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# Early Childhood Nutrition Education Implementation Evaluation and Planning: Learn, Grow, Eat & Go!

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#### **ABSTRACT:**

The obesity rate among American children aged two to five years old is 12.7% (Center for Disease Control, 2022), indicating a need for health interventions at this critical life stage. Nebraska Extension's Nutrition Education Program has identified a need for direct education materials to reach Nebraskans in early childhood. *Learn, Grow, Eat & Go! Early Childhood* was identified as an appropriate curriculum to be tested in an early childhood intervention pilot. Learn, Grow, Eat & Go! Early Childhood is a newly developed program built upon the foundation of teaching children about healthful foods and physical activity through gardening. An early childhood direct education program is implemented with short-, intermediate- and long-term goals in mind. Short-term goals involve an improvement in children's abilities to identify and eat fruits and vegetables. Intermediate term goals focus on the increase of gardening accessibility, consumption of fruits and vegetables, and physical activity participation in Nebraskan children. The long-term goal of implementing an early childhood direct education program is to decrease the rate of obesity in Nebraskan children.

The goals of this project are to plan the implementation and evaluations for the Learn, Grow, Eat & Go! Early Childhood curriculum to be used by Nebraska Extension Nutrition Education Program educators. Implementation of this program will occur in six phases, with Phase III involving the acceptance or rejection of the program following a program pilot in Phase II. If the program is not accepted in Phase III, Phases IV, V, and VI will not occur. Evaluation of this program occurs by asking formative, process, and outcome questions to reflect upon the strengths and limitations of the curriculum.

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Early Childhood Nutrition Education Program Planning: Learn, Grow, Eat & Go! for Early Childhood

**Chapter 1: Introduction** 

Specific Aims

A 2023 state action plan created by Nebraska Extension's Food, Nutrition, and Health department found a gap in direct education directed at Nebraskan children in early childhood. In the early planning stages, two curricula were originally identified as programs potentially fitting NEP's needs for nutrition education. Following further research and planning, Learn, Grow, Eat & Go! Early Childhood was selected as the most suitable program for piloting. The program evaluation will inform decisions regarding adopting the Learn, Grow, Eat & Go! Early childhood curriculum to the Nebraska Extension Nutrition Education Program's list of approved curricula to be used by SNAP-Ed educators. Significant issues with the curriculum's implementation practicality, deliverability, or content may result in the rejection of the program's adoption. It is in hopes of improving Nebraska's obesity rates and creating positive fruit and vegetable associations in early childhood, that this new curriculum is being explored.

This project aims to develop an implementation and evaluation plan of the early childhood direct education curriculum for Nebraska Extension's Food, Nutrition, and Health Department, and more specifically for the Nutrition Education Program. The implementation of an early childhood direct education curriculum will be carried out in phases. Data collected during a pilot implementation of the program will be used to adopt the curriculum permanently. Prior to pilot implementation, a focus group was planned to collect data from Nebraska

Extension educators after their delivery of the pilot program; a fidelity rubric was developed as a data collection tool to be used throughout the piloting process. Feedback collected during these processes will regard the selected curriculum's practicality, strengths, and limitations. Prior to pilot implementation, two data collection tools were developed to collect qualitative and quantitative data regarding outcomes following curriculum delivery.

Evaluation of this program will be completed through formative, process, and outcome evaluation questions. Formative questions have been formulated to ensure that the implementation of the planned curriculum will support the short-, medium-, and long-term goals of Nebraska Extension's Food, Nutrition, and Health Department, outlined in the 2023 state action plan. Formative questions have also been developed to evaluate the access to necessary inputs required for a successful implementation of the early childhood curriculum and to evaluate the curriculum's content structure compatibility with the Nutrition Education Program educator's needs.

Process evaluation questions have been developed to ensure all barriers preventing successful early childhood intervention implementation are addressed before beginning implementation. Process evaluation questions have also been designed to ascertain any necessary supplies and resources to implement a successful program.

#### **Chapter 2: Background**

#### Health Problem Description

The obesity rate amongst Americans in early childhood has been slowly decreasing over the past decade. In 2020 the obesity rate of all American children aged two to four years old was 14.4%, down 1.5% from 2010 data when the rate was 15.9% (State of Childhood Obesity: Ages 2-4, 2022). The obesity rate in American children aged two to five years old in 2022 was 12.7% (Center for Disease Control, 2022). The observed downward trend potentially suggests that obesity intervention and prevention strategies are having a positive impact. The CDC points to four leading causes of obesity; those causes are listed as attitudes and behaviors as they relate to eating, physical activity, and sleep patterns, Social Determinants of Health, genetics, and illnesses and medications (Centers for Disease Control and Prevention, 2022). Physical activity and food-related attitudes and behaviors are the primary focuses of the Nutrition Education Program.

Birth through early childhood is a critical life stage for the development and evolution of eating behaviors. The direct experiences that children have regarding food during early childhood will shape what, when, and how much they eat; these direct experiences can be with food itself or through the observation of others' eating behaviors (Birch et al., 2007). Unhealthful eating behaviors that adults model for children include oversized portions, primarily choosing low nutritional density foods, eating too frequently, and consumption of sugary drinks. Food modeling behaviors can follow children throughout their entire lives; therefore, healthful eating behaviors must be modeled early in childhood to prevent future development of obesity.

#### Organization Description

Nebraska Extension aims to strengthen Nebraskan families and empower young

Nebraskans. It is stated in Nebraska Extension's Mission statement that this organization strives
to meet Nebraskans wherever they are; maintain the reputation of a trusted source of education
for Nebraskans; aspire to inspire fulfilled, healthy, and prosperous lives in all Nebraskans
(Nebraska Extension, 2023). The Nutrition Education Program (NEP), a department of Nebraska
Extension, is rooted in the mission of helping Nebraska families make healthier food choices on
limited budgets while choosing to live physically active lives (Nutrition Education Program,
2023). The Nutrition Education Program, housed within the Food, Nutrition, and Health
department (FNH), focuses on educating underserved populations, while FNH educates
Nebraskans regardless of income. There are two separately funded programs within the Nutrition
Education Program - Supplemental Nutrition Education Program Education (SNAP-Ed) and
Expanded Food and Nutrition Education Program (EFNEP).

During the 2023 reporting period, FNH created two state action plans. One of these state action plans was regarding Food Systems, encompassing food safety, food science, and food access issues in Nebraska; the other action plan regarded Health and Well-being, encompassing early childhood, youth, and healthy people and communities. In the process of developing the Health and Well-being action plan, the NEP specifically identified enhancing health and well-being as a critical issue in Nebraska. An essential component of the development of the state action plans was identifying important deliverables for the following year; the Nutrition Education Program developed nine deliverables for 2023, one of them being to develop and

implement programs with evidence-based approaches or practice-based approaches for community requests for programming.

Regional Food, Nutrition, and Health (FNH) leadership, namely those who monitor the ongoings of NEP's SNAP-Ed programming through the SNAP-Ed State Agency, recommend that each age group has both direct education and Policy, System, Environment (PSE) opportunities. The Nutrition Education Program has identified Early Childhood as a life stage in need of program development. Currently, the only curriculum that is directed towards early childhood and available for SNAP-Ed educators to use in Nebraska Extension is the Nutrition and Physical Activity Self-Assessment for Child Care (Go NAP SACC); however, this curriculum is not a direct education curriculum intended for childhood education, but rather a PSE intervention developed for childcare providers. After thorough curriculum research, Learn, Grow, Eat & Go! Early Childhood was identified as a curriculum that could potentially fill NEP's gap in early childhood direct education.

#### Needs Assessment

The Food, Nutrition, and Health State Action Plan highlighted a need for early childhood direct education programming. Regional partners also identified early childhood as an unaddressed age group regarding direct programming offered by FNH and NEP educators. The only current approach that SNAP-Ed educators are approved to utilize for early childhood intervention is Go NAP SACC; this PSE approach was created to be utilized with childcare providers to reach best practices in their childcare facility. These best practices include child nutrition, breastfeeding and infant feeding, infant and child physical activity, outdoor play and learning, and screen time (Nebraska Nutrition and Physical Activity Self-Assessment for Child

Care, 2023). While the Nutrition Education Program has professionals who dedicate their services to the delivery of Go NAP SACC, this Policy, Systems, Environment approach still leaves a gap in terms of direct education.

Learn, Grow, Eat & Go! Early Childhood was identified as a suitable curriculum to fill this gap. Educators funded by SNAP-Ed are typically required to use curricula approved through the SNAP-Ed Toolkit. Neither the elementary nor early childhood Learn, Grow, Eat & Go! curricula are approved to be listed in the SNAP-Ed Toolkit as of June 2023 (Supplemental Nutrition Assistance Program, 2016). No other suitable curricula are listed in the SNAP-Ed Toolkit at this time. Nebraska Extension was granted an exception by the regional SNAP-Ed office to utilize this curriculum, regardless of toolkit status. Nebraska Extension bypassed this customary requirement due to the substantial evidence base available for the school aged Learn, Grow, Eat & Go! curriculum provided in the state action plan. Texas A&M AgriLife Extension Service is in the process of getting Learn, Grow, Eat & Go! listed in the SNAP-Ed toolkit to improve future ease of use for SNAP-Ed professionals. SNAP-Ed educators with Nebraska Extension do currently utilize the elementary-aged version of the Learn, Grow, Eat & Go! Curriculum.

#### Program Description

Learn, Grow, Eat & Go! Early Childhood is built upon four pillars, outlined clearly in the curriculum's name: Learn, Grow, Eat, and Go. The Learn pillar aims to not only educate children about plants, but how they provide us with things we need and how they can work together as a preschool classroom to nurture a healthy garden. The Grow pillar is intended to build, grow, maintain, and harvest a bountiful garden with the children. The Eat pillar concentrates on

students having a chance to taste the healthful and nutrient-dense food they grew in their garden. This pillar provides children with sensory experiences through sampling their produce, and food preparation skills through recipes utilizing the fruits and vegetables they grew. The final pillar, Go, is supported through garden yoga, silly and interactive games and songs, and other body and brain-boosting activities presented in each weekly lesson (Seagraves et al., 2021).

The curriculum is comprised of twenty sessions; each session is comprised of a ten-to-fifteen-minute lesson and a ten-to-fifteen-minute activity. The intention of the curriculum developers is that the content is delivered five days a week over the course of four weeks. The topic of week one is Plant Parts and Plant Needs, week two's topic is Seeds and Roots. Week three focuses on stems and leaves, and the final week focuses on flowers and fruit.

Each week will have five Learn lessons, one Grow activity, one Go activity, one Eat activity, and two supplemental activities, typically an arts and crafts experience. Each week has a song of the week that can be taught to the students on the first day of the week and then sung at the beginning of each lesson; there are also four literary connections offered each week; educators can choose to read none, some, or all books during the sessions. The classroom teachers are also left with a garden journalling prompt to work on with their classroom after the day's lesson. The curriculum is not specific about the number of facilitators that should be present; however, SNAP-Ed educators do typically request at least one staff person from the site be present for the programming.

# ${\bf Chapter~3:~Methods~-~Implementation~Planning~and~Evaluation} \ {\bf \textit{Logic~Model}}$

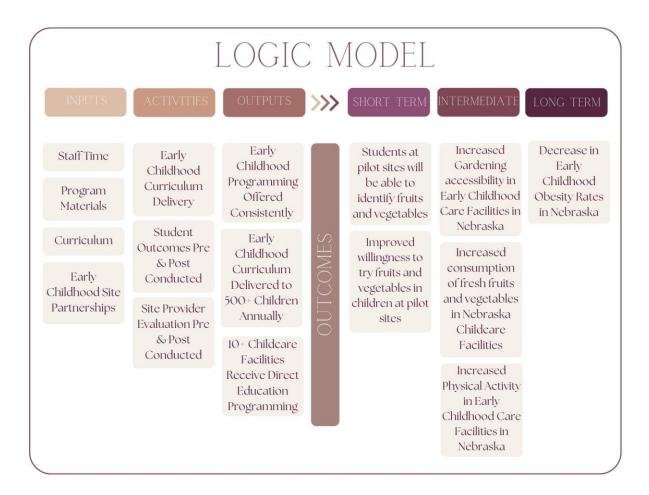
A logic model has been developed for implementing this program, detailing the implementation and evaluation of adopting a new curriculum to the NEP list of approved curricula. The inputs for this implementation are staff time, program materials curriculum, and early childhood site partnerships. NEP educators are the staff needed for this project; they are necessary to perform the delivery of the pilot curriculum. The curriculum and program materials are needed in order to be able to deliver the program. Curricula have been provided for the piloting staff by the NEP leadership team. Piloting staff are responsible for using their grant funds to purchase the necessary supplies in preparation for curriculum delivery. Early childhood site partnerships partnership is needed to work within the delivery of this project. Ideally, a childcare facility would fit into this role.

The activities for program implementation include curriculum delivery, conducting the Student Outcomes Pre- and Post-Evaluation, and conducting the Site Provider Pre- and Post-Evaluation. Outputs for this project include consistently offered early childhood programming, the curriculum being delivered to 500 or more children annually, and ten or more childcare facilities partnering with NEP to receive direct education programming annually.

The short-term goals of implementing this curriculum are that the students at program sites will be able to identify fruits and vegetables and = will have an improved willingness to try fruits and vegetables. These goals align with the short-term goal outlined in the FNH state action plan, a goal which hopes for an increased likelihood that Nebraskan children will increase knowledge and adopt attitudes necessary to engage in healthy lifestyles, eating, and activity behaviors. Intermediate goals are:

- 1. Increased gardening accessibility in early childhood facilities in Nebraska.
- 2. Increased consumption of fresh fruits and vegetables in Nebraska childcare facilities.
- 3. Increased physical activity in early childhood care facilities in Nebraska.

These goals align with the FNH state action medium-term goals, which highlight an increased likelihood that Nebraskan children will choose healthy lifestyles, eating patterns, and physical activity levels. The FNH Food Access state action plan also highlights increased accessibility to gardening and fresh produce for Nebraskan children. The only long-term goal of this project is a decrease in early childhood obesity rates in Nebraska, a goal which aligns with the mission of NEP and a long-term goal listed in the FNH state action plan as improving chronic episodic conditions related to poor diet and physical activity.



#### Implementation Phases I and II

Development of the state action plan launched Phase I of this project. With the establishment of the state action plan came an informal needs assessment and the undertaking of identifying a suitable curriculum to fit Nebraska Extension's needs. Learn, Grow, Eat & Go! Early Childhood was identified as a fitting curriculum for NEP's needs. Phase I was completed in the Fall of 2022.

Pilot testing the selected curriculum, Learn, Grow, Eat, & Go! Early Childhood encompassed Phase II. Program testing, a process that began in April of 2023, was completed at three pilot sites. Phase II was completed in early July of 2023. Get Ready, Set, Grow in Omaha, Nebraska was selected as one pilot site; it was here that two of the three pilot programs were delivered. Stick Creek Kids in Wood River, Nebraska is the location of the third pilot program. Pilot testing sites were required to have at least 50% or more of their families qualifying for SNAP benefit participation to qualify for pilot participation, a requirement set federally by SNAP-Ed. The creation of a fidelity rubric (Appendix A) to be used by educators piloting the program was also completed before the beginning of Phase II, to allow educators to utilize the rubric throughout their piloting experience.

#### Fidelity Rubric

The purpose of the fidelity rubric is to collect information from the piloting educators, encompassing their efforts and observations throughout the planning and programming processes. The first page of the fidelity rubric is dedicated to collecting demographic data for the

site; it asks for the percentage of students who qualify for free or reduced lunch and collects data on gender, age, race, and ethnicity.

There are pages each week asking about the use of Engagement Resources. Educators select which resources they used and are provided space to comment on them. These resources include family newsletters, home activities, and recipes. These weekly pages also collect information on which literature connections were used and whether the song of the week was used in the lessons. Each week also has two pages dedicated to collecting feedback on each lesson. Each day has a section dedicated to it, collecting information on staff and the number of children present, and comments on the lesson and activity components. At the end of each week, program educators are presented with a space to note their time spent planning and teaching, and to give overall feedback on the week. The feedback provided on these fidelity rubrics can be utilized during the final evaluation process; it can also be used during the implementation process as feedback from educators may show that some lessons could be more feasible or more appropriate for NEP educators.

#### **Implementation Phase III**

Implementation Phase III is set to take place during August of 2023 and involves the analysis of data collected during Phase II of this project. Data will also be collected during the focus group amongst piloting educators. This data will be analyzed alongside the data collected through the use of the fidelity rubrics during Phase II.

#### Focus Group

The focus group will be conducted via Zoom, intending to allow NEP educators who delivered the pilot program to discuss the strengths and limitations of the Learn, Grow, Eat & Go! Early Childhood curriculum. The focus group is conducted to receive feedback regarding the NEP educators' experiences with the curriculum. Two NEP leaders will host the focus group. There will be overarching questions about the curriculum. There will also be lesson-specific questions. The handout for this focus group can be found in Appendix D. The input provided during the focus group will be utilized by NEP Leadership in the decision of whether to accept or reject Learn, Grow, Eat & Go! Early Childhood as an approved curriculum for NEP educators. Questions asked during the focus group will be stated as follows. -

- 1. Describe your most significant challenges experienced when delivering the curriculum during the pilot program.
- 2. Describe any success stories that arose during the pilot program experience. Were there any significant moments of behavior and / or attitude change to note?
- 3. Were there any lessons in the curriculum that you felt were irrelevant to FNH's mission and values? If so, which ones and why?
- 4. What lessons did you feel were exceptionally relevant towards FNH's mission and values?
- 5. What lessons or activities did students enjoy the most?
- 6. What makes this program unique from others that we already offer?
- 7. If you could make changes to the program, what would they be and why would you make those changes?
- 8. What challenges do you foresee FNH experiencing when implementing this curriculum?
- 9. If FNH were to adopt this curriculum, would you use it? If so how often do you foresee yourself delivering this curriculum. If not why?

10. Do you believe FNH should add this curriculum to the list of NEP's approved curricula?

This Zoom meeting will be recorded. Additionally, notes will be taken, and each educator will have the opportunity to make notes on the handouts, to be shared with NEP leadership. The feedback received during this focus group will be taken into consideration by the NEP leadership team, when it comes time to decide whether to add the program to the approved list of curricula. All positives and negatives outlined both in the fidelity rubric and in the focus group will be considered. Leadership will consider the percentage of educators that claim they will use the curriculum in the future if it is adopted, as well as the number of educators who believe the curriculum should be added to the list of approved curricula. The leadership team will also consider the responses of the Site Provider Pre- and Post-Evaluation and the Student Outcomes Pre- and Post-Evaluation gathered during the pilot implementation. If the responses to most questions on the Site Provider Pre- and Post-Evaluation are seen to have improved from the preevaluation to the post-evaluation, this will be seen positively and will lead towards the adoption of the curriculum. If site providers do not express positive responses to the curriculum, or feelings toward these topics move in a negative trajectory from the pre-evaluation to the postevaluation, this will lead towards rejection of the curriculum. The same mindset will be taken when evaluating the Student Outcomes Pre- and Post-Evaluation. The leadership team will be looking for positive movement regarding attitudes and behaviors regarding the four pillars of the Learn, Grow, Eat & Go! Early Childhood curriculum; they will also be looking to see a reported increase in demonstrated knowledge. If these positive changes are observed, the curriculum will be adopted into the approved list of curriculums available for NEP educators to use. Following acceptance of the Learn, Grow, Eat & Go! Early Childhood curriculum, implementation Phase

IV will commence. If it is decided that the Learn, Grow, Eat & Go! Early Childhood curriculum should be adopted following an evaluation by the NEP Leadership team, Phase IV of the project shall commence.

#### Implementation Phase IV

#### Table I: Implementation Evaluation of Inputs - Funding

Implementation Evaluation Question 1: What resources will be needed to implement the Learn, Grow, Eat & Go! Early Childhood curriculum statewide?

Input: Funding to purchase the curriculum and necessary supplies and curriculum and program materials

#### Table II: Implementation Evaluation of Input Readiness - Funding

Implementation Evaluation Question 2: In order to successfully implement this program, a multitude of inputs are required; to what extent are these inputs available to the Nutrition Education Program?

Input: Funding to purchase the curriculum and necessary supplies and curriculum and program materials

Readily Available

Factored into the 2023 and 2024 fiscal year budgets

Phase IV of the project is the collection of supplies and preparation for implementation. During this phase, existing supply stock and finances are allocated to create program supply kits. Learn, Grow, Eat & Go! has a supply list available for download on their website. County offices are encouraged to look through their existing supply stock and cooperate with other departments before new supplies are purchased in order to limit the finances allocated to purchasing supplies for the program. Supply kits will first be created for offices in the metro areas to begin implementation in Phase V; rural counties will receive supply kits as Phase VI begins. Phase IV for metro area offices is anticipated to be completed by November of 2023; Phase IV for rural county offices is anticipated to conclude by April of 2024 as to allow for program kit delivery at in-person FNH meetings in the Spring of 2024.

#### Implementation Phase V

Table III: Implementation Evaluation of Inputs – Staff				
Implementation Evaluation Question 1: What resources will be needed to implement the Learn, Grow, Eat & Go! Early Childhood curriculum statewide?				
Input: Curriculum training for NEP educators				
Input: NEP educators to facilitate and prepare for program delivery				
Gathering materials	Creating lesson plans	Unitcomes Pre- and Post-		Delivering Site Teacher Pre- and Post-Evaluation Tools
Input: NEP educators to file program paperwork				
Demographics Form		Pre- and Post-Evaluation Results		
Input: Childcare program partnerships				

Table IV: Implementation Evaluation of Input Readiness - Staff			
Implementation	Implementation Evaluation Question 2: To successfully implement this program, a multitude		
_	of inputs are required; to what extent are these inputs available to the Nutrition Education		
1	Progra	*	
Input: Curriculum training for NEP educators			
Readily Available	Provided by Nebraska Extension Educators  Need to be planned two+ months in advance		
Input: NEP educators to facilitate and prepare for program delivery			
Partially Available	Staff eager to implement	Time for preparation and delivery may be limited for some educators	Strategic planning and scheduling will be required
Input: NEP educators to file program paperwork			
Readily Available	Halicators schedule data entry into their schedules		
Input: Childcare program partnerships			
Readily Available	Previous (to NAP SACC participating sites would be great initial contacts		

Table V: Implementation Evaluation of Barriers - Staff				
Implementation Evaluation Question 3: What are barriers to implementation of the pilot program and permanent implementation of the Learn, Grow, Eat & Go! Early Childhood				
curriculum?				
Input: Curriculum training for NEP educators				
Input: NEP educators to facilitate and prepare for program delivery				
Gathering materials	Creating lesson plans	Delivering Student Outcomes Pre- and Post-Evaluation Tool		Delivering Site Teacher Pre- and Post-Evaluation Tools
Input: NEP educators to file program paperwork				
Demographics Form		Pre- and Post-Evaluation Results		
Input: Childcare program partnerships				

Table VI: Implementation Evaluation of Barriers - Time		
Implementation Evaluation Question 3: What are barriers to implementation of the pilot program and permanent implementation of the Learn, Grow, Eat & Go! Early Childhood curriculum?		
Barrier: Time investment for program delivery		
Overcome through strategic scheduling	Overcome through adapting curriculum without compromising fidelity	

Phase V of the project is the implementation of Learn, Grow, Eat & Go! Early Childhood in the metro region of Nebraska. Omaha, Nebraska already has an office piloting the curriculum, simplifying the previous process of Phase IV as a supply kit has already been created for use during the delivery of the pilot program. One staff member in Omaha, and two staff members in Lincoln, are currently trained in the curriculum. Training for the remaining metro employees will be held in person at the Nebraska Extension office in Lancaster County. During this in-person training, supply kits will be delivered for use in both Lancaster County offices, and additional curriculum and print materials will be supplied for all metro area educators. It is anticipated that

Phase V of the project will begin with the program training in November of 2023. Completion of Phase V prior to the Spring of 2024 is vital to ensure educators are fully trained and prepared to begin delivery of the program during the spring and summer months when program requests are at their peak.

Staff are eager to implement an early childhood direct education curriculum and prepared to facilitate the program, evidenced by several requests to leadership for such programming. Time for preparation and delivery, however, may be limited for some educators. This curriculum is time intensive both in terms of planning and delivery; to compensate for this, educators will need to plan their schedules strategically to fit in the desired programming. Therefore, while the input of educators' time is available, it will be necessary for educators to plan their programming schedules strategically.

Funding to purchase curricula and build out supply kits for all implementing offices is readily available. The implementation of an early childhood direct education curriculum has been factored into the 2023 and 2024 fiscal year budgets to account for these increased expenditures. It is expected that the initial cost of program implementation will be around \$8,000; these prices are detailed in the sustainability plan. Continued program delivery costs have also been factored into the annual programming budget.

Training in program delivery is also readily available. Nebraska Extension educators outside of FNH are excited to train others on the curriculum they aided in developing. Program training will need to be planned at least two months in advance to ensure trainers are able to accommodate the training session and that all implementing educators are able to make it to the training.

Childcare facilities or other early childcare site partnerships are necessitated to have an impactful implementation of the curriculum statewide. This resource is readily available for all NEP educators through the Go NAP SACC system. Contacting sites who have gone through the Go NAP SACC program is likely to gather enough interest for NEP educators to schedule multiple programs annually. Many of these Go NAP SACC certified sites have requested gardening and nutrition direct education programming.

The most substantial barrier facing NEP when it comes to implementation of this specific early childhood curriculum is the time investment required for delivery of the program. Most of the programming offered by NEP educators is either one time programming, or a forty-to-sixty-minute lesson offered weekly for four to six weeks. This is not the case for the Learn, Grow, Eat & Go! Early Childhood curriculum. This curriculum is comprised of twenty lessons, it is intended to be delivered for twenty days, five days a week over the course of four weeks. The curriculum is incredibly time-intensive, and this structure of programming is unusual for NEP educators to deliver. Educators delivering this program can expect it to monopolize a majority of their time for the month that it takes to deliver.

The lessons are also structured as to be broken into two parts – the educational lesson followed by the activity of the day. This format is beneficial for keeping young children engaged, and is practical for childcare providers; however, this layout is not rational for NEP educators who are traveling to the childcare sites to deliver lessons. During pilot classes, the activity was executed directly after the delivery of the educational lesson. On some occasions, this led to a decrease in attention from the class. The delivery of some lessons took more than the allotted ten to fifteen minutes. This also led to less attention and higher rates of negative behaviors in classes. Classes not fitting into the allotted amount of time can also complicate scheduling for Extension educators.

It is possible for NEP educators to overcome these obstacles by strategically planning their programming schedules and by adapting the Learn, Grow, Eat & Go! Early Childhood curriculum to better fit their scheduling needs while being mindful not to compromise the fidelity of the curriculum.

#### Implementation Phase VI

Phase VI of the project is the statewide implementation of Learn, Grow, Eat & Go! Early Childhood. Grand Island, Nebraska and Norfolk, Nebraska are currently being used as pilot cities for the program, with one staff member from each location being trained in the curriculum. Experiential knowledge from these educators will be relied upon in the implementation process in rural counties. Staff training for all rural county employees will be hosted virtually, via Zoom, in the Fall of 2024. Once trained, educators are allowed to begin delivering the curriculum, however, the curriculum may not be appealing to programs during non-peak-gardening seasons. Kits will be available for pick-up at the Nebraska Extension State NEP Office, located at the University of Nebraska- Lincoln East Campus. For those who cannot pick up their kits throughout the year, kits will be made available at the Fall NEP Meeting in 2024. It is anticipated that all counties will have a kit in their office, and at least one trained educator, by the end of 2024.

#### **Chapter 4: Methods – Program Evaluation**

#### Data Collection at Programming Sites

Two forms of data collection have been provided to the childcare site leaders or teachers during a planning meeting or on the first day of the program. The first of the evaluations, the Student Outcomes Pre- and Post- Evaluation tool (Appendix C), will be used to evaluate differences seen in the knowledge and behaviors of the youth experiencing the curriculum. Each student will be assigned a private ID to maintain the anonymity of the youth. Questions on the evaluation inquire about the students' abilities to identify fruits or vegetables and their willingness to try them. The Student Outcomes Pre- and Post-Evaluation tool will also seek demonstrated knowledge of how plants grow and the parts of the plant. The outcomes obtained from this evaluation speak to the program evaluation questions formulated for this project. See Table VII below for a breakdown of how the Student Outcomes Pre- and Post-Evaluation tool questions relate to these evaluation questions.

Table VII: Program Evaluation - Data Derived from Student Outcomes Evaluation as it Relates to FNH Short Term Goals			
Program Evaluation Question 1: In line with the FNH short term goal of improving attitudes regarding healthy eating behaviors, to what degree was there an attitude change towards the consumption of fruits and / or vegetables?			
Evaluation Tool Question	Evaluation Tool Measures		
How willing is this child to taste new fruits and/or vegetables	<ul><li>(1) Extremely unwilling</li><li>(2) Somewhat unwilling</li><li>(3) Somewhat willing</li><li>(4) Extremely willing</li></ul>		
Program Evaluation Question 2: In line with the FNH short term goal of increasing knowledge necessary to engage in healthy eating behaviors, to what extent did knowledge regarding fruits and vegetables increase?			
Evaluation Tool Question	Evaluation Tool Measures		
How capable is this child of identifying fruits and vegetables	<ul><li>(1) Extremely uncapable</li><li>(2) Somewhat uncapable</li><li>(3) Somewhat capable</li><li>(4) Extremely capable</li></ul>		
How many of these plant parts can the student identify?	Flower Stem Leaves Roots (Assign 0 – 4 points, 1 point per plant part)		
Program Evaluation Question 3: In line with the FNH short term goal of improved attitudes towards physical activity, what changes in perspectives towards physical activity were observed?			
Evaluation Tool Question	Evaluation Tool Measures		
How willing is this child to participate in physical activity?	<ul><li>(1) Extremely unwilling</li><li>(2) Somewhat unwilling</li><li>(3) Somewhat willing</li><li>(4) Extremely willing</li></ul>		

It is anticipated that changes in attitudes towards healthy eating behaviors will improve as a result of receiving the Learn, Grow, Eat & Go! Early Childhood programming. The curriculum provides ample opportunities for healthy food taste testing and frames fruits and vegetables in a positive manner. Knowledge regarding fruits and vegetables is anticipated to improve following

program delivery. Most of the Learn, Grow, Eat & Go! Early Childhood curriculum focuses on education regarding parts of the plant, including fruits and vegetables. Children can see where their fruits and vegetables grow through hands-on gardening experiences. Incorporation of physical activity in a fun and positive way throughout the delivery of the program is anticipated to improve attitudes regarding physical activity. It is also probable that these lessons will provide site educators with insight into how physical activity can be incorporated into their daily classroom routines.

The second portion of program site data collection is for the site leader or teacher to complete. This Site Provider Pre- and Post-Evaluation tool (Appendix B) is also to be offered pre- and post-program delivery alongside the Student Outcomes Pre- and Post-Evaluation. The program provider evaluation is divided into five sections. There are sections asking questions directly related to each curriculum pillar: Learn, Grow, Eat, and Go. These questions are answered on a scale of: Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, and Strongly Agree, with the option to choose Not Applicable. There is also a final section meant to be completed only following the conclusion of the program, as a post-evaluation. See Table VIII to find the questions regarding the Learn pillar as they relate to the program evaluation questions.

## Table VIII: Program Evaluation as it Relates to Site Teacher Pre- and Post-Evaluation Questions Regarding the Learn Pillar

Program Evaluation Question 1: In line with the FNH short term goal of improving attitudes regarding healthy eating behaviors, to what degree was there an attitude change towards the consumption of fruits and / or vegetables?

"My students bring healthy foods, such as fruits and vegetables, from home for meals or snacks"

Program Evaluation Question 2: In line with the FNH short term goal of increasing knowledge necessary to engage in healthy eating behaviors, to what extent did knowledge regarding fruits and vegetables increase?

"My site provides suggestions and/or guidelines on foods provided by parents for classroom parties or other events"

"I am confident talking to parents about healthy food choices in the classroom."

These questions tie back to one of the short-term goals outlined in the logic model:

"improved willingness to try fruits and vegetables in children at pilot sites". This also relates to the intermediate goal of "increased consumption of fresh fruits and vegetables in Nebraska Childcare Facilities" and the long-term goal of "decrease in early childhood obesity rates in Nebraska". Directed towards these same goals, the second question of the Grow pillar section asks: "My program uses a vegetable garden for tasting opportunities". This is in hopes that access to a garden on-site may increase access to fruits and vegetables for children to consume. Outlined in Table IX, you will find the questions regarding the Grow pillar as they relate to the program evaluation questions.

## Table IX: Program Evaluation as it Relates to Site Teacher Pre- and Post-Evaluation Questions Regarding the Grow Pillar

Program Evaluation Question 2: In line with the FNH short term goal of increasing knowledge necessary to engage in healthy eating behaviors, to what extent did knowledge regarding fruits and vegetables increase?

- "My students have opportunities to participate in gardening activities within the classroom."
- "My program uses a vegetable garden for educational opportunities."
- "My program uses a vegetable garden for tasting opportunities."
- "I am confident teaching my students about gardening."

These questions relate back to the short-term goal of students at the pilot site being able to identify fruits and vegetables and the intermediate goal of increased gardening accessibility in early childhood care facilities in Nebraska; both goals are outlined in the logic model. This portion of the evaluation also asks if teachers feel confident teaching their students about gardening. This question reflects the intermediate goal of increasing gardening accessibility in early childhood care facilities in Nebraska. The longest portion of the site evaluation is dedicated to the Eat pillar. Table X outlines the questions regarding the Eat pillar as they relate to the program evaluation questions.

## Table X: Program Evaluation as it Relates to Site Teacher Pre- and Post-Evaluation Questions Regarding the Eat Pillar

Program Evaluation Question 1: In line with the FNH short term goal of improving attitudes regarding healthy eating behaviors, to what degree was there an attitude change towards the consumption of fruits and / or vegetables?

"I talk about and model positive eating behaviors regarding fruits and vegetables in front of my students."

- "I provide positive opportunities for students to taste fruits or vegetables in my classroom."
- "My students see me eat fruits and vegetables."
- "My students are willing to try new fruits and vegetables."
- "My students select healthy foods, such as fruits and vegetables, when they are offered with school meals or snacks."

Program Evaluation Question 2: In line with the FNH short term goal of increasing knowledge necessary to engage in healthy eating behaviors, to what extent did knowledge regarding fruits and vegetables increase?

- "I talk about the importance of eating healthy foods, such as fruits and vegetables, with my students."
- "Foods grown in the school garden are used for meals, snacks, or tastings."
- "I am confident teaching my students about fruits and vegetables."

These questions all reflect on multiple goals outlined in the logic model. Each question relates to an improved willingness to try fruits and vegetables in children at the pilot sites, a short-term goal. The questions also report to the intermediate goals of increased consumption of fresh fruits and vegetables in Nebraska childcare facilities and the long-term goal of decreasing

early childhood obesity rates in Nebraska. One question reveals insights on whether the teacher feels confident teaching their students about fruits and vegetables. This question relates back to the same goals as the others in this section, in addition to the short-term goal of students at the pilot site being able to identify fruits and vegetables.

Each of the questions in the Go pillar section reflects on the intermediate goal of increased physical activity in early childhood care facilities in Nebraska, and the long-term goal of decreasing early childhood obesity rates in Nebraska. Table XI the questions regarding the Go pillar as they relate to the program evaluation questions.

Table XI: Program Evaluation as it Relates to Site Teacher Pre- and Post-Evaluation Questions Regarding the Go Pillar

Program Evaluation Question 3: In line with the FNH short term goal of improved attitudes towards physical activity, what changes in perspectives towards physical activity were observed?

- "My students are positive about being physically active."
- "My students have the opportunity to engage in at least thirty minutes of heart pumping activity during the program day."
- "My program is committed to providing students with time for recess or other physical activity opportunities."
- "I am confident teaching my students about physical activity".

For the pre-evaluation portion, teachers will answer only these questions. For post-evaluation, teachers will answer the previously described questions in addition to four post-evaluation questions. The first three of these questions give the answer options of "yes", "no", and "I would like to spend more time on this topic, but I do not have the classroom instruction time". These first three questions ask the teacher if they have continued discussing a specific topic in their classroom following the conclusion of the program. Question 1 asks about the continued discussion of healthy eating. This relates back to the short-term goal of improved willingness to try fruits and vegetables in children at the pilot sites, the intermediate goal of

increased consumption of fresh fruits and vegetables in Nebraska childcare facilities, and the long-term goal of decreasing early childhood obesity rates in Nebraska.

The second question asks about the continued discussion of gardening in the classroom following the conclusion of the NEP program. The purpose of this question is the depict movement towards the short-term goal of students at pilot sites being able to identify fruits and vegetables and the intermediate goal of increased gardening accessibility in early childcare facilities in Nebraska. The final question of this section simply asks teachers how likely they are to recommend this program to other early childhood professionals. The answer options range from extremely likely to extremely unlikely. Teachers are also provided with a section to share any additional thoughts they have regarding the program. This post portion of the Site Provider Pre- and Post-Evaluation provides insight towards the implementation question 3, regarding barriers towards implementation as site provider attitudes towards the curriculum are captured. To see this site evaluation, see Appendix B.

To quantify the data collected in the site teacher evaluation, responses will be given a numerical value, with strongly disagree equating to one point ranging to five points for strongly agree. Each pillar will be given a percentage of the total possible points, to allow for easy visualization of possible improvement. Table XII portrays the numerical values associated with each possible response in the teacher evaluation.

#### **Chapter 5: Discussion**

#### **Summary**

Early childhood is a critical life stage that the Nutrition Education Program is failing to address through direct education, therefore, an implementation and evaluation plan has been developed for the Learn, Grow, Eat & Go! Early Childhood curriculum. The purpose of this curriculum is to address the troubling obesity rates in America, a primary goal of the Nutrition Education Program. The Learn, Grow, Eat & Go! Early Childhood curriculum has three main pillars, which outline objectives that align with the goals of the Nutrition Education Program and the Food, Nutrition, and Health Department. The first pillar, Learn, focuses on the education of children on topics such as plants, gardening, and the benefits of fruits and vegetables for our bodies. The second pillar, Grow, focuses on growing and maintaining a garden in order to harvest fruits and vegetables. The third pillar, Eat, aims to provide students with ample opportunities to try new fruits and vegetables in order to improve attitudes and behaviors towards healthful foods. The final pillar, Go, highlights the importance of children moving their bodies and boosting their brain through active activities.

The implementation of this program as a permanent fixture amongst NEP educators will be a six-phase project. Phase I was completed in Fall of 2022, when the FNH state action plan found the need for an early childhood direct education curriculum and Learn, Grow, Eat & Go! Early Childhood was identified as a practical curriculum to fit this gap. Phase II concluded in July of 2023; this phase included piloting the curriculum at three early childhood sites in addition to creating data collection tools. The data collected during this phase is to be evaluated during Phase III of the project. This data was collected by use of a Site Provider Pre- and Post-Evaluation tool, a Student Outcome Pre- and Post-Evaluation tool, a Fidelity Rubric completed

by educators piloting the program, and a focus group which piloting educators participated in. A team of FNH leaders will be evaluating the data collected during Phase II and will use this data analysis to determine if the Learn, Grow, Eat & Go! Early Childhood curriculum should be accepted as a permanent curriculum or should be rejected and the search for a new project should begin again. Phase III of the project will take place during August of 2023. By April of 2024, Phase IV will have been completed. Phase IV entails collection of supplies and preparation for implementation. This phase includes creating supply kits for metro area offices by November of 2023 and rural areas by April of 2024. In Phase V of this project, metro area educators will be trained in the use of the Learn, Grow, Eat & Go! Curriculum and will be prepared to introduce the program to their communities immediately following training. Program training will occur in November of 2023 so that metro area educators are prepared for delivery of the program by Spring of 2024. The final stage of the program, implementation Phase VI, encompasses the training of rural county employees during the Fall of 2024. Rural area educators will all be trained to deliver the Learn, Grow, Eat & Go! Early Childhood curriculum by the end of 2024.

Resources and inputs needed for a successful program implementation are available for NEP educators, and the significant barrier of the time intensity of the curriculum can be overcome through thoughtful planning and scheduling. The NEP leadership team can utilize the two data collection tools to answer the three program evaluation questions as they relate to FNH's goals. It is anticipated that outcomes will reflect the desired attitude, behavior, and knowledge changes.

#### Strengths

The content of the curriculum is strong. The lessons are interactive and short enough to keep most students engaged. The lessons are age-appropriate for most children aged four and five years of age. Many lessons are able to be completed in less than ten minutes, with almost all lessons being completed within fifteen minutes. These short lessons were advantageous in keeping four-to-five-year olds' attention and are easy to fit into educators' programming schedules. None of the lessons involve much lecture time, with a majority of each lesson being interactive. The lessons are intentionally made with the attention span of early childhood in mind, keeping lessons moving and interactive. Allowing for interactive and cooperative engagement is not at the expense of educational content. The lessons in the curriculum have clearly lined out objectives, which are all met through the program.

Most lessons in the curriculum do not involve vast amounts of space. Apart from some physical activity lessons, most lessons can be conducted at an activity rug or a craft table or in the cafeteria. The bulk of the lessons can be delivered indoors. The exception to this is that some physical activity lessons require space to move about, these activities can be modified to be performed in a large classroom or wide hallway. Without special supplies such as indoor pots, tables, and grow lighting, gardening can be challenging to do year-round. Outside of the gardening lessons, most of the program can be delivered either in its original context, or with mild modification, indoors. The selection of such a robust and exciting curriculum by the FNH leadership team eased the process of planning the implementation and evaluation of this curriculum. This curriculum has few disadvantages, making the list of barriers that needed to be evaluated much shorter.

I was lucky to have a very supportive group of teams throughout the process of this project. I worked with teams varying from Nebraska Extension Educators for creation of

evaluation tools to assure fidelity, to childcare facility coordinators for program piloting, to my committee. The opportunity to work with these interprofessional teams was beneficial for me as a professional, providing a robust experience.

Having five years of experience with Nebraska Extension and direct education was an advantage during the creation of this project. I have an in-depth understanding of the ongoings and structure of Nebraska Extension and all its interprofessional and intertwined departments. Without my personal experiences with Nebraska Extension, evaluating the practicality of this program for use by NEP would have been more challenging.

#### Limitations

Creating a relevant Student Outcomes Pre- and Post-Evaluation tool for this project was challenging. It was important to ask questions that would reflect the changes NEP aims to see, something that was challenging to do in a way that young children could understand. Most NEP pre- and post-evaluations are meant to be completed by the person receiving the education, however with young children this wasn't possible. Creating an evaluation tool that answered the questions I needed answered while maintaining fidelity towards NEP standards was an obstacle.

It was also a limiting factor that I did not have any response data from the Student Outcomes Pre- and Post-Evaluation and the Site Teacher Pre- and Post-Evaluation as the curriculum has not yet been delivered with the use of these evaluation tools. Having these responses would have made evaluating the effectiveness of the program an easier process.

#### Plan of Dissemination

NEP hosts monthly curriculum trainings and updates, as a part of the monthly department meetings. It is currently scheduled that the findings for this pilot program and the evaluation process will be shared at the monthly NEP Curriculum Update in September of 2023. Sharing the findings of this pilot and information regarding the curriculum, if adopted, is done in hopes of

motivating all NEP offices to pursue implementation of the program in their regions of accountability.

A one-page handout, summarizing the results of the pilot program, will be created and disseminated Extension-wide. Sharing this handout with the entire organization, rather than just within NEP, is done as other programs are also considering adoption of the Learn, Grow, Eat & Go! Early Childhood curriculum. These departments include the Horticultural Departments and some county Early Childhood programs. While Early Childhood programs in some counties are currently using the Learn, Grow, Eat & Go! Early Childhood curriculum in their direct programming, it is not used statewide. This handout is also intended to be shared by the NEP leadership team, with regional partners and stakeholders.

Primary stakeholders who may find value in the implementation of an early childhood direct education curriculum include summer school programs in Nebraska. Many summer school programs, particularly in Omaha, have on-site gardens. Some of these gardens are functional, but others are not currently in use. These specific programs will likely find interest in a curriculum focused on gardening and early childhood. Programming partners who serve early childhood populations and host community gardens are likely to find the implementation of this curricula intriguing. Other partners who may find the installment of this curriculum interesting are childcare providers who have undergone the NAP SACC training process.

#### Plan of Sustainability

The maintenance of this program is low in comparison to other early childhood curricula considered for implementation, and many other curricula already utilized by FNH for other age groups. Initial training for use of the Learn, Grow, Eat & Go! Early Childhood curriculum

provides little financial burden, with Nebraska Extension educators being able to provide the training at no cost. Newly hired educators will be able to be trained on the curriculum during NEP monthly curriculum updates. Each NEP curriculum is revisited once annually during these trainings. The curriculum itself comes at a cost of \$56.00. Below is a cost breakdown per county.

Table XII: Curriculum Purchasing Cost Breakdown	
County	Number
	Curricula
	Needed
State Office (Lancaster)	3
Lancaster County Office	3
Douglas – Sarpy Counties Office	3
Platte – Colfax – Saunders - Dodge County Office	2
Cumming – Stanton – Colfax Counties Office	1
Pierce – Cedar – Wayne - Madison Counties Office	1
Antelope – Knox – Boone – Nance Counties Office	1
Custer – Loup – Garfield – Wheeler – Valley – Greeley – Howard Sherman	2
Counties Offices	
Brown – Keya Paha – Rock Counties Office	1
Keith – Lincoln - McPherson Counties Office	1
Sioux – Dawes – Box Butte – Sheridan Counties Office	1
Morrill – Scotts Bluff – Banner – Kimball – Cheyenne – Deuel – Garden Counties	2
Offices	
Dawson – Lincoln – McPherson – Logan – Keith – Arthur – Grant – Hooker –	3
Thomas – Blaine – Perkins Counties Offices	
Chase – Dundy – Red Willow – Hayes – Frontier Hitchcock Counties Offices	2
Buffalo County	1
Kearney – Franklin – Phelps – Harlan – Furnas – Gospel Counties Office	1
Adams – Hall – Webster Counties Offices	3
Hamilton – Merrick – Clay – Nuckolls Counties Office	1
Polk – Butler – York – Seward Counties Office	1
Gage - Saline - Jefferson - Johnson - Pawnee - Nemaha - Richardson Counties	1
Office	
Total Curricula Needed:	34
Cost Per Curriculum:	\$56.00
Curricula Purchase Cost	\$2,016.00

The highest cost of this program is the supplies needed for delivery. Some supplies are one-time purchases, while others will need to be repurchased or replaced at low rates of frequency. Some supplies must be purchased every time the curriculum is delivered. To keep the costs of kit production as low as possible, offices will be asked to review the supply list prior to

kit build out and inform those building the kits of any supplies they already have in the office.

Below is a breakdown of the costs for creating Learn, Grow, Eat & Go! Early Childhood Kits.

Table XIII: One Time Purchase Cost Breakdown	
One Time Purchase	Cost
Pegboard	\$2.00
Green Pool Noodle	\$4.00
Mop	\$10.00
Poster Board	\$6.00
Spray Bottle	\$1.00
Tweezers	\$6.00
Artificial Flowers	\$7.00
Magnifying Glasses	\$14.00
Kid's Gardening Glovers	\$7.00
Watering Cans	\$10.00
Juicer	\$5.00
Scrub Brushes	\$8.00
<b>Total One Time Cost:</b>	\$80.00
Number Kits Needed:	34
Total One Time Kit Cost:	\$2720.00

Semi – Frequent Replacement Items	Cost
Green Playdough	\$12.00
Cotton Balls	\$1.00
Chalk	\$3.00
Roasted Sunflower Seeds	\$15.00
Muffin Liners	\$2.00
Napkins	\$2.00
Small Plates	\$4.00
Large Plates	\$6.00
Green Straws	\$3.00
8 oz Cups	\$5.00
Plastic Spoons	\$4.00
Reusable Bowls	\$20.00
Plastic Tablecloth	\$1.00
<b>Total First Time Cost:</b>	\$78.00
Number Kits Needed:	34
<b>Total One Time Kit Cost:</b>	\$ 2652.00

Replacement of these items will be the responsibility of individual county offices to restock, although all funding does come from the same source. Offices will also be responsible for their own food purchases, which will occur each time the program is delivered. Below is a cost breakdown of the food purchases in addition to other one-time purchases. These costs are approximate, as they will likely change over time. Some of the food items are not single use items, and therefore costs are inflated.

Table XV: Food Purchases Breakdown	
Food Purchases	Cost
Baby carrots	\$3.00
Celery	\$3.00
Raw broccoli florets	\$3.00
Spinach	\$5.00
Bell peppers	\$6.00
Sunflower seeds	\$3.00
Pumpkin seeds	\$4.00
Ranch dressing	\$3.00
Pumpkin	\$3.00
Single-serve containers / quart skim milk	\$3.00
Frozen pineapple chunks	\$2.00
Single-serve cups low-fat vanilla yogurt	\$2.00
Dried lima beans	\$2.00
Can green peas	\$1.00
Can corn	\$1.00
Apples	\$2.00
Avocados	\$2.00
Dry beans	\$2.00
Matchstick carrots	\$3.00
Carrot chips	\$3.00
Carrots with leaves	\$3.00
Radishes with leaves	\$3.00
Turnips with leaves, if possible	\$2.00
Beets with leaves	\$2.00
Canned low-sodium garbanzo beans	\$2.00
Clove, crushed, or powdered garlic	\$1.00
Ground cumin	\$1.00
Olive oil	\$4.00
	,

Blue food coloring	\$4.00
Fresh leaf lettuce	\$2.00
Red leaf lettuce greens	\$2.00
Balsamic vinaigrette salad dressing	\$1.00
Mandarin oranges, canned	\$1.00
Honey	\$4.00
Kiwi	\$2.00
Oranges	\$6.00
Banana	\$1.00
Cocoa powder	\$2.00
Vanilla extract	\$2.00
Lemon	\$1.00
Containers for Planting	\$15.00
Large Tubs	\$10.00
Potting Soil	\$26.00
Seeds	\$20.00
Plant Transplant	\$5.00
Small Potted Plant	\$5.00
Cost per program delivery:	\$180.00

Not included in this cost breakdown is the cost of literature resources, which are optional. Counties have the option of purchasing any of the approved children's books if they find them useful. Counties may also check these books out from their local libraries. There are also school and office supplies used in some of the lessons. County offices are encouraged to utilize what they have on hand and work with programming sites to accommodate these needs. If counties are unable to access these resources, they are able to purchase them independently.

#### Recommendations

I am of the opinion that Learn, Grow, Eat & Go! Early Childhood is an appropriate curriculum for Nebraska Extension NEP educators to implement, however some modifications may be made to create a program delivery process that better fits the needs of NEP's team of educators. Rather than a daily program for four weeks, NEP should offer their educators the

freedom to create a flexible programming schedule that better fits their needs. For some educators, this may be a two or three times per week thirty-minute lesson, while other educators may find the daily program fits their needs reasonably.

With the serious limitation of the lack of nutrition education provided in the curriculum, it is my recommendation that NEP educators incorporate nutrition education lessons into the weekly Eat activities. Nutrition education can also be incorporated easily into some of the other weekly activities that involve tasting opportunities. Considering NEP's lack of any other nutrition curricula, NEP educators can provide basic education derived from their own personal knowledge or incorporate appropriate lessons from other curricula. FNH frequently utilizes a curriculum entitled "School Enrichment Kits". These kits are grade specific, with one being designated for kindergarten aged students. This kindergarten program has been successfully used in preschool classrooms previously. Nutrition education materials could be pulled from this curriculum to be used in conjunction with the Learn, Grow, Eat & Go! Early Childhood Eat lessons in order to increase the amount of nutrition education provided in this lesson. If results of the evaluation process are positive, and these changes to the curriculum can be made, I believe Learn, Grow, Eat & Go! Early Childhood would be a positive addition to the Nebraska Extension Nutrition Education Program list of approved curricula.

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# Appendices

# Appendix A: Fidelity Rubric

Extension Staff:	
Program Location / Site:	
Primary Contact:	
<b>Number of Youth by Gender</b>	
Female:	
Male:	
Unknown:	
Number of Youth by Age	
< 2 Years of Age	
2 Years of Age	
3 Years of Age	
4 Years of Age	
5 Years of Age	
6 Years of Age	
> 6 Years of Age	
Number of Youth by Race	
American Indian or Alaskan Native	
Asian	
Black or African American	
Native Hawaiian or other Pacific Islander	
White	
Unknown:	
Number of Youth by Ethnicity	
Hispanic/Latino:	
Non-Hispanic/Latino:	
Unknown:	
Total Youth	

Engagement Resources – Week One			
Resource:	Used:	Comments:	
Our Class Garden Family Newsletter	☐ Yes		
– Garden Home Found!	□ No		
Our Class Garden Family Newsletter	☐ Yes		
<ul> <li>Class Crawls Underground</li> </ul>	□ No		
T TYPE DE LET A LET			
Learn With Me at Home Activity –	☐ Yes		
Fun Food Face Project	□ No		
Garden Kitchen Recipe:	☐ Yes		
Power Smoothie	□ No		
Garden Kitchen Recipe:	☐ Yes		
Easy, Homemade, Vegetable Soup	□ No		
Garden Kitchen Recipe:	☐ Yes		
Super Quesadillas	□ No		
	W 10		
Daily Literature Connection Options – '			
Book:	Used:	Comments:	
Grow Flower, Grow! - Lisa Bruce	☐ Yes		
	□ No		
Lola Plants a Garden – Anna	☐ Yes		
McQuinn	□ No		
Pumpkin Circle – George Levenson	☐ Yes		
1 umpkin Circle – George Levenson	☐ No		
Seeds Go, Seeds Grow – Mark	☐ Yes		
Weakland	□ No		
-			
Song Of the Week: Parts of the Plant			
Sang:	☐ Yes	Comments:	
	□ No		

Week One, Day One:			
Lesson Leader:			
Facility Staff Present:	☐ Yes ☐ No	Number of Children Present:	
Lesson Component:	Date:	Comments:	Recommend:
Lesson:			☐ Yes
How Do Plants Grow			□ No
GROW Activity:			☐ Yes
Finding a Garden Home			□ No
	Week	One, Day Two:	
Lesson Leader:			
Facility Staff Present:	☐ Yes ☐ No	Number of Children Present:	
Lesson Component:	Date:	Comments:	Recommend:
Lesson: Underground Root Table			☐ Yes ☐ No
Activity: Rainbow Roots			☐ Yes ☐ No
	Week (	One, Day Three:	
Lesson Leader:	1		<del>,</del>
Facility Staff Present:	☐ Yes ☐ No	Number of Children Present:	
Lesson Component:	Date:	Comments:	Recommend:
Lesson:			☐ Yes
Mop Flower			□ No
GO Activity:			☐ Yes
I am a Growing Plant!			□ No

Week One, Day Four:			
Lesson Leader:			
Facility Staff Present:	☐ Yes ☐ No	Number of Children Present:	
Lesson Component:	Date:	Comments:	Recommend:
Lesson:			☐ Yes
Healthy Henry			□ No
Activity:			☐ Yes
Sorting Plant Parts			□ No
	Week	One, Day Five:	
Lesson Leader:			
Facility Staff Present:	☐ Yes ☐ No	Number of Children Present:	
Lesson Component:	Date:	Comments:	Recommend:
Lesson:	Bute.	Comments.	☐ Yes
Grow a Pumpkin			□ No
EAT Activity: Garden Kitchen Day Recipe Used: ☐ Power Smoothie ☐ Easy, Homemade Vegetable Soup ☐ Super Quesadillas			☐ Yes ☐ No
Week One – Conclusion			
Time Spent Planning (Minutes):			
Time Spent Teaching (Minutes):			
Overall Feedback:		·	

Engagement Resources – Week Two		
Resource:	Used:	Comments:
Our Class Garden Family Newsletter	☐ Yes	
<ul> <li>Planting Seeds for the Future</li> </ul>	□ No	
Our Class Garden Family Newsletter	☐ Yes	
<ul><li>Students Learn with Twisty Roots</li><li>and Tasty Roots</li></ul>	□ No	
and Tasty Roots		
Learn With Me at Home Activity –	☐ Yes	
Fun Root and Seed Scavenger Hunt	□ No	
Garden Kitchen Recipe:	☐ Yes	
Seed Roller Energy Bites	□ No	
Garden Kitchen Recipe:	☐ Yes	
Hummus with Carrot Sticks	□ No	
Garden Kitchen Recipe:	☐ Yes	
Brown Sugar Glazed Carrots	□ No	
Daily Literature Connection Options –		
Book:	Used:	Comments:
The Tiny Seed – Eric Carle	☐ Yes	
	□ No	
The Carrot Seed – Ruth Krauss	☐ Yes	
The Carrot Seed Radii Radiis	□ No	
	_ 1,0	
From Seed to Plant by Gail Gibbons	☐ Yes	
	□ No	
What will Grow – Jennifer Ward	☐ Yes	
	□ No	
Song Of the Weeks Doots and Charries	in the Ground!	
Song Of the Week: Roots are Growing Sang:	Yes	Comments:
Sang.	☐ No	Comments.

Week Two, Day One:			
Lesson Leader:			
Facility Staff Present:	☐ Yes ☐ No	Number of Children Present:	
Lesson Component:	Date:	Comments:	Recommend:
Lesson:			☐ Yes
Seed Dissection			□ No
GROW Activity:			☐ Yes
Growing Carrots or Radishes			□ No
	Week	Two, Day Two:	
Lesson Leader:			
Facility Staff Present:	☐ Yes	Number of Children Present:	
	□ No		
Lesson Component:	Date:	Comments:	Recommend:
Lesson:			☐ Yes
Seed Investigation			□ No
Activity:			☐ Yes
Seed Mosaic			□ No
	Week T	Swo, Day Three:	
Lesson Leader:			
Facility Staff Present:	☐ Yes	Number of Children Present:	
	□ No		
Lesson Component:	Date:	Comments:	Recommend:
Lesson:			☐ Yes
Bare Root Bucket			□ No
GO Activity:			☐ Yes
Garden Yoga			□ No

Week Two, Day Four:						
Lesson Leader:						
Facility Staff Present:	☐ Yes ☐ No	Number of Children Present:				
Lesson Component:	Date:	Comments:	Recommend:			
Lesson:			☐ Yes			
Root Investigation			□ No			
Activity:			☐ Yes			
Graphing Carrots			□ No			
	Week	Two, Day Five:				
Lesson Leader:						
Facility Staff Present:	☐ Yes ☐ No	Number of Children Present:				
Lesson Component:	Date:	Comments:	Recommend:			
Lesson: Twisty Roots			☐ Yes ☐ No			
EAT Activity: Garden Kitchen Day Recipe Used: ☐ Seed Roller Energy Bites ☐ Hummus with Carrot Sticks ☐ Brown Sugar Glazed Carrots			☐ Yes ☐ No			
Week Two – Conclusion						
Time Spent Planning (Minutes):						
Time Spent Teaching (Minutes):						
Overall Feedback:						

Engagement Resources – Week Three						
Resource:	Used:	Comments:				
Our Class Garden Family Newsletter –	☐ Yes					
Student Scientists Study Stems	□ No					
Our Class Garden Family Newsletter –	☐ Yes					
Shining on Kids in Class	□ No					
Learn With Me at Home Activity – Fun	☐ Yes					
Plant Part Nature Walk	□ No					
Garden Kitchen Recipe:	☐ Yes					
Dippy Spinach and Celery Sticks	□ No					
Cardan Vitahan Basinas	☐ Yes					
Garden Kitchen Recipe: Red Leaf Lettuce and Strawberry Salad	□ No					
Red Leaf Lettuce and Strawberry Salad						
Garden Kitchen Recipe:	☐ Yes					
Roasted Stems	□ No					
Daily Literature Connection Options – We						
Book:	Used:	Comments:				
Up, Down, and Around – Katherine	☐ Yes					
Ayres	□ No					
Leaves – David Ezra Stein	☐ Yes					
	□ No					
Oliver's Vegetables – Vivian French	☐ Yes					
	□ No					
Jack's Garden – Henry Cole	☐ Yes					
	□ No					
Cong Of the Week. The Characterist						
Song Of the Week: The Stem Stretch	D Ve-	Comments				
Sang:	☐ Yes	Comments:				

Week Three, Day One:						
Lesson Leader:						
Facility Staff Present:	☐ Yes ☐ No	Number of Children Present:				
Lesson Component:	Date:	Comments:	Recommend:			
Lesson:			☐ Yes			
Stem Investigation			□ No			
GROW Activity:			☐ Yes			
Growing Spinach or Lettuce			□ No			
	Week Thro	ee, Day Two:				
Lesson Leader:						
Facility Staff Present:	☐ Yes	Number of Children Present:				
	□ No					
Lesson Component:	Date:	Comments:	Recommend:			
Lesson:			☐ Yes			
Coloring Stems			□ No			
Activity:			☐ Yes			
Sipping Stems			□ No			
V	Veek Thre	e, Day Three:				
Lesson Leader:	D V.	No. 1 and Children Duranet				
Facility Staff Present:	☐ Yes☐ No	Number of Children Present:				
Lesson Component:	Date:	Comments:	Recommend:			
Lesson:			☐ Yes			
Leaf Investigation			□ No			
GO Activity:			☐ Yes			
Stem Flow Run			□ No			

	Week Thro	ee, Day Four:	
Lesson Leader:			
Facility Staff Present:	☐ Yes ☐ No	Number of Children Present:	
Lesson Component:	Date:	Comments:	Recommend:
Lesson:			☐ Yes
Mystery Touch & Feel			□ No
Activity:			☐ Yes
Leaf Texture Card			□ No
	Week Thr	ee, Day Five:	
Lesson Leader:			
Facility Staff Present:	☐ Yes ☐ No	Number of Children Present:	
Lesson Component:	Date:	Comments:	Recommend:
Lesson:			☐ Yes
Leaf Shine			□ No
EAT Activity:			☐ Yes
Garden Kitchen Day			□ No
Recipe Used:			
☐ Dippy Spinach and Celery Sticks			
☐ Red Leaf Lettuce and Strawberry			
Salad			
☐ Roasted Stems			
Week Three– Conclusion			
Time Spent Planning (Minutes):			
Time Spent Teaching (Minutes):			
Overall Feedback:			

Engagement Resources – Week Four		
Resource:	Used:	Comments:
Our Class Garden Family Newsletter –	☐ Yes	
Student Piled Up Plant Parts	☐ No	
Our Class Garden Family Newsletter –	☐ Yes	
Planting Plants at School	□ No	
T WAY THE ACT TO C		
Learn With Me at Home Activity – Fun Grow	☐ Yes	
Some Green at Home	□ No	
Garden Kitchen Recipe:	☐ Yes	
Creamy Cauliflower and Broccoli	□ No	
Creamy Caamiower and Broccon	_ 110	
Garden Kitchen Recipe:	☐ Yes	
Banana Chocolate Pudding	□ No	
Garden Kitchen Recipe:	☐ Yes	
Slow Cooker Applesauce	□ No	
Daily Literature Connection Options – Week F		Comments
Book: The Reason for a Flower – Ruth Heller	Used:	Comments:
The Reason for a Flower – Ruth Hener	□ No	
Planting a Rainbow – Lois Ehlert	☐ Yes	
1 faitting a Kamoow – Lois Emert	□ No	
A Fruit is a Suitcase for Seeds – Jean	☐ Yes	
Richards	□ No	
Flower Garden – Eve Bunting	☐ Yes	
	□ No	
Song Of the Week: The Flowers on the Plant		
Sang:	☐ Yes	Comments:
	$\square$ No	1

	Week Fou	ır, Day One:	
Lesson Leader:			
Facility Staff Present:	☐ Yes ☐ No	Number of Children Present:	
Lesson Component:	Date:	Comments:	Recommend:
Lesson: Flower Lab			☐ Yes ☐ No
GROW Activity: Growing Vegetable Transplants			☐ Yes ☐ No
	Week Fou	r, Day Two:	
Lesson Leader:			
Facility Staff Present:	☐ Yes ☐ No	Number of Children Present:	
Lesson Component:	Date:	Comments:	Recommend:
Lesson: Making Sunflower Seed Heads			☐ Yes ☐ No
Activity: Chalk Flowers			☐ Yes ☐ No
	Week Four	r, Day Three:	
Lesson Leader:			
Facility Staff Present:	☐ Yes ☐ No	Number of Children Present:	
Lesson Component:	Date:	Comments:	Recommend:
Lesson: Dusty Bees & Honey Please			☐ Yes ☐ No
GO Activity: Blue Flower, Yellow Flower, Buzz!			☐ Yes ☐ No

Week Four, Day Four:					
Lesson Leader:					
Facility Staff Present:	☐ Yes ☐ No	Number of Children Present:			
Lesson Component:	Date:	Comments:	Recommend:		
Lesson:			☐ Yes		
Fruit Investigation			□ No		
Activity			☐ Yes		
Activity: Orange Juicer			□ No		
Grange sureer			_ 1.0		
	Week For	ır, Day Five:			
Lesson Leader:					
Facility Staff Present:	☐ Yes	Number of Children Present:			
	☐ No				
Lesson Component:	Date:	Comments:	Recommend:		
Lesson:			☐ Yes		
Floating Fruit			□ No		
EAT Activity:			☐ Yes		
Garden Kitchen Day			□ No		
Recipe Used:					
☐ Creamy Cauliflower and Broccoli					
☐ Banana Chocolate Pudding					
☐ Slow Cooker Applesauce					
Week Four – Conclusion					
Time Spent Planning (Minutes): Time Spent Teaching (Minutes):					
Overall Feedback:					
O FORMA I COMOME.					

# Appendix B: Site Provider Pre- and Post-Evaluation

Teacher Name:	Date:
Job Title:	PRE or POST (circle)
Site Name:	County:
Site Type:	
□ School	
☐ Child Care Center	
□ Summer Camp	
☐ After-School Program	
☐ Other (Please Specify)	
PRE and POST Survey Questions:	

LEARN						
	Strongly disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	N/A
My students bring healthy foods, such as fruits and vegetables, from home for meals or snacks.						
My site provides suggestions and/or guidelines on foods provided by parents for classroom parties or other events.						
I am confident talking to parents about healthy food choices in the classroom						

GROW						
	Strongly disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	N/A
My students have opportunities to participate in gardening activities within the classroom.						
My program uses a vegetable garden for educational opportunities.						
My program uses a vegetable garden for tasting opportunities.						
I am confident teaching my students about gardening.						

EAT:						
	Strongly disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	N/A
I talk about the importance of eating healthy foods, such as fruits and vegetables, with my students.  My students see me eat fruits and						
vegetables.						
I talk about and model positive eating behaviors regarding fruits and vegetables in front of my students						
I provide positive opportunities for students to taste fruits or vegetables in my classroom.						
My students select healthy foods, such as fruits and vegetables, when they are offered with school meals or snacks.						
My students are willing to try new fruits and vegetables.						
Foods grown in the school garden are used for meals, snacks, or tastings.						
I am confident teaching my students about fruits and vegetables.						

GO						
Strongly disagree	Disagre e	Neither Agree	Agree	Strongly Agree	N/A	Strongly disagree
		nor		715100		aisagice
		Disagree				
My students are positive about being						
physically active.						
My students have the opportunity to						
engage in at least 30 minutes of heart						
pumping activity during the program						
day.						
My program is committed to providing						
students with time for recess or other						
physical activity opportunities						
I am confident teaching my students						
about physical activity.						

POST Survey Only: Following the conclusion of this program, have you continued discussing healthy eating in your classroom? ☐ Yes ☐ I would like to spend more time on this topic, but I do not have the classroom instruction time. Following the conclusion of this program, have you continued discussing gardening in your classroom? ☐ Yes ☐ I would like to spend more time on this topic, but I do not have the classroom instruction time. □ No Following the conclusion of this program, have you continued discussing physical activity in your classroom? □ Yes ☐ I would like to spend more time on this topic, but I do not have the classroom instruction time. □ No How likely are you to recommend this program to other early childhood professionals? ☐ Extremely likely ☐ Somewhat likely ☐ Neith likely or unlikely ☐ Somewhat unlikely ☐ Extremely unlikely Please share any additional thoughts you have on the program:

### Appendix C: Student Outcomes Pre- and Post-Evaluation

Teacher Name:	Date:
Site Name:	PRE or POST (circle)
For each child, please rank their willingness / ability to participate in each activity.	

Participant ID	How willing is this child to taste new fruits and/or vegetables?	How capable is this child of identifying fruits and vegetables?	How many of these plant parts can the student identify?	How willing is this child to participate in physical activity?
	1 – Extremely unwilling 2 – Somewhat unwilling 3 – Somewhat willing 4 – Extremely willing	<ul><li>1- Extremely uncapable</li><li>2- Somewhat uncapable</li><li>3- Somewhat capable</li><li>4- Extremely capable</li></ul>	<ul> <li>Flower</li> <li>Stem</li> <li>Leaves</li> <li>Roots</li> <li>(Assign 0 – 4 points, 1 point per plant part)</li> </ul>	1 – Extremely unwilling 2 – Somewhat unwilling 3 – Somewhat willing 4 – Extremely willing

Appendix D: Focus Group Handout
Learn, Grow, Eat & Go! Early Childhood
Program Pilot – Focus Group Meeting

Name	(optional):	
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\	Security 1997 Security 1997 Security
1.	Describe your most significant challenges experienced when delivering the curriculum during the pilot program.
2.	Describe any success stories that arose during the pilot program experience. Were there any significant moments of behavior and / or attitude change to note?
3.	Were there any lessons in the curriculum that you felt were irrelevant to FNH's mission and values? If so which ones and why?
4.	What lessons did you feel were exceptionally relevant towards FNH's mission and values?
5.	What lessons or activities did students enjoy the most?
6.	What makes this program unique from others that we already offer?

7.	If you could make changes to the program, what would they be and why would you make those changes?
8.	What challenges do you foresee FNH experiencing when implementing this curriculum?
9.	If FNH were to adopt this curriculum, would you use it? If so – how often do you foresee yourself delivering this curriculum. If not – why?
10.	Do you believe FNH should add this curriculum to the list of NEP's approved curricula?
	Please utilize this space to provide any further information that may be beneficial in the final decision on whether to adopt or reject the Learn, Grow, Eat & Go! Early Childhood curriculum.

#### **Biography**

Alyssa Wessling is a candidate for a Master of Public Health with a Maternal and Child Health focus, and a Nebraska native working in community nutrition. Her public health career began in personal training and nutrition consulting at a Lincoln, Nebraska YMCA. She has experience in athletic nutrition through the Husker Athletics Nutrition program. Following graduation from the University of Nebraska – Lincoln in December of 2018 with a Bachelor of Science in Dietetics, Alyssa began her career with Nebraska Extension as a SNAP-Ed Assistant. It is at Nebraska Extension that she focuses on delivering nutrition education to low-resource and underserved Nebraskans, particularly mothers and youth. Alyssa plans to use her Master of Public Health education to further work with underserved Nebraskans through nutrition education and food access policy, systems, and environmental objectives.

### Foundational Competencies Fulfilled Through This Capstone Project:

# MPHF2: Select quantitative and qualitative data collection methods appropriate for a given public health context.

During this project I created multiple evaluation tools. The first of these tools was a Student Outcomes Pre- and Post- Evaluation, this purpose of this evaluation was to gather qualitative and quantitative data on the changes seen in student attitudes and behaviors before and after completion of the program. The second tool was a Site Provider Pre- and Post- Evaluation tool. The purpose of this tool was to gather quantitative and qualitative responses from site providers on the changes they performed and observed following program delivery. I also created a fidelity rubric and a focus group handout to gather qualitative data from the educators who delivered the pilot program regarding their experiences and observations. I feel I was able to effectively work towards this competency through the creation of these evaluation tools.

#### Concentration Competencies Fulfilled Through This Capstone Project:

# MCH MPH2: Apply the life course perspective in addressing health, diseases, and behaviors of MCH populations.

Acknowledging that early childhood is a critical period of development, addressing the health needs of this population required the application of a life course perspective. It was vital to the success of this project that the specific developmental needs and abilities of this age group were recognized throughout the entire process.

# MCH MPH5: Develop rigorous project to improve health and to reduce inequalities and inequities of MCH populations.

During the course of this project, I created two evaluation tools, a fidelity rubric, and a focus group data collection tool. I planned and evaluated the implementation process of this curriculum and evaluated the program as a whole. Delivery of the Learn, Grow, Eat & Go! Early Childhood will work to reduce inequalities and inequities in the early childhood population through NEP's focus on neighborhoods where most of the population lives below the federal poverty level.

### **Human Subjects**

This project involved only the planning of the evaluation and implementation of the Learn, Grow, Eat & Go! Early Childhood curriculum. No human subjects are involved in this project; therefore, no IRB approval is required.