



# ARREST THAT PEST!

## LESSON THREE:

### Scene of the Crime: *Learn to Identify Ash Trees in your Community*

#### Goal:

- Trees play an important role in the environment. The more knowledgeable youth are about trees and their benefits, the more likely they are to feel empowered to maintain and preserve them in urban and natural landscapes.

#### Purpose of Lesson:

- The purpose of this activity is to increase awareness and appreciation of trees in general and ash trees specifically. It is important for youth to be engaged with the natural world around them and understand the benefits associated with trees in both public and private spaces. This activity reinforces environmental awareness and encourages youth to take active roles as caretakers of the trees in their environment.

#### Learning Objectives:

Youth will be able to:

- Explain three reasons why trees are important
- Describe at least three characteristics of ash trees

#### Teacher Preparation:

- As you work with students, check for their understanding of vocabulary words and any other new words that come up during discussions. Gather materials and make necessary copies. Review **Background Information for Youth: *Benefits of Trees*** in **Part One**, and **Background Information for Educators** and the **Ash Identification PowerPoint** used in **Part Two**. Identify an area for the nature walks to take place.

#### Materials and Resources:

- Handout: *Benefits of Trees*  
[http://treesaregood.com/treecare/resources/benefits\\_trees.pdf](http://treesaregood.com/treecare/resources/benefits_trees.pdf)
- Ash Tree Identification PowerPoint
- Ash Tree Identification Guide  
<http://extension.entm.purdue.edu/eab/pdf/ashTreeIdentificationHandout.pdf>
- Field Notes Handout for bark/leaf rubbing, notes
- Crayons

- Pencils

**Vocabulary:**

- Erosion
- Habitat
- Host species
- Natural enemies
- Pinnately compound
- Resistance
- Rural
- Samaras
- Stressed trees
- Suburban
- Urban

**PART ONE:****Introduction:****Why are trees so important?**

Open the lesson with a general question about trees and their value in the public and private spaces of the community. Two of the best reasons for planting trees are to provide beauty and shade, but trees can also serve many other purposes. What are they?

**Development:**

The benefits of trees can be grouped into social, communal, environmental, and economic categories. Break youth into four cooperative learning groups.

*Group One: Social Benefits*

*Group Two: Communal Benefits*

*Group Three: Environmental Benefits*

*Group Four: Economic Benefits*

Provide each of the groups with a copy of one of the *Benefits of Trees* handout (link found below). Have them read their assigned section and make a list of all the benefits associated with trees that are discussed in their assigned section.

**Background Information for Youth:** *Benefits of Trees:*

[http://treesaregood.com/treecare/resources/benefits\\_trees.pdf](http://treesaregood.com/treecare/resources/benefits_trees.pdf)

**Exploration and Closure:**

Bring the larger group together to discuss the main ideas from their assigned section; lists can be made on the board or a flip chart. Once all the main ideas have been discussed, take youth on a nature walk to observe trees in schoolyards, parks, and neighborhoods. Ask them to describe the trees to you. Ask them to be specific about the differences and similarities they see. Ask them to point out examples of what they see in nature that reflects the ideas presented in their reading.

For example, the shade of a tree (how much cooler the temperature is beneath the canopy of the tree) in summer, or the beauty of fall color in the fall.

## **PART TWO:**

### **Introduction:**

The Emerald Ash Borer is an invasive wood boring beetle that represents one of the greatest threats to ash trees in North America. If ash trees are infested and die, or have to be destroyed, there is a devastating economic impact on nursery, landscaping, timber, and recreation and tourism industries because of the loss of resources and the associated jobs. The destruction of ash trees decreases the quality of life for other members of the community. Trees are identified by: leaves, bark, buds, twigs or branches, and structure. These components are analyzed by shape, size, color, and texture. This activity will teach young people how to identify ash trees in the landscape so that they can begin to understand what is at risk.

### **Background Information for Educators:**

#### **Review with youth why trees are beneficial:**

Trees are important for a variety of reasons. Trees in urban, suburban, and rural areas improve our quality of life, create a habitat for plants and animals, improve the quality of the air we breathe, and reduce storm water run-off and erosion. They provide the shade that helps moderate local climate and conserve energy and serve as natural screens and buffers of noise. Trees improve our health and well-being and contribute and promote a sense of community.

### **Introduction:**

In North America, the Emerald Ash Borer has only been found in ash trees. These trees are called a host species. When feeding, the beetles bore, or chew tunnels, into the wood. The larvae feed on the living tissue of the tree, which prevents the flow of nutrients and water throughout the tree from the roots to the branches and leaves of the tree. EAB will attack any size or species of ash in any location; among ash, the borer does not discriminate (EAB *does not* attack Mountain Ash because it is not a true ash tree.)

In addition, ash trees have little or no resistance to EAB. Scientists have found that EAB adults are more attracted to stressed trees and that the larvae develop more rapidly in these trees. But even the healthiest trees have been killed when EAB population densities are high. Up until now, natural enemies have had little impact on EAB.

Present the Ash Identification PowerPoint to youth. This presentation can be tailored to fit time allotted or to suit the educator's audience. Pass out the one page Ash Identification Guide and a copy of the Field Notes page. Have youth take along a pencil or crayon for the bark/leaf rubbing. Prepare for a second nature walk.

### **Exploration:**

- Remind youth that to identify an ash tree, look first at the branch and bud arrangement. Ash trees have branches and buds that are arranged opposite one another. Ash trees have a pinnately compound leaf with (usually) five to seven (or more) leaflets. Look for seeds on the trees. Ash trees have prominently winged seeds called samaras. The bark of an older ash has a rough, diamond shaped appearance.

**Development:**

- On your walk of the surrounding area, have youth identify an ash tree and make an ash bark or ash leaf rubbing; have them draw a picture of their tree, incorporating what they have learned about the characteristics of the ash tree.
- Discuss some of the specifics about ash trees, using the vocabulary they have learned to identify the parts of the tree.
- For homework, ask youth to use their Ash Tree Identification Guide to find out if they have ash trees on their property at home; encourage them to share what they have learned with their parents.

**Closure:**

- When youth return with their private property inventory results, tally everyone's information and graph it.

**Assessment: Test Your Knowledge!** *Online quiz coming soon!*

**Concept Extension:**

- Create a bulletin board dedicated to the benefits of trees. Cut out a trunk and branches. Have a leaf template on hand for students to cut out and write something they have learned about trees from this activity. Or have the share a feeling or experience related to trees.
- Write an original story, acrostic poem, song, or play about an ash tree to include some of the facts you have learned. Make a book that includes your rubbings and written work.
- Make a map of the nature walk area, and identify where your tree is on the map.
- Document changes throughout the year on an ash tree.

