EcoQuest
Fantastic Feast:
Who's Coming Over for Dinner?

[Space for name]
Field Journal
A Note About the Illustrations

Unless otherwise noted below*, illustrations for this EcoQuest Field Journal and the EcoQuest Badges were created by two of our extremely talented high school Eco-Leaders, Jiali Pickering and Sadie Pickering. We thank them for their amazing contributions to EcoQuest!

Sincerely,

Ashley Alred & Amelia Goldstein

EcoQuest Authors + Educators

*Illustrations retrieved from Eco-Inquiry (1994) by Kathleen Hogan are cited below:

p. 16 To be a careful observer. Eco-Inquiry (1994), p. 67
Welcome to EcoQuest!
Join us on an EcoQuest to uncover the secret ecosystem where you live! How many different organisms live all around you, and what in the world are they eating?

Learn how to use science tools to understand fascinating heterotrophs and their bizarre eating habits in your home ecosystem.

A heterotroph is something that has to eat other things to live! A bird is a heterotroph…a tick is a heterotroph…YOU are a heterotroph!

Each Eco-Challenge Badge will guide you in your quest. Always have a pencil ready, and your tools close by! Remember, Cary Educators are ready to help if you have questions or want to share your discoveries! We would love to hear from you.

Visit us on our Padlet webpage at https://padlet.com/caryecoquest/FantasticFeast, or you can email us at caryeducation@caryinstitute.org. Good Luck in your EcoQuest!

A Note about this Field Journal
This Field Journal is for you and your discoveries during this Fantastic Feast EcoQuest!

COLOR the drawings.

DRAW what you notice.

WRITE notes wherever you want.

And best of all…TAPE natural objects in here like pressed leaves, flowers, even tiny bugs that may have been accidentally squished!

You’ll be saving your memories like a scrap book…

...and documenting data like an ecologist!

Get creative, have fun, & uncover the mysteries of…Who’s Coming Over for Dinner?
EcoQuest Challenges

☐ Complete 5* Eco-Challenge Badges:

☐ Naturalist Badge
☐ Field Tech Badge
☐ Field Ecologist Badge
☐ Artist Badge
☐ Teacher Badge

☐ Complete a Master List:

You must identify 30 heterotrophs throughout your EcoQuest journey on page 9.

☐ Complete the Food Frenzy:

You must identify 4 feeding relationships throughout your EcoQuest journey on page 11.

*Please Note:

“Junior” EcoExplorers should complete the Naturalist, Field Tech, and Artist badges, while “Senior” EcoExplorers should complete all 5 badges (There is no age assignment for “Junior” or “Senior”—it's up to you!). Each badge is broken down into smaller challenges throughout this journal.

Remember to check in online on our EcoQuest Padlet page as you go for additional challenges, videos, feedback, and to see what other EcoExplorers are up to!” Visit our EcoQuest Padlet:
https://padlet.com/caryecoquest/FantasticFeast

Hi! I’m Daisy the Deer Tick. Be sure to tune in to my “Tick Talk” during EcoQuest. I am full of fun facts, tips, and...surprises!
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Eco Explorer Bio

my name is

this is me!

draw yourself!

if I could be any animal I would be...

draw it!

my favorite color is:

my favorite ice cream flavor is:

my favorite animal is:
Introduction

Who is in Your Home Habitat?

Think about the nature outside your home...We will call this your Home Habitat.

You probably already know a lot about your animal and plant neighbors.

Look through a window or step outside...what animals and plants do you notice?

<table>
<thead>
<tr>
<th>What <strong>ANIMALS and PLANTS</strong> live outside in your home habitat?</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Draw or Write in the space below!</em></td>
</tr>
</tbody>
</table>
What makes your Home Habitat **special** to you?

*Draw and color one thing outside that you think is really interesting!*

<table>
<thead>
<tr>
<th>There are animals in your Home Habitat that you <em>might not see</em>...</th>
<th>Do you like food? Of course you do.</th>
</tr>
</thead>
<tbody>
<tr>
<td>What other animals do you <strong>guess</strong> could live in your home habitat?</td>
<td><em>So do animals!</em></td>
</tr>
<tr>
<td></td>
<td>What do you <strong>guess</strong> animals eat for food in your home habitat?</td>
</tr>
</tbody>
</table>

Scientists like to make educated **guesses** about things they don’t know. This guess is called a **PREDICTION**.
Let’s Explore!

Explore freely all over your Home Habitat for 10 minutes—or more! Bring this Field Journal with you to make sketches & write notes as you go! Ready...Set...Go!

<table>
<thead>
<tr>
<th>Animals</th>
<th>Plants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signs of Animals</td>
<td>Signs of Animals Eating</td>
</tr>
</tbody>
</table>
EcoQuest Big Questions

What organisms (animals, fungi, & bacteria) live outside of our homes?

*What do you think?*

What do these organisms eat for food?

*What do you think?*

How do we even *begin* to answer these questions?

*Can you think of ways?*

It’s not always easy to see animals because they hide or are really small—how might we know animals are still around?

You are ready to begin answering these questions...by first working on your

**Naturalist Badge!**
An organism is a living thing like a plant, animal, fungus, or bacteria.

An observation is anything you notice by using your senses. Scientists use observations to learn about the natural world!

To earn the Naturalist badge, you must:

- Develop a Sit Spot where you will make observations.
- Master the practice of seeing.
- Master the practice of listening.
- Master the practice of smelling.
- Explore the sense of taste in nature.
- Explore your sense of touch.

Visit us online for the Naturalist Badge! https://padlet.com/caryecoquest/Naturalist
Finding a Sit Spot

To earn your Naturalist Badge, the first thing you must do is find a **SIT SPOT**. This can be a large or small spot, but it must be outdoors, it must be near soil, and it must be a place you can come to almost *every day*. Make sure it’s comfortable!

*Hint: You can sit on steps or a porch, or bring a towel or crate if you are sitting on grass. Bring your journal and a pencil!*

**Name your Sit Spot:**

Spend as much time sitting still at your **Sit Spot** as long as you can. Write or draw anything you notice or observe around you.

Today I sat at my sit spot for _______ minutes.

The weather today was ________________________________________________________________.

*Every day, when you discover a heterotroph (something that eats something else!) you haven’t seen before, make sure to add it to your Master List on page 106!*
Part 1: Seeing
Who are the little creatures you can see around your Home Habitat??

We are looking for little living things that we can find in our Sit Spot. These can be plants, bugs, arachnids, worms, fungi—anything living! Look around your sit spot and use the space below to write sketches or notes about what you see.
How many different kinds of bugs can you find?
Can you sketch them, identify them, trap them, dig them?

Now let’s have some fun! Use binoculars, a magnifying glass, a microscope, a kaleidoscope, goggles, your dad’s glasses (with permission), sunglasses, or anything else you can find to see if you can discover even more small creatures!

Create a drawing of what you saw below!
Part 2: Hearing

*Who are the bigger creatures you can hear around your Home Habitat?*

Start by coming back to your *Sit Spot*. Again, spend a few minutes at your *Sit Spot* and write or draw anything you notice or observe around you.

Today I sat at my sit spot for ________ minutes.

The weather today was _____________________________________________.
Now we are going to focus on **hearing**. Take 5-10 minutes to close your eyes (or use a blindfold if you have one!) and notice as many sounds as you can.

Share the sounds you heard in the spaces below:

<table>
<thead>
<tr>
<th>Living (Biotic)</th>
<th>Nonliving (Abiotic)</th>
</tr>
</thead>
</table>

Any *non-living* things (like wind or water!) you observe are called **ABIOTIC** factors.
Create a map of the different sounds you heard and where they came from:
Animal Sounds

Pick one animal sound to focus on.

How would you spell out the sound? ________________________________

Who do you think made the sound? Name or draw the animal below.

*Bonus: Go online and research where this animal came from, what it eats, and why it came to your home.

Why do you think that animal made that sound?

Practice making the sound yourself!

☐ Show your imitation to a friend or family member.
☐ Teach your imitation to a friend or family member.
☐ Have a conversation using only that sound with a friend or family member.
Part 3: Smell

How do all of these creatures interact with one another?

Start by coming back to your Sit Spot. Again, spend a few minutes at your Sit Spot and write or draw anything you notice or observe around you.

Today I sat at my sit spot for _______ minutes.

The weather today was _____________________________________________. 
What are the different smells you can smell from your spot? You may move around and explore beyond your spot a little today. List (or draw!) the smells below.

Tips: Pick and crush some plants to smell them better. Dig up a little soil and smell it.

**BRAINSTORM BOX**

Why do you think there are so many different smells in your spot?

Why do you think plants have their own smells? How does it help them to survive?
Did you know?
Leaves such as grass give off a pheromone called Green Leaf Volatiles that alerts other blades of grass when there is danger! That is why freshly cut grass gives off a strong aroma!

A pheromone is a chemical made by a living thing that helps it communicate with other living things of the same species. Whoa!

Did you know?
Human body odor does not come from our own sweat glands, but instead from bacteria living on the surface of our skin that thrives in sweaty environments. When you smell your sweaty armpits, that means you’re smelling the microscopic neighbors that live all around you.
Part 4: Taste

*Which of these creatures are eating each other?*

Start by coming back to your *Sit Spot*. Again, spend a few minutes at your *Sit Spot* and write or draw anything you notice or observe around you.

Today I sat at my sit spot for ________ minutes.

The weather today was ____________________________________________________________.
Are any of the organisms you see edible to you (like a blueberry bush or mint leaves)? Which are edible to other living things? Look for any evidence of organisms being eaten (like holes in plants!) and note them below.

A living thing that eats another living thing is called a heterotroph!
Use this page to collect (tape or press) any leaves with evidence of eaters!
Example of a Food Web

Pick **FIVE** different living things you’ve observed. Use the space below to draw your own food web by drawing each living thing and using arrows to show who eats what.

What’s **MISSING** from your food web? What must be nearby, but you haven’t observed yet?
Part 5: Touch & Feel

*How are our neighbors impacting us, and how do we impact them?*

Start by coming back to your *Sit Spot*. Again, spend a few minutes at your *Sit Spot* and write or draw anything you notice or observe around you.

Today I sat at my sit spot for _______ minutes.

The weather today was ________________________________________________________.

Use the space below to write down what you **FEEL** at your *Sit Spot*.
Find a **rock** near your Sit Spot. Hold it in your hand and close your eyes. Describe how the rock feels in as much detail as you can. You can sketch it, too.

*Bonus: Give the rock a **name** and make it your **pet rock** to carry throughout your EcoQuest!
When you sit at your sit spot, what are the **living** things you come in contact with? Are you sitting on anything living, does anything crawl or land on you?

Which are the living things you interact with the **most**?

Which living things are you most **grateful** for?

Oh, me? I'm grateful for mice... and deer... and humans... but mostly my thousands of babies.
Imagine a world with no bees. What would it be like? Describe it below.

Imagine a world with no ants. What would it be like? Describe it below.

Imagine a world with no ________________. What would it be like? Describe it below.

Thank your sit spot and all the living things within it for teaching you to be a Naturalist!

Go online to the Naturalist Badge Padlet webpage to see more challenges you can complete!
**Naturalist Badge Eco-Challenge Check**

<table>
<thead>
<tr>
<th>✓</th>
<th>Challenge Steps</th>
<th>Eco-Explorer Signature</th>
<th>Adult Initials</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Develop a Sit Spot where you will make observations.</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Master the practice of seeing.</td>
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</tr>
<tr>
<td></td>
<td>Master the practice of listening.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Master the practice of smelling.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Explore the sense of taste in nature.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Explore your sense of touch.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Field Tech Badge

Field Technician (noun): a person who collects data in nature to learn more about animals, plants, and other organisms. They often set traps for animals for ecology research and identify what they catch.

Eco-Challenge

The mission of this badge is to learn techniques to “take attendance” of the animals that live in your habitat and practice identifying them.

To earn the Field Tech badge, you must:

☐ Set up a Study Square
☐ Observe the Study Square at least 5 different times
☐ Identify 5 heterotrophs
☐ Identify 2 pieces of evidence of heterotrophs
☐ Master at least 1 field investigation method

Visit us online for the Field Tech Badge! https://padlet.com/caryecoquest/FieldTech
Create a Study Square

Part 1: Set Up

The whole ecosystem is huge, and too big for scientists to study all at once. So, we use **samples**, or smaller pieces of an ecosystem, that help us understand the whole ecosystem.

One tool ecologists use to create a sample of their ecosystem is a **quadrat**: a small square of land they can use to study animals and plants.

You will use pencils and string to create your own quadrat, or **Study Square**! For this badge, you will work on recording the living organisms that you find within it.

### Study Square Materials

- Small plot of land
- Pencils (4)
- String or yarn cut to 8-feet long & tied at ends
- Ruler or tape measure

Step 1: Find a spot with dirt, soil, or sand that you can stick a pencil into. Push & twist your first pencil into the ground. Leave at least half of your pencil above the ground.

Step 2: Measure 2 feet up from the first pencil and push the second pencil in the ground. *Hint: If you don’t have a ruler or tape measurer, hold out your arm straight in front of you. The length from your fingertips to your shoulder is about two feet.*

Step 3: Measure 2 feet to the right of the second pencil and push the third pencil into the ground.

Step 4: Measure 2 feet down from the third pencil and stake the fourth pencil into the ground.
Step 5: Your four pencils now form a SQUARE!

Step 6: Use a ruler or measuring tape to cut string or yarn to be 8 feet long. Tie the ends together so you now have a huge circle. Loop the string a few times around one pencil, then stretch the string to the next pencil. Loop the string a few times around this pencil, and stretch to the third pencil. Repeat until string is tight between the four pencils.

*You can also watch a video of how to set up a Study Square. Go to YouTube.com and search “Cary Institute Study Square.”

You are now all set to observe your Study Square!
Part 2: Observe Your Study Square

Just like at your Sit Spot...remember your Field Journal & a pencil!
- Sit and get comfy –and move around a little, too!
- Carefully observe your Study Square for a few minutes—don’t forget your magnifying glass!

**What do you notice?** Grass, flowers, leaves, any bugs? Are some things living and some things not?

**What do you wonder?** When you look at your square, what are you curious about? How many ants live in my entire home habitat? Why is the grass shorter in this part of my yard than in other parts?

Sketch what you see in your Study Square below. Add to this each day! Add color, too!

*My Study Square*
# Study Square Observations

<table>
<thead>
<tr>
<th>Day 1:</th>
<th>The weather today:</th>
</tr>
</thead>
<tbody>
<tr>
<td>I notice…</td>
<td>I wonder…</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Day 2:</th>
<th>The weather today:</th>
</tr>
</thead>
<tbody>
<tr>
<td>I notice…</td>
<td>I wonder…</td>
</tr>
<tr>
<td>Day 3:</td>
<td>The weather today:</td>
</tr>
<tr>
<td>-------</td>
<td>-------------------</td>
</tr>
<tr>
<td>I notice…</td>
<td>I wonder…</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Day 4:</th>
<th>The weather today:</th>
</tr>
</thead>
<tbody>
<tr>
<td>I notice…</td>
<td>I wonder…</td>
</tr>
</tbody>
</table>
Day 5: The weather today:

<table>
<thead>
<tr>
<th>I notice…</th>
<th>I wonder…</th>
</tr>
</thead>
</table>

What was your favorite thing you observed in your Study Square? Share it here!

*Eco-Alert! Have you added all of the heterotrophs (organisms that eat other things) you found in your Study Square to your Master List on page 9?
Part 3 (Bonus): What does my Study Square tell me?

Think about your “I Wonder...” questions. Which question could be answered using your Study Square?

Example: How many yellow flowers are in my entire Home Ecosystem?

Let’s learn how to think like an ecologist!

Step 1. Your study square is a 2ft x 2ft square that represents the whole of your outdoor space (aka your Home Habitat).

Use your ruler to figure out (roughly) how many study squares you could fit in your WHOLE Home Habitat you are studying.

I could fit ___________ study squares in my Home Habitat.

Step 2. Pick an organism that lives inside your study square. This could be a blade of grass, a weed, an ant... anything you can see or count.

I picked ________________.

Step 3. How many of this organism are in your study square?

I found ____________ ________________ in my study square.

(Number) (Organism)

Step 4. Multiply the number of organisms you found in your square by the total number of study squares you could fit in your Home Ecosystem.

_______ x ______ = ____________
(# of organisms) (# of squares) (TOTAL number of organisms)
What OTHER questions could you answer using your study square?

I wonder…

IDENTIFICATION

What kind of creature is this, and how do I know?

When you find a new bug, you can identify what it is by asking yourself the following questions:

Questions for Bugs

★ How many legs does it have?
★ Does it have wings? Are these wings parallel or do they stick out?
★ Did you find it near water?
★ Does it have antennae?
★ Does it have a parallel line down its back?
★ Did you find it near a specific plant?

You can also use the following field guides to identify common bugs and signs of bugs.
Common Soil and Litter Invertebrates

- Millipede
- Slugs & Snails
- Centipede
- Ground Spider
- Springtails
- Sowbug (Isopod)
- Tick
- Mite
- Worm
- Nematode, Unsegmented Worm

Images taken from: http://www.colby.edu/biology/BI131/Lab/Lab08SoilInvertGuide.pdf
Common Flying Invertebrates

- True Bugs
- Leaf Hoppers
- Cricket
- Aphid
- Ants, Bees & Wasps
- Moth
- Fly
- Beetle
- Beetle Larvae
If you find any plants that have evidence of bugs, clip them and tape them into your booklet here!

If you use glue, be sure to let this page dry before closing—or else you’ll have a sticky situation!
Hungry Heterotrophs

A heterotroph is any living thing that gets energy by eating other living things. Sometimes heterotrophs eat plants. Sometimes...they eat...other heterotrophs!

Are you a heterotroph?

Do you eat? Then YES, you are a heterotroph!

Which heterotrophs have you observed so far outside your home?

Which heterotrophs have you observed so far inside your Study Square?

Go to the Field Tech Badge Padlet webpage to learn more tools, apps, and activities you can use to identify plants, animals, and fungi!
Field Methods

How do field techs perform studies outside?

To earn your Field Tech Badge, you must complete at least ONE of the following field methods: Pitfall Trap, Coverboard, Critter Catching, or Beat Sampling.

**Online video tutorials are available on the Field Tech Badge Padlet page. If you cannot complete any of these methods at home, simply watch and respond to the videos to still earn your badge! **
Pitfall Traps

Materials
- Empty yogurt cup (or similar sized cup)
- Spoon or trowel for digging
- Soily area outside
- Large leaf or small piece of cardboard

Pitfall traps help us catch small creatures that are walking around above the surface of the ground.

Method:
Step 1. Simply dig a hole in the ground large enough to fit a cup (like a recycled yogurt container or something of similar size).
Step 2. Place the cup in the hole and make sure the top of the cup is even with the ground.
Step 3. Place a large leaf or small piece of cardboard loosely over the top of the cup.
Step 4. Leave it for insects to fall into.

That's all there is to it!

We recommend checking every 2 hours, or even leaving it overnight and checking in the morning!
Pitfall Traps

Use this space to record what you found!

Use your field guides or the naturalist app Seek to identify the organisms you find.
Think like a bug!
Where would YOU want to hide?

Critter Catching

Materials

- Net (DIY: https://www.youtube.com/watch?v=Y6X2VZyY0dY)
- Bug box

Method: To catch insects without fancy tools, simply stay still and swing your net in one swift motion. If you don’t have a net, you can use a recycled plastic jar with a lid, a small bug box, or make a homemade net!
Critter Catching

Use this space to record what you found!

Use your field guides or the naturalist app Seek to identify the organisms you find.
Beat Sampling

Materials

- Tree or bush
- Sturdy stick
- Large light-colored piece of fabric like an old bed sheet

When they’re not hiding underground, some animals climb up high to hide on branches or in bushes. Beat sampling is a tool ecologists use to release creatures that are climbing up trees or hiding in bushes by shaking the branch and catching them on a cloth.

Method:
Step 1. Find a bush or tree with low-hanging branches.
Step 2. Lay the large piece of fabric on the ground.
Step. Carefully but firmly hit and shake the branches right above the fabric. You can also shake branches with your hand!
Step 4. Check out the sheet! What kind of bugs do you see?
Step 5. Capture some of the bugs in a bug box to take a closer look!
Beat Sampling

*Use this space to record what you found!*

Use your field guides or the naturalist app Seek to identify the organisms you find.
Hungry Heterotrophs
Now that you’ve mastered these field tech tools, which new heterotrophs (or animals that eat other things) have you observed?

Which heterotrophs have you seen evidence (or signs) of? This can include bite marks and poop, any sign that an organism was eating here.

*Eco-Alert! Have you added all of the heterotrophs (organisms that eat other things) you found during your Field Tech Badge to your Master List on page 106?
An ecologist is someone who studies how living things interact with their environment.

Ecologists love to ask questions about the natural world. Use the space below to brainstorm some questions you might want to answer using the field methods you learned during this badge. *Hint: Think about what you learned during your naturalist badge, too!*

Examples:
*Are there more bugs in this branch in the morning or evening?*
*Will more bugs fall into my pitfall trap if I leave a flower in it?*
*Will I catch more bugs if I dress in green?*

**Your Questions:**

E-mail your favorite answerable question to an educator at caryeducation@caryinstitute.org so that you can get ready to conduct an experiment for your Field Ecologist Badge. We can help!
### *Field Tech Eco-Challenge Check*

<table>
<thead>
<tr>
<th>✓</th>
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<td></td>
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<tr>
<td></td>
<td>Master at least 1 field investigation method.</td>
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</table>
Field Ecologist Badge

Field Ecologist (noun): a scientist who studies how living organisms are connected to each other and to their environment

Eco-Challenge

The mission of this badge is to design and conduct your own at-home field experiment to investigate more about animals and the food they consume.

To earn the Field Ecologist badge, you must:

- Ask a science question that will help you learn more about how an animal eats.
- Choose a field experiment to answer your question.
  - You can choose one we provide or design an experiment yourself.
- Get your question + field experiment approved by a trusted adult.
- Predict what you think is going to happen in your experiment.
- Do your field experiment!
- Make observations and collect data.
- Share what you learned by completing your Investigative Report.

Visit us online for the Field Ecologist Badge!

https://padlet.com/caryecoquest/FieldEcologist
Field ecologists are curious about everything! They often wonder about the lives of animals. Before doing an experiment to learn more about an animal, they always first ask a science question.

Think about the study animal you picked. What is a question you could ask that you could answer by doing a field experiment?

Hmm…I wonder…

Asking a good science question is not always easy! Lucky for you, we have some ideas to get you started. After all, good field ecologists need practice!

If you would like to Design Your Own Experiment, skip ahead to page 66.
Option 1: Choose a Field Experiment

We have some field experiments for you to try if you’d like practice before designing your own experiment. Read through each field experiment and pick the one that is most interesting to you!

There are three experiments to choose from: **Ant Hotel**, **Plant Munchers**, and **Stupendous Seeds**. Choose ONE of these for now.

*After you complete your Field Ecologist badge, you are welcome to try more experiments!*

![Earthworm Feeding Experiment](image)

From *Eco-Inquiry* (1994) by Kathleen Hogan

If you are interested in creating an *indoor* critter habitat for your experiment, email *caryeducation@caryinstitute.org* for ideas. Great for rainy days!

From *Eco-Inquiry* (1994) by Kathleen Hogan
# OUTDOOR FIELD EXPERIMENTS

## Field Experiment 1: Ant Hotel

*Ants are everywhere—let's learn more about them and what they like to eat!*

<table>
<thead>
<tr>
<th>Check the field experiment you want to do. Pick ONE!</th>
<th>Research Question</th>
<th>Possible Method for Field Experiment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Option 1</strong></td>
<td>Do ants like some food better than others?</td>
<td>Create a <em>bait station</em>: In a jar lid or on a paper plate, put tiny amounts of food like peanut butter, honey, seeds, lettuce, or cookie crumbs—get creative with what you have! What foods do ants like best?</td>
</tr>
<tr>
<td><strong>Option 2</strong></td>
<td>Do different kinds of ants like different kinds of food?</td>
<td>Create a <em>bait station</em>: In a jar lid or on a paper plate, put tiny amounts of food like peanut butter, honey, seeds, lettuce, or cookie crumbs. Do different kinds of ants (big black ants, small black ants) like certain foods?</td>
</tr>
<tr>
<td><strong>Option 3</strong></td>
<td>Do ants that live in different habitats eat different things?</td>
<td>Put the <em>bait station</em> in different places or habitats outside to see if the type of ant attracted to the foods differ based on the habitat.</td>
</tr>
<tr>
<td><strong>Option 4</strong></td>
<td>Are there differences in how ants eat their food? Do some ants take food away in big chunks, or do some suck liquid out of their food?</td>
<td>Take a close look (use a magnifying glass!) to watch ants at the <em>bait station</em> to see how different ants handle their food. Try to follow them to see where they take their food!</td>
</tr>
</tbody>
</table>

Adapted from *Eco-Inquiry* (1994) by Kathleen Hogan
Ant Hotel Data Collection – Use extra paper if you need & stick it in your Journal!

Date: ____________  Time of day: ______  Weather: ____________________________.

What do you PREDICT will happen in your field experiment?

Sketch your Method for the field experiment:

What did you notice and observe?

What was the most interesting thing you noticed?
Field Experiment 2: Plant Munchers

A lot of bugs love to eat plants, but bugs have favorite plants—as well as interesting ways of eating them!

<table>
<thead>
<tr>
<th>Check the field experiment you want to do. Pick ONE!</th>
<th>Research Question</th>
<th>Possible Method for Field Experiment</th>
</tr>
</thead>
<tbody>
<tr>
<td>❑ Option 1</td>
<td>Do different bugs eat different parts of plants? (like fruits, flowers, branches, leaves, bark, buds, &amp; roots)</td>
<td>Take a close look (use a magnifying glass!) on a plant to look for insects feeding on leaves. Notice what insects are found on different parts of the plant.</td>
</tr>
<tr>
<td>❑ Option 2</td>
<td>Do different kinds of plants have different kinds of bugs feeding on them?</td>
<td>Look for evidence of bugs eating leaves (like holes, tunnels, &amp; scrapes). Compare different leaves to each other. Do different leaves have the same kind of evidence left by bugs?</td>
</tr>
<tr>
<td>❑ Option 3</td>
<td>Which plants have the most different kinds of insects?</td>
<td>Spread a light-colored cloth(sheet on the ground below tree branches or bushes. Gently shake branches (or use the “Beat Sampling” technique from your Field Tech Badge) to see what insects fall out. Note which types of insects fall off of different kinds of plants.</td>
</tr>
</tbody>
</table>

Adapted from *Eco-Inquiry* (1994) by Kathleen Hogan
Plant Munchers Data Collection – Use extra paper if you need & stick it in your Journal!

Date: _______________ Time of day: _______ Weather: _____________________.

What do you PREDICT will happen in your field experiment?

Sketch your Method for the field experiment:

What did you notice and observe?

What was the most interesting thing you noticed?
Field Experiment 3: Stupendous Seeds

Create **seed stations** to see how some animals have special abilities for finding their food.

<table>
<thead>
<tr>
<th>Check the field experiment you want to do. Pick ONE!</th>
<th>Research Question</th>
<th>Possible Method for Field Experiment</th>
</tr>
</thead>
</table>
| ❑ Option 1                                          | Do small or larger seeds disappear more quickly in the open or under cover? | Create a **seed station**: Put large & small seeds (like a bird seed mix, peanuts, sunflower seeds on three plates—get creative!) in three places:

1. Put seeds on a plate in an open space, like the middle of a yard.
2. Put seeds on a plate under a bush or other “shelter.”
3. Put seeds on a plate under a box with a hole cut out of it.

*Check stations every day for a week.* |

| ❑ Option 2                                          | Does the size and position of the entry holes into a container with seeds make a difference for how quickly the seeds disappear? | Put equal numbers of the same kinds of seed in two containers with different entry holes (like big or small, covered by a flap, located on the top or side of a container, etc.) to compare how quickly the seeds disappear. |

Adapted from *Eco-Inquiry* (1994) by Kathleen Hogan
Stupendous Seeds Data Collection – Use extra paper if you need & stick it in your Journal!

Date: ________________  Time of day: _______  Weather: _________________________.

What do you PREDICT will happen in your field experiment?

Sketch your Method for the field experiment:

What did you notice and observe?

What was the most interesting thing you noticed?
OFFICIAL ECO-EXPLORER INVESTIGATIVE REPORT

<table>
<thead>
<tr>
<th>Field EcoExplorer Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your study animal:</td>
</tr>
<tr>
<td>Type of food your study animal consumes:</td>
</tr>
</tbody>
</table>

Sketch your animal and its food.

From your field experiment, what did you discover about your animal and how it eats? What patterns did you notice?

What do you think is AMAZING about your animal?

Did you discover any other organisms during your study? Sketch and write about them here!

*Eco-Alert! Have you added all of the heterotrophs (organisms that eat other things) you found during your Field Experiment to your Master List on page 106?
Option 2: DESIGN YOUR OWN EXPERIMENT

Reminder: Before setting up your study, please FIRST share your science question + field experiment design with a Cary Educator.

**Reflection:** Pick a study animal in your home habitat.

In all of the badges that you have done so far, which animal did you see (or see signs of!) that you would like to learn more about?

Why do you think this animal is interesting?

What do you think this animal eats?

Draw your animal here and what it eats.

---

Ideas for developing a Research Question:

- Maybe you could use a question from your Field Tech Brainstorm Box!
- Compare and contrast different kinds of field methods you learned during the Field Tech Badge. *Are different kinds of bugs caught by using a coverboard versus a pitfall trap?*
- Study different habitats. *Are different bugs found in different habitats?*
- Study different food sources: *Are certain insects found on the plants they eat? Do ants prefer yogurt or peanut butter?*
Other Methods for designing a field study:

- Anything from your Field Tech Badge! (pitfall traps, cover boards, beat sampling, etc.)

- There might be another field method, like track plating, that could inspire your investigation!  

  - Examples: Track plates, Leaf packs, Camera trapping, or Bait stations
  - Aquatic studies like dip-netting, leaf packs, etc.

Have an idea but aren’t quite sure how to set up a field experiment? Ask an Educator! Send us an email at caryeducation@caryinstitute.org or set up a phone call—we are happy to chat!
### Field Experiment Design

#### My Research Question

[Blank]

#### My Field Experiment

**Supplies Needed:**

[Blank]

**Describe your Method:**

[Blank]

**How will you collect data/ make observations?**

Example: I will collect data ________ times a day for _________ days. I will write observations in my Field Journal about...

[Blank]

**What do you PREDICT will happen in your field experiment?**

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</table>
| **Observations:** *What do you notice?*  
(Write & Sketch!) | **Questions:** *What do you wonder?* |
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**Observations:** What do you notice?  
(Write & Sketch!)

**Questions:** What do you wonder?
# OFFICIAL ECO-EXPLORER INVESTIGATIVE REPORT

<table>
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<tr>
<th>Field EcoExplorer Name:</th>
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<th>Type of food your study animal consumes:</th>
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**Sketch your animal and its food.**

<table>
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<th>From your field experiment, what did you discover about your animal and how it eats? What patterns did you notice?</th>
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</table>

<table>
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<tr>
<th>What do you think is AMAZING about your animal?</th>
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</table>

<table>
<thead>
<tr>
<th>Did you discover any other organisms during your study? Sketch and write about them here!</th>
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</table>

*Eco-Alert!* Have you added all of the heterotrophs (organisms that eat other things) you found during your Field Experiment to your Master List on page 106?
## *Field Ecologist Badge Eco-Challenge Check*

<table>
<thead>
<tr>
<th>✓</th>
<th><strong>Challenge Steps</strong></th>
<th>Eco-Explorer Signature</th>
<th>Adult Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ask a science question that will help you learn more about how an animal eats.</td>
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<tr>
<td></td>
<td>Choose or Design a field experiment to answer your science question.</td>
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<td></td>
<td>Get your question + field experiment approved by a trusted adult.</td>
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<td></td>
<td>Predict what you think is going to happen in your experiment.</td>
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<td></td>
<td>Do your field experiment!</td>
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<tr>
<td></td>
<td>Make observations and collect data.</td>
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<td></td>
<td>Share what you learned by completing your Investigative Report.</td>
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</tbody>
</table>
Artist Badge

Artist (noun): A person who practices any of the creative arts, including but not limited to: painting, drawing, sculpting, music-making, writing, collaging, sewing, dyeing, gluing, building, filming, recording, singing, speaking, performing.

Woo! So this means...everyone is an artist in some way! Oh, me...? I'm really into playing the cello.

Eco-Challenge

The mission of this badge is to use artistic techniques to explore, celebrate, and share your habitat.

To earn this Artist badge, you must:

- Complete at least one leaf rubbing
- Complete at least one original drawing
- Write at least one nature poem
- Create a habitat restaurant
- Write a story
- Create a collage

Visit us online for the Artist Badge! [https://padlet.com/caryecoquest/Artist](https://padlet.com/caryecoquest/Artist)
Part 1: The Autotrophs

Who are the autotrophs in our habitat who feed the local heterotrophs?

An **autotroph** is an organism that makes its own energy, without having to eat any other living things. Most plants are autotrophs because they create energy using sunlight.

For this badge, you will need a **Sit Spot** again. This can be the same sit spot from your Naturalist Badge or a new one! Anywhere you can comfortably sit for about an hour.

**Worm-Up #1**

1. Pick an autotroph in or near your spot. This can be a tree, a flower, a bush, a blade of grass.
2. Watch this autotroph for at least a minute.
3. Write down one thing you noticed about it:

   ____________________________________________

4. Draw the autotroph below:

   ![Autotroph Drawing]

5. Close your eyes and draw the autotroph again:

   ![Autotroph Drawing]
Now we are going to pick one leaf from our autotroph.  
Look at the leaf and draw it below.

Draw the leaf without looking at it below.
Draw the leaf and all of its edges and shadows without picking up your pencil/pen. This is called a contour drawing.

Draw the leaf all at once, without picking up your pencil, without looking.
Trace the outside of the leaf, and color in a new design to fill in the blanks.

Use the space below to make a rubbing of the leaf.
To make a rubbing, place the leaf right underneath this page and gently shade above it using a pencil, crayon, or colored pencil.

You should see some of the details of the leaf come through to this page!
Use the space below to produce more rubbings, to tape down your leaf, or to practice any leaf drawing activities again with new leaves!

Can you identify what kinds of leaves these are?
Try using field guides or online resources and label your drawings!
Part 2: Poet-tree

*How can we use words to celebrate our surroundings?*

**Worm-Up #2**

Fill this box with **as many words you can use to describe** the living things you have seen in your Home Habitat!

*For an extra challenge, try to fill up the whole box in only 2 minutes.*

*For an extra extra challenge, draw an image to go with each word.*
Below are some examples of nature poetry.
Take some time to read through and respond to each poem.

**PINE TREE TOPS**
by Gary Snyder

in the blue night
frost haze, the sky glows
with the moon
pine tree tops
bend snow-blue, fade
into sky, frost, starlight.
the creak of boots.
rabbit tracks, deer tracks,
what do we know.

What do these poems make you think of?
How do they make you feel?
What images come to mind? (Feel free to draw!)
What words or phrases stand out?

**FOR THE CHILDREN**
by Gary Snyder

The rising hills, the slopes,
of statistics
lie before us.
the steep climb
of everything, going up,
up, as we all
go down.

In the next century
or the one beyond that,
they say,
are valleys, pastures,
we can all meet there in peace
if we make it.

To climb these coming crests
one word to you, to
you and your children:
*stay together*
*learn the flowers*
*go light*
Going out to the Garden
By Alice Walker

Going out to the garden this morning to plant seeds for my winter greens—the strong, fiery mustard & the milder broadleaf turnip—
I saw a gecko who like the rest of us has been reeling from the heat.

Geckos like heat I know this but the heat these last few days has been excessive for us & for them.

A spray of water from the hose touched its skin: I thought it would run away.
There are crevices aplenty to hide in: the garden wall is made of stones.

But no not only did the gecko not run away it appeared to raise its eyes & head looking for more.

I gave it.

Squirt after squirt of cooling spray from the green garden hose.

Is it the end of the world? It seemed to ask. This bliss, is it Paradise?

I bathed it until we were both washed clean of the troubles of this world at least for this moment: this moment of pleasure of gecko joy as I with so much happiness played Goddess to Gecko.
Now it’s time to write your own nature poetry! Below are a few types of poems for you to try.

The Acrostic
Step 1. Pick one of the heterotrophs in your spot that you have identified already.
Step 2. Write its name, but vertically.
Step 3. Fill in words that intersect with the letters of its name.

See this “CRICKET” example!

Can you hear the world outside your chirp?
Or are you so
Inundated with the loud
Chirp Chirp chirp
causing such a racket
causing quite a stir
That you cannot hear anything else?

Write your acrostic below. What animal did you choose? __________________________
The Shape Poem

Step 1. Pick one of the organisms you found and identified.
Step 2. Draw an outline of this organism without filling it in.
Step 3. Fill the inside of the shape with the words about your organism.

*Bonus: Color your creation, draw a background, add its habitat, or add a friend.
The Rhyme
Pick a heterotroph (something that eats something else) you have identified that you wish to write about. You can write your poem however you wish—it just needs to rhyme!

Example Rhyming Poem:

| If I lived inside a birch                      |
| I’d never leave you in the lurch               |
| If I were stuck inside a tree                  |
| Would you have stayed to play with me?         |
The Letter
Pick a heterotroph that you found and identified already: __________________________
Give a name to this creature: __________________________

What do you notice about this creature? What do you find interesting or curious?

<table>
<thead>
<tr>
<th>I notice...</th>
<th>I wonder...</th>
</tr>
</thead>
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</table>

Starting with “Dear _____,” write a letter to this creature. Ask or tell it anything you want.
*Bonus: Make it rhyme, give it a fun shape, or give it a creative structure.

Share your favorite poems on the Artist Badge Padlet webpage!
Part 3: Critter Characters

Who are the creatures around us? What is their story?

Worm-Up #3

Earlier, we asked you to find a rock. In the space below, tell us more about your rock. Name it, draw it, give it some clothes, give it a story. How old is it? What time did it wake up this morning? Where is it from? What are its favorite things to do? What is its favorite food?
These activities are all about storytelling. You will develop a story about the different creatures in your habitat.

**Step 1. Characters**

Use the space below to sketch and name some of the characters that live in your habitat.

Now that you’ve named your characters, use arrows to show their relationships, just like you did on page 29 when you made a food web. Are they predator and prey? Are they friends? Family? Enemies?
Step 2. Setting
By now, you are an expert on the habitat where your story will take place. Use the space below to jot down some words or characteristics that describe this habitat, the setting of your story.

The name of this habitat is ____________________________.

Step 3. The Plot
Use the space below to illustrate a timeline of events in your story, from beginning to end. Make sure to include at least one exciting event or problem!
Step 4. Tell the Tale
Using words, drawings, or a combination of both, tell the story you have created about your creature characters in their habitat.

You may use a video or audio recording instead of paper.
You may write a poem or script.
You may need some extra paper.
It’s up to YOU!
Part 4: Il Ristorante Naturale

Who’s coming over for dinner?

Worm-Up #4
Create an advertisement that shows off your Sit Spot. Why is it the best spot ever?
Throughout this program, you have looked for evidence of animals eating plants, you have asked who eats what, and you have watched different animals come and go. In other words, you have observed a habitat restaurant.

If your spot really were a restaurant, what would it be called?

______________________________

What kind of restaurant would it be? How would it look? Draw it below.
Looking through the observations you have made throughout your EcoQuest, see if you can use what you have learned to design the **menu** for your habitat.

*Be as creative and imaginative as you can, but make sure to use some of the observations you made to inform your menu!*
Part 5: Nature’s Palette

What can you use to create art?

Worm-Up #5

Pens and pencils are old news. **What else can you use to make marks on paper?**
See if you can use **leaves, mud, rocks**, or any other natural item you find outside to create markings on this sheet, or even create a **masterpiece**.
Part 1. Plant Presses

Sometimes, when an ecologist finds a plant they really like, they press it flat so that they can preserve it forever. This is called a plant press.

Materials:
- Pieces of paper, newspaper, or magazine paper
- 2 pieces of cardboard
- Extra books or boxes

Step 1. Pick a plant you like! Try to figure out what kind of plant it is.

Step 2. Find two pieces of paper (or newspaper). They can be small, but must be bigger than the plant you have chosen.

Step 3. Sandwich the plant between two pieces of paper.

Step 4. Sandwich the plant and paper between two pieces of cardboard.

Step 5. Weigh down your press by putting books or boxes on top of it. This should flatten your plant.

Step 6. Leave your plant press for at least a few days. After about a week, your plants will be fully dry!
Part 2. Eco-Collages!

If you can tape it down, you can collage it. A collage is a type of art made by mixing a lot of different materials into one big image.

Materials:

- Natural materials
- Scrap paper and other craft materials
- Paper, cardboard...something to be your “canvas”
- Scissors
- Tape and/or glue

Step 1. Find as many materials as you can that you would use to make a collage. Some should be natural materials from your habitat, but others might come from around your home.

Step 2. Find something to stick them down with. This can be glue or tape or both.

Step 3. Find something to stick them down onto. This can be paper, poster paper, cardboard, or anything your parents/guardians will let you stick things to.

Step 4. Have some fun collaging! Can you use the materials you gathered to create an image? Or do you want to create something abstract?

Step 5. Name your creation. Take a picture and share it!
<table>
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<tr>
<th>✓</th>
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<tr>
<td></td>
<td>Create a habitat restaurant</td>
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<td></td>
<td>Write a story</td>
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<td></td>
<td>Create an eco-collage</td>
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Teacher Badge

Teacher (noun): a person who helps others learn and inspires understanding of new things

Eco-Challenge
The mission of this badge is to practice communicating ecology lessons by sharing what you have learned with your friends and family.

To earn the Teacher badge, you must:

- Make a creative, ecological EcoQuest Finale! You will help others learn about your EcoQuest investigations in your home ecosystem.
- Before you begin your EcoQuest Finale, share your idea with Cary Educators for feedback at caryeducation@caryinstitute.org
- Present your EcoQuest Finale to family or friends.
- Bonus: Share your project virtually with other EcoExplorers on Padlet!

Visit us online for the Teacher Badge! https://padlet.com/caryecoquest/Teacher
Get Inspired!

Sometimes a teacher really inspires us to want to learn and be the best we can be. Who is that teacher for you?

<table>
<thead>
<tr>
<th>Write &amp; draw your <strong>favorite teacher</strong> here.</th>
<th>What are some <strong>words</strong> that describe them?</th>
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</table>

Teacher’s Name: __________________________

How did this teacher get you **excited** to learn?

What makes that teacher **special**?

How do they make the classroom **FUN**?
Teacher Bio

You reflected on your favorite teacher and what made them so great.
Now, let’s learn more about **YOU** and what makes you a great teacher, too.

<table>
<thead>
<tr>
<th>Write &amp; draw yourself as a teacher here.</th>
<th>What are some <strong>words</strong> that describe you?</th>
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</table>

Your Name: __________________________

How would **YOU** get others **excited** about something?

What makes **YOU** **special** as a teacher?

How will **YOU** make learning **FUN**?
EcoQuest Finale!

On this EcoQuest, you have learned SO MUCH about amazing organisms and how they eat in your home habitat.

You’ve tuned in all 5 of your senses to observe things no one else might notice...

You’ve practiced field methods to catch all sorts of insects and other critters...

You’ve proven that you can do a field experiment just like a field ecologist.

Not only that, you’ve wowed everyone with your creative skills as an ecologist artist!

Now it’s your turn to TEACH others about

Who is Coming Over for Dinner for a Fantastic Feast
in your home ecosystem!
Brainstorm!

You can teach about anything you thought was really amazing during EcoQuest. The questions below are to help get your creative juices flowing...but these are just ideas. Follow your heart!

What are some of the coolest animals you learned about during EcoQuest? *(Remember, bugs are animals, too!)*

What animal did you discover during EcoQuest do you want to teach others about?

What was amazing about this animal?

What did this animal eat?

Can you think of a really interesting food web that you discovered? Do you think you could teach others about the ENTIRE food web of your home ecosystem?

What field method was the most fun to do? What animals, or connections between animals, did you discover?

What was the most fun thing you did in EcoQuest? Is there a way that you could teach someone else how to do it, too?

Close your eyes. Take a snapshot in your mind of your very favorite moment from EcoQuest. When you think of it, draw or write about it below:
EcoQuest Finale Guide

Since this badge is an Eco-Challenge, these are the challenges you must include in your lesson in some way.

Your EcoQuest Finale lesson must...

- Include at least one heterotroph you discovered in your Home Habitat
- Include the food that this heterotroph eats—and how it eats it!
- Include 2 new science words you learned during EcoQuest
- Be artistic.
  - What does this mean? Use any type of creativity to teach your ecology lesson. Remember, an artist practices any of the creative arts, including but not limited to: painting, drawing, sculpting, music-making, writing, collaging, sewing, dyeing, gluing, building, filming, recording, singing, speaking, performing.
  - This simply means...get creative! Make a lesson in your own style.
- Be FUN for you to create! This is not for a grade. This is for YOU and your loved ones.
EcoQuest Finale Planning

Brainstorm Box

Use this space to **plan** how you will teach others about what you have learned. Will you make a poster? A video? A mural? A painting? A song? The possibilities are **endless**!

Now is your time to shine!

We cannot wait to see what you create. Please share with Cary Educators at caryeducation@cary institute.org and on our [EcoQuest Teacher Padlet](#).
### Teacher Badge Eco-Challenge Check

<table>
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<tr>
<th>✓</th>
<th>Challenge Steps</th>
<th>Eco-Explorer Signature</th>
<th>Adult Initials</th>
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<tr>
<td></td>
<td><strong>Before you begin your EcoQuest Finale, share your idea with Cary Educators.</strong></td>
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<td></td>
<td><strong>Make a creative EcoQuest Finale that teaches an ecological lesson!</strong></td>
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<td><strong>Present your EcoQuest Finale to family or friends.</strong></td>
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<td><strong>Bonus: Share your EcoQuest Finale virtually with other EcoExplorers!</strong></td>
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Master List Eco-Challenge

When you discover a new *heterotroph* (something that eats something else), **add it below!**

*Remember: You must find **at least 30 heterotrophs** to complete this Eco-Challenge.*

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Food Frenzy Eco-Challenge

Come back to this page to share your favorite feeding relationships you discover.

*Remember: You must find **at least 4 relationships** to complete this Eco-Challenge.

<table>
<thead>
<tr>
<th>Who… → → → (The heterotroph)</th>
<th>→ → → …eats What? (the food)</th>
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</thead>
<tbody>
<tr>
<td>1. Organism:</td>
<td>Organism:</td>
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<td>Circle the category it belongs to:</td>
<td>Circle the category it belongs to:</td>
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<tr>
<td>Animal</td>
<td>Plant</td>
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<tr>
<td>Fungi</td>
<td>Animal</td>
</tr>
<tr>
<td>Bacteria</td>
<td>Fungi</td>
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<td></td>
<td>Bacteria</td>
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<td></td>
<td>Decaying matter (dead stuff!)</td>
</tr>
<tr>
<td>Who…→→→</td>
<td>→→→…eats What?</td>
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<tr>
<td>------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>(The heterotroph)</td>
<td>(the food)</td>
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</table>

3. Organism: ________________________

Circle the category it belongs to:
- Animal
- Fungi
- Bacteria

Organism: ________________________

Circle the category it belongs to:
- Plant
- Animal
- Fungi
- Bacteria
- Decaying matter (dead stuff!)

4. Organism: ________________________

Circle the category it belongs to:
- Animal
- Fungi
- Bacteria

Organism: ________________________

Circle the category it belongs to:
- Plant
- Animal
- Fungi
- Bacteria
- Decaying matter (dead stuff!)
As an EcoExplorer, I completed the...

- Naturalist Badge
- Field Tech Badge
- Field Ecologist Badge
- Artist Badge
- Teacher Badge
- Master List of Heterotrophs
- Food Frenzy of Heterotroph Relationships

I, EcoExplorer ____________________________, hereby certify that I have

(Your Name)
officially completed my Fantastic Feast EcoQuest!

EcoExplorer Signature: ____________________________

Date: __________________________________________

Congratulations on completing your EcoQuest!!!
Thank You! We at Cary Education created EcoQuest as a way to provide families with a fun ecology education opportunity since we had to cancel Cary Eco-Discovery summer camps during the COVID-19 Pandemic in 2020. We are incredibly grateful to all the families, teachers, and students who participate in this brand new program, as well as to our amazing team of high school Eco-Leaders for their creative ideas and dedicated educational contributions.

We are excited to inspire—and be inspired by—children discovering the ecosystem of their own homes and schoolyards.

Thank you for supporting our educational endeavors!

With Gratitude,

Cary Education

References


About the Authors

The Cary EcoQuest (2020) curriculum and accompanying online materials were created by Ashley Alred and Amelia Goldstein, with priceless guidance from Dr. Alan Berkowitz, Cary Head of Education, and Shelly Forster, Cary Educator.

Ashley Alred, Cary Education Program Leader
Before joining Cary, Ashley served as a k-12 environmental educator at the Urban Ecology Center in Milwaukee, Wisconsin. She received her MS in Science Literacy Research at the University of Nebraska-Lincoln ('16) and her BS in Fisheries & Wildlife Biology from the University of Georgia ('12). Over the years, her academic research interests have ranged from captive chimpanzee behavior to understanding how undergraduates make decisions about conservation issues. She has been an environmental educator in five different states across the country.

As Education Program Leader, Ashley is excited to devote her skills in education, ecology, and research to teaching youth using inquiry-based and data-driven methods during local school field trips and summer camp, while also contributing to innovative ecology education research. Her career focus is to inspire youth to think critically and creatively about ecology and cultivate meaningful, fun connections to their local environment.

Amelia Goldstein, Cary Summer Camp Instructor
Amelia’s path to becoming an ecology teacher began in college where she studied the Sociology of Science—that is, how scientists act, what rules they follow, who gets to be a scientist and how. She became passionate about making sure that everyone who wanted to do science could do science. She realized that the best way to make science accessible to everybody was to teach it! When in graduate school for Biology Education, Amelia discovered the incredible world of ecology, and she loved that there was room for everybody in it. There was no turning back!

Last year in summer 2019, Amelia became a summer camp instructor for the Cary Institute of Ecosystem Studies where kids spend every day outside exploring ecology. We were lucky enough to have Amelia back for a second summer as an instructor for EcoQuest. During the school year, Amelia is a high school science teacher. This fall, Amelia will be teaching a trifecta of Biology, Ecology, and Environmental Science to high school students at Oakwood Friends School in Poughkeepsie, New York.