

## **Surry-Yadkin Virtual 4-H Pollination Station**

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### **Narrative**

#### **1. Educational Objectives**

The overall goal of this program was to teach 4-H youth plants, gardening, and the environment through an at-home learning opportunity during their summer break. Normally, N.C. Cooperative Extension of Yadkin and Surry counties offer 4-H Summer Fun programming, a series of ten or more events including hands-on learning activities, field trips, and just purely fun outings during the summer months. In accordance with state mandates and Extension guidelines requiring the suspension of all in-person, youth activities, Summer Fun 2020 programming looked a little different. We quickly changed plans and adapted these programs to an all-virtual platform. In lieu of the multi-day Jr. Master Gardener program for kids, a popular Summer Fun offering, we developed the Surry-Yadkin Pollination Station program.

The objectives of this program were for kids to learn 1) the science of how pollination occurs, the role pollinators play, and their importance to modern agriculture, thus our food supply. 2) We also introduced students to specific pollinators (birds, insects, and mammals), focusing on the honeybee, the primary pollinator for many agricultural crops. 3) Finally, we explained the importance of preserving pollinator habitat for their survival, reasons for habitat loss (e.g. expanding cities encroach on natural spaces), and how students can take action to create habitat for bees, butterflies, and birds in their backyards and neighborhoods.

#### **2. Program Activities**

The activities of this online, self-paced educational program were grouped into three main lessons: 1) Introduction to Pollination and Pollinators 2) The Honeybee, an All-Star Pollinator, and 3) Pollinator Habitat. The lesson topics to be covered were explained to program participants as follows:

“In Lesson 1, we are going to learn how pollination happens, why it is important, and who does the pollinating. Activities in this section have a lot to do with food! You will find out just how much of the food in your lunchbox comes from the work of bees, and use Cheetos to see the process of pollination.

In Lesson 2, We will be zoosooming in to take a closer look at a very important pollinator, the honey bee. Ms Joanna and the Surry County beekeepers will show us how bees live, their biology, and how they make honey.

In Lesson 3, we will talk about what bees and other pollinators need to live, and how our landscapes can provide habitat for them. In these activities, you will create habitat for pollinators at home.”

Each lesson provided a series of videos that explained concepts and were created by agents and community volunteers, master gardeners, local beekeepers and farmers. Videos were uploaded onto a program website which participants could access upon registering for the class. Prior to beginning the lessons, students picked up program kits at their Extension office; kits included the supplies, instructions, and worksheets. The horticulture agents were available via email or phone to answer questions of the participant, and provide clarification as needed. Upon course completion (watching the instructional videos and completing the activities, and worksheets) students were emailed a certificate to recognize their accomplishments!

#### **3. Teaching Methods**

Visual, experiential, and written teaching methods were utilized in the form of teaching videos, hands-on activities, and written lessons. The curriculum was created by Joanna Radford, and supplemented by Hannah Lepsch and the NC State Extension 4-H Youth Pollinator program curriculums for first graders, "The Busy World of Bees," and fourth graders, "Hive Helpers." We emphasized experiential learning by planning numerous hands-on craft and demo activities that kids could create models, observe processes, and interact with pollinating insects outdoors. We encourage participants to communicate on facebook, phone, and through sharing photos to foster a feeling of learning together, albeit in a virtual platform.

#### **4. Results**

There were twenty-eight youth from Surry and Yadkin counties, ranging from ages eight to thirteen, who participated and learned about pollinators in this program. These youth represented multiple races and ethnicities. White, black, and Hispanic youth participated in this program along with almost an even number of male and female genders. The youth's parents also got to play a part in their children's learning. Youth came away from this program with a better understanding of pollinators and why they are so vital to our environment. Youth learned basic science of how pollination occurs and the role pollinators play, knowledge that will help them in science classes during the school year. Youth focused on discovering the world of the honeybee, the major pollinator for many agricultural crops responsible for our food supply. They also learned that many creatures are in fact pollinators - birds, native bees, other insects, and mammals. Youth also learned the importance of pollinator conservation, and how to become environmental stewards themselves to keep our vital pollinators safe. Also as a result, eight out of the twenty-eight youth said they would take what they learned in this program to make their environment better suited for honeybees and other pollinators.

#### **5. Impact Statement**

One of the biggest impacts of this program was that it gave youth a sense of "normalcy" during the pandemic. During the summer in a normal year, 4-H'ers would be able to come to Summer Enrichment programs in-person and learn from skilled professionals. However, due to Covid-19, youth did not get to have this opportunity. This program allowed youth to have many opportunities that would be given to them in a regular year and they were encouraged to explore the outside world in a safe manner.

Youth also came away with a better understanding of pollinators and their importance to our environment. Many youth naturally have a fear of bees, but this program showed youth that these pollinators are not trying to hurt them, but instead play a vital role in making sure we have food to eat, beautiful flowers, and so much more. Students gained an understanding of how to be good stewards of the pollinator's environment. This, in turn, helps lend to a more promising future of our pollinators and us!

#### **6. Evaluation**

This program was evaluated through the use of a Google Form survey to gauge youth learning as it was observed by their parents/guardians. We sent out this survey a week after the program went off line since it was a self-paced program and we wanted to give youth plenty of time to complete the activities. The parents/guardians were asked ten questions with several types of questions about 1) how satisfied they were with the program delivery methods, 2) knowledge was gained through this program, 3) if their child showed more interest in the topic after the program, 4) what their child most enjoyed the most about this program, and 5) any overall comments about the program. We received all positive feedback from this program. Of the twenty-eight that took the survey, 100% said that their child gained more of an interest in pollinators. The respondents' comments showed a high regard for the learning opportunity, and many raved about the high quality of the kit, activities, and delivery method of this program.