Hub Farm Field Trip Offerings

The Hub Farm

The Durham Public Schools (DPS) Hub Farm is an environmental education facility that engages DPS students, families, teachers, and the greater Durham community in meaningful outdoor learning experiences and career exploration. The campus includes bountiful gardens, a shady forest trail, a flock of chickens, a pair of rabbits, a buzzing apiary, and a creek and pond. The property is supported by 3-4 staff members.

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Farm Experience -

Any aged visitor can learn something new and have a meaningful experience outdoors! All subjects and grade levels can be accommodated. Select from the ideas below to create your trip - include what you're looking for in your trip request! Come for an open house or schedule a tour to learn more! Fall 2023 Open House and Plant Giveaway: October 11th, 2023 1-3pm

1. **PreK**
    a. **Animals**: Visit the chickens, rabbits, and honeybees. Read a storybook, feed/observe/touch an animal, and even taste some honey (depending on supply level)!
    b. **Garden:** Use your senses to explore the garden! Depending on the season, plant a sunflower, help with chores, harvest a strawberry, or taste something yummy!
    c. **Forest:** Read a story or play a game in the forest! Explore the creek.
    d. **Pond:** Visit the floating lab to see some of our native animals like geese, turtles, and more!
2. **K-5**
    a. **Animals**: Visit the chickens, rabbits, and honeybees. Read a storybook, feed/observe/touch an animal, and even taste some honey (depending on supply level)! Try on bee suits, help with animal chores, see some bees up close.
    b. **Garden:** Use your senses to explore the garden! Depending on the season, plant a sunflower, help with chores, harvest a strawberry, or taste something yummy! Go a garden scavenger hunt and work with DINE to build a fresh garden snack together (available to eligible schools only).
    c. **Forest:** Move through our shady forest on a hike and explore the creek. Search for macroinvertebrates and play forest games. Identify different plants and animals.
    d. **Pond:** Search the pond for birds, turtles, and fish using binoculars and the naked eye!
3. **6-8**
    a. **Animals:** Visit the chickens, rabbits, and honeybees. Feed/observe/touch an animal, and even taste some honey (depending on supply level)! Try on bee suits, help with animal chores, see some bees up close.
    b. **Garden:** Depending on the season, plant a sunflower, help with chores, harvest a strawberry, or taste something yummy! Go a garden scavenger hunt and work with DINE to build a fresh garden snack together (available to eligible schools only).
    c. **Forest:** Move through our shady forest on a hike and explore the creek. Search for macroinvertebrates, Identify different plants and animals. Build forest shelters and help maintain trails.

   d. **Pond:** Search the pond for birds and turtles using binoculars and the naked eye! Use a fishing pole to try and catch our elusive crappie, bluegill, and largemouth bass.

4. 9-12
   a. **Animals:** Learn how to care for animals, including chickens, rabbits, and bees. Assist with husbandry chores like clipping chicken wings, sustainable rabbit waste composting, or beehive hygiene. Understand how food is produced on a small to industrial scale.
   b. **Garden:** Learn how to care for different types of fruits and vegetables. Assist with garden chores like irrigation, cultivation, transplanting, greenhouse activities, and harvesting. Try new and familiar things when making a snack. Learn about different types of agriculture and understand how food is produced on a small to industrial scale.
   c. **Forest:** Move through our shady forest on a hike and explore the creek. Search for macroinvertebrates, Identify different plants and animals. Build forest shelters and help maintain trails.
   d. **Pond:** Search the pond for birds and turtles using binoculars and the naked eye! Use a fishing pole to try and catch our elusive crappie, bluegill, and largemouth bass.
   e. **Grounds:** Assist with landscape and trail maintenance. Learn how to prune fruit trees in the fall and winter or plant perennials in spring.

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Content Specific Trips

First Grade Field Trip Activities

NEW standards are bolded

Activity	Objectives	Connecting Standards
Soil Exploration	● Students will be able to distinguish between soil and dirt ● Create a piece of art using soil ● Students will be able to describe soil using adjectives	● 1.E.2.1 Summarize the physical properties of earth materials, including rocks, minerals, soils and water that make them useful in different ways. ● 1.E.2.2 Compare the properties of soil samples from different places relating their capacity to retain water, nourish and support the growth of certain plants. ● ***ESS.1.2.2 Carry out investigations to compare the properties of different soil samples from local places relating their capacity to retain water, provide nutrients, and support the growth of plants.***
Fairy House Building	● Students will be able to list what animals need to survive ● Students will be able to recreate a suitable habitat for a living thing ● Students will be able to distinguish between a story book and an informational book	● 1.L.1 Understand characteristics of various environments and behaviors of humans that enable plants and animals to survive. ● RL.1.1 Ask and answer questions about key details in a text. ● RL.1.3 Describe characters, settings, and major events in a story, using key details. ● RL.1.5 Explain major differences between books that tell stories and books that give information. ● RL.1.7 Use illustrations and details in a story to describe its characters, setting, or events. ● ***LS.1.1 Understand the basic needs of a variety of plants and animals in different ecosystems.***

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Feeding Animals	● Students will be able to complete a procedural text about feeding Hub Farm Animals ● Students will be able to follow step-by-step instructions for simple barnyard tasks	● 1.L.1.3 Summarize ways that humans protect their environment and/or improve conditions for the growth of the plants and animals that live there ● 1.L.2 Summarize the needs of living organisms for energy and growth. ● W.1.2 Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide closure. ● ***LS.1.1 Understand the basic needs of a variety of plants and animals in different ecosystems.***
Pond Predictions	● Students will understand... ○ Organisms can survive only in environments in which their needs can be met. ○ Organisms find the thing that they need in their environment in order to survive. ○ All organisms have basic needs that must be met in order to survive. ○ When an environment changes, the organisms that live there will be affected	● 1.L.1.1 Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment. ● 1.L.1.2 Give examples of how the needs of different plants and animals can be met by their environments in North Carolina or different places throughout the world. ● 1.L.2.1 Summarize the basic needs of a variety of different plants (including air, water, nutrients, and light) for energy and growth. ● 1.L.2.2 Summarize the basic needs of a variety of different animals (including air, water, and food) for energy and growth. ● ***LS.1.1 Understand the basic needs of a variety of plants and animals in different ecosystems***

BONUS: Scavenger Hunt/Hike

- Students will gather as a group, or in small groups to complete a hike and scavenger hunt.

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Second Grade Field Trip Activities

Activity	Objectives	Connecting Standards
Life Cycles	● Students will be able to correctly use a Venn Diagram ● Students will be able to use adjectives to describe Hub Farm Animals ● Students will be able to explain that animal life cycles have differences and similarities between species	● L.2.1 Demonstrate command of the conventions of standard English grammar and usage when writing or peaking; demonstrate proficiency within the 2-3 grammar continuum ● 2.L.1.2 Compare life cycles of different animals such as, but not limited to, mealworms, ladybugs, crickets, guppies, or frogs ● ***LS.2.1.2 Obtain, evaluate, and communicate information to compare life cycles of different animals.***
Birds and Worms	● Students will be able to describe how camouflage helps animals survive ● Students will be able to create a bar graph from collected data ● Students will be able to answer questions using a bar graph.	● NC.2.MD.10 Organize, represent, and interpret data with up to four categories.
Garden Scavenger Hunt	● Students will be able to measure using both metric and imperial units ● Students will be able to use adjectives to describe Hub Farm plants ● Students will be able to represent data using a pictograph	● L.2.1 Demonstrate command of the conventions of standard English grammar and usage when writing or peaking; demonstrate proficiency within the 2-3 grammar continuum ● NC.2.MD.1 Measure the length of an object in standard units by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. ● NC.2.MD.2 Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two

		measurements relate to the size of the unit chosen. • NC.2.MD.10 Organize, represent, and interpret data with up to four categories.
Creek	• Students will be able to use observation skills to identify sights/ sounds in the forest • Students will be able to identify an aquatic habitat and some of the animals that live there.	• 2.L.1.2 Summarize the life cycles of animals • ***LS.2.2.1 Obtain, evaluate, and communicate information to summarize ways in which animals closely resemble their parents and ways they are different.***
Macroinvertebrates	• Students will be able to differentiate between a fictional and non-fictional book • Students will be able to describe the lifecycle of an invertebrate.	• RI.2.1 Ask and answer such questions as *who*, *what*, *where*, *when*, and *how* to demonstrate understanding of key details in a text. • 2.L.1.2 Summarize the life cycles of animals • ***LS.2.2.1 Obtain, evaluate, and communicate information to summarize ways in which animals closely resemble their parents and ways they are different.***
Salt Paintings	• Students will be able to explain the phenomena of evaporation	• 2.P.2.3 Compare what happens to water left in an open container over time as to water left in a closed container.
Changing Phases	• Students will be able to explain how solids can change to a liquid and a liquid to a solid by heating and cooling	• 2.P.2.1 Give examples of matter that change from a solid to a liquid and from a liquid to a solid by heating and cooling.
STEM Folktales	• Students will be able to creatively solve a problem from a diverse fairy tale using natural objects. • Students will be able to identify the lesson,	• RL.2.1 Ask and answer questions as *who, what, where, when, why* and *how* to demonstrate understanding of key details in a text • RL.2.2 Recount stories, including fables and folktales from diverse cultures and determine the central message, lesson, or moral. • RL.2.3 Describe how characters in a story respond to major events and challenges

	problem, and solution of a fairytale.	
Garden History		• 2.B.1.2 Explain how belief systems of various indigenous, religious, and racial groups have impacted culture in America • 2.H.1.1 Summarize contributions of various women, indigenous, religious, racial, and other minority groups that have impacted American history • 2.H.1.3 Compare various perspectives of the same time period using primary and secondary sources.
Math Scavenger Hunt	• Students will be able to use math knowledge (including place value, arithmetic, and problem solving) to complete a scavenger hunt.	• NC.2.NBT.2 Count within 1000; skip-count by 5s, 10s, and 100s • NC.2.OA.1 Represent and solve addition and subtraction word problems, within 100 • NC.2.NBT.4 Compare two three-digit numbers based on the value of the hundreds, tens, and ones digits • NC.2.NBT.5 Demonstrate fluency with addition and subtraction, within 100 • NC.2.NBT.6 Add up to three two-digit numbers using strategies based on place value and properties of operations • NC.2.NBT.8 Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900 • NC.2.MD.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

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Third Grade Field Trip Activities

Activity	Objectives	Connecting Standards
Garden/ Parts of Plant	● Students will be able to identify the parts of plants ● Students will be able to explain how each part of the plant contributes to its function ● Students will be able to describe using adjectives how different parts of the plants taste	● L.3.1 Demonstrate command of the conventions of standard English grammar and usage when writing or peaking; demonstrate proficiency within the 2-3 grammar continuum ● 3.L.2.1 Remember the function of the following structures as it relates to the survival of plants in their environments: roots, stems, leaves, flowers ● ***LS.3.2.1 Carry out investigations to explain the structures and functions of plants and how they are essential for life.***
Seeds	● Students will be able to create a pattern in order sort seeds into categories ● Students will be able to create a bar graph using their created categories. ● Students will understand the different methods of seed dispersal.	● NC.3.MD.3 Represent and interpret scaled picture and bar graphs ● 3.L.2.3 Summarize the distinct stages of the life cycle of seed plants ● ***LS.3.2.2 Use models to exemplify the distinct stages of the life cycle of seed plants***
Every Tree for Itself	● Students will be able to explain what a plant needs to survive and why ● Students will be able to explain how environmental conditions aid or hinder a plants growth	● 3.L.2.2 Explain how environmental conditions determine how well plants survive and grow ● ***LS.3.3.1 Carry out investigations to explain how environmental conditions determine how well plants survive and grow***

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Soil Builders	● Students will be able to describe soil using adjectives ● Students will understand the different components of soil ● Students will be able to identify that soil can differ depending on location.	● 3.L.2.4 Explain how the basic properties (texture and capacity to hold water) and components (sand, clay and humus) of soil determine the ability of soil to support the growth and survival of many plants. ● ***LS.3.3.2 Construct an explanation to infer how the basic properties and components of soil determine its ability to support the growth and survival of many plants.***

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EcoBloom: 5th Grade EOG Review

Activity	Objectives	Connecting Standards
Farmyard Friends	● Students will be able to describe different adaptations that allow farm animals to survive ● Students will be able to distinguish between different breeds of animals based on observable traits ● Students will be able to differentiate between producer, consumers, and decomposers	● 5.L.2.2 Classify the organisms within an ecosystem according to the function they serve; producers, consumers, or decomposers ● 5.L.3.1 Explain why organisms differ from or are similar to their parents based on the characteristics of the organism. ● ***LS.5.2.2 Use models to classify organisms within an ecosystem according to the function they serve: producers, consumers, decomposers*** ● ***LS.5.3.2 Ask questions to compare inherited and acquired traits***
Garden Explorer	● Students will be able to explain how different foods help our different body systems ● Students will be able to describe the garden ecosystem	● 5.L.1.2 Compare the major systems of the human body (digestive, respiratory, circulatory, muscular, skeletal, and cardiovascular) in terms of their functions necessary for life. ● ***LS.5.1.2 Use models to compare the major systems of the human body (digestive, respiratory, circulatory, muscular, skeletal, nervous) as it relates to their functions necessary for life***
Weather Station	● Students will be able to identify different tools used for measuring the weather ● Students will be able to create different weather systems ● Students will be able to identify the jet stream, gulf stream, and California current	● NC.5.MD.2 Represent and interpret data ● 5.E.1.3 Explain how global patterns such as the jet stream and water currents influence local weather in measurable terms such as temperature, wind direction and speed, and precipitation ● ***ESS.5.1.3 Construct an explanation of summarize the ocean's influences on weather and climate in North Carolina***

	● Students will be able to graph and describe daily weather trends	
Aquatic Adventure	● Students will be able to describe the difference between an aquatic and terrestrial ecosystem ● Students will be able to define convection, conduction, and radiation and provide examples	● 5.P.2.1 Explain how the sun's energy impacts the processes of the water cycle (including evaporation, transpiration, condensation, precipitation and runoff) ● 5.P.3.1 Explain the effects of the transfer of heat (either by direct contact or at a distance) that occurs between objects at different temperatures. (conduction, convection or radiation)
Creek	● Students will be able to describe the difference between an aquatic and terrestrial ecosystem ● Students will be able to identify different animals that may live in an aquatic ecosystem	● 5.L.2.1 Compare the characteristics of several common ecosystems including estuaries and salt marshes, oceans, lakes and ponds, forests, and grasslands ● ***LS.5.2.1 Engage in argument from evidence to compare the characteristics of several common ecosystems (including estuaries and salt marshes, oceans, lakes and ponds, rivers and streams, forests, and grassland) in terms of their ability to support a variety of populations***

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Middle School 6th-8th

Activity	Objectives	Connecting Standards
Water Quality Whirlwind	Students will understand… ● How to evaluate the health of a pond and a stream ● What factors indicate a healthy aquatic environment ● Certain animals can only survive in clean water; others can tolerate pollution ● Farmers can be good stewards of the environment by conserving habitats that help to clean freshwater, including wetlands/marshes, fields and forests	● 6.L.2.3 - Summarize how the abiotic factors (such as temperature, water, sunlight, and soil quality) of biomes (freshwater, marine, forest, grasslands, desert, Tundra) affect the ability of organisms to grow, survive and/or create their own food through photosynthesis. ● 8.E.1.3 - Predict the safety and potability of water supplies in North Carolina based on physical and biological factors, including: • Temperature • Dissolved oxygen • pH • Nitrates and phosphates • Turbidity • Bio-indicators ● 8.E.1.4 - Conclude that the good health of humans requires: • Monitoring of the hydrosphere • Water quality standards • Methods of water treatment • Maintaining safe water quality • Stewardship ● 8.L.3.1 - Explain how factors such as food, water, shelter and space affect populations in an ecosystem
Soil… it's alive?!	Students will understand… ● How to evaluate the health/productivity of soils ● Soil is a mix of different things from nature. ○ Soil reflects its ecosystem, and also changes which plants can grow in an ecosystem. ○ Forest soil is made of	● 6.L.2.3 - Summarize how the abiotic factors (such as temperature, water, sunlight, and soil quality) of biomes (freshwater, marine, forest, grasslands, desert, Tundra) affect the ability of organisms to grow, survive and/or create their own food through photosynthesis. ● 6.E.2.3 Explain how the formation of soil is related to the parent rock type and the environment in which it

	leaves, roots, and sticks. ○ Soil near water has more rocks. ● There are millions of microbes, soil insects, worms, and soil fungi living in healthy soil. ● Soil organisms help break down the organic and inorganic matter in the soil, providing nutrients for plants. In some cases, they also help with the delivery of the nutrients to the plants. ● Soils that are treated with excessive amounts of fertilizers, insecticides, and weed killers may become lifeless, decreasing their ability to sustain healthy plant growth.	develops. ● 6.E.2.4 Conclude that the good health of humans requires: monitoring the lithosphere, maintaining soil quality and stewardship. ● 8.L.3.1 - Explain how factors such as food, water, shelter and space affect populations in an ecosystem
Ready, Set, Resilience!	Students will understand the connections between personal, ecological, and community resilience through fables, short mindfulness activities, and group practices. This is a collaboration between Carteret County Public Schools, Duke University, NCSU, and Durham Public Schools.	● 6th Grade Standards ● 7th Grade Standards ● 8th Grade Standards

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Teacher-Farm Collaborative

This is a unique opportunity to build a field trip collaboratively with Hub Farm staff. Past projects have included:

- A variety of farm work
- Insect hotel construction
- Farm to table cooking projects
- Art projects
- Mushroom log inoculation
- Writing, poetry, reading
- Land history research
- Outdoor education skills

Themes can vary and be relevant to what is going on in your classroom - any and all subjects are welcome! Please contact us if you have an idea for a trip, we'd love to work with you!

Self-Guided Trips

The Hub Farm is happy to accommodate teachers who want to lead their own groups at the Hub Farm on a case-by-case basis. Our Hub Farm Staff will be around during your visit, but they won't be providing instructional assistance or helping with materials. If you're planning to lead your own trip, we just ask that you come by for a visit beforehand and share an outline of your planned activities with us. You still must submit a request for a trip, you cannot simply stop by the farm with your class.

Career and Technical Education Opportunities

Internships during the summer and the school year help high school students try their hand at new things while learning career skills that can be applied in a variety of fields. Summer internships are available to any DPS student going into their 11th or 12th grade year. Transportation is not provided. A stipend is included.

Field Trip Procedures

- The Hub Farm is committed to providing safe, educational experiences for students. The procedures outlined below are all in effort to provide a quality, safe, educational experience for our students.
- The Hub Farm Staff will do our best to accommodate all requests made before each deadline. It's possible that we will offer you a different date than your request in order to accommodate more trips. Spring trips will conclude before Memorial Day. Summer trips are on a case-by-case basis due to Hub Farm summer camp. Summer trips will

conclude two weeks prior to the first day of traditional school. Fall trips after Thanksgiving will be offered on a case-by-case basis.

- Requests made after the deadline to apply may be considered depending on availability. Requests for collaborative field trips must be submitted at least 30 days prior to the requested date.
- There are no field trip fees for DPS schools. Schools are responsible for transportation costs.
- DPS schools will be given priority over schools outside the district. The cost per non-DPS student is $10/student.
- Hub Farm Cancellations: Field trips will always be canceled when DPS closes school or calls an early release or delay. In the case of adverse weather conditions (including but not limited to snow, very cold temperatures, heat advisories, thunderstorms, heavy rain, and other dangerous site conditions), the Hub Farm may cancel the field trip. Cancellations due to adverse weather and site conditions will be made by 7am the day of the scheduled trip, if not the night before. Schools will then be given the opportunity to reschedule if possible.
- Site Conditions: If staff deems the Hub Farm site unsafe for any other reason.
- Note: given the ever-changing nature of the outdoor learning environment at Hub Farm, the staff reserve the right to cancel a field trip due to any safety concerns that may arise.
- You must communicate your number of students one week in advance. You must not cancel within 4 weeks of your trip (weather permitting).
- Your trip will be confirmed upon receipt of a signed contract including:
    - Number of students, chaperones, staff
    - Pre-field trip meeting with all teachers
    - Lesson plan (including lunch) and any accessibility requirements

Sample Schedule

10am-10:10 Arrival & Welcome
10:15-10:35 Station 1
10:40-11:00 Station 2
11:05-11:25 Station 3
11:30-11:50 Station 4
11:55-12:15 Station 5
12:20-12:50 Lunch
12:50-1 Closing Circle
Lunch can also be moved to the middle of the trip