

# INVESTIGATING AGRICULTURE SCAVENGER HUNT



**Science Exploration Field Trip  
Life Lab Garden Classroom**



**Life Lab Science Program**  
**(831) 459-2001 • [www.lifelab.org](http://www.lifelab.org)**



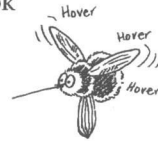
## WELCOME TO THE UCSC FARM & LIFE LAB GARDEN CLASSROOM

As you tour our farm you will learn how organic farmers successfully grow food without the use of chemical fertilizers, pesticides or herbicides. Organic farmers are soil builders, because they know to grow a healthy plant you have to grow healthy soil! Our organic farm is a diverse ecosystem, with habitats for beneficial insects and predators. We also grow a diversity of crops which reduces the outbreak of pests and disease.

On this scavenger hunt you will learn techniques that organic farmers use to grow and market their produce successfully. You'll visit many of the diverse habitats on our farm and hopefully see signs of some of the animal predators that help to keep pests in check. You'll also get to observe honey bees and other helpful insects at work on our farm.

As you explore our farm, remember to look around, ask questions and have FUN!

**ORGANIC FARMING:**  
Farming done without the use of chemical fertilizers, pesticides or insecticides



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## GLOSSARY

### **Agroecology**

The study of how plants and animals interact in an agricultural system.

### **Beneficial Insect**

Insects that kill pests by eating or laying their eggs in other insects that might damage crops.

### **Community Supported Agriculture (CSA)**

A way to buy food where members get a box of fruits and vegetables direct from the farm each week. It's kind of like having a weekly subscription to farm fresh food.

### **Crop Rotation**

Planting crops in different places on the farm field each year to reduce weeds and disease and to help balance nutrients.

### **Diversity of Species**

A collection of various plants and animals.

### **Ecosystem**

Living things like plants and animals and the nonliving environment interacting in one area. Rain forests, deserts, coral reefs, grasslands, and a rotting log are all examples of ecosystems.

### **Herbicide**

A chemical used to kill weeds. Organic farmers do not use chemical herbicides.

### **Organic Farming**

Food grown without the use of chemical fertilizers, pesticides, or herbicides.

### **Perennial**

A plant that lives for more than two years.

### **Predator**

An animal that hunts and kills other animals for its food. On our farm owls, bats, snakes, and cats are beneficial predators that eat plant pests.





## DIVERSITY ON THE FARM

### (PERENNIAL BORDER)

Diversity of species is an important part of ecosystem health. Have you ever seen a natural area with only one type of plant or animal in it? Probably not! Nature usually has a diversity of species that support and interact with one another to create a healthy ecosystem. To make a healthy farm we try to create diversity. We do this by planting many different crops and leaving undisturbed habitat for wildlife.

Diversity on our farm is not limited to the crops that we grow to sell. Many organic farmers plant other crops to provide habitat for beneficial insects. Beneficial critters help the farmer by:

- ☛ eating insect pests.
- ☛ pollinating flowers, which then turn into fruit and seed.
- ☛ improving soil structure and fertility.



**LADY BUGS** are beneficial insects because they eat aphids, who suck the juices out of green, leafy plants.



**PREDATOR:** An animal that hunts other animals for its main food source.

### ACTIVITY

Have your guide show you the beneficial insect photos, then do a sheet shake and look for bugs.

### DISCUSSION

What are other ways to get beneficial insects on a farm?

**HONEY BEES** are beneficial insects because, in their search for nectar, they pollinate about 30% of all the food we eat.



## PREDATORS ON THE FARM

(KIWI TRELLIS)

Insects are not the only beneficial predators on the farm. Can you guess what lives in the white box above the kiwis? Some people call this predator a winged cat. Predators like this one help control the population of rodents, which eat many of our crops. Don't go too close to the box! We don't want to scare this predator away and keep it from nesting here.



**Q: How many gophers can a family of owls eat per night?**

**A: About 5 - 8 per night**

### ACTIVITY

1. Look at various pictures of common organic farm predators and guess what pests they eat.
2. Pick apart the owl pellet and see if you can find any bones or fur. What do you think the owl had for dinner last night?
3. If you had an organic farm or garden what 3 predators would you have on your farm? Write their names and the pest/prey they eat below.



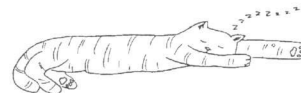
Predator	Pest/Prey
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- 1.
- 2.
- 3.

**KEEP YOUR EYES PEELED!**  
Our farm cats—  
Frankie &  
Kaoloha—are  
our top gopher  
catchers, but  
mostly they like  
to sleep in  
the sun.

### DISCUSSION

**What would happen if the prey of the beneficial predators were poisoned?**





## **ROTATING CROPS FOR A HEALTHY FARM**

**(RESEARCH FIELD BENCH)**

Organic farmers rarely plant the same crop in the same field year after year. Rotating crops from year to year helps control pests and plant disease, manage weeds, and balance the nutrients that plants need.

### **ACTIVITY—CROP ROTATION GAME**

Play the crop rotation game. Afterwards write down the crops you would plant for the next eight years.

**HINT: Start with Rye Grass!**

<b>This Year</b>	
<b>Year 2</b>	
<b>Year 3</b>	
<b>Year 4</b>	
<b>Year 5</b>	
<b>Year 6</b>	
<b>Year 7</b>	
<b>Year 8</b>	

### **DISCUSSION**

How can crop rotation help with weed control?