# Insect Investigation

**3rd & 4th grade**

Students will identify insects found in the garden and determine whether they are a pest or beneficial insect. They will discuss different methods of protecting crops from insect damage and the risks and benefits of each.

30 minutes

## What You Need

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insect catching supplies (cups, screened cages, nets)</td>
<td>Explain to students that the farm is an ecosystem, and that many living things share the space with the vegetables in the field. Today we are going to spend some time observing the insects that live on the farm. Farmers group insects into two groups “pests” and “beneficial” – ask the students if they can guess what these names mean? (pests eat crops, beneficial insects eat the pests and pollinate vegetables)</td>
</tr>
<tr>
<td>Small Pieces of paper</td>
<td>Students will get into pairs or groups of three. Send each group to a different part of the farm (greenhouse, squash field, tomatoes, berries etc). Tell students that even if the insects are pests we are not going to hurt them today, just observe them. Give them 5-10 minutes to look for and catch insects. <strong>Make sure students return with all of the insect catching equipment.</strong> When they return to the table have them draw pictures of the insects and look at the identification sheets or in the field guides to try to identify them. You read, or have students take turns reading, about the insects from the guide sheets.</td>
</tr>
</tbody>
</table>
| Art supplies                              | **If you are familiar with different methods of pest control used by farmers, talk about them with the students. What are the risks and benefits to each?**
| Insect Identification sheets              | ● Integrated Pest Management  
|                                          | ● Crop Rotation  
|                                          | ● Chemical Pesticides  
|                                          | ● “Organic” Pesticides  
|                                          | ● Hormone trap |

**Release pests into the bushes around the farm, release beneficial insects into the fields.**
NOTES AND EXTENSIONS

Insect anatomy
* Label and describe the parts of an insect
* Compare and assess features of insects for their adaptive, competitive, and survival potential (e.g., appendages, reproductive rates, camouflage, defensive structures.)
* Compare and contrast how different forms and structures reflect different functions (e.g., similarities and differences between insects that walk, fly, or swim.)
* Identify physical features of insects that help them live in different environments.

Life cycles
* Describe the life cycles of various insects to illustrate incomplete and complete metamorphosis.
* Describe simple life cycles of insects and the similarities and differences of their offspring.

Interrelatedness
* Describe relationships among various insects in their environment (such as predator/prey, parasite/host, food chains, and food webs.)
* Create a food chain/web to illustrate the importance of insects in the environment.
* Analyze how specific personal and societal choice that humans make affect local, regional, and global ecosystems (e.g., lawn and garden care.)