation Scales; *validated by Hollar et. Al 2013 in a similar population)**
1. I like fruit.
2. I will eat a fruit I have never tried before.
3. I like tasting new fruits.
4. I will taste a fruit even if I don’t know what it is.
5. I will taste a fruit even if it looks weird.
6. I will try a new fruit at a friend’s house.
7. I will try a new fruit at school.
8. I will try a new fruit at home.
9. I like vegetables.
10. I will eat a vegetable I have never tried before.
11. I like tasting new vegetables.
12. I will taste a vegetable even if I don’t know what it is.
13. I will taste a vegetables even if it looks weird.
14. I will try a new vegetable at a friend’s house.
15. I will try a new vegetable at school.
16. I will try a new vegetable at home.

*Descriptive Norms/Outcome Expectations (adapted from Cullen et al 2001; Baranowski’s GIMME 5 2000; *internal consistency validated in similar population))*
1. My friends eat fruit.
3. My family eats fruit.
4. My family eats vegetables.
5. My family eats vegetables when we go out to eat.
6. My family eats vegetables when we eat at church.
7. If I eat a vegetable, my friends will make fun of me.
8. If I eat a vegetable, my family will make fun of me.
9. If I eat a fruit or vegetable, my family will be proud of me.

*Now we’re going to ask you some questions about drinks (Very Unlikely, Unlikely, Not Sure, Likely, Very Likely, Does Not Apply):*

*Self-efficacy (Sharma et al 2014; *internal consistency validated in similar population))*
1. How likely are you to drink plain milk instead of chocolate milk?
2. How likely are you to drink only water when you are thirsty?
3. How likely are you to eat an apple instead of drinking apple juice?
4. How likely are you to drink water instead of soda?
5. How likely are you to drink milk instead of soda?
6. How likely are you to drink plain milk instead of chocolate milk when your friends are drinking chocolate milk?
7. How likely are you to eat an apple instead of drinking apple juice when you are at home?
8. How likely are you to drink milk instead of soda even if your friends are drinking soda?
9. How likely are you to drink water instead of a fruit flavored beverage (like Kool-aid)?
10. How likely are you to drink water instead of sports drinks when you are playing hard?

*Now we have some questions about school lunch (Disagree a lot, Disagree a little, Neutral/ “Eh”, Agree a little, Agree a lot, Does not apply):*

*Attitudes towards school lunch*
1. I like school lunch.
2. I like the vegetables in school lunch.
3. I like the fruit in school lunch.
4. School lunch recipes are interesting.
5. School lunch recipes are boring.
6. School lunch staff know a lot about cooking.
7. School lunch staff know a lot about nutrition.
8. School lunch staff are an important part of the school staff team.
9. School lunch staff are friendly.
School Meal Participation (Never, Once per month, 2-3 times per month, Once per week, 2-3 times per week, 4-5 times per week)
1. How often do you eat school breakfast?
2. How often do you eat school lunch?
3. How often do you eat snack at school?

Now we’d like you to tell us about what you ate yesterday (0, 1, 2, 3+, Does not apply):

Consumption (self-report)
1. How many different fruits did you eat at breakfast yesterday?
2. How many different vegetables did you eat at breakfast yesterday?
3. How many different fruits did you eat at lunch yesterday?
4. How many different vegetables did you eat at lunch yesterday?
5. How many different fruits did you eat at snack yesterday?
6. How many different vegetables did you eat at snack yesterday?
7. How many different fruits did you eat at dinner yesterday?
8. How many different vegetables did you eat at dinner yesterday?
9. How many sugary drinks (soda, sports drinks, energy drinks, fruit flavored drinks) did you consume yesterday?

More about what you ate yesterday (Yes, No, Does not apply):

Consumption (self-report)
1. Did you drink 100% juice at breakfast yesterday?
2. Did you drink milk at breakfast yesterday?
3. Did you drink water at breakfast yesterday?
4. Did you drink 100% juice at lunch yesterday?
5. Did you drink milk at lunch yesterday?
6. Did you drink water at lunch yesterday?
7. Did you drink 100% juice at snack yesterday?
8. Did you drink milk at snack yesterday?
9. Did you drink water at snack yesterday?
10. Did you drink 100% juice at dinner yesterday?
11. Did you drink milk at dinner yesterday?
12. Did you drink water at dinner yesterday?

FOLLOW UP SURVEY QUESTIONS

What was your FAMILY’S nutrition-related goal during this 12 week program?

Did you achieve your FAMILY goal during the 12 weeks? YES/NO

1. Have you seen any of the following Food Explorer components?
   a. Food Explorer fruit and veggie dishes on the cafeteria line? YES/NO
   b. Food Explorer lunch menus sent home each month? YES/NO
   c. Food Explorer labels on the cafeteria line? YES/NO
   d. Food Explorer Banner on the cafeteria wall? YES/NO
e. Food Explorer passports, trading cards, or other FE items in your classroom? YES/NO

2. Did you participate in the FE Classroom program (passports/trading cards)? YES/NO

3. How much do you agree with the following statements? (Disagree a lot, Disagree a little, Neutral/ “Eh”, Agree a little, Agree a lot, Does not apply)
   a. The Food Explorers passport and trading card game was fun.
   b. My teacher gave me time to participate in the Food Explorers passport and trading card game.
   c. The Food Explorers passport and trading card game got me to try new vegetables and fruits.
   d. The Food Explorers passport and trading card game helped me eat healthy.

4. Did you become a Master Explorer? YES/NO

5. Did your parent participate in the Food Explorers: Family Edition program (text messages, Facebook, website, emails)? YES/NO

6. Is there anything else you’d like to tell us about the Food Explorers or Food Explorers: Family Edition programs?

Demographics

1. Age:
2. Grade:
3. Gender (circle one): MALE/ FEMALE/ OTHER
APPENDIX 3.2: PARENT SURVEYS (PRE/POST)

How much do you agree with the following statements? (Disagree a lot, Disagree a little, Neutral/ “Eh”, Agree a little, Agree a lot, Does not apply)

Preferences/Attitudes/Beliefs (adapted from QuickChef Scales)
1. I like to cook.
2. I like to shop for food.
3. I involve my children in cooking and preparing meals.
4. I involve my children in meal planning.
5. I involve my children in food shopping.
6. I am the primary food shopper in my house.
7. I am the primary cook in my house.
8. It is easy to prepare veggies that my child enjoys.
9. Fresh vegetables are affordable.
10. Frozen vegetables are affordable.
11. It is easy to find high quality vegetables in my community.
12. I know how to prepare healthy meals that my child enjoys.

Attitudes (adapted from Cooking Matters/Food Alienation Scales)
1. I like fruit.
2. I will eat a fruit I have never tried before.
3. I like tasting new fruits.
4. I will taste a fruit even if I don’t know what it is.
5. I will taste a fruit even if it looks weird.
6. I will try a new fruit at a friend’s house.
8. I will try a new fruit at home.
9. I like vegetables.
10. I will eat a vegetable I have never tried before.
11. I like tasting new vegetables.
12. I will taste a vegetable even if I don’t know what it is.
13. I will taste a vegetables even if it looks weird.
14. I will try a new vegetable at a friend’s house.
15. I will try a new vegetable at home.

Descriptive Norms/Outcome Expectations (adapted from Cullen et al 2001 & Baranowski’s GIMME 5 2000)
1. My friends eat fruit.
3. My family eats fruit.
4. My family eats vegetables.
5. My family eats vegetables when we go out to eat.
6. My family eats vegetables when we eat at church.
7. If I eat a vegetable, my friends will make fun of me.
8. If I eat a vegetable, my family will make fun of me.
9. If I eat a fruit or vegetable, my family will be proud of me.

Where do you purchase vegetables and fruit? Check all that apply.

Grocery Store (e.g. SupplyLine); Supercenter (e.g. Walmart); Corner store/bodega/gas station; Farmers Market; Farm stand; I grow my own; Other (please specify)
First, we're going to ask you some questions about veggies and fruit. Do NOT include potatoes or French fries in your responses. Tell us how likely or unlikely it is that you do the following things (Very Unlikely, Unlikely, Not Sure, Likely, Very Likely, Does Not Apply):

**Self-Efficacy (adapted from Sharma et al 2014)**
1. How likely are you to eat at least one serving of raw vegetables weekly?
2. How likely is your child to ask you to put vegetables in their lunch?
3. How likely are you to eat vegetables in your lunch?
4. How likely are you to send vegetables from home in your child’s lunch
5. How likely are you to serve vegetables at home at least twice a week?
6. How likely are you to eat vegetables at home at least twice a week?
7. How likely are you to eat vegetables when you eat out?
8. How likely are your children to eat vegetables when you eat out?
9. How likely are you to eat vegetables every day at work?
10. How likely are you to eat vegetables every day at home?
11. How likely are your children to ask that vegetables be served with dinner?
12. How likely are you to eat vegetables when you are at church?
13. How likely are you to eat vegetables when you are at home with your family?
14. How likely are you to eat raw vegetables as snacks when at home?
15. How likely are you to eat raw vegetables as snacks when with friends?
16. How likely are you to bring vegetables to a party or other social gathering?
17. How likely are you to finish eating your vegetables, even if your family says something bad about them?
18. How likely are you to finish eating your vegetables, even if your friends say something bad about them?
19. How likely are you to eat cooked vegetables even if your family is not eating them?
20. How likely are you to eat cooked vegetables even if your friends are not eating them?
21. How likely are you to eat a serving of raw vegetables, even if your family is not eating them?
22. How likely are you to eat a serving of raw vegetables, even if your friends are not eating them?
23. How likely are you to eat vegetables when you eat at a fast food restaurant with your family?
24. How likely are you to eat vegetables when you eat at a fast food restaurant with your friends?

Now we’re going to ask you some questions about drinks (Very Unlikely, Unlikely, Not Sure, Likely, Very Likely, Does Not Apply):

**Self-efficacy (Sharma et al 2014)**
1. How likely are you to drink only water when you are thirsty?
2. How likely are you to eat an apple instead of drinking apple juice?
3. How likely are you to drink water instead of soda/sweet tea?
4. How likely are you to drink milk instead of soda/sweet tea?
5. How likely are you to eat an apple instead of drinking apple juice when you are at home?
6. How likely are you to drink water instead of soda even if your friends are drinking soda?
7. How likely are you to drink water instead of soda even if your family is drinking soda?
8. How likely are you to drink water instead of a fruit flavored beverage (like Kool-aid)?
9. How likely are you to drink water instead of sports drinks when you are working hard?
Now we’re going to ask you some questions about school meals (Very Unlikely, Unlikely, Not Sure, Likely, Very Likely, Does Not Apply):

**Attitudes/Beliefs**
1. My child likes school lunch.
2. My child likes the vegetables in school lunch.
3. My child likes the fruit in school lunch.
4. School lunch recipes are interesting.
5. School lunch recipes are boring.
6. School lunch staff know a lot about cooking.
7. School lunch staff know a lot about nutrition.
8. School lunch staff are an important part of the school staff team.
9. School lunch staff are friendly.
10. My child enjoys eating in the cafeteria.
11. School lunch is prepared using fresh ingredients.
12. School lunch staff prepare meals from scratch.

**School Meal Participation (Never, Once per month, 2-3 times per month, Once per week, 2-3 times per week, 4-5 times per week)**
1. How often does your child eat school breakfast?
2. How often does your child eat school lunch?
3. How often does your child eat snack at school?

Now we’d like you to tell us about what you ate yesterday (0, 1, 2, 3+, Does not apply):

**Consumption (self-report)**
1. How many different fruits did you eat at breakfast yesterday?
2. How many different vegetables did you eat at breakfast yesterday?
3. How many different fruits did you eat at lunch yesterday?
4. How many different vegetables did you eat at lunch yesterday?
5. How many different fruits did you eat at snack yesterday?
6. How many different vegetables did you eat at snack yesterday?
7. How many different fruits did you eat at dinner yesterday?
8. How many different vegetables did you eat at dinner yesterday?
9. How many sugary drinks (soda, sports drinks, energy drinks, fruit flavored drinks) did you consume yesterday?

More about what you ate yesterday (Yes, No, Does not apply):

**Consumption (self-report)**
1. Did you drink 100% juice at breakfast yesterday?
2. Did you drink milk at breakfast yesterday?
3. Did you drink water at breakfast yesterday?
4. Did you drink 100% juice at lunch yesterday?
5. Did you drink milk at lunch yesterday?
6. Did you drink water at lunch yesterday?
7. Did you drink 100% juice at snack yesterday?
8. Did you drink milk at snack yesterday?
9. Did you drink water at snack yesterday?
10. Did you drink 100% juice at dinner yesterday?
11. Did you drink milk at dinner yesterday?
12. Did you drink water at dinner yesterday?

FOLLOW UP SURVEY QUESTIONS

What was your FAMILY’S nutrition-related goal during this 12 week program?

Did you achieve your FAMILY goal during the 12 weeks? YES/NO

Process Evaluation

1. Did you read the FE2 program text messages? YES/NO
   a. If YES, please place an “X” next to the response that best reflects your reaction to the statements below (Disagree a lot, disagree a little, Neutral/ “Eh”, Agree a little, Agree a lot, Does not apply):
      a. There were too many text messages.
      b. The information in the messages was helpful to me.
      c. The text messages were easy to read.
      d. The text messages were easy to understand.
      e. The text messages helped me eat healthy.
      f. The text messages helped my family eat healthy.

2. Did you look at the FE2 Facebook page? YES/NO
   a. If YES, please place an “X” next to the response that best reflects your reaction to the statements below (Disagree a lot, disagree a little, Neutral/ “Eh”, Agree a little, Agree a lot, Does not apply):
      a. There were too many Facebook posts.
      b. The information on the Facebook page was helpful to me.
      c. The information on the Facebook page was easy to read.
      d. The information on the Facebook page was easy to understand.
      e. The information on the Facebook page helped me eat healthy.
      f. The information on the Facebook page helped my family eat healthy.

3. Did you look at the FE2 printed packet? YES/NO
   a. If YES, please place an “X” next to the response that best reflects your reaction to the statements below (Disagree a lot, disagree a little, Neutral/ “Eh”, Agree a little, Agree a lot, Does not apply):
      a. There was too much information in the printed packet.
      b. The information in the printed packet was helpful to me.
      c. The information in the printed packet was easy to read.
      d. The information in the printed packet was easy to understand.
      e. The information in the printed packet helped me eat healthy.
      f. The information in the printed packet helped my family eat healthy.
4. Did you send messages to the FE2 nutrition expert? YES/NO
   a. If YES, please place an “X” next to the response that best reflects your reaction to the statements below (Disagree a lot, disagree a little, Neutral/ “Eh”, Agree a little, Agree a lot, Does not apply):
      a. The nutrition expert responded in a timely manner.
      b. The nutrition expert’s response was helpful to me.
      c. The nutrition expert’s response was easy to read.
      d. The nutrition expert’s response was easy to understand.
      e. The nutrition expert’s response helpful me eat healthy.
      f. The nutrition expert’s response helped my family eat healthy.

5. Did you read the FE2 email newsletters? YES/NO
   a. If YES, please place an “X” next to the response that best reflects your reaction to the statements below (Disagree a lot, disagree a little, Neutral/ “Eh”, Agree a little, Agree a lot, Does not apply):
      a. There was too much information in the email.
      b. The information in the email was helpful to me.
      c. The information in the email was easy to read.
      d. The information in the email was easy to understand.
      e. The information in the email helped me eat healthy.
      f. The information in the email helped my family eat healthy.

6. Would you recommend this program to a friend? YES/NO
7. Would you participate in this program again? YES/NO
8. Is there anything else you would like to tell us about your experience with the FE2 program?

Demographics

1. Age: ____________
2. Grade: ____________
3. Gender (circle one): MALE/ FEMALE/ OTHER
4. Race (circle all that apply): WHITE, BLACK, AMERICAN INDIAN, PACIFIC ISLANDER, ASIAN, OTHER (please specify): ________________
5. Do you identify as Hispanic (do your parents speak Spanish at home)? YES NO
6. YOUR Height (in feet and inches): ______________
7. YOUR Weight (in pounds): ____________________
8. Your participating CHILD’s Height (in feet and inches): ______________
9. Your participating CHILD’s Weight (in pounds): ____________________
10. Your highest level of education (circle one): Less than High School, High School Diploma or GED, Some college/Associate’s Degree, Four year college degree, Master’s Degree, Terminal Degree (e.g. PhD, JD, MD)
11. Your combined family income (circle one): Less than $25,000 per year, $25,00-$40,000 per year, $40,001-$60,000 per year, More than $60,000 per year
Home Food Inventory

Date: ___ / ___ / ___

Look in areas in your home where your household stores food, including the refrigerator, freezer, pantries, cupboards, and other storage areas (list follows in that order). Please check "yes" or "no" to each of the food product/item/category below. Check "yes" to a food product/item/category if it is present anywhere in your home (opened or unopened) as you are completing this form. Check "no" to a food product/item/category if it is not present anywhere in your home as you are completing this form.

Lower fat products will be labeled as “reduced-fat,” “low-fat,” “light,” “nonfat,” or “skim” on product and can be interchangeable.

1. Cheese

   Yes  No

   1. Shredded or block regular cheese (example: American, cheddar)
   2. Sliced regular cheese (example: American, cheddar)
   3. Shredded or block of reduced-fat cheese (example: low fat cheddar)
   4. Sliced reduced-fat cheese (example: low fat cheddar, low fat swiss)
   5. String cheese
   6. Mozzarella cheese
   7. Regular ricotta or cottage cheese (minimum of 4% fat)
   8. Reduced-fat ricotta or cottage cheese (2% or low fat on label)
   9. Regular cream cheese
   10. Reduced-fat cream cheese or neufchatel
   11. Cheez Whiz, Velveeta, canned cheese or other similar cheese

Go to next page.
2. **Milk/Dairy (see the “other beverage” section for non-dairy beverages)**

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</tbody>
</table>

   a. Skim milk
   b. 1% or 2% low fat milk
   c. Whole milk
   d. Half and half, whipping cream or heavy cream
   e. Sour cream or sour cream/cheese dips
   f. Reduced-fat sour cream or low fat sour cream/cheese dips
   g. Chocolate or flavored milk
   h. Reduced-fat yogurt (with or without fruit)
   i. Regular yogurt (made from whole milk, with or without fruit)
   j. Reduced-fat yogurt drinks

3. **Butter, Margarine and Oils**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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</thead>
<tbody>
<tr>
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</tbody>
</table>

   a. Regular butter
   b. Light butter
   c. Regular margarine or butter substitute
   d. Light margarine or butter substitute
   e. Olive oil
   f. Vegetable oil (example: canola oil, corn oil)
   g. Seed oil (example: sunflower oil, sesame oil)
   h. Lard or shortening

4. **Salad Dressing**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<tr>
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<td>1</td>
</tr>
</tbody>
</table>

   a. Regular dressing (e.g., blue cheese dressing, Caesar, ranch)
   b. Light/reduced fat dressing (example: light blue cheese, light Italian)

5. **Condiments**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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</tbody>
</table>

   a. Regular mayonnaise
   b. Light/reduced fat mayonnaise
   c. Miracle Whip or other sandwich spread
   d. Mustard or ketchup

6. **How many other types of condiments (e.g., BBQ sauce, horseradish sauce, tartar sauce, steak sauce) do you estimate you have in your home? (mark only one response)**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
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<tr>
<td>1</td>
<td>1-5</td>
</tr>
<tr>
<td>2</td>
<td>6-10</td>
</tr>
<tr>
<td>3</td>
<td>More than 10</td>
</tr>
</tbody>
</table>

Note, please mark whether each vegetable present is fresh, canned or frozen (mark all that apply). For example, if you have both fresh and canned asparagus in your home, you would check “yes” to asparagus and check in both the fresh and canned columns.

### 7. Vegetables

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Fresh</th>
<th>Can/Jar</th>
<th>Frozen</th>
</tr>
</thead>
<tbody>
<tr>
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Note, please check whether each fruit present is fresh, canned, frozen, or dried (mark all that apply). For example, if you have both fresh and frozen blueberries in your home, you would check "yes" to blueberries and check in both the fresh and frozen columns.

8. Fruit

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Fresh</th>
<th>Can/Jar</th>
<th>Frozen</th>
<th>Dried</th>
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9. **Deli, Luncheon, Sandwich Meat and Sausage**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>a. Sliced turkey or chicken deli meat</td>
<td></td>
</tr>
<tr>
<td>b. Sliced ham, roast beef</td>
<td></td>
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<tr>
<td>c. Bologna</td>
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<tr>
<td>d. Salami, summer sausage, pepperoni</td>
<td></td>
</tr>
<tr>
<td>e. Bacon, breakfast sausage</td>
<td></td>
</tr>
<tr>
<td>f. Hot dogs, bratwurst, polish sausage</td>
<td></td>
</tr>
</tbody>
</table>

10. **Meats and Other Protein (Fresh, frozen, canned or jar)**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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</thead>
<tbody>
<tr>
<td>a. Chicken/turkey (example: burgers, breasts, whole)</td>
<td></td>
</tr>
<tr>
<td>b. Beef, pork, lamb (example: burgers, steaks, roasts, chops)</td>
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<tr>
<td>c. Tofu, seitan, tempe, textured vegetable protein (TVP)</td>
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<tr>
<td>d. Veggie burgers</td>
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<tr>
<td>e. Fish (e.g., canned, packet, fresh or frozen tuna, salmon, cod)</td>
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<tr>
<td>f. Shellfish (example: shrimp, scallops, crab)</td>
<td></td>
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<tr>
<td>g. Lentils</td>
<td></td>
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<tr>
<td>h. Beans (example: black beans, pinto beans, kidney beans)</td>
<td></td>
</tr>
<tr>
<td>i. Peanut butter or other nut butter</td>
<td></td>
</tr>
<tr>
<td>j. Eggs</td>
<td></td>
</tr>
</tbody>
</table>

11. **Frozen Desserts (Ice cream/yogurt type only)**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Regular ice cream (any flavor)</td>
<td></td>
</tr>
<tr>
<td>b. Reduced-fat ice cream (any flavor)</td>
<td></td>
</tr>
<tr>
<td>c. Frozen yogurt (any flavor)</td>
<td></td>
</tr>
<tr>
<td>d. Frozen treats made with ice cream or pudding</td>
<td></td>
</tr>
<tr>
<td>e. Frozen treats made with ice milk, frozen yogurt, sherbet, sorbet</td>
<td></td>
</tr>
<tr>
<td>f. Frozen fruit juice bars</td>
<td></td>
</tr>
<tr>
<td>g. Frozen soy or rice desserts</td>
<td></td>
</tr>
</tbody>
</table>

12. **Microwavable or Quick-Cook Frozen Foods**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Pizza (any variety)</td>
<td></td>
</tr>
<tr>
<td>b. Hot Pockets (any flavor)</td>
<td></td>
</tr>
<tr>
<td>c. Pizza rolls or bagel snacks (any flavor)</td>
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</tr>
<tr>
<td>d. Burritos or other Mexican snacks</td>
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</tr>
<tr>
<td>e. Chicken nuggets</td>
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<tr>
<td>f. French fries or tater tots</td>
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<tr>
<td>g. Egg rolls</td>
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</tr>
<tr>
<td>i. Ramen noodles</td>
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</tbody>
</table>
Note, please check whether each bread present is fresh or frozen (mark all that apply). For example, if you have both fresh and frozen whole wheat rolls in your home, you would check "yes" to whole wheat bread or rolls and check in both the fresh and frozen columns.

### 13. Bread

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Fresh</th>
<th>Frozen</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
<tr>
<td>1. a. Wheat bread or rolls</td>
<td>□</td>
<td>□</td>
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</tr>
<tr>
<td>1. b. White bread/rolls (example: baguette)</td>
<td>□</td>
<td>□</td>
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<tr>
<td>1. c. English muffins (wheat)</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>1. d. English muffins (white)</td>
<td>□</td>
<td>□</td>
<td></td>
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<tr>
<td>1. e. Bagels (wheat)</td>
<td>□</td>
<td>□</td>
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<tr>
<td>1. f. Bagels (white, any flavor)</td>
<td>□</td>
<td>□</td>
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<tr>
<td>1. g. Tortillas (wheat, sprout)</td>
<td>□</td>
<td>□</td>
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<tr>
<td>1. h. Tortillas (flour, any flavors)</td>
<td>□</td>
<td>□</td>
<td></td>
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<tr>
<td>1. i. Tortillas (corn)</td>
<td>□</td>
<td>□</td>
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<tr>
<td>1. j. Pita bread (wheat, sprout)</td>
<td>□</td>
<td>□</td>
<td></td>
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<tr>
<td>1. k. Pita bread (white, any flavor)</td>
<td>□</td>
<td>□</td>
<td></td>
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<tr>
<td>1. l. Croissants</td>
<td>□</td>
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</tbody>
</table>

Note, please check whether each prepared dessert type present is homemade or store-bought (mark all that apply). For example, if you have both homemade and store-bought chocolate chip cookies in your home, you would check "yes" to regular cookies and check in both the store-bought and homemade columns.

### 14. Prepared Desserts (do not count boxed mixes that are not prepared)

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Storebought</th>
<th>Homemade</th>
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<tbody>
<tr>
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<td></td>
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</tr>
<tr>
<td>1. a. Regular cookies (any flavor/variety)</td>
<td>□</td>
<td>□</td>
<td></td>
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<tr>
<td>1. b. Reduced-fat cookies (any flavor/variety)</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>1. c. Regular cake/cupcakes (any flavor)</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>1. d. Reduced-fat cake/cupcakes (any flavor)</td>
<td>□</td>
<td>□</td>
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</tr>
<tr>
<td>1. e. Regular muffins (any flavor/variety)</td>
<td>□</td>
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<tr>
<td>1. f. Brownies/bars (any variety)</td>
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<tr>
<td>1. g. Other snack cakes (any variety)</td>
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<tr>
<td>1. h. Pastry, sweet rolls, donuts</td>
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</tbody>
</table>

Go to next page.
15. Chips, Crackers and Other Snack Foods

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Whole grain snack crackers (labeled “whole grain” or “whole wheat”, example: Triscuit)</td>
<td></td>
</tr>
<tr>
<td>b. Regular snack crackers (example: Saltines, Wheat Thins)</td>
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<tr>
<td>c. Reduced-fat snack crackers (example: Reduced fat Wheat Thins)</td>
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<tr>
<td>d. Regular potato chips</td>
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<tr>
<td>e. Reduced-fat potato chips (example: Baked Lays)</td>
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<tr>
<td>f. Corn chips (example: Fritos)</td>
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<tr>
<td>g. Tortilla chips</td>
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<tr>
<td>h. Reduced-fat tortilla chips (example: baked tortilla chips)</td>
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</tr>
<tr>
<td>i. Cheese curls or puffs</td>
<td></td>
</tr>
<tr>
<td>j. Reduced-fat cheese curls or puffs (example: baked Cheetos)</td>
<td></td>
</tr>
<tr>
<td>k. Regular bagel chips</td>
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<tr>
<td>l. Reduced-fat bagel chips</td>
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<tr>
<td>m. Graham crackers</td>
<td></td>
</tr>
<tr>
<td>n. Pretzels, any shape</td>
<td></td>
</tr>
<tr>
<td>o. Popcorn (microwave bags or bags of prepared popcorn)</td>
<td></td>
</tr>
<tr>
<td>p. Peanuts, cashews or other nuts</td>
<td></td>
</tr>
<tr>
<td>q. Regular granola bars, sports bars</td>
<td></td>
</tr>
<tr>
<td>r. Reduced-fat granola bars, sports bars</td>
<td></td>
</tr>
</tbody>
</table>

16. Are any of the chips, crackers or other snacks checked above in prepackaged snack size or single size portions (do not count granola, sports bars, meal supplement bars)?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Dry Breakfast Cereal

17. How many ready-to-eat cereals do you have that are labeled “whole grain”, “whole wheat” or have at least 3 grams of fiber per serving? (Check one response)

<table>
<thead>
<tr>
<th>None</th>
<th>One</th>
<th>Two or three</th>
<th>Four or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

18. How many ready-to-eat cereals indicate on the nutrition label that they have less than 6 grams of sugar per serving? (Check one response)

<table>
<thead>
<tr>
<th>None</th>
<th>One</th>
<th>Two or three</th>
<th>Four or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

19. How many ready-to-eat cereals indicate on the nutrition label that they have 6 or more grams of sugar per serving? (Check one response)

0 □ None
1 □ One
2 □ Two or three
3 □ Four or more

20. Beverages (do not include alcoholic beverages)

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>a. Regular soda pop (any variety, flavor)</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>b. Diet soda pop (any variety, flavor)</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>c. Prepared iced teas or lemonade (e.g., Snapple)</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>d. Prepared light iced teas or lemonade (example: diet Snapple)</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>e. Sports drinks (example: Gatorade)</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>f. 100% fruit juice (labeled as 100% juice)</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>g. Fruit drinks (example: &lt;100% juice, Capri Sun)</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>h. Bottled water (unsweetened, any variety, flavor)</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>i. Soy milk, rice milk (any variety, flavor)</td>
</tr>
</tbody>
</table>

21. Candy

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>a. Chocolate candy (any variety, except chocolate exclusively for baking)</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>b. Hard candy</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>c. Gummis</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>d. Fruit rollups, fruit snacks or other fruit based candy</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>e. Chewy candy (example: Skittles, caramel)</td>
</tr>
</tbody>
</table>

22. Now please look around your kitchen (countertop, top of refrigerator, table) and indicate which of the following items are visible and readily accessible.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>a. Fresh fruit</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>b. Canned or dried fruit</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>c. Fresh vegetables</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>d. Regular snack crackers, pretzels, chips, popcorn</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>e. Reduced-fat snack crackers, pretzels, chips, popcorn</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>f. Dry cereal</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>g. Bread or rolls</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>h. Regular soda pop</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>i. Diet soda pop</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>j. Candy</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>k. Regular cookies, cake, cupcakes, muffins</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>l. Reduced-fat cookies, cake, cupcakes, muffins</td>
</tr>
</tbody>
</table>

23. Now please open your refrigerator. Which of the following items can you see without moving items around?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Skim milk (any flavor)</td>
<td></td>
</tr>
<tr>
<td>b. 1% or 2% low fat milk (any flavor)</td>
<td></td>
</tr>
<tr>
<td>c. Whole milk (any flavor)</td>
<td></td>
</tr>
<tr>
<td>d. 100 % fruit juice (any flavor)</td>
<td></td>
</tr>
<tr>
<td>e. Fruit drinks/sports drinks (not 100% juice)</td>
<td></td>
</tr>
<tr>
<td>f. Regular soda pop</td>
<td></td>
</tr>
<tr>
<td>g. Diet soda pop</td>
<td></td>
</tr>
<tr>
<td>h. Bottled/contained water</td>
<td></td>
</tr>
<tr>
<td>i. Regular cheese (example: American, cheddar, Swiss, parmesan)</td>
<td></td>
</tr>
<tr>
<td>j. Reduced-fat cheese (example: low fat cheddar, low fat Swiss)</td>
<td></td>
</tr>
<tr>
<td>k. Reduced-fat yogurt (with or without fruit)</td>
<td></td>
</tr>
<tr>
<td>l. Regular yogurt (made from whole milk, with or without fruit)</td>
<td></td>
</tr>
<tr>
<td>m. Reduced-fat yogurt drinks</td>
<td></td>
</tr>
<tr>
<td>n. Fresh ready-to-eat vegetables</td>
<td></td>
</tr>
<tr>
<td>o. Fresh ready-to-eat fruit</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 3.4: POST-STUDY IN-DEPTH INTERVIEW GUIDE (PARENT)

Thank you for agreeing to participate in our research study that uses fun and easy text message and social media programs to help parents raise healthy kids. You have been asked to participate in this interview because you are a PARENT participant in the Food Explorers: Family Edition Study.

I will start by reviewing the consent form with you. Then we'll move on to the questions. Remember there are no right or wrong answers, and you are an expert when it comes to parents and families at Henderson Collegiate and this FE2 study. This interview will take on average 45 minutes.

[Review Consent Documents]

Do you have any questions? Just a reminder that this interview is recorded but your name and identifying information will never be linked to the information you provide – you will remain anonymous.

Let's begin!

General Impressions

1. Please tell me about your participation in the Food Explorers: Family Edition Study.
   a. PROBE: Likes/dislikes?
   b. PROBE: What was your child’s experience with this study? How, if at all, did FE2 affect their eating experiences/behavior?

Goals

1. Tell me about your experience with the family goal component.
   a. PROBE: Describe how you tracked your goal.
   b. PROBE: What were the challenges to achieving your goal?
   c. PROBE: What helped you achieve your goal?
   d. PROBE: Who in your family was aware of your goal? Were they actively engaged in helping to achieve your goal?

2. How has this goal setting exercise affected your approach to eating well as a family, if at all?

3. What, if anything, in this FE2 program motivated you to achieve your goal?

Text Messages

1. Did you sign up for the REMIND text message service?
   a. PROBE: If not, why didn’t you sign up for the REMIND text message service?

2. Tell me about your experiences with the text messages you received.
   a. PROBE: Were there any technical difficulties with the program?
   b. PROBE: How did the text messages affect your motivation to achieve your goal, if at all?
   c. PROBE: If yes, what could be improved re: text messages?
   d. PROBE: If you did not respond/send text messages to the program but you did receive the text messages, what did you view as the benefits of this program?
Social Media
1. Did you sign up for the FACEBOOK GROUP?
   a. PROBE: If not, why didn’t you sign up for the FACEBOOK GROUP?
2. Tell me about your experience with the FE2 Facebook Group.
   a. PROBE: Were there any technical difficulties with the Facebook group?
   b. PROBE: How did Facebook affect your motivation to achieve your goal, if at all?
   c. PROBE: What could be improved re: the Facebook Group?

Website
3. Did you check out the website? How often?
   a. PROBE: If not, why didn’t you check out the website?
   b. PROBE: If yes, were there any technical difficulties with the website?
   c. PROBE: If yes, how did the website affect your motivation to achieve your goal, if at all?
   d. PROBE: If yes, what could be improved re: the website?

Email
4. Did you sign up for and receive the email newsletter?
   a. PROBE: If not, why didn’t you sign up for the email newsletter?
5. Tell me about the email newsletter.
   a. PROBE: Were there any technical difficulties with the newsletter?
   b. PROBE: How did the emails affect your motivation to achieve your goal, if at all?
   c. PROBE: What could be improved re: the email newsletter?

In person events/kick-off event
1. Did you participate in the in-person kick-off event at Henderson Collegiate at the start of the study? Tell me more about that experience.
   a. Who else in your family participated in this event? What were their impressions of the program?
2. Did you participate in any of the in-person family events hosted during the study (the potluck or the Family Cook Challenge)? Tell me more about that experience.

Content/components
1. Was there one piece of health information that really stuck with you from this program? Tell me more.
2. What did you hope this program would do for you/your family that it has NOT helped you to achieve?
   a. PROBE: How do you envision a program like this COULD help you achieve that goal the just described?

FE in the Classroom
1. 4th and 5th grade students were participating in the classroom portion of the FE program this semester. What do you know about that program?
2. What information/program(s) would you like the school to provide to support healthy kids?
Future
1. How will your participation in this study influence you and your family’s food habits in the future?
2. Tell me what might motivate other parents and families to participate in the FE2 program.
3. We like to use these interviews to help us build stronger programs going forward – what are your suggestions to improve FE2? Would you like to continue participating in this study? In what way(s)?)

Is there anything else you would like to share about the FE2 study, your health, kid health, or health at Henderson Collegiate? Do you have any great ideas for how to move forward as a community toward better health?

DEMOGRAPHICS
1. Age: ___
2. Race: White, Black, Asian, Pacific Islander, Native American, Mixed, Other, Prefer Not to Say
3. Ethnicity: Hispanic Y/N, Prefer Not to Say
4. Gender: Female/Male/Prefer Not to Say
5. Number of 4th or 5th grade children: ___
6. Number of children total: ___
7. Highest level of education: less than high school, GED, high school diploma, some college, 4 year college degree, master’s degree, doctorate or terminal degree
8. Occupation: __________
9. Household income level: less than $20,000; $20,0001 - $30,000; $30,001 - $45,000; $45,001 - $60,000; more than $60,000

Thank you so much for your time. [BLANK] and I will help you sign out your gift card. Have a great day!
APPENDIX 3.5: POST-STUDY IN-DEPTH INTERVIEW GUIDE (CHILD)

Thank you for agreeing to participate in our research study that uses fun and easy text message and social media programs to help parents raise healthy kids. You have been asked to participate in this interview because you are a STUDENT participant in the Food Explorers: Family Edition Study. I will start by reviewing the assent form with you. Then we'll move on to the questions. Remember there are no right or wrong answers, and you are an expert when it comes to students and the Food Explorers program. This interview will take on average 20 minutes.

[Review Consent Documents] Do you have any questions? Just a reminder that this interview is recorded but your name and identifying information will never be linked to the information you provide – you will remain anonymous.

Let’s begin!

General Impressions

2. Please tell me about your participation in the Food Explorers: Family Edition Study.
   a. PROBE: What would you tell other students about this program?
   b. PROBE: Likes/dislikes?

Goals

4. Tell me about your family goal.
   a. PROBE: Describe how you tracked your goal.
   b. PROBE: What were the challenges to achieving your goal?
   c. PROBE: What things helped you achieve your goal?
   d. PROBE: Who in your family was aware of your goal? Were they actively engaged in helping to achieve your goal?

Text Messages

3. Do you know if your parent got the REMIND FE2 text messages?
4. Tell me about your experiences with the text messages, if any.
   a. PROBE: Did your parent take any pictures of you for the FE2 study? Tell me about that experience.

Social Media

2. Do you know if your parent signed up for the FACEBOOK GROUP?
3. Tell me about your experience with the FE2 Facebook Group, if any.
   a. PROBE: What did you like about the Facebook Group?
   b. PROBE: How often did you see things posted to the Facebook group?
   c. PROBE: Did your parent take any pictures of you for the FE2 study? Tell me about that experience.

Website

6. Did you check out the website? What did you think of the website?
   a. PROBE: What would make the website better?
Email
2. Did your parent ever share the email newsletters with you?
3. What did you think of the email newsletter?
   a. PROBE: What did you like about the newsletter?
   b. PROBE: What would make the email newsletter better?

In person events/kick-off event
3. Did you participate in the in-person kick-off event at Henderson Collegiate at the start of
   the study? What did you think about that event?
   a. Who else in your family participated in this event?
4. Did you participate in any of the in-person family events hosted during the study (the pot-
   luck or the Family Cook Challenge)? Tell me more about that experience.
   a. PROBE: What did you like about that event?
   b. PROBE: What parts of the event would you change?

FE in the Classroom
3. 4th and 5th grade students were participating in the classroom portion of the FE program
   this semester. Tell me about your experience with the classroom/cafeteria FE program.
   a. PROBE: What was your favorite part of the program (and why)?
   b. PROBE: What part(s) did you not like (and why)?
   c. PROBE: How could we make it better?
   d. PROBE: Tell me about the passport.
   e. PROBE: Tell me about the trading cards.
   f. PROBE: Tell me about becoming a Master Explorer. What were the challenges
to becoming a master explorer? What helped you become a Master Explorer?
   g. PROBE: What, if anything, motivated you to try to become a Master Explorer?

Future
4. How will your participation in this study affect what you eat in the future?
5. Tell me what might motivate other students to participate in Food Explorers.
6. We like to use these interviews to help us build stronger programs going forward – what
   are your suggestions to improve FE2? Would you like to continue participating in this
   study? In what way(s)?

Is there anything else you would like to share about the FE2 study, your health, kid health, or
health at Henderson Collegiate?
DEMOGRAPHICS
1. Age: ___ (ASK)
2. Grade: ___ (ASK)
3. Race: White, Black, Asian, Pacific Islander, Native American, Mixed, Other, Prefer Not to
   Say (INTERVIEWER DETERMINED)
4. Ethnicity: Hispanic Y/N (INTERVIEWER DETERMINED)
5. Gender: Female/Male/Prefer Not to Say (INTERVIEWER DETERMINED)

Thank you so much for your time. [BLANK] and I will help you pick out your thank you gifts.
Have a great day!
APPENDIX 3.6: POST-STUDY IN-DEPTH INTERVIEW GUIDE (TEACHER)

Thank you for agreeing to participate in our research study that uses fun and easy text message and social media programs to help parents raise healthy kids. You have been asked to participate in this interview because you are a STAFF PERSON AT HENDERSON COLLEGIATE. I will start by reviewing the consent form with you. Then we’ll move on to the questions. Remember there are no right or wrong answers, and you are an expert when it comes to kids and families at HC. This interview will take on average 30 minutes.

[Review Consent Documents]Do you have any questions? Just a reminder that this interview is recorded but your name and identifying information will never be linked to the information you provide – you will remain anonymous.

Let’s begin!

General Impressions

3. Please tell me about your impressions of the Food Explorers study.
   a. PROBE: How did the FE function in your grade?
   b. PROBE: How did the kids respond?
   c. PROBE: What were the challenges to implementing the FE program? How did you address the challenges?
   d. PROBE: What did you do to help students engage in FE?
   e. PROBE: What worked really well in FE?
   f. PROBE: How would you improve FE?

4. Tell me about your impressions of the cafeteria components of the FE study?
   h. PROBE: Master Explorer Banner, point of sale signage on the line, sidewalk boards, actual food?
   i. PROBE: School nutrition staff?
   j. PROBE: FE foods

5. How else could FE help the school and families raise healthy kids?

Parent Component – FE2

1. What do you know, if anything, about the Food Explorers: Family Edition study happening with parents and students at home?

Future

7. We like to use these interviews to help us build stronger programs going forward – what are your suggestions to improve FE2? Would you like (the school) to continue participating in this study? In what way(s)?

Is there anything else you would like to share about the FE2 study, your health, kid health, or health at Henderson Collegiate? Do you have any great ideas for how to move forward as a community toward better health?
DEMOGRAPHICS
1. Age: ___
2. Race: White, Black, Asian, Pacific Islander, Native American, Mixed, Other, Prefer Not to Say
3. Ethnicity: Hispanic Y/N, Prefer Not to Say
4. Gender: Female/Male/Prefer Not to Say
5. Highest level of education: less than high school, GED, high school diploma, some college, 4 year college degree, master’s degree, doctorate or terminal degree
6. Occupation: _________
7. Household income level: less than $20,000; $20,001 - $30,000; $30,001 - $45,000; $45,001 - $60,000; more than $60,000
8. GRADE OF CHILD PARTICIPATING IN STUDY?

Thank you so much for your time. We couldn’t have done conducted this study without you. Have a great day!
APPENDIX 3.7: POST-STUDY IN-DEPTH INTERVIEW GUIDE (SCHOOL NUTRITION SERVICES STAFF)

Thank you for agreeing to participate in our research study that uses fun and easy text message and social media programs to help parents raise healthy kids. You have been asked to participate in this interview because you are a School Nutrition Services Staff member at Henderson Collegiate. I will start by reviewing the consent form with you. Then we'll move on to the questions. Remember there are no right or wrong answers, and you are an expert when it comes to HC nutrition. This interview will take on average 20-30 minutes.

[Review Consent Documents] Do you have any questions? Just a reminder that this interview is recorded but your name and identifying information will never be linked to the information you provide – you will remain anonymous.

Let's begin!

General Impressions
6. Please tell me about your general impressions of the Food Explorers study.
   a. PROBE: Tell me about your experience with the labels on the lunch line
   b. PROBE: Tell me about your experience serving fresh veggies on the lunch line.
   c. PROBE: Tell me about your experience serving fresh fruit on the lunch line.
   d. PROBE: How do you think the students responded to it?
7. How did the Food Explorers program affect your job, if at all?
   a. PROBE: Were there any additional tasks you had to do during your work day for the study? If so, please describe your experience with these additional tasks.
      i. PROBE: Did the FE program affect the time it took you to do your job?
   b. PROBE: Would you recommend the FE program to other school nutrition teams? Why or why not?
   c. PROBE: What would improve the FE program for school nutrition staff?

Future
8. What should HC do to help families raise healthy kids, if anything?
   a. PROBE: What should HC nutrition do to help families raise healthy kids, if anything?
9. We like to use these interviews to help us build stronger programs going forward – what are your suggestions to improve FE2? Should HC continue to participate in Food Explorers? In what way(s)?

Is there anything else you would like to share about the FE2 study, your health, kid health, or health at Henderson Collegiate? Do you have any great ideas for how to move forward as a community toward better health?
DEMOGRAPHICS

1. Age: ___
2. Race: White, Black, Asian, Pacific Islander, Native American, Mixed, Other, Prefer Not to Say
3. Ethnicity: Hispanic Y/N, Prefer Not to Say
4. Gender: Female/Male/Prefer Not to Say
5. Highest level of education: less than high school, GED, high school diploma, some college, 4 year college degree, master’s degree, doctorate or terminal degree
6. Occupation: _________
7. Household income level: less than $20,000; $20,001 - $30,000; $30,001 - $45,000; $45,001 - $60,000; more than $60,000

Thank you so much for your time. [BLANK] and I will help you sign out your gift card. Have a great day!
APPENDIX 3.8: FE2 REMIND TEXT MESSAGE SERVICE ILLUSTRATION

http://www.remind.com

Text Message Sign Up Instructions

Ms. Thayer would like you to join FE2!

To receive messages via text, text @hcfle2 to 81010. You can opt-out of messages at anytime by replying, ‘unsubscribe @hcfle2’.

Trouble using 81010? Try texting @hcfle2 to (919) 800-0828 instead.

*Standard text message rates apply.

Or to receive messages via email, send an email to hcfle2@mail.remind.com. To unsubscribe, reply with ‘unsubscribe’ in the subject line.

WHAT IS REMIND AND WHY IS IT SAFE?
Remind is a free, safe, and simple messaging tool that helps teachers share important updates and reminders with students & parents. Subscribe by text, email or using the Remind app. All personal information is kept private. Teachers will never see your phone number, nor will you see theirs.

Visit remind.com to learn more.
REMIND Text Message Service Screenshot

Example Text Message

Ms. Thayer

Kale's good any time, including snack time - click the link for an easy Kale Chip recipe. http://goo.gl/Q3OThs

December 14, 2015 at 4:30 PM  Delivered
APPENDIX 3.9: FE2 FACEBOOK IMAGES

Example Recipe Post

Linden Thayer
October 12, 2015

RECIPES: Grandma's Collards can't be beat. But you have all winter, so you might want to try a few of these wild collard recipe ideas! Pick up a bunch of collards at your local farm stand or Walmart - the price is right and all you have to do is wash, chop, add flavors and enjoy!

Collard Wraps?! http://thehealthyfoodie.com/collard-wraps/
Brazilian Collard Greens?!
http://www.marthastewart.com/866900/brazilian-collard-greens...
See More

Collard Wraps & Satay Style Dipping Sauce - The Healthy Foodie
I can't believe that I had never had collard wraps before now. In fact, I never even knew of their existence and probably would still be living in total oblivion had I...
Example Participant Post

Collards was a part of our Sunday dinner last night
Example Facilitation Post

Linden Thayer uploaded a file.

November 20, 2015

NUTRITION LABELS 101
First - if a food has no nutrition label, there's a good chance its a healthy choice. Think about raw zucchini or fresh apples on the grocery shelf. Simple foods don't require complicated labels.
It's only when we start to process foods that labels are required - the more processed, the more complicated the label, and the less time you want to actually spend reading those labels!... See More

Nutrition Label 101.pdf
Portable Document Format

Download  Preview  Upload Revision

Like  Comment

See by 9

**We really should spend more time reading labels, at least the ingredients.**
APPENDIX 3.10: FE2 WEBSITE IMAGES

http://www.foodexplorersfe2.org

Website Header

Website Homepage

Welcome to the FE2 Research Study!

FE2 is a text message and social media program designed by nutrition experts, school food professionals, and families like yours. The purpose of the program is to provide YOU with simple, affordable tools to make healthy eating delicious and fun for the whole family!

The Study

At Home - Supporting families making healthy decisions whenever they are, through text messages, social media, and online programs

At School - Supporting 4th and 5th grade students through a fun passport and trading card game that encourages healthy eating exploration.

Learn More

Featured Posts

Collard in the Cafeteria

Grandma's Collards...and beyond!

October 13, 2015

Website Study Description


**Testimonial**

"I love this program...I thought it was pretty cool including the recipes and ideas."

FE2 Pilot Study Participant

---

**FE2 Study Components**

**Phase 1: Formative Research**

In this phase of the research (March - May 2015) we got to know the Henderson Collegiate Community through focus groups, in-depth interviews, and surveys. This helped us decide that text messages and Facebook were the best ways to get you the nutrition information you want to make healthy decisions wherever you are.

**Phase 2: Program Development/Pilot Study (2 weeks)**

In this phase of the research (May - August 2015) we developed the program and tested a model of it with 5 HC families. This helped us work out the bugs and add some features that families said they wanted.

**Phase 3: 12 Week Study**

In this phase of the research (September - December 2015) we will test our FE2 program with 70 families - including yours! Half of our families will participate in the text message program September - December, and the other half will serve as controls so we know what kind of effects this program can have on kids’ eating habits. That second group of families will have the opportunity to participate in the 12 week program in January after we have finished data collection.
Website Recipe Page

RECIPES

The internet is full of recipe ideas, and we encourage you to find ones that you love. We'll continue to add recipes we love to this page - these are recipes we know are delicious, simple, affordable, and kid-approved. Have your own recipe ideas you want to share with other FE2 families? Send them our way and we'll post them here!

RECIPE INDEX

Main Dish
Pink Pasta
Super Spaghetti
Corn and Black Bean Chili with Cornbread
Butternut Squash Lasagna w/Salad
Beefy Stew w/ Brown Rice

Sides
Roasted Cauliflower
Roasted Okra

Website Blog

Picky Eaters - We're Coming For You!
October 13, 2015

PICKY EATERS. We love them, and they drive us nuts at dinner.

Here are a few ideas to encourage more adventurous eating:

(1) Don't push it. It's counterintuitive, but just putting a new food on their plate without requiring them to actually eat it is important. This ma...

Archive

October 2016 (8)
September 2015 (2)
Looking for inspiration? These HC families can help...

Right now these are simply images of yummy food. But as the study gets going, we’ll post pictures YOU send us of REAL families eating REAL food. We’ll also link those images to recipes and other cool tips on eating well with kids (and on a budget!)
Example Newsletter Content

FoodExplorers: Family Edition

Two weeks in and FE2 families are off and running! Check out these pictures from REAL HC families living well and eating well!

What have FE2 families learned so far?
1. Kids have to be exposed to veggies A LOT before they’ll love them.
2. Good quality fat is an important part of your meals each day.
3. Whole grain foods are important for health, and can be delicious.
4. Parents need to model great veggie eating if they want their kids to do the same.
5. Buying veggies in less processed form (e.g., large carrots instead of baby carrots) saves $$! Process veggies into bite-size pieces on Sunday and store in the fridge for healthy snacking throughout the week.
6. If you want kids to eat well, invite them into the kitchen to help!
7. Water is important for good health - and there are ways to make it taste less boring!
8. There are no shortage of tasty local veggies in season right now - peppers, collards, kale, cabbage, turnips, sweet potatoes...try one today!

For more details about topics from the last two weeks, click here to read our BLOG and check out our WEBSITE!
**APPENDIX 3.12: TEXT MESSAGE LIBRARY**

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<thead>
<tr>
<th>DATE</th>
<th>TEXT MESSAGE CONTENT</th>
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<tbody>
<tr>
<td>9/28/2015</td>
<td>1 Welcome to FE2! To get started, text us your child's favorite veggie so we know you got this message!</td>
</tr>
<tr>
<td>9/28/2015</td>
<td>2 Have a question? Text us any time, and you'll get a response from a nutrition expert within 24 hours!</td>
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<tr>
<td>9/28/2015</td>
<td>3 If you haven't already, friend &quot;Linden Thayer&quot; with the FE logo so we can grant you access to our FB page!</td>
</tr>
<tr>
<td>9/28/2015</td>
<td>4 And don't forget to visit our website: <a href="http://www.foodexplorersFE2.org">www.foodexplorersFE2.org</a>!</td>
</tr>
<tr>
<td>9/29/2015</td>
<td>5 Be Open: you may have to try a veggie 10-20 times before you like it.</td>
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<tr>
<td>9/29/2015</td>
<td>6 Text us our FAMILY GOAL.</td>
</tr>
<tr>
<td>9/30/2015</td>
<td>7 For those who just joined FE2 - WELCOME! Be sure to send us your FAMILY GOAL by text or email!</td>
</tr>
<tr>
<td>9/30/2015</td>
<td>8 Eat good fat. Not too much. For your brain, heart, and general health! Click the link to learn more about good fats! <a href="http://goo.gl/Qnis3G">http://goo.gl/Qnis3G</a></td>
</tr>
<tr>
<td>10/1/2015</td>
<td>9 Whole grains provide great nutrients and fiber - but they need to taste good too! Click the link for one example! <a href="https://goo.gl/Fj6GQq">https://goo.gl/Fj6GQq</a></td>
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<tr>
<td>10/1/2015</td>
<td>10 YOUR Turn to SHARE: What's your favorite whole grain recipe? Send us a message or post to the FB page and you could win a prize!</td>
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<tr>
<td>10/2/2015</td>
<td>11 If you want to receive email updates, reply &quot;EMAIL&quot; with your email address.</td>
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<tr>
<td>10/2/2015</td>
<td>12 If you still haven't connected to our Facebook page, reply &quot;FB&quot; with your email address and we'll connect you!</td>
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<tr>
<td>10/2/2015</td>
<td>13 If your friends and family eat well, so will you. Be the change: eat veggies with those you love!</td>
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<tr>
<td>10/2/2015</td>
<td>14 Post a picture of your family eating their favorite veggie - you can send it via text using REMIND or you can post it to our FB page!</td>
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<tr>
<td>10/3/2015</td>
<td>15 GOAL CHECK: REPLY and let us know if you're on track to achieve your FAMILY goal! 1 - YES, 2 - NO. If you'd like help goal, send us a text!</td>
</tr>
<tr>
<td>10/5/2015</td>
<td>16 TIP: Big carrots cost less/pound than baby carrots. Buy a bag, chop them up, and store in water for a grab-and-go snack for less $!</td>
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</table>
| 10/7/2015  | 17 Use cooking as a way to bring kids to the kitchen. Let them add seasoning or stir the pot to get them engaged with their meals.  
  Fall = peppers, apples, beets, cabbage, collards, mushrooms...NC is full of tasty local foods! http://goo.gl/apj6Ev |
<p>| 10/8/2015  | 18 We all need to drink more water. But what if you won't like the taste? Check our email (FRI) and FB page for tips on jazzing up your H2O! 1st FAMILY POTLUCK - Oct 14 5:30 at HC. Bring a dish and be inspired by what other HC families do to eat deliciously! RSVP by text or phone. |
| 10/9/2015  | 19 First Quiz - click the link here, FB, or on the website to complete the quiz and earn a chance for another prize! <a href="https://goo.gl/rqcsU7">https://goo.gl/rqcsU7</a> Our first email newsletter was just released! If you don't see it in your Inbox check your Spam folder first; then send us a note! |</p>
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<tr>
<td>10/10/2015</td>
<td>20</td>
<td><strong>GOAL CHECK:</strong> REPLY and let us know if you're on track to achieve your FAMILY goal! 1 - YES, 2 - NO. If you'd like help goal, send us a text!</td>
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<td>10/12/2015</td>
<td>21</td>
<td>Veggie of the Week: Collards. Ask Grandma for her recipe - make it together! What's your favorite easy collard recipe? Share it on Facebook or the FE2 website! It's not too late! If you'd like to join us for a FE2 potluck on Wednesday at 5:30, RSVP to REMIND or Ms. Thayer!</td>
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<td>10/14/2015</td>
<td>22</td>
<td>If anyone else is coming to the potluck tonight please text so we can let you in!</td>
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<td>10/15/2015</td>
<td>23</td>
<td><strong>Challenge:</strong> Try a new veggie this weekend. Then send us a picture or message to tell us about it!</td>
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<td>10/16/2015</td>
<td>24</td>
<td><strong>Second Quiz:</strong> Complete the quiz about this week's topics and be entered for a chance to win a prize! <a href="https://goo.gl/18OiSi">https://goo.gl/18OiSi</a> A reminder: if you have NOT submitted your Home Food Inventory (at the back of your binder) please return it MONDAY! Thanks!</td>
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<td>10/17/2015</td>
<td>25</td>
<td><strong>GOAL CHECK:</strong> REPLY and let us know if you're on track to achieve your FAMILY goal! 1 - YES, 2 - NO. If you'd like help goal, send us a text!</td>
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<td>10/19/2015</td>
<td>26</td>
<td><strong>Congrats to our Quiz 2 Winner NAME! We're sending her home a fabulous set of cutting boards for all the veggies she's cooking up for FE! Veggie of the Week: Beets! These red or gold veggies are Vit B packed &amp; OH SO SWEET. Click for a kid-fav: PINK PASTA! <a href="http://goo.gl/oU3hp4">http://goo.gl/oU3hp4</a></strong></td>
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<tr>
<td>10/20/2015</td>
<td>27</td>
<td><strong>Breakfast - it makes a difference for kids (and adults too)! Make sure it's packed with healthy fats and protein to fuel you up for the day! Save the Date: Mon Nov 9 5:30-7 PM. FE2 FAMILY COOK CHALLENGE! <a href="http://www.foodexplorersfe2.org/">http://www.foodexplorersfe2.org/</a> Do you have great breakfast ideas? Share them here or FB! We'll add the best ones to the website site to inspire other parents!</strong></td>
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<td>10/21/2015</td>
<td>28</td>
<td>Health on a Budget: Make it at Home. Big Mac Meal - $5.99; Burger, Salad, Apple, Water at Home - $3-5</td>
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<td>10/22/2015</td>
<td>29</td>
<td><strong>Challenge:</strong> Make a meal (with veggies!) for your family for $5 or less/person. Share a picture/text to let us know what you made. <strong>PRIZES!</strong></td>
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<td>10/23/2015</td>
<td>30</td>
<td><strong>Third Quiz:</strong> Complete the quiz about this week's topics and be entered for a chance to win a prize! <a href="https://goo.gl/5ntv9w">https://goo.gl/5ntv9w</a> <strong>Added CHALLENGE:</strong> Take a PICTURE of your Goal Tracking Sheet and text/email/FB post it for a chance to win a prize! <strong>GOAL CHECK:</strong> REPLY to let us know if you're on track to achieve your FAMILY goal! 1 - YES, 2 - NO. If you'd like help goal, send us a text!</td>
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<tr>
<td>10/24/2015</td>
<td>31</td>
<td>Veggie of the Week: Lettuce! There are so many kinds? Did you know: some have more nutrients per serving than kale or cabbage?! Congrats to NAME - she's this week's Quiz Winner &amp; her family progressed toward their goal every day in the first 3 wks of the program!</td>
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<tr>
<td>10/26/2015</td>
<td>32</td>
<td>Tired of the same Chef Salad every night? Click here for SALAD INSPIRATIONS that kids love! <a href="http://goo.gl/nRO2TH">http://goo.gl/nRO2TH</a></td>
</tr>
<tr>
<td>10/27/2016</td>
<td>33</td>
<td>Snacks - an important part of kids' days: precut veggies, keep fruit on the counter, stock up on low-sugar yogurts &amp; wholegrain snack items. <strong>HealthonBudget:</strong> Buy snack items in bulk &amp; pack into small packages yourself. Its WAY less expensive than buying premade 100 calorie packs!</td>
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<tr>
<td>10/28/2015</td>
<td>34</td>
<td><strong>Challenge:</strong> Create a Halloween Themed-Veggie Snack. Post or text a picture for a chance to win a prize!</td>
</tr>
<tr>
<td>10/29/2015</td>
<td>35</td>
<td><strong>Fourth Quiz:</strong> Complete the quiz about this week's topics and be entered for a chance to win a prize! <a href="https://goo.gl/2tG1UI">https://goo.gl/2tG1UI</a> <strong>Happy Halloween! REPLY and let us know if you're on track to achieve your FAMILY goal! 1-YES, 2-NO. If you'd like help goal, send us a text!</strong></td>
</tr>
<tr>
<td>10/30/2015</td>
<td>36</td>
<td><strong>Congrats to our Quiz 3 Winner NAME! We're sending her home a fabulous set of cutting boards for all the veggies she's cooking up for FE! Veggie of the Week: Beets! These red or gold veggies are Vit B packed &amp; OH SO SWEET. Click for a kid-fav: PINK PASTA!</strong></td>
</tr>
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</table>
| 10/31/2015  | 37   | **Breakfast - it makes a difference for kids (and adults too)! Make sure it's packed with healthy fats and protein to fuel you up for the day! Save the Date: Mon Nov 9 5:30-7 PM. FE2 FAMILY COOK CHALLENGE!**
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<tr>
<td>11/2/2015</td>
<td>38</td>
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<td>Veggie of the Week: Sweet Potato! Nutrient packed, affordable, and so versatile! PS Did you know you’re halfway to achieving your 12 wk goal? Congrats to NAME - she’s this week’s randomly selected Quiz Participant. She’s earned another great kitchen gadget for her family!</td>
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<tr>
<td>11/3/2015</td>
<td>39</td>
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<td>What's the weirdest way to eat a sweet potato? Click here for some deliciously creative ideas! <a href="http://goo.gl/sXLv">http://goo.gl/sXLv</a> D63</td>
</tr>
<tr>
<td>11/4/2015</td>
<td>40</td>
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<td></td>
<td>Water! As the holidays approach, balance out all that delicious eating with water instead of extra calories and sugar in other beverages.</td>
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<tr>
<td>11/5/2015</td>
<td>41</td>
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<td></td>
<td>FamilyCookChallenge is MONDAY 5:30 PM! RSVP by Fri at 5 PM to reserve your spot. Secret ingredient list will be sent by text on Sunday! Health on a Budget: Water is free from the tap. A soda a day = $15-30 per month!</td>
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<tr>
<td>11/6/2015</td>
<td>42</td>
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<td>Challenge: Can you and your kid go a whole 24 hours without drinking sugary drinks? How about 3 days? Try it and let us know how it goes!</td>
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<td>11/7/2015</td>
<td>43</td>
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<td>BONUS Tip: Serving Sizes! Confusing, to say the least. Click here for some simple visuals for healthy portions: <a href="https://youtu.be/RpLa4ddq6RQ">https://youtu.be/RpLa4ddq6RQ</a> GOAL CHECK: REPLY and let us know if you’re on track to achieve your FAMILY goal! 1 - YES, 2 - NO. If you’d like help goal, send us a text!</td>
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<tr>
<td>11/8/2015</td>
<td>44</td>
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<td>Secret Ingredients for TOMORROW’s FamilyCookChallenge...let those creative juices flow! We provide everything you need!&quot;drumroll&quot; Eggs, beets, pesto, pasta, butternut squash, spinach, ricotta, garlic, rosemary, balsamic vinegar, pizza dough, olive oil Important Announcement: We have to POSTPONE the cooking challenge! My hubby has been called to a school board meeting so I have to be back in Chapel Hill by 5 PM. We will reschedule soon! Our apologies - have a great evening!</td>
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<td>11/9/2015</td>
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<td>Veggie of the Week: Jicama! What in the world? So many nutrients, so low in calories - crunchy and delicious. Find it at Compare Foods!</td>
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<td>11/10/2015</td>
<td>46</td>
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<td>Hidden Sugar: Sugar has a lot of names. Click here for a list to help you identify sugar in the things you buy! <a href="http://goo.gl/sSNo8G">http://goo.gl/sSNo8G</a></td>
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<td>11/11/2015</td>
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<td>Challenge: Find a full fat dressing this weekend at the store that has less sugar than its low or no-fat equivalent!</td>
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<td>11/12/2015</td>
<td>48</td>
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<td>Health on a Budget: Buy store brand. In-store brands are great for many reasons: cost, quality, content.</td>
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<td>11/13/2015</td>
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<td>FE2 Quiz 5 - complete the 3 question survey to test your knowledge and earn a chance at a prize! <a href="https://goo.gl/rF5jXo">https://goo.gl/rF5jXo</a> Going out with the kids? Click here for a few ideas on how to eat smart on the go! <a href="https://goo.gl/KHSvvG">https://goo.gl/KHSvvG</a></td>
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<td>GOAL CHECK: REPLY and let us know if you’re on track to achieve your FAMILY goal! 1 - YES, 2 - NO. If you'd like help goal, send us a text!</td>
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<td>11/16/2015</td>
<td>51</td>
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<td></td>
<td>Congrats to NAME for winning this week's FE2 Quiz drawing! Her prize will be coming home with her son tomorrow! Veggie of the Week: Well, it’s not a veggie but MUSHROOMS are yummy! Check out our FB page to learn more about these nutrient-rich foods!</td>
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<td>11/17/2015</td>
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<td>Sauteed &amp; roasted veggies are delicious, but what kind of oil should I use? Check out our FB page or website for great healthy fat ideas! UPDATE: The Family Cook Challenge has been RESCHEDULED for THURSDAY DEC 3 from 5:30-7 pm. RSVP by Nov 30!</td>
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<td>11/18/2015</td>
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<td>After overwhelming feedback from participants, we have moved the make up Family Cook Challenge to Monday Dec 7. RSVP by Nov 30!</td>
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health. You know it’s a whole grain when you cook the whole food (e.g. brown rice, instead of white rice with the outer husk removed) or when the ingredients label says “whole wheat” etc. If you have picky eaters at home, look for “white whole wheat” products that look and feel like white bread, but have the nutrition that comes with whole grains.

Here’s one whole grain swap that ACTUALLY TASTES GOOD! We recommend serving these with good fats as well as real maple syrup (or your favorite fruit syrup - just cook up some frozen blueberries, strawberries, etc. with a little vanilla and a touch of sugar and salt). Or try peanut or almond butter on your pancakes topped with sliced banana! http://www.fifteenspatulas.com/whole-wheat-pancakes/

YOUR TURN TO SHARE: What's your favorite whole grain recipe? Leave a message or a picture about it by Sunday at 5 pm and you might win a prize!

Congratulations to our first FE2 Weekly Challenge Winners NAME and NAME! They'll take home some fabulous kitchen utensils this week for sharing some great veggie-eating photos!

Today we’re talking about the clean plate club - it is counter intuitive, but parents shouldn’t enforce the clean plate rule. That’s because kids (and adults) will push back harder against new foods and healthy foods if they are forced to eat them. It’s all about exposure, over and over again. They’ll come around eventually to most delicious foods. A compromise to the clean plate rule? How about a "no-thank-you-bite"? Encourage kids to try one bite of the new food, and remind them they don't have to like it or even swallow it (they just have to make it to the trash can first!)" https://www.healthychildren.org/English/healthy-living/nutrition/Pages/The-Clean-Plate-Club.aspx

Tasty snack ideas:
1. Carrots and full-fat Ranch dressing
2. Apples dipped in peanut butter (or Sunbutter!)
3. Whole grain crackers and full-fat string cheese.

YOUR Turn to SHARE: What's YOUR favorite "healthy" snack? Share your recipe here! (Plus pictures of kids)

COOK WITH YOUR KIDS - whether its having them add one ingredient, or encouraging them to make a mess in the kitchen and cook the whole meal! Nothing encourages healthy eating like bringing kids into the kitchen and showing them how the magic happens.

https://www.youtube.com/watch?v=Wsu_h6pBHDE&feature
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<thead>
<tr>
<th>Date</th>
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<th>Content</th>
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<tbody>
<tr>
<td>10/8/2015</td>
<td>13</td>
<td>Water is important. But what if you think it tastes gross, or worse, doesn't taste like anything at all? Here are a few ways to jazz up your H2O!</td>
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<td></td>
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<td>1. Add bubbles! Pick up some seltzer for a drink that literally tickles your taste buds.</td>
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<td>2. Slice up lemon or lime and add it to your glass (of plain or bubbly water).</td>
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<td>3. Get fancy with sliced cucumber and mint - put a pitcher of water with these flavor enhancers in the fridge and use it throughout the day.</td>
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<td>4. Add a splash of 100% juice to seltzer water for a homemade soda with very little sugar and no artificial sweeteners.</td>
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<td></td>
<td>5. Tea, without sugar (hot or iced, caffeinated or caffeine free, black, green, white, or herbal) is a flavorful way to drink water.</td>
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<td><img src="image" alt="Picture of water pouring into glass" /></td>
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<tr>
<td>10/8/2015</td>
<td>14</td>
<td>WATER: Invest in a reusable travel mug or water bottle so you don't have to buy your beverage at a local coffee shop or grocery store every day.</td>
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<td></td>
<td></td>
<td>That's a $1.00 savings every time you DON'T buy a soda, and a $3.55 savings every time you DON'T buy a Starbucks latte.</td>
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<td></td>
<td>That's $356 - $1,295.75 you saved in a year by skipping out on one purchased drink per day!</td>
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<td>10/7/2015</td>
<td>15</td>
<td>NC has TONS of fresh, affordable produce this time of year.</td>
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<td><a href="http://goo.gl/apj6Ev">http://goo.gl/apj6Ev</a></td>
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<td></td>
<td></td>
<td>The first of our fast, affordable, delicious recipes are available by clicking here. We'll add more as you send them to us!</td>
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<tr>
<td>10/9/2015</td>
<td>16</td>
<td>FIRST FE2 QUIZ! Show what you know, and enter for a chance to win a prize! The quiz only takes 30-60 seconds!</td>
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<td><a href="https://goo.gl/rqcsU7">https://goo.gl/rqcsU7</a></td>
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<td><img src="image" alt="picture of cute baby" /></td>
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<tr>
<td>10/12/2015</td>
<td>17</td>
<td>Congratulations to NAME- her name was randomly selected from the Quiz 1 participants to win a special prize!</td>
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<td><img src="image" alt="picture of smiley face" /></td>
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<tr>
<td>10/12/2015</td>
<td>18</td>
<td>Veggie of the Week: Collards. Collards are dark green and packed with Vitamins A and K, and Calcium.</td>
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<td><img src="image" alt="picture of girl among collards" /></td>
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<td>10/12/2015</td>
<td>19</td>
<td>RECIPES: Grandma's Collards can't be beat. But you have all winter, so you might want to try a few of these wild collard recipe ideas!</td>
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<td>Pick up a bunch of collards at your local farm stand or Walmart - the price is right and all you have to do is wash, chop, add flavors and enjoy!</td>
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<td>Collard Wraps?! <a href="http://thehealthyfoodie.com/collard-wraps/">http://thehealthyfoodie.com/collard-wraps/</a></td>
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<td>Brazilian Collard Greens?! <a href="http://www.marthastewart.com/866900/brazilian-collard-greens">http://www.marthastewart.com/866900/brazilian-collard-greens</a></td>
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<td>Rustic Indian Lentils with Collard Greens?!</td>
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<tr>
<td>10/12/2015</td>
<td>20</td>
<td>Even schools are loving Collards! [Embedded vimeo video: &quot;Collards in the Cafeteria&quot;]</td>
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<tr>
<td>10/13/2015</td>
<td>21</td>
<td>PICKY EATERS. We love them, and they drive us nuts at dinner. Here are a few ideas to encourage more adventurous eating: (1) Don't push it. Its counter intuitive, but just putting a new food on their plate without requiring them to actually eat it is important. (2) Model - kids are smart! If you won't eat the Brussels sprouts roasted with bacon, why would they? (3) Serve new things with old favorites - if your kid loves mashed potatoes try making a batch with cauliflower whipped in to see how they like it (tell them there are two versions to try, don't sneak it in....they'll trust you less later on when you're pushing them to eat new foods if they know you've tricked them before)! <a href="http://southernfood.about.com/video/Potato-and-Cauliflower-Mash.htm">http://southernfood.about.com/video/Potato-and-Cauliflower-Mash.htm</a></td>
</tr>
<tr>
<td>10/14/2015</td>
<td>22</td>
<td>Health on a Budget: Meat and fish can be expensive to eat every night. Consider EGGS - a great source of protein in an inexpensive package! <a href="http://www.nytimes.com/2013/05/08/dining/shakshuka-a-rich-egg-dish-that-satisfies.html?_r=1">http://www.nytimes.com/2013/05/08/dining/shakshuka-a-rich-egg-dish-that-satisfies.html?_r=1</a></td>
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<tr>
<td>10/14/2015</td>
<td>23</td>
<td>Health on a Budget: Eggs, its what's for dinner. A family of four that subs ONE chicken dinner per week for ONE EGG dinner per week could save more than $10/month. Sub one hamburger dinner per week for one egg dinner per week and you could save more than $20/month. Photo credit to NYTIMES. See link below. <em>(the link from row 36)</em></td>
</tr>
<tr>
<td>10/16/2015</td>
<td>24</td>
<td>Another chance to win a prize - complete the survey now and let us know what you’ve learned! Participants are entered for a chance to win a prize! <a href="https://goo.gl/18OiSi">https://goo.gl/18OiSi</a> [Picture of HC students eating lunch]</td>
</tr>
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<td>10/15/2015</td>
<td>25</td>
<td>Challenge: Try a new veggie this weekend. Then send us a picture or message to tell us about it! You'll be entered into a chance to win a prize [Picture of boy holding a giant corn]</td>
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<td>10/14/2015</td>
<td>26</td>
<td>YOUR Turn to SHARE: What are your picky eater tricks?</td>
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<td>10/19/2015</td>
<td>27</td>
<td>Beets are a doubly delicious Fall veggie because you really get two veggies in one: roasted beet roots AND beet greens. That's more money in your pocket, and more veggies in your life! For a fabulous PINK PASTA recipe that uses the roots and the greens of the beet, click here: <a href="http://goo.gl/oU3hp4">http://goo.gl/oU3hp4</a></td>
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<td>10/20/2015</td>
<td>28</td>
<td>Beat the Breakfast Blues! No time to make breakfast? Your kids get great breakfast options at school, but what about you? Here are a few ideas for Brain Boosting Breakfasts on the go! (1) Peanut Butter Banana Smoothie: <a href="http://www.gimmesomeoven.com/peanut-butter-banana-smoothie-recipe/">http://www.gimmesomeoven.com/peanut-butter-banana-smoothie-recipe/</a> (2) Morning Glory Muffin: <a href="https://goo.gl/VTkgH0">https://goo.gl/VTkgH0</a> (3) Breakfast Burrito: <a href="http://goo.gl/2Y33hi">http://goo.gl/2Y33hi</a></td>
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<td>10/21/2015</td>
<td>29</td>
<td>Eating out often feels like the easy choice. But it's certainly not the cheaper one! Here are 3 delicious meals that cost less than $5/person. <a href="http://www.foodexplorersfe2.org/">http://www.foodexplorersfe2.org/</a> (1) Corn and Black Bean Chili with Cornbread (2) Butternut Squash Lasagna with Salad (3) Beef Stir-fry with Brown Rice</td>
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<tr>
<td>10/20/2015</td>
<td>30</td>
<td>Do you have great breakfast ideas? Share them here! We'll add the best ones to the website site, and the one with the most likes will appear on the HC School Breakfast Menu in December!</td>
</tr>
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<td>10/22/2015</td>
<td>31</td>
<td>Challenge: Make a meal (with veggies!) for your family for $5 or less per person. Share a picture or message to let us know what you made. Post or text before Sunday at 6 PM and you could win a prize!</td>
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<td>10/23/2015</td>
<td>32</td>
<td>Third Quiz: Complete the quiz about this week’s topics and be entered for a chance to win a prize! <a href="https://unc.az1.qualtrics.com/jfe/form/SV_cvDgblKleVAGqb3">https://unc.az1.qualtrics.com/jfe/form/SV_cvDgblKleVAGqb3</a></td>
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<td>10/26/2015</td>
<td>33</td>
<td>Lettuce - so much more than the limp greens or white iceberg you used to see! Lettuce has lots of Vitamin K and micronutrients. And filling half your plate with salad = a balanced, not-too-high-calorie meal! Lettuce Facts: 1. Lettuce is a member of the daisy family 2. 75% of all US lettuce comes from California. 3. Lettuce is the 2nd most popular veggie in the US (behind potatoes, which aren't really a vegetable anyway!) [2 pictures of lettuce in fields]</td>
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<td>10/28/2015</td>
<td>35</td>
<td>If it’s there, kids will eat it. Snacks are an important part of kids’ (and Big Kids’) days. To make the most of your kid’s grazing: pre-cut veggies and store them in the fridge keep fruit on the counter, and stock the pantry with low-sugar yogurts and whole grain snack items.</td>
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If you don’t want them to eat something, don’t keep it around. It’s as simple as that. Some cheap and easy snack ideas: (1) carrots and black bean dip (2) apple slices and peanut butter (3) homemade trail mix (peanuts, sunflower seeds, raisins, chocolate chips, whole grain pretzels, etc) (4) plain yogurt with fruit on top (5) corn tortilla chips and salsa
Click the link to find out what Barak Obama likes to snack on...
https://www.youtube.com/watch?v=HqNXYH0JSEg&feature=youtu.be

YOUR Turn to SHARE: What are your favorite healthy kid snack ideas? Upload a video of your kids making their own healthy snacks!

Challenge: Create a Halloween Themed-Veggie Snack. Post or text a picture for a chance to win a prize.
http://weelicious.com/2013/10/14/tangerine-pumpkins-banana-ghosts-fruity-halloween/

Sweet Potato! Nutrient packed, affordable, and so versatile. Plus it stores in a cool dry place so you won’t waste it the way you might other fresh veggies in your fridge! DID YOU KNOW: It’s also our state vegetable?!
http://greatist.com/health/45-delicious-and-healthy-sweet-potato-recipes

YOUR Turn to SHARE: Trying Sweet ‘Taters? Take a picture of your kids eating those ruby red roots and post via text or right here; you’ll be entered for a chance to win prize!
INSPIRATION: Sweet Potato Chocolate Chip Bread
http://www.loveandflour.com/chocolate-chip-sweet-potato-bread/

Water, water everywhere! As you contemplate your Thanksgiving meal consider this - you could eat another serving of mashed potatoes, mac and cheese, turkey, or stuffing for the same calories in a Coke or Fruit Punch. Your body needs water; it doesn’t need that extra sugar!
http://www.sugarstacks.com/

Have kids that love Sports Drinks? Those are sugary beverages too, and they’re not cheap! Consider buying a 20 oz Vitamin Water or Gatorade and mixing it for kids in a glass with half water and half sports drink. Half the calories. Half the sugar. Half the price!

Challenge: Can you and your kid go a whole 24 hours without drinking sugary drinks? How about a full 3 days? Try it and let us know how it goes! Send a photo or text and you’ll be entered for a chance to win a prize!

[Picture of lemon, mint, and water]
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<tr>
<th>Date</th>
<th>Page</th>
<th>Content</th>
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<tbody>
<tr>
<td>11/9/2015</td>
<td>43</td>
<td>JICAMA - this Central American root is making its way onto the North American food scene. Packed with water, fiber, and Vitamin C, it’s a great crunchy addition to salads or vehicle for tasting new veggie dips. It looks like a round, light-skinned potato- peel the outer layer off the root, then chop up and enjoy! Where can you buy it? In the produce section at your grocery store - Walmart, Food Lion, and Compare Foods all carry it! Your kids tried it last week at school...ask them about it! <a href="http://www.thekitchn.com/jicama-most-exciting-vegetable-youre-not-eating-the-vegetable-butcher-220006">http://www.thekitchn.com/jicama-most-exciting-vegetable-youre-not-eating-the-vegetable-butcher-220006</a></td>
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<td>11/10/2015</td>
<td>44</td>
<td>Hidden Sugar: Sugar has many names. Read the ingredients on the food package to look for hidden added sugars. Examples: Sucrose, glucose, maltose, dextrose, invert sugar, cane sugar, cane syrup, corn syrup, high fructose corn syrup, malt, brown sugar, fruit juice, etc. Some sneaky places sugar hides - low fat salad dressings, bread, baked beans, coffee drinks, McChicken Sandwich! <a href="http://www.womenshealthmag.com/food/different-names-for-sugar">http://www.womenshealthmag.com/food/different-names-for-sugar</a></td>
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<td>11/11/2015</td>
<td>45</td>
<td>Congrats to NAME for finishing a 3 DAY water challenge! A prize will be coming her way early next week!</td>
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<td>11/11/2015</td>
<td>46</td>
<td>Challenge: Find a full fat dressing this weekend at the store that has less sugar than its low or no-fat equivalent! Snap a picture of your purchase or your family eating some tasty salad with your lower-sugar dressing and you could win a prize! [Picture of salad]</td>
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<td>11/12/2015</td>
<td>47</td>
<td>HEALTH ON A BUDGET: In-store brands are often cheaper, which you may know, but did you realize they might be better for you too? Many in-store brands use fewer artificial preservatives, additives, flavors, colors, and other chemicals whose names you can't pronounce. Check out store brand items for savings and healthy options today! <a href="http://www.consumerreports.org/cro/magazine/2012/10/store-brand-vs-name-brand-taste-off/index.htm">http://www.consumerreports.org/cro/magazine/2012/10/store-brand-vs-name-brand-taste-off/index.htm</a></td>
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<td>11/13/2015</td>
<td>48</td>
<td>You can always make healthy choices when you're eating out. Model some of these behaviors so your kids learn them too! (1) Swap a salad or other veggie for those fries (2) Get a serving of fries to share instead of one per person (3) Get that dressing on the side (there can be more than 100 calories in a tablespoon!) (4) Cut it in half - have your kid share a meal, or box up half and take it home...double the value, half the calories! (4) Drink Water (its free, its calorie free!) (5) Try a whole grain bread or bun option...a Chick-fil-a sandwich tastes the same either way!</td>
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<td>11/11/2015</td>
<td>48</td>
<td>(6) Anyone can get a kid's scoop... next time you go for ice cream try getting kids size scoops for the whole family (it’s cheaper too!) <a href="http://goo.gl/Xgw0DJ">http://goo.gl/Xgw0DJ</a></td>
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<td>11/11/2015</td>
<td>49</td>
<td>Challenge: Find a full fat dressing this weekend at the store that has less sugar than its low or no-fat equivalent! Snap a picture of your purchase or your family eating some tasty salad with your lower-sugar dressing and you could win a prize! [Picture of a salad]</td>
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<td>11/13/2015</td>
<td>50</td>
<td>FE2 Quiz 5 - complete the 3 question survey to test your knowledge and earn a chance at a prize! <a href="https://unc.az1.qualtrics.com/jfe/form/SV_3CpgOVuE2IU5sfX">https://unc.az1.qualtrics.com/jfe/form/SV_3CpgOVuE2IU5sfX</a></td>
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<td>11/16/2015</td>
<td>51</td>
<td>What’s up with mushrooms?! They are FABULOUS but what are they? For eaters, they are a food packed with micronutrients like potassium hard to find in other places - they have that umami flavor of meat without so many calories or obstacles to prepare them. Mushrooms offer a great way to change up old favorites and swap out the large amounts of meat Americans consume without losing all that flavor. Check out these recipes for inspiration. <a href="http://www.epicurious.com/recipes/food/views/wild-mushroom-pizza-with-caramelized-onions-fontina-and-rosemary-230633">http://www.epicurious.com/recipes/food/views/wild-mushroom-pizza-with-caramelized-onions-fontina-and-rosemary-230633</a></td>
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<td>11/16/2015</td>
<td>53</td>
<td><a href="http://allrecipes.com/recipe/14511/mushroom-kabobs/">http://allrecipes.com/recipe/14511/mushroom-kabobs/</a></td>
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<td>11/17/2015</td>
<td>54</td>
<td>Healthy Fats?! Yes! Eat a VARIETY – it’s the same for fats and oils as it is for veggies. Eat a variety of oils throughout the week to get all the benefits they offer. Olive oil is good for RAW foods like salad or for drizzling on cooked food when it’s done (olive oil breaks down when heated too high so it’s a waste of money to bake or roast with this oil)! For HIGH HEAT try sunflower or canola oil. Other fats to try: butter, sesame oil, peanut oil, soybean, coconut oil! <a href="http://goo.gl/Z7a9SW">http://goo.gl/Z7a9SW</a></td>
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<td>11/17/2015</td>
<td>55</td>
<td>NEXT FAMILY COOK CHALLENGE - Thursday Dec 3 5:30-7 PM! RSVP by text, email, FB, or phone by Monday Nov 30! [Pictures from the family cook challenge]</td>
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<td>11/19/2015</td>
<td>56</td>
<td>UPDATE: The Family Cook Challenge will be MONDAY DECEMBER 7 5:30-7 PM. We’re doing our best to accommodate your busy schedules, so if this doesn’t work for you we’ll catch you in the New Year!</td>
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<td>11/19/2015</td>
<td>57</td>
<td>Growing kids and adults both need good quality protein to help build and maintain muscle and keep the body running smoothly. All that protein doesn't have to come from meat! More budget friendly protein options include beans, mushrooms, and dairy products like yogurt. You don't have to give up meat - just stretch it a little. Three examples: (1) Ground Turkey and Three Bean Chili (2) Beef Stroganoff with Mushrooms (3) Italian White Bean Pasta with Bacon <a href="http://www.budgetbytes.com/2014/02/one-pot-beef-mushroom-stroganoff/">http://www.budgetbytes.com/2014/02/one-pot-beef-mushroom-stroganoff/</a></td>
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<td>11/20/2015</td>
<td>60</td>
<td>NUTRITION LABELS 101 First - if a food has no nutrition label, there's a good chance it's a healthy choice. Think about raw zucchini or fresh apples on the grocery shelf. Simple foods don't require complicated labels. Its only when we start to process foods that labels are required - the more processed, the more complicated the label, and the less time you want to actually spend reading those labels! That said, here's a cheat sheet for what's really important. Our take-away for you: READ THE INGREDIENTS. That's what really matters. You want those first 5 ingredients to be wholesome foods you recognize and WANT to put in your body! <a href="#">Nutrition Label 101 PDF download</a></td>
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<td>11/24/2015</td>
<td>62</td>
<td>SERVING SIZE. Confusing, to say the least! Here are a few rules of thumb to help make it easy. How much should I eat? (1) For most kids (and adults), a serving = the size of your fist (2) Tricks to keep potions in check- your plate matters! Smaller plates, plates with a rim, and plates with contrasting colors to the food (example green salad on a white plate) all help you serve and eat more reasonable portions. (3) When a label says &quot;200 calories per serving&quot; check the box or can to know HOW MANY SERVINGS are in the container. That 20oz Coke? 2.5 servings. How often do you only drink 30% of the bottle?!</td>
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| 11/30/2015 | 63   | Happy Belated Thanksgiving!  
Leftover Ideas:  
(1) The Classic Leftover Sandwich  
(2) Fried Rice Rehashed  
(3) Tacos con Everything  
(4) SOUP!  
| 11/30/2015 | 64   | Challenge: Make a leftover meal using at least two veggies. Snap a picture or send a message and you're entered for a chance to win a prize! |
| 11/30/2015 | 65   | Turnips are Tasty!  
These root veggies come in a variety of sizes and colors (small globe white turnips, large purple-top turnips...), and are packed with Vitamins A, C, K and calcium. They are a great way to break up the monotony of the same old green winter veggies!  
[Picture of turnips] |
| 11/30/2015 | 66   | YOUR Turn to SHARE: What did you and your kids make with turnips? Share a picture or message for your chance to win a prize! For inspiration, check out these links!  
http://www.bonappetit.com/recipes/slideshow/turnip-18-recipes-underrated-root-vegetable#1 |
| 12/1/2015  | 67   | Whole Grains for the Holidays - You can always make healthy choices, even during the holidays. Remember whole grains provide great fiber and more nutrients than refined grains.  
Try out these kid-friendly recipes with your family this holiday season!  
(1) Scrumptious (Whole Wheat) Gingerbread  
(2) Turkey Dressing with Whole Grain Bread  
(3) Mac&Cheese Revamped.  
Remember your kids are eating whole grains at school every day - if they have learned to like them, you can too!  
http://www.kingarthurflour.com/recipes/gingerbread-recipe  
http://www.marthastewart.com/1050256/whole-wheat-stuffing-turkey-sausage  
| 12/1/2015  | 68   | Health on a Budget: Plan ahead! Know your weekly menus so you can buy just what you need, and you won't lose $$ when unused food goes bad. Try...  
1. Planning a week's worth of dinners with your kids, and shopping together for those ingredients.  
2. Practice making shopping lists - so you don't forget AND you don't buy extras.  
3. Cook one or more meals on Sunday to get you through the busy work week. |
| 12/2/2015  | 70   |  |

167
<table>
<thead>
<tr>
<th>Date</th>
<th>Page</th>
<th>Content</th>
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<tbody>
<tr>
<td>12/3/2015</td>
<td>71</td>
<td>4. Be honest - if you're not going to cook on Thursday night then don't buy ingredients for that night!! Do you have other health-on-a-budget tips? Share them here! [Picture of lots of groceries]</td>
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<td>12/3/2015</td>
<td>72</td>
<td>Health on a Budget: Plan ahead! Know your weekly menus so you can buy just what you need, and you won't lose $$ when unused food goes bad. There are lots of apps and online services to help you plan if organization isn't your strong suit. Maybe your Star Student can take on menu planning for you?!</td>
</tr>
<tr>
<td>12/4/2015</td>
<td>73</td>
<td>YOUR Turn to Share: Post a picture of your shopping list (packed with veggies of course) for this weekend's shopping trip. You could earn a prize!! [Picture of rainbow vegetables]</td>
</tr>
<tr>
<td>12/4/2015</td>
<td>74</td>
<td>Complete the quiz to show what you know and a chance to earn a prize!</td>
</tr>
<tr>
<td>12/4/2015</td>
<td>75</td>
<td>There are literally worlds of flavors beyond SALT. Salt's critical to your health; too much can be critically damaging. When you ratchet back the salt, what else can make your meals delicious? Taste these tips and let us know what you think! <a href="http://goo.gl/WbjS6H">http://goo.gl/WbjS6H</a>; <a href="http://goo.gl/V4uKzk">http://goo.gl/V4uKzk</a> [Picture of spices]</td>
</tr>
<tr>
<td>12/8/2015</td>
<td>76</td>
<td>Bell Peppers are a versatile vegetable that come in so many fun colors, shapes, and sizes! The more color, the more nutrients, but all of them provide vitamins, minerals, fiber and water. Raw they provide great crunch, and cooked they add great color and flavor to any dish. Peppers are a great vehicle for your favorite dip at snack time!</td>
</tr>
<tr>
<td>12/8/2015</td>
<td>77</td>
<td>Three Pepper Beef <a href="http://www.myrecipes.com/recipe/three-pepper-beef">http://www.myrecipes.com/recipe/three-pepper-beef</a></td>
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<tr>
<td>12/9/2015</td>
<td>79</td>
<td>YOUR Turn to SHARE: Snap a photo of your kids cooking or eating a pepper dish. Share and enter for your chance to win a prize!</td>
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<tr>
<td>12/10/2015</td>
<td>79</td>
<td>Frozen Veggies are Just as Nutritious. And so much easier to prepare. And cheaper too. Go FROZEN! Do you have great ideas for how to use frozen veggies? Share them here! <a href="http://www.wisebread.com/25-ways-to-use-frozen-mixed-vegetables">http://www.wisebread.com/25-ways-to-use-frozen-mixed-vegetables</a></td>
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<tr>
<td>12/10/2015</td>
<td>80</td>
<td>LAST QUIZ, LAST WEEKEND- MAKE IT COUNT!</td>
</tr>
<tr>
<td>12/11/2015</td>
<td>81</td>
<td>Text or post pictures of all the veggies you eat this week! Take the survey for a change to win more prizes! <a href="https://goo.gl/MUVkck">https://goo.gl/MUVkck</a></td>
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<td>Date</td>
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<tr>
<td>12/14/2015</td>
<td>82</td>
<td>Kale: A leafy green full of calcium, Vitamin A and K, and other micronutrients. So versatile because it can be cooked like collards or chopped up for salad!</td>
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<td></td>
<td></td>
<td>Kale Chips! <a href="http://goo.gl/Q30ThS">http://goo.gl/Q30ThS</a></td>
</tr>
<tr>
<td>12/14/2015</td>
<td>83</td>
<td>More Kale Recipes! <a href="http://goo.gl/Y9RG5D">http://goo.gl/Y9RG5D</a></td>
</tr>
<tr>
<td>12/14/2015</td>
<td>84</td>
<td>Massaged Kale?! Yes! <a href="http://goo.gl/hTqrE8">http://goo.gl/hTqrE8</a></td>
</tr>
<tr>
<td>12/14/2015</td>
<td>85</td>
<td>YOUR Turn to SHARE: What's your favorite kale recipe? Snap a photo (or leave a note) of your family eating kale and get entered for a chance to win a prize!</td>
</tr>
<tr>
<td>12/15/2015</td>
<td>86</td>
<td>BALANCE. MODERATION. VARIETY. That's all folks smile emoticon Eat well. Live well. (picture courtesy of Jeunesse Transition)</td>
</tr>
<tr>
<td>12/16/2015</td>
<td>88</td>
<td>Holidays are a great time to share your new knowledge with loved ones. What's one healthy eating on a budget tip you'll share with others? <a href="https://youtu.be/AGrczY8AMJc">https://youtu.be/AGrczY8AMJc</a></td>
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<tr>
<td>17-Dec</td>
<td>89</td>
<td>You can make healthy choices every day, whether you're eating at home, grocery shopping, or dining out. Make smart choices and be proud of them! <a href="http://www.foodexplorersfe2.org/">http://www.foodexplorersfe2.org/</a></td>
</tr>
<tr>
<td>12/18/2015</td>
<td>90</td>
<td>DID YOU DO IT? DID YOU ACHIEVE YOUR GOAL? LET US KNOW! We're so proud of all our FE2 families for participating in this exciting research study! We'll take all your feedback to help us build an even stronger FE2 program in the future. Stay tuned in early January for how you can collaborate with us and continue to raise healthy, successful kids! In Gratitude - the FE2 Team</td>
</tr>
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APPENDIX 3.14: GOAL TRACKING SHEET

(printed on florescent heavy weight paper)

GOALTRACKER 2015

**OUR FAMILY GOAL:**

---

Put a sticker on each day you achieve your goal, or on each day you make progress towards your goal.

**OCTOBER**

<table>
<thead>
<tr>
<th>SUNDAY</th>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
<th>SATURDAY</th>
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*Happy Halloween!
FAMILY EDITION

Fall 2015

NAMES: ___________________________________________________________

Our FAMILY GOAL:

________________________________________________________________

________________________________________________________________

________________________________________________________________
TABLE OF CONTENTS

FE2 Overview........................................................................................................... 3

Dates to Remember.................................................................................................. 4

Contact Information................................................................................................ 5

REMIND Text Message Program.............................................................................. 6

Facebook Page......................................................................................................... 7
  Social Media Etiquette

Email Updates........................................................................................................... 8

Website.................................................................................................................... 8

NUTRITION 101....................................................................................................... 9

SMART Goals.......................................................................................................... 10
  What are they?
  How to write them?
  Tracking for Success

Resources.................................................................................................................. 11

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Other programs require that you show up once a week for an hour or more - FE2 comes to YOU where you are (on your phone, on Facebook, and online). We also provide in-person opportunities to learn more about healthy living from experts and from other families just like yours, but you don’t have to come in person to participate or benefit from this program.

At Home - Text messages, Facebook posts, website (including kid’s games), and email updates to provide you with the support you need to live well. You also have a goal tracker and access to nutrition experts who will respond to your questions within 24 hours.

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3. You will receive a bi-weekly email with even more news and information related to
   raising healthy kids.
4. You will set a family SMART goal, and we’ll help you track your progress toward those
   goals over the course of the project.

FE2 focuses on veggies and fruits, drinking low-sugar beverages, and eating healthy fats and
whole grains. There are many more components to raising healthy kids, including good sleep,
reducing stress, and lots of physical activity - those are important pieces that might appear in
future versions of this program!

DATES TO REMEMBER

*September 21-25, 2015 - Study enrollment and baseline data collection*

*September 28 - First text messages and Facebook posts released*

October 14 - 6 PM FE2 Potluck

November 4 - 6 PM FE2 Family Cooks Challenge

December 9 - FE2 Family Cooks Challenge 2

*December 9-16, 2015 - Study follow up data collection*
Contacts:
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Study Coordinator, Lead Researcher
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Maria Yao
Research Assistant
Email: yaom@live.unc.edu

Alice Ammerman
Faculty Advisor
Phone Number: 919-966-6082
Email: alice_ammerman@unc.edu

UNC-Chapel Hill Institutional Review Board (IRB) Study # 15-0625
Phone: 919-966-3113
Email: IRB_subjects@unc.edu
TEXT MESSAGE PROGRAM

What is REMIND?
REMIND is a free text message service for schools to communicate with families safely and securely - you can download the REMIND app or sign up for the text message service directly from your phone or computer.

Why are we using REMIND?
We want to make sure your privacy is protected, and allow you a way to reach nutrition experts directly without sharing your personal information. If you have any questions about the program, please reach out directly to FE2 program staff.

How to sign up for REMIND by text:
1. Enter “81010” in the phone number line.
2. Write “@hcfe2” in the text field. Hit Send.

How to sign up for REMIND texts online (from your computer or tablet):
2. Click on “I am a student or parent” button on the right (white).
3. Enter your class code: @hcfe2.
4. Click “Join Ms. Thayer’s FE2”.
5. Enter your phone number in the provided space.
6. Click “Enter” when done.
7. You will receive a text message that has a confirmation code. Enter this code on the website. This will confirm your phone number.
8. Once your code is entered, click “confirm”.
9. You will then be notified that you have subscribed to Ms. Thayer’s FE2.

How to sign up for REMIND email messages online (from your computer or tablet):
1. Send an email to hcfe2@mail.remind.com.

How to respond to a text message from Remind:
1. This works like a normal text message. You type in the box what you want to say or ask.
2. Hit “Send” on the right
3. Your message will be sent to the experts and answered within 24 hours.
(All information is anonymous and confidential.)
FACEBOOK PAGE

How to view the FE2 Facebook group:

1. Log into your Facebook account. Search for “Linden Thayer” and select the person with the Food Explorers logo. FRIEND THIS ACCOUNT.
2. Our Facebook administrator will accept your friend request and then send you an invitation to join the FE2 Facebook Group.
3. Accept the invitation to join the group.
4. Click on the Group Page.
5. Posts should be visible to you once you have joined the group.

How to post in the Facebook group:

1. Once you have read the Facebook post and want to respond, you have two options:
   a. Click the “Like” button under the post to simply “like” the post. This will not allow you to write or share anything but shows that you have seen the post and like something about it.
   b. Click the “Comment” button under the post to write a comment, share a picture, post a link, etc. This option gives you more space to share your thoughts, stories, pictures, things you find, etc.
      i. To post a photo in your comment, you can click the camera icon to the right of the comment box. This will allow you to attach a picture along with your comment.
   c. Facebook Etiquette: Please be respectful of fellow participants and program staff in your posts to the site. Program staff will monitor the site daily and reserve the right to remove any posts deemed inappropriate for any reason. If you, as a participant, have any concerns about posts on the site, please contact the program staff via Facebook message OR the REMIND anonymous text service. A full description of social media etiquette and rules governing participation on the Facebook page can be found in the “About” section of the Facebook site.
How to get biweekly email newsletters from FE2:
1. Send a text to REMIND or email foodexplorersfe2@gmail.com to sign up for the bi-weekly newsletter. We will send a reminder to do so within the first week of the program.
2. Be sure to add foodexplorersfe2@gmail.com to your list of contacts so our email doesn’t end up in the SPAM folder!
3. Emails should arrive in your mailbox every other Thursday, full of tips, inspirations, and challenges for the coming weekend and week!

How to log on to the website:
1. The website for FE2 is www.foodexplorersfe2.org.
2. Log on for information about the program, contact information, links to the latest news and information, a resource page, recipes, weekly challenges, pictures, kids games, and more!

How to complete a survey:
1. Follow the link from the text message, email, website OR go directly to the Facebook page. The survey will be embedded in the “News Feed” section of the site.
2. Follow the survey instructions and hit Submit. Please only complete the survey ONCE!
GOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
Basic Health Information and Resources:
Healthy Eating - So Easy, Yet So Hard
You know ALL of the reasons you don’t eat well every day:
- Money
- Time
- Stress
- Hate cooking
- Hate shopping
- Kids are picky eaters
- You’re a picky eater
- Fill in the blank…….

And you know MANY of the reasons to eat well
- Prevent health problems like heart disease, strokes, high blood pressure, and diabetes
- Control existing health problems like high blood pressure, high cholesterol, and diabetes
- Maintain or manage your weight
- Have a positive impact on those you love, like your children, parents, and friends, by helping them choose more healthy foods

The challenge is MAKING IT HAPPEN. That's where Food Explorers: Family Edition comes in! We’ve included some basic nutrition information in this packet, highlighting the latest in nutrition science and sifting through the Myths and Misconceptions to help you make smart eating choices at home and in the community. More information will be highlighted in the text messages, emails, Facebook page, and website over the next 12 weeks.

Remember - you can always ask an expert your nutrition, cooking, and eating questions by sending us a text or email. We’ll respond within 24 hours!

The following information comes from the Heart Healthy Lenoir program, a doctor and nutrition expert-developed program that focuses on healthy habits for a lifetime of well being.

The following nutrition information was developed with funding from: Grant Number 5P50HL105184 from the National Institutes of Health, National Heart, Lung, and Blood Institute. Cooperative Agreement Number 1U48DP002658 from the Centers for Disease Control and Prevention, Prevention Research Center Program. ©The University of North Carolina at Chapel Hill 2011 Center for Health Promotion and Disease Prevention.

Ms. Thayer would like you to join FE2!

To receive messages via text, text @hcfe2 to 81010. You can opt-out of messages at anytime by replying, ‘unsubscribe @hcfe2’.

Trouble using 81010? Try texting @hcfe2 to (919) 800-0626 instead.

Or to receive messages via email, send an email to hcfe2@mail.remind.com. To unsubscribe, reply with ‘unsubscribe’ in the subject line.

WHAT IS REMIND AND WHY IS IT SAFE?
Remind is a free, safe, and simple messaging tool that helps teachers share important updates and reminders with students & parents. Subscribe by text, email or using the Remind app. All personal information is kept private. Teachers will never see your phone number, nor will you see theirs.
Visit remind.com to learn more.
<table>
<thead>
<tr>
<th>TABLE OF CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FE2 Overview ......................................... 3</td>
</tr>
<tr>
<td>Dates to Remember ...................................... 4</td>
</tr>
<tr>
<td>Contact Information ..................................... 5</td>
</tr>
<tr>
<td>REMIND Text Message Program ........................ 6</td>
</tr>
<tr>
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</tr>
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</tr>
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Maria Yao
Research Assistant
Email: yaom@live.unc.edu

Alice Ammerman
Faculty Advisor
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Email: alice_ammerman@unc.edu

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3. Your message will be sent to the experts and answered within 24 hours.
(All information is anonymous and confidential.)
Basic Health Information and Resources:

Healthy Eating - So Easy, Yet So Hard

You know ALL of the reasons you don’t eat well every day:

- Money
- Time
- Stress
- Hate cooking
- Hate shopping
- Kids are picky eaters
- You’re a picky eater
- Fill in the blank……..

And you know MANY of the reasons to eat well

- Prevent health problems like heart disease, strokes, high blood pressure, and diabetes
- Control existing health problems like high blood pressure, high cholesterol, and diabetes
- Maintain or manage your weight
- Have a positive impact on those you love, like your children, parents, and friends, by helping them choose more healthy foods

The challenge is MAKING IT HAPPEN. That’s where Food Explorers: Family Edition comes in! We’ve included some basic nutrition information in this packet, highlighting the latest in nutrition science and sifting through the Myths and Misconceptions to help you make smart eating choices at home and in the community. More information will be highlighted in the text messages, emails, Facebook page, and website over the next 12 weeks.

Remember - you can always ask an expert your nutrition, cooking, and eating questions by sending us a text or email. We’ll respond within 24 hours!

The following information comes from the Heart Healthy Lenoir program, a doctor and nutrition expert-developed program that focuses on healthy habits for a lifetime of well being.

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RESOURCES
For more Heart Healthy Lenoir lifestyle information, you can go here: http://hearthealthylenoir.com/healthy-lifestyle-tips?sid=211

Also, here is a link to the Henderson Collegiate School Nutrition page: www.hcschoolfood.org

A few more websites we recommend:
- School Meals That Rock! http://schoolmealsthatrock.org/
- Smarter Lunchrooms http://smarterlunchrooms.org/
- USDA MyPyramid http://www.cnpp.usda.gov/MyPlate
- Kids State Dinners at the White House http://www.letsmove.gov/kids-state-dinner
- Family Cook Productions http://www.familycookproductions.com/
- Johns Hopkins Bloomberg School of Public Health “Teaching the Food System” http://www.jhsphs.edu/research/centers-and-institutes/teaching-the-food-system/resources/

RESOURCES
Food Explorers: Family Edition (FE2) website: www.foodexplorersfe2.org

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- Kids State Dinners at the White House http://www.letsmove.gov/kids-state-dinner
- Family Cook Productions http://www.familycookproductions.com/
- Johns Hopkins Bloomberg School of Public Health “Teaching the Food System” http://www.jhsphs.edu/research/centers-and-institutes/teaching-the-food-system/resources/
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