## Crime Solving Insects

### Project Skills:
- Collecting data
- Organizing information

### Life Skills:
- Teamwork
- Critical Thinking
- Problem Solving

### Academic Standards:
SC.F>1.3#7; SC.H.2.3

### Grade Level(s):
6-8

### Time:
60-90 minutes

### Supplies Needed:
- Suspect List
- Crime Report Pack
- Copy of *Crime Solving Insects* Curriculum by Lisa Carloye and Stephen Bambara

### Advance Preparation:
Read over the background information and divide the students into four groups. If desired, you can also decorate the room with crime scene tape, or ask volunteers to play the role of the suspects.

### BACKGROUND
With so many shows on television based around crime scene investigators, it provides a wonderful opportunity to teach youth about the scientific method and how to conduct experiments. Television shows can make forensic science seem very glamorous or exciting, but in reality it requires lots of patience, dedication, and hard work. This lesson will demonstrate how forensic scientists use insects to solve crimes. Students will be measuring maggots (simulated by pipe cleaners) and using a chart to determine when an animal died. This lesson has four different scenarios which can be done in succession, or divided among four different teams.

### INTRODUCTION
Crime scene investigators collect evidence and use the scientific method to determine how, why, and who committed crimes. There are lots of different types of evidence that can be collected—fingerprints, footprints, hair and blood samples, and even insects. In fact, insects have helped solve crimes for hundreds of years.

Once an animal dies, flies are the first to find the carcass, usually within 10 minutes of death. The flies begin to lay eggs in the carcass, and as the carcass decays, the eggs hatch and the insects grow. Because insect life cycles are predictable, scientists can use insects and information about the environment, such as temperature, to determine how long the animal has been dead. This is called forensic entomology. Today, you will work in teams to solve a crime using forensic entomology.

### WHAT TO DO
Youth will need some basic knowledge of the insect life cycle before beginning. Have them take turns reading aloud the paragraphs on pages 5 and 6 of *Crime Solving Insects*. 

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Next, ask the youth to read the suspect list, or if acting out, have the suspects introduce themselves. Ask each team to make a hypothesis, or educated guess about who they think committed the crime.

Next, give each team a crime report pack, and tell them that they will be measuring the maggot and pupal evidence (cut up pipe cleaners) to determine the life stages and species found on the scene. Once they have measured the maggots, they will use the life history chart and ecological information in their crime report pack to solve the crime. Ask them to record their answers on their worksheet.

Once each team has completed their assignment, and come up with a conclusion, use the answer key on pages 16 and 17 of Crime Solving Insects and work through the processing questions.

**PROCESSING QUESTIONS - 20 minutes**

**Sharing**:  
- How do you feel about this topic?  
- What was the hardest part of this activity?  
- Are insects that eat animal corpses “good” or “bad?”  
- What were some of the challenges working as a team?

**Processing**:  
- What different species of flies did you use to determine the ages of the corpses?  
- What kind of insects do you think you might find if the animal had been dead for six months?  
- What other types of evidence do you think crime scene investigators would look for besides insects?

**Generalizing**:  
- What other situations in life require you to make observations to solve a mystery?  
- Have you ever used data to prove a point?  
- Why is it important to collect all the information before making a judgment?

**Applying**:  
- Can you think of other situations where entomology could help solve crimes?  
- What would you do differently if you had to do this activity again?  
- What other situations have required you to make an educated guess, and how did it turn out?

**ENHANCEMENT**:  
- Do the optional activity on page 19 of *Crime Solving Insects.*  
- Invite a detective or CSI to visit your group. Help youth prepare interview questions in advance.
• For more information and activities, the following books and websites are recommended:
  o [www.courttv.com/forensics_curriculum](http://www.courttv.com/forensics_curriculum)
  o *Crime Scene Investigations* by Pam Walker and Elaine Wood
  o *Detective Science* by Jim Wiese

**TRAINER TIP**
The youth really enjoy acting the scenario out; ask for volunteers to play the role of each suspect.

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